



Evaluating the Efficacy of Restoration Projects for Mitigation: An Assessment of Private Riparian Revegetation Projects in Santa Barbara County



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I. <u>Executive Summary</u>

A. Introduction

The Environmental Defense Center ("EDC") evaluated four private riparian restoration / revegetation projects to identify their successes and shortcomings.¹ Each of these riparian restoration projects was approved to mitigate the impacts of private development projects on riparian habitats in the City of Goleta or the unincorporated Goleta Valley in Santa Barbara County.² EDC staff reviewed these four projects' environmental impact reports ("EIRs"), mitigated negative declarations ("MNDs"), permits and associated permit terms, and revegetation plans. Each plan we assessed had different requirements for planting, maintenance, and monitoring of revegetation projects, and differing standards for restoration success. This report identifies successful riparian habitat restoration strategies, provides recommendations to ensure better success of future restoration projects, and encourages developers and permitting agencies to avoid impacts to riparian habitat because restoration is not always successful over the long-term.

This report contains background information on the four private development projects, their impacts to riparian habitats, creeks, and water quality, mitigation measures designed to reduce those impacts, including restoration plans, the plans' restoration success criteria, and an assessment of each restoration project. We summarize our qualitative findings and provide quantitative measurements of the success of each revegetation project. This report provides recommendations to the current landowners to increase the success of the four restoration projects and improve the ecological functioning of the restoration sites. These recommendations are intended to assist owners in fulfilling the intent of required mitigation and include invasive species removal, installing or reinstalling native plants, and changes in current landscape maintenance practices.

The report concludes with global recommendations to inform future permitting of development projects which affect riparian habitats, including avoiding impacts to riparian habitats whenever possible and improving the effectiveness of future riparian habitat restoration.

B. California Environmental Quality Act

Under the California Environmental Quality Act ("CEQA"), decision-making agencies must consider the potential environmental consequences of their actions. As defined under CEQA, a "project" includes the whole of an action, which has potential to result in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the

² Riparian habitats are streamside plant communities typically supporting willow, sycamore, oak trees, and associated shrub and understory plants. Riparian habitats in the Goleta Valley support numerous special-status wildlife species and are protected as a rare plant community in the state of California, Santa Barbara County, and the City of Goleta.



¹ Revegetation refers to planting native plants to enhance habitats and is used synonymously with "restoration" in this report.

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environment, and includes activities undertaken by a public agency, approved by an agency, or supported by an agency through contracts, grants, loans, or other forms of assistance.³

If a project may result in a significant effect on the environment, an Environmental Impact Report ("EIR") must be prepared.⁴ If an agency determines that a project will not have a significant effect on the environment, a Negative Declaration ("ND") may be prepared.⁵ Sometimes the agency's preliminary analysis will identify potentially significant effects, but the applicant agrees to revise the project to avoid or mitigate the effects before the proposed ND is released for public review; in such instances, the agency may prepare a Mitigated ND ("MND").⁶ An ND or MND is not appropriate if a project, even with revisions, may result in a significant impact.

Two of the projects reviewed in this report were approved with EIRs, and two were approved with MNDs. In all cases, the projects were approved with mitigation measures, including restoration plans, to avoid or substantially reduce potentially significant effects on riparian habitats in the Goleta Valley. As shown in this report, such measures do not always succeed. Accordingly, if agencies intend to approve projects which might result in significant impacts, the agencies need to require more effective measures and long-term monitoring, and, where appropriate, require preparation of EIRs to ensure full disclosure and consideration of impacts to riparian habitats.

C. Environmentally Sensitive Habitats

In Santa Barbara County's Goleta Community Plan Area and Eastern Goleta Community Plan Area, and in the City of Goleta, creeks and their associated riparian habitats are protected as Environmentally Sensitive Habitat Areas ("ESHA") inside and outside of the coastal zone. An area is identified as ESHA when either plant or animal life, or their habitats, are rare or especially valuable due to their role in an ecosystem and when human activities could easily disturb the habitat.⁷ Project impacts to ESHA, including riparian habitat, must be evaluated under

⁷ See e.g., City of Goleta General Plan Coastal Land Use Plan, Policy CE 1.1 stating, "ESHAs shall include, but are not limited to, any areas that through professional biological evaluation are determined to meet the following criteria: a. Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and that could be easily disturbed or degraded by human activities and developments. b. Any area that includes habitat for species and plant communities recognized as threatened or endangered by the state or federal governments; plant communities recognized by the State of California (in the Terrestrial Natural Communities Inventory) as restricted in distribution and very threatened; and those habitat types of limited distribution recognized to be of particular habitat value, including wetlands, <u>riparian vegetation</u>,



³ CEQA Guidelines Section 15378(a) "Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1) An activity directly undertaken by any public agency including but not limited to public works construction and related activities clearing or grading of land, improvement to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100-65700. (2) An activity undertaken by a person which is supported in whole or in part through public agency contacts, grants subsidies, or other forms of assistance from one or more public agencies. (3) An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

⁴ CEQA Guidelines Sections 15064, 15065.

⁵ CEQA Guidelines Section 15070.

⁶ Id.

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CEQA and significant impacts to ESHA must be avoided or substantially lessened through the imposition of alternatives or mitigation measures whenever feasible. The City of Santa Barbara also protects creeks and riparian habitat inside and outside the coastal zone and labels them ESHA in the coastal zone.⁸

D. Summary of Findings and Recommendations

This report includes an analysis of revegetation projects that were required as mitigation for four private development projects' impacts on riparian habitat. These projects were approved ten to twenty-five years ago. Each revegetation project had different criteria for planting, maintenance, monitoring, and evaluating long-term success. EDC concludes that there has been a mixture of success and shortcomings at each site. In general, much can be done to improve the success of the four revegetation projects and to ensure better success of future riparian revegetation projects. Certain species of trees and shrubs planted as part of revegetation projects, including coast live oaks, California sycamores, and elderberry have generally done well across revegetation sites, while planted shrubs, groundcover, and forbs have struggled to survive at comparable rates, and planted native grasses are nearly nonexistent across sites.

Sites with more stringent maintenance and monitoring practices have done better over time. For example, sites with only two to three years of required maintenance had less native groundcover than sites with five years of required maintenance. Additionally, while each of the four sites contains some degree of exotic vegetation, sites that had shorter maintenance periods have become dominated by invasive species, predominately non-native grasses and herbaceous weeds. This finding underscores the need for longer-term and more frequent and rigorous maintenance and monitoring, and robust, measurable success criteria. Concerns with inadequate revegetation plans and projects include low long-term success, inadequate mitigation of impacts to riparian habitats, and spread of exotic vegetation from revegetation sites into nearby natural riparian habitats.

In conclusion, based on EDC's analysis, revegetation projects rarely fully or substantially lessen projects' impacts to existing riparian habitats. Revegetation project success can be improved through more stringent mitigation requirements. However, to ensure long-term

https://santabarbaraca.gov/sites/default/files/documents/General%20Plan/General%20Plan/Environmental%20Reso urces%20Element%20%28includes%20Noise%2A%20and%20Conservation%2A%29.pdf (2011); See also Santa

Barbara City Coastal Land Use Plan Policies 4.1-1 through 4.1-30 available at https://santabarbaraca.gov/sites/default/files/documents/Services/LCP%20Update/City%20of%20Santa%20Barbara %20Complete%20Certified%20Coastal%20LUP.pdf (2019).



eucalyptus groves associated with monarch butterfly roosts, oak woodlands, and savannas. c. Any area that has been previously designated as an ESHA by the California Coastal Commission, the California Department of Fish and Game, City of Goleta, or other agency with jurisdiction over the designated area." (Emphasis added.) (2006) ("City of Goleta (2006)").

⁸ City of Santa Barbara Environmental Resources Element at 46 stating, "Water is the major limiting factor to the abundance and diversity of terrestrial organisms, and, within the City, the creeks are the major natural supply of readily available water. Because of this, riparian areas are very important as they provide water to wildlife from several communities. Riparian woodlands provide a balanced combination of the four basic needs in a terrestrial habitat, but these areas have been altered greatly by urban development within the City. Extensive riparian woodlands and natural creek areas are now limited to the upper portions of Mission and Sycamore Creeks and along most of Arroyo Burro." Available at

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protection of riparian habitats, this report recommends that projects should be redesigned to avoid impacts to riparian habitats whenever possible and should not be approved if potentially significant effects on riparian habitats cannot be avoided.

E. Acknowledgements

EDC is grateful to the entities and individuals that supported preparation of this report. University of California Santa Barbara ("UCSB") Associated Students Coastal Fund, MUFG Union Bank, Clif Family Foundation, and Santa Barbara Foundation provided generous grant funding to enable revegetation site surveys, research, and preparation of this report. UCSB Associated Students Coastal Fund also provided a generous stipend to EDC's Watershed Program Intern and report coauthor, Elijah Baker.

The authors of this report are grateful to staff at the City of Goleta and the County of Santa Barbara for providing EIRs, MNDs, and revegetation plans, without which this effort would not have been possible.

II. <u>Purpose, Goals, and Methods</u>

A. Purpose

The purpose of this report is to gauge the effectiveness of riparian revegetation projects as mitigation for private developments in the Goleta Valley and to recommend site-specific and programmatic improvements to ensure impacts to riparian habitats are avoided whenever possible and successfully mitigated when avoidance is not possible.

EDC intends for this report to be utilized by current land managers at each of the four sites to improve the state of riparian habitats they oversee, meet their respective restoration plan goals over the long-term, and enhance other community benefits, including reducing risks of wildfire and erosion, protecting clean water in local creeks, providing wildlife habitat, and enhancing aesthetic values. This report is also intended for consulting firm and government agency staff who prepare and/or review CEQA documents, restoration plans, and conditions of approval, and decisionmakers who consider approval of projects which would impact riparian habitats. Our intent is that project proponents, agency planners, and government decisionmakers will consider this report's findings regarding the limited effectiveness of riparian revegetation projects as mitigation and apply this knowledge when planning, reviewing, and permitting future projects near creeks.

B. Goals

EDC evaluated the effectiveness of four private riparian restoration projects required as mitigation for the impacts of development in the Goleta Valley in order to achieve the following goals:



- 1. Identify successes and shortcomings across four existing revegetation projects required as mitigation for development projects' impacts on creeks and riparian habitats.
- 2. Provide site-specific recommendations for landowners to increase success of the four revegetation projects.
- 3. Ensure future development projects avoid impacts to riparian habitat whenever feasible.
- 4. Ensure that when impact avoidance is not possible, future revegetation plans required to mitigate impacts to creeks and riparian habitats are successful.
- 5. Ensure that planners, project applicants, and decision-makers are aware that riparian revegetation projects are not always successful at mitigating development projects' impacts on creeks and riparian habitat over the long-term.

EDC surveyed four private creek restoration projects and assessed plant survival, percent cover of native species, and qualitative habitat values within revegetation sites, and developed site-specific and global recommendations to accomplish these goals.

C. Methods

The following steps were undertaken to evaluate success of revegetation sites and ensure improved success of future restoration projects:

- 1. Reviewed EIRs, Supplemental EIRs, and MNDs for each site.
- 2. Reviewed revegetation plans and success criteria for each site.
- 3. Conducted surveys at each site.⁹
- 4. Counted and recorded the number of installed plants observed to estimate survival rates.¹⁰
- 5. Estimated percent cover of native canopy cover and native groundcover.
- 6. Documented nonnative and invasive exotic species and their prevalence.
- 7. Conducted qualitative assessment of habitat conditions and revegetation success, including native plant health and recruitment, wildlife usage, management practices, etc.
- 8. Assessed revegetation plans' maintenance and monitoring requirements and success criteria to determine which produced the best results for long-term success.
- 9. Identified recommendations to enhance the success of revegetation projects at each site.
- 10. Identified global recommendations to enhance the success of future revegetation efforts and to improve tracking and reporting of success.
- 11. Identified global recommendations to ensure future development projects' impacts to riparian habitats and streams are avoided when feasible.

¹⁰ The numbers of surviving plants at each site were estimated when counting plants was not feasible due to visibility or limited access. It was only possible to estimate percent survival when the number of individual plants planted was documented in the corresponding revegetation plan.



⁹ Access to the Hideaways and Mercy Housing sites was granted. Access to the Hampton Inn site was via a public trail alongside Old San Jose Creek. Inaccessible sites were surveyed from adjacent public areas.

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III. <u>Restoration Sites</u>

A. Haskell's Landing, 7900 Hollister Avenue, Goleta, California

1. <u>Background</u>

The Haskell's Landing Project is a 14.5-acre housing development in the western portion of the City of Goleta, California, consisting of 101 housing units, new roads, parking lots, and an open space area . The site is located on Hollister Avenue south of U.S. Highway 101. Devereux Creek flows southward through the property's open space. The Union Pacific Railroad ("UPRR") runs east-west along the northside of the property.¹¹

Haskell's Landing is located on the site of a former proposed development, the 1994 Aradon Project. Santa Barbara County prepared an EIR (94-EIR-9) for the Aradon Project, but the project was not developed. The County prepared a Supplemental EIR for the Residences at Sandpiper Project on the same site in 1999. The City of Goleta was incorporated in 2002. The City prepared a 2008 CEQA Addendum to 94-EIR-9 for what was then named the Haskell's Landing Project on the same site after determining the project would not generate new significant impacts that were not already disclosed in 94-EIR-9.¹² The City approved the Haskell's Landing Project in 2009.

The Supplemental EIR's mitigation measures for biological resources and the City's Conditions of Approval required preparation of a Vegetation Enhancement Plan ("Enhancement Plan").¹³ The Enhancement Plan was drafted to satisfy the Project's Condition of Approval #16 for the Final Development Plan 99-DP-051. The Enhancement Plan was designed to restore and enhance the site's native vegetation communities, including riparian habitat along Devereux Creek, native grasslands, wetlands, and wildlife habitat on the site.¹⁴ Restoration began in 2013.

The Haskell's Landing Project included 101 duplexes, triplexes, and single-family homes which were constructed in 2013-2016. Today, the housing development is known as the Hideaway Bungalows and Coastal Preserves.¹⁵

- 2. <u>Summary of Environmental Impact Analysis</u>
 - a. Impacts to Devereux Creek, Wetlands, and Native Grasslands

Both the Aradon Project EIR (94-EIR-9) and the Supplemental EIR for the Residences at Sandpiper identified significant but feasibly mitigated impacts to biological and water resources

¹⁵ Rent.com Website available at <u>https://www.rent.com/california/goleta-apartments/the-hideaway-bungalows-and-coastal-preserve-4-lnp001E000000nyp17IAA</u>.



¹¹ City of Goleta, *Haskell's Landing Project: Addendum to 94-EIR-9, Goleta General Plan EIR 07-102-GP, - TM, - DP, -OA, -RN* at 1-2 (2008) ("City of Goleta (2008)"). ¹² *Id.*

¹³ City of Goleta, *Resolution for Haskell's Landing Project, Conditions of Approval*, Condition 16 (2009) ("City of Goleta (2009)").

¹⁴ HELIX Environmental Planning, Inc. and V.L. Holland, *The Residences at Sandpiper: Vegetation Enhancement Plan Implementation Report* at 1 (2002) ("Helix (2002)" or "Enhancement Plan").

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in and adjacent to Devereux Creek. During the Supplemental EIR review process, EDC retained botanist Dr. Elizabeth Painter, who identified native grasslands on the project site which the original EIR omitted. The final Supplemental EIR acknowledged the presence of the native grasslands. A city-qualified biologist completed a reevaluation of the native grasslands on the site in April 2008, and results were generally consistent with the Supplemental EIR.¹⁶ Native grasslands are an ESHA which require avoidance when feasible pursuant to the City's General Plan/Coastal Land Use Plan.¹⁷ The project would have removed all the native grasslands but was redesigned to avoid and incorporate some of them into the Devereux Creek buffer, which ranges from fifty feet in the northern portion of the site to two-hundred feet where the preserved native grasslands are located. Wetlands identified in the Supplemental EIR were also incorporated into the Project's open space and the Devereux Creek buffer and preserved consistent with the City's General Plan.¹⁸

According to the Supplemental EIR and Addendum, Haskell's Landing would result in the following "significant, but feasibly mitigated" impacts to biological and water resources:

Biological Resources

- i. Removal of native grasslands.
- ii. Rough site grading vegetation removal, leading to loss of vegetation and wildlife habitat.
- iii. Wetland habitats would be preserved in an open space but would suffer indirect impacts from adjacent development on the site.
- iv. Indirect effects to Devereux Creek associated with increased noise and human activity.
- v. Long-term water quality impacts from stormwater discharges, including grease and other non-point source pollutants.
- vi. Loss of monarch butterfly habitat due to thinning of eucalyptus trees.
- vii. Loss of upland habitat.
- viii. Devereux Creek and eucalyptus grove disturbances from sewer lateral and utility installation.

Water Resources and Flooding

i. Increased runoff due to increased imperious surfaces may reduce the water quality of Devereux Creek by increasing sedimentation and carrying pollutants.



¹⁶ City of Goleta (2008) at 28-29

¹⁷ City of Goleta (2006), Policies CE 1.1 - 1.3 and 5.2.

¹⁸ *Id.*, Policy CE 3.4.

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ii. Siltation of the UPRR culvert, located immediately north of the project site, would continue to result in divergence of normal creek flow away from the project site.¹⁹

b. Mitigation Measures for Devereux Creek

The Haskell's Landing Supplemental EIR provided the following mitigation measures to minimize and compensate for the Project's potentially significant impacts to biological and water resources.

Biological Resources

- Submit a final Vegetation Enhancement Plan to be approved by City Planning & Environmental Services staff, with specific goals for habitat restoration and performance criteria. Additionally, the Vegetation Enhancement Plan shall include monitoring by a City-approved biologist to determine project success.
- ii. The development of an open space easement including the protected area and creek corridor of Devereux Creek wherein invasive species will be eradicated and native species shall be planted, to remain in perpetuity.
- iii. The final grading plan shall identify measures to minimize sedimentation into the protected area adjacent to the creek channel, and protected wetlands and grassland.
- iv. Final landscape plan shall include barrier plantings of native riparian shrub and understory species on the existing margin of the protected area and the Devereux Creek channel, combined with appropriate fencing to reduce encroachment.
- v. Sedimentation, silt, and grease traps shall be installed in paved areas to function as filters to minimize pollution entering Devereux Creek. These shall be maintained for the working life of the project.
- vi. Non-invasive landscape plants to be included in the landscape plan shall be selected for their importance to Monarch butterfly habitats for roosting, basking, or feeding.
- vii. Night lighting in the vicinity shall be minimized.
- viii. Improvements to the hydrology and water quality of Devereux Creek shall be effectuated via grading and designing the site to facilitate runoff to riparian and wetland habitats, rather than to the sewer system.

¹⁹ City of Goleta (2008) at 74; *See also* City of Goleta (2009) Conditions of Approval, Condition 16 requiring that the Vegetation Enhancement Plan "shall specifically provide for redirection of the Creek from its current course along the UPRR tracks to the Devereux Creek."



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- ix. The Enhancement Plan shall contain indigenous native plant material only and invasive non-natives shall be eradicated from the site.²⁰
- x. Sewer lateral extensions and utility connections shall avoid the Creek, adjacent buffer, and protected areas.
- xi. During project construction the washing of concrete, paint, and equipment shall be designated where polluted water and materials can be contained, to be removed from the site.²¹

Water Quality and Flooding

- i. Reduce and filter stormwater leaving the project site using on-site fossil filter to pretreat water before entering storm drains, erosion control, and the development of bioswales.
- ii. Pesticide, herbicide, and fertilizer use shall be approved via. A maintenance plan that minimizes their use, maximizing biodegradable options.
- iii. Final grading plans shall be approved by Community Services, Caltrans, and UPRR staff to prevent flooding and ensure effective drainage through the UPRR culvert.
- iv. Dog waste pollution shall be minimized by installing Muttmitt dispensers on both sides of the Creek.²²
- 3. <u>Summary of Vegetation Enhancement Plan</u>

The Vegetation Enhancement Plan Implementation Report required by Condition of Approval 16 was authored by HELIX Environmental Planning, Inc and Dr. V. L. Holland and submitted to the City of Goleta on October 10, 2002. The Vegetation Enhancement Plan was designed for the prior Residences at Sandpiper Project but was applied to the Haskell's Landing Project because the projects' biological impacts were found to be essentially identical.

The Enhancement Plan identified six integrated vegetation and wildlife habitats prior to development, including California native grasslands, non-native grasslands, Eucalyptus woodland, seasonal wetlands, riparian habitat, and coastal scrub.²³ The Enhancement Plan aimed to protect established native systems where possible, while reducing the amount of non-native vegetive cover and restoring native cover. To do this, the Enhancement Plan divided restoration efforts into four distinct "planting areas": 1) Upland and Native Grassland Areas, 2) Wetland Areas, 3) Northern Creek, and 4) Southern Creek. The Enhancement Plan set forth individualized methods and success criteria for each planting area as set forth below.



²⁰ City of Goleta (2008) at 29-31.

²¹ *Id.* at 32-38.

²² *Id*. at 76.

²³ Helix (2002) at 3.

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The Enhancement Plan did not provide a specific timeline for implementation efforts, using general seasons to guide restoration efforts. First, a temporary irrigation system was to be installed to assist with weed removal and to ensure plantings can become established.²⁴ The irrigation system was used to germinate the non-native seedbank, followed by extensive weeding as part of a grow-kill cycle. This grow-kill process was required to occur at least three times prior to planting native plants to reduce competition from the existing nonnative seedbank.²⁵ Weed eradication was conducted prior to planting to remove invasive and weedy species.

Onsite seed collection was ongoing when the Enhancement Plan was drafted, with the expectation that native seeds would be collected from the site seasonally throughout the duration of the restoration project. The Enhancement Plan allowed native seed and plant stock to be supplemented by purchasing stock that had been collected near the site.²⁶

Weed removal was required to begin in spring/summer, followed by native plant installation in the fall. Wetland plants were to be salvaged from outside of the preservation area in the fall and transplanted within the restoration areas after the first winter rains. The first annual data collection was required to occur in the following spring/summer. If necessary, remedial seeding and planting were to occur for the first time in fall of the following year and continue as needed.²⁷ Irrigation was to be phased out through the spring/summer of the second year, unless unusually dry conditions threatened the restoration effort.²⁸

a. Planting

The Enhancement Plan contains a list of species to be planted in each of the four habitat areas, either through seeding or by planting of container plants. However, the Enhancement Plan does not include the number of individual plants required to be planted, which complicates evaluating percent survival and as a measure of success.²⁹

Tables 1 - 4 below set forth the species to be planted in each habitat area.

²⁹ The number of plants installed may be included in the revegetation projects' annual monitoring reports which EDC did not review.



²⁴ City of Goleta (2008) at 16.

²⁵ Helix (2002) at 6 - 8.

 $^{^{26}}$ *Id.* at 10.

²⁷ *Id*. at 22.

²⁸ *Id*. at 16.

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Table 1. California Native Grassland Areas				
Scientific Name Common Name				
Grasses				
Agrostis diegoensis	Diego bentgrass			
Bromus carinatus	California brome grass			
Deschampsia danthonioides	annual hairgrass			
Elymus glaucus	blue wildrye grass			
Hordeum branchatherium spp. californicum	meadow barley			
Koeleria macrantha	prairie junegrass			
Melica imperfecta	coast range melic grass			
Nassella (Stipa) lepida	foothill needlegrass			
Nassella (Stipa) pulchra	purple needlegrass			
Phalaris lemmonii	Lemon's canarygrass			
Poa secunda	one-side blue grass			
Vulpia microstachys (V. pacifica) (V. reflexa)	fescue grass			
Perennial Forbs				
Achillea millefolium	common yarrow			
Dodecatheon clevelandii	padre's shooting star			
Sanicula app.	Pacific sanicle			
Sidelcia malviflora spp. malviflora	checker mallow			
Sisyrinchium bellum	blue-eyed grass			
Eschscholzia californica	California poppy			

Table 2. Seed Mix for South Devereux Creek			
Scientific Name	Common Name		
Leymus triticoides	creeping wildrye grass	2	
Artemisia douglasiana	mugwort	2	
Bromus carinatus var. maritimus	perennial brome	3	
Elymus condensatus (aka Leymus condensatus)	giant wild rye	2	
Baccharis salicifolia	mulefat	2	
Hordeum brachyantherum spp. brachyantherum	meadow barley	2	



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<u>Table 3.</u> <u>North Devereux Creek Plant List</u>				
Plant Type	Scientific Name	Common Name		
Tree	Quercus agrifolia	coast live oak		
Tree	Platanus racemosa	California sycamore		
Shrub	Heteromeles arbutifolia	California toyon		
Shrub	Ceanothus spinosa	greenbark ceanothus		
Shrub	Baccharis salicifolia	mulefat		
Shrub	Sambucus nigra	Mexican elderberry		
Vine	Rubus ursinus	wild blackberry		
Shrub	Rosa californica	wild rose		
Tree	Alnus rhombifolia	white alder		

Table 4.	Minimum Size	Planting
Additional Plant Species	at Planting	Centers
	(gallon)	(feet)
black cottonwood (Populus balsamiflora spp. trichocarpa)	1	20
red willow (Salix laevigata)	1	15
black willow (Salix gooddingii)	1	15
creek dogwood (Cornus sericea spp. occidentalis)	1	10
snowberry (Symphoricarpos albus)	1	5



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b. Monitoring and Maintenance

Maintenance was to consist of weeding, irrigation repair, and plant and seed replacement.³⁰ Container stock plants that did not survive were to be replaced.³¹ Seeded areas that experienced little to no germination were to be reseeded the following year.³²

	Table 5. Monitoring andMaintenance Schedule	
Year(s)	Frequency	Number of Visits per Year
1 and 2	Monthly	12
3 and 4	Monthly December through May and every other month June through November	9
5	Every other month	6

The Enhancement Plan's maintenance and monitoring schedule included above details the frequency of monitoring and maintenance across five years. An annual monitoring report was to be prepared by the project botanist and submitted to the CDFW and City of Goleta by January first of each year.³³ EDC reviewed the 2014, 2015, 2016, 2017, and 2019 annual monitoring reports which document success in achieving the success criteria.³⁴

c. Success Criteria

The Enhancement Plan set forth success criteria for different habitat types.³⁵ (Table 6) Native vegetation had to exceed specified percentages each year for the Enhancement Plan to be deemed successful.³⁶ Similarly, the percent cover of nonnative vegetation had to be less than the criteria for each planting area and each year.³⁷ Success of each of the four planting areas was to be evaluated annually for five years.³⁸

³⁸ *Id*.



³⁰ Helix (2002).

³¹ Id.

³² *Id.* at 17.

³³ *Id*. at 22.

 ³⁴ Jeff Johnson, Pacific BioScience, Inc., Haskell's Landing Vegetation Enhancement Plan Volume 1: Installation Phase (September 22, 2014); Haskell's Landing Vegetation Enhancement Plan Volume 2: Annual Report (December 22, 2014); Haskell's Landing Vegetation Enhancement Plan Volume 3: Annual Report (December 16, 2015); Haskell's Landing Vegetation Enhancement Plan Annual Report (December 2016); Haskell's Landing Vegetation Enhancement Plan Volume 3: Annual Report (December 16, 2015); Haskell's Landing Vegetation Enhancement Plan Annual Report (December 2016); Haskell's Landing Vegetation Enhancement Plan Annual Report (December 2017); Haskell's Landing Vegetation Enhancement Plan Final Annual Report (November 2019) ("Johnson (2014) – Johnson (2019)").

 $^{^{36}}$ Id.

³⁷ *Id*.

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The Southern Creek Area's minimum thirty percent native vegetation threshold was low compared to other restoration plans we reviewed. For example, the Enhancement Plan set forth a five-year eighty-five percent cover criterion for the Northern Creek Area's native herb and shrub plantings. The Enhancement Plan's success criteria are set forth in Table 6 below.

Table 6. Success Criteria					
	Year	Year	Year	Year	Year
	1	2	3	4	5
Upland and Native Grassland Areas					
Percent Cover by Native Species	20	30	40	50	60
Percent Cover by Weeds*	15	15	12	8	8
Species Diversity					
Native Species Established by Seed Mix	3	4	5	6	7
Native Species Established by Natural Recruitment	1	1	2	2	3
Wetland Areas					
Percent Cover by Native Species	35	40	45	50	60
Percent Cover by Introduced Weedy Species*	15	10	10	5	5
Northern Creek					
Percent Cover by Native Herb and Shrub Species	30	45	60	75	85
Percent Cover by Native Tree Species	0	5	15	30	40
Percent Cover by Introduced Weedy Species*	15	10	10	5	5
Species Diversity					
Container Stock Species Established	6	8	8	8	8
Seed Mix Species Established	2	3	3	3	3
Species Established by Natural Recruitment	1	2	2	3	3
Southern Creek					
Percent Cover by Native Species	10	15	20	25	30
Percent Cover by Introduced Weedy Species*+	15	10	10	5	5
Species Diversity					
Seed Mix Species Established	2	3	3	3	3
Species Established by Natural Recruitment	1	2	2	3	4

The Enhancement Plan sets forth two additional success criteria: "In no case will the amount of weed cover be greater than found in the baseline data. There will be no instances where native cover is greater in the baseline data than in the annual data."³⁹

According to the Plan, if the success criteria were not met during annual reviews, an evaluation was required to identify reasons success criteria were not met.⁴⁰ In this event, the Plan was to be modified through adaptive management, including replanting to ensure success.⁴¹

³⁹ *Id*. at 22.

⁴⁰ Id.

⁴¹ *Id*.



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For the restoration effort to be considered successful, all success criteria must be met. If the success criteria were not met in Year 5, maintenance and monitoring was to be continued until these criteria were met.⁴² In addition, native plantings were required to survive for at least two years without supplemental water.⁴³

Our surveys occurred approximately fourteen years after the revegetation project. No irrigation infrastructure was observed during our surveys. The success criteria were met in year five, according to the Annual Reports⁴⁴ and presumably irrigation lines were removed at UCSB's Cheadle Center for Biodiversity and Ecological Restoration's ("CCBER") recommendation.

EDC's evaluation of the four revegetation projects indicates that once success criteria were met and monitoring and maintenance discontinued, success declined, consistent with EDC's conclusions regarding County Flood Control and Water Conservation District revegetation sites.⁴⁵ Therefore, our analysis for this report focuses on whether the success criteria continue to be met years later to determine long-term success of the Haskell's Landing revegetation project (and the other three private revegetation projects discussed below). In the Haskell's Landing case, as shown in Table 7 below, most success criteria continue to be met fourteen years after the revegetation project was initiated. The homeowners' association hired CCBER to conduct an assessment and make recommendations regarding maintenance of the revegetation area.⁴⁶ EDC reviewed CCBER's 2022 report which included numerous recommendations.⁴⁷



Figure 1. Willow woodland in Section 4 of the revegetation area. Arroyo willows are deciduous and lose their leaves in winter as shown here. Willow trees onsite generally appear in poor to fair condition, possibly due to drought and lack of water due to a blockage in Devereux Creek. Brian Trautwein. January 5, 2024.

⁴⁷ Lisa Stratton, Wayne Chapman, Jeremiah Bender, Cheadle Center for Biodiversity and Ecological Restoration, *VEP Management Recommendations* (July 2022) ("Stratton et at (2022)").



⁴² Id.

⁴³ *Id.* at 16.

⁴⁴ Johnson (2014) – Johnson (2019).

⁴⁵ Brian Trautwein, Senior Analyst/Watershed Program Director and Natalie Blackwelder, Watershed Program Intern, Environmental Defense Center, *San Jose Creek Flood Control Revegetation Sites and Los Carneros Mitigation Bank: Review and Recommendations* (October 24, 2022).

⁴⁶ Dr. Lisa Stratton, Director of Ecosystem Management, UCSB Center for Biodiversity and Ecological Restoration, personal communication with Brian Trautwein, Senior Analyst/Watershed Program Director (2023); Tim Morphy, Hideaways Homeowners Association, personal communication with Brian Trautwein, Senior Analyst/Watershed Program Director (August 19, 2024).

d. Condition of Approval 16 Requires the Vegetation Enhancement Plan to Provide for Redirection of Devereux Creek Into its Natural Channel.

The City's Condition of Approval 16 requires the Enhancement Plan to restore flows in Devereux Creek by unblocking the culvert under the UPRR tracks and within the surrounding Creek channel. (See also mitigation measure xiii in Section III.A.2.b above.) The UPRR Devereux Creek culvert and the Creek channel in the northern portion of the Haskell's Landing site are currently blocked by accumulated sediment, preventing stormwater runoff and stream flows from continuing downstream along Devereux Creek. (Figure 4) Instead, flows are diverted west for 860 meters along the UPRR tracks into Bell Canyon Creek. Unblocking the culvert and Devereux Creek to restore flows in the Creek was intended to provide the moisture needed to support the riparian vegetation installed pursuant to the Enhancement Plan. According to the City's Condition of Approval 16,

"The [Vegetation Enhancement] plan shall specifically provide for redirection of the Creek from its current course along the UPRR tracks to the Devereux Creek channel crossing the property. This would potentially require excavation of the channel invert to remove accumulated sediment and to provide appropriate elevations. Construction and habitat improvement activities in the channel shall be limited to dry season (May 1 to October 31) unless otherwise stipulated in permits from the Army Corps of Engineers or CDFG (see Condition No. 21). It may also require contributing to the design and construction of a structural solution to ensure continued flow across the UPRR and onto the project property in cooperation with UPRR."⁴⁸

This aspect of the Enhancement Plan is discussed below in Section 6.a.

4. Analysis of Haskell's Landing Riparian Revegetation Project

We divided the restoration site into eight polygons, including six twenty-seven-meterlong segments of the riparian corridor and two grassland restoration areas. (Figure 2) EDC conducted a survey of the restoration area identifying native and nonnative plant species and estimating percent cover of native vegetation and percent cover of nonnative vegetation in each polygon and gauged success based on the Enhancement Plan's success criteria in Table 6 above.

⁴⁸ City of Goleta (2009) Condition 16. (Note CDFG was the prior name of CDFW.)



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Figure 2. Devereux Creek restoration area. Six survey segments (red polygons) and two native grassland restoration area survey polygons (green).

5. Quantitative Assessment of Restoration Success

The restoration project met most of the Enhancement Plan's percent cover-based success criteria across each habitat type. Estimated native plant cover exceeded the success criteria except in two locations. Estimated nonnative weed cover was less than the maximum five percent allowed in the success criteria as shown in Table 7.



Table 7. Evaluation of Success Based on Percent Cover

Area Surveyed	Percent Cover	Restoration Criteria Met
Devereux Creek Section 1		
Percent Canopy cover by Native Species	70%	Yes
Percent Ground Cover by Native Species	70%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes
Devereux Creek Section 2		
Percent Canopy cover by Native Species	35-40%	No
Percent Ground Cover by Native Species	90-95%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes
Devereux Creek Section 3		
Percent Canopy cover by Native Species	45-50%	Yes
Percent Ground Cover by Native Species	85-90%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes
Devereux Creek Section 4		
Percent Canopy cover by Native Species	25-30%	No
Percent Ground Cover by Native Species	65-75%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes
Devereux Creek Section 5		
Percent Canopy cover by Native Species	40-45%	Yes
Percent Ground Cover by Native Species	80-85%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes
Devereux Creek Section 6		
Percent Canopy cover by Native Species	65-80%	Yes
Percent Ground Cover by Native Species	85-90%	Yes
Percent Cover by Introduced, Weedy Species	<5%	Yes

Long-term restoration of riparian habitat along Devereux Creek has generally been successful at the Haskell's Landing revegetation site. However, in 2022 the percent cover of native canopy species did not meet the Year 5 success criteria in Sections 2 and 4. Native groundcover was estimated to exceed sixty percent in all Sections and percent cover by invasive species was less than five percent in all Sections in 2022.





Figure 3. An invasive tamarix plant was observed growing Devereux Creek. Riparian and coyote brush scrub vegetation is desiccated in the revegetation area. Brian Trautwein. August 5, 2022.

6. Qualitative Assessment of Restoration Success

We tracked success qualitatively based on plant health, wildlife usage, human disturbances in the revegetation area, and other factors. The results of our qualitative assessment are presented below.

a. The Revegetation Site is Desiccated Due to Blockage of Devereux Creek at the Union Pacific Railroad Culvert.

Condition of Approval 16 required the Haskell's Landing developer to unblock the Devereux Creek culvert under the UPRR tracks to restore Devereux Creek's flows through the revegetation area as part of the Enhancement Plan.⁴⁹ The developer "committed" to unblocking the culvert when it agreed to Condition of Approval 16.⁵⁰ However, the culvert remains blocked. The blockage diverts stream flows west 860 meters to Bell Canyon Creek.⁵¹ (Figure 7) Several willow trees and the stream channel within the revegetation area appear desiccated, likely due to the plugged culvert and resulting diversion. The 2002 Enhancement Plan noted that riparian species were doing poorly in Devereux Creek because the UPRR culvert was blocked.⁵² The blockage continues to deprive the revegetation site and Devereux Creek of water and undermine the Enhancement Plan.

content/uploads/2023/10/edc goleta watershed report 2020 addendum.pdf (June 10, 2020) ("EDC (2020)"). ⁵² Helix (2002) at 1, 4, and 13.



⁴⁹ City of Goleta (2009); *See also* Lawrence Hunt, Hunt and associates Biological Consulting Services, Summary Review of Vegetation Enhancement Plan Implementation (2014-2019), Hideaway Residential Development Project Goleta, Santa Barbara County, California (July 26, 2021) ("Hunt (2021)").

⁵⁰ Email from Bob Wignot to Goleta Mayor Paula Perotte. (February 3, 2016).

⁵¹ Environmental Defense Center, *Goleta Creeks and Watersheds: Opportunities for Enhancement and Restoration* at 60 – 63 available at <u>https://www.environmentaldefensecenter.org/wp-</u>

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Winter storms washed out the railroad tracks at this location when the culvert became plugged in 1997-98.⁵³ The sediment blocking the culvert and Creek is approximately 0.3 to 0.5 meters deep and extends down the Creek from the culvert approximately thirty meters into Section 1. (Figure 2) The sediment appears to originate from eroding scarps and gullies along the UPRR corridor. (Figures 8 and 9) No erosion control measures are evident in this area. A ditch excavated through Devereux Creek's west bank in 2022 directs stream flows west away from the blocked culvert, parallelling the railroad tracks toward Bell Canyon. (Figure 6)

EDC reported the blocked culvert to the City, UPRR, CDFW, US Army Corps of Engineers ("ACOE"), Regional Water Quality Control Board ("RWQCB"), California Coastal Commission ("CCC"), the Santa Barbara County Flood Control and Water Conservation District ("FCD"), and CCBER in an effort to encourage a cooperative resolution. All parties appear generally interested in unblocking the culvert and restoring flows in Devereux Creek. UPRR's representative states, "Union Pacific Railroad would prefer that water flow via the railroad's Devereaux Creek bridge, and not west and down the right-of-way to Bell Canyon."⁵⁴

UPRR requested local interests conduct a hydraulic capacity analysis in 2022.⁵⁵ By requesting the hydraulic capacity analysis, UPRR is seeking to ensure that when the culvert and Creek are unblocked, flows from upstream of the UPRR culvert plus flows from the Haskell's Landing site would pass safely through the Hollister Avenue box culvert and not contribute to flooding. Flows pass under Highway 101 through a three-foot diameter metal culvert located approximately thirty meters upstream from the UPRR culvert. Flows pass through a four-foot-by-four-foot concrete box culvert underneath Hollister Avenue, located approximately 183 meters downstream from the UPRR culvert. The Hollister Avenue box culvert provides significantly more capacity than the Highway 101 culvert.⁵⁶ UPRR also requested a linear profile survey of the Creek to determine the depth and length of the blockage from the culvert south (downstream) into the Hideaways.⁵⁷ Neither study has been undertaken.

In 2016, EDC requested the City contact UPRR and collaborate with interested parties to unblock the culvert and Creek.⁵⁸ The City Public Works Director sent a letter to UPRR in 2016.⁵⁹ Goleta Mayor Paula Perotte met with the City Manager, Michelle Greene on February 11, 2016 and Ms. Greene "agreed that we [the City] should be working collaboratively with EDC and UPRR and applicant" (i.e., Haskell's Landing).⁶⁰

⁶⁰ Email from Mayor Paula Perotte to Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. (February 11, 2016).



⁵³ Email from Lynn Dee Althouse, Althouse Meade to Brian Trautwein, EDC (November 11, 2022) ("Althouse (2022)").

⁵⁴ Id.

⁵⁵ Id.

⁵⁶ The cross-sectional area of the Highway 101 culvert is 7.065 square feet. The cross-sectional area of the Hollister box culvert is 16 square feet.

⁵⁷ Althouse (2022).

⁵⁸ Email from Brian Trautwein, Senior Analyst / Watershed Program Director to Rosemarie Gaglione, City of Goleta Public Works Director and Michelle Greene, City Manager, City of Goleta. (April 12, 2016).

⁵⁹ Email from Rosemarie Gaglione, City of Goleta Public Works Director to Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. (April 12, 2016).

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The RWQCB also contacted UPRR in 2016 in response to EDC's inquiries.⁶¹ UPRR committed to unblocking the culvert by the end of July 2016.⁶² UPRR subsequently notified RWQCB that the work was delayed but would still be accomplished in September, 2016.⁶³ However, the culvert was not unblocked in 2016 and remains blocked in 2024.

In 2023, EDC and other community groups requested the Goleta City Council collaborate with UPRR and interested parties to unblock the culvert. City Public Works staff advised City Council that the project would require studies and permits. However, FCD already has programmatic CDFW, ACOE, and RWQCB permits and US Fish and Wildlife Service and National Marine Fisheries Service Endangered Species Act authorizations for desilting creeks and culverts as part of its Annual Maintenance Program.⁶⁴ The FCD, CDFW, ACOE, and RWQCB conceptually support using these permits to unblock the culvert.⁶⁵ A Coastal Development Permit ("CDP") is also required. The CCC informed EDC that a CDP could be issued within approximately six months after receipt of a complete application, including any required studies.⁶⁶



Figure 4. The UPRR culvert for Devereux Creek located just north of Haskell's Landing is blocked with sediment preventing runoff from flowing down the Creek and through the revegetation project site.

⁶⁵ See e.g., Email from Andrew Raaf, Environmental Manager, FCD to Brian Trautwein, Senior Analyst/Watershed Program Director, EDC stating, "Yes, we are open to consider adding a project like this to next year's annual plan, provided the work falls within the scope of our permits." (September 7, 2022); *See also* Email from April Woods, Environmental Scientist – 401 Unit, RWQCB to Brian Trautwein, Senior Analyst / Watershed Program Director (July 28, 2023); *See also* email from Andrew Raaf, Environmental Manager, FCD to Brian Trautwein, Senior Analyst / Watershed Program Director (September 7, 2023); *See also* email from Crystal Huerta, Biologist / Senior Project Manager, Los Angeles District, U.S. Army Corps of Engineers Regulatory Division, North Coast Branch to Andrew Raaf, Environmental Manager, FCD (August 22, 2023).

⁶⁶ Jonathan Hasbun, Coastal Program Analyst, CCC phone call with Brian Trautwein, Senior Analyst / Watershed Program Director, EDC (June 5, 2023).



⁶¹ Email from Paula Richter, Environmental Scientist, RWQCB to Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. (May 24, 2016).

⁶² Id.

⁶³ Email from Paula Richter, Environmental Scientist, RWQCB to Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. (August 5, 2016).

⁶⁴ See e.g., California Department of Fish and Wildlife, *Streambed Alteration Agreement for Santa Barbara County Flood Control and Water Conservation District Annual Creek Maintenance Program* (2015) ("CDFW (2015)").

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Figure 5. The blocked culvert diverts water from Devereux Creek 860 meters west along the railroad tracks into Bell Canyon Creek. UPRR installed rock rip rap to protect the tracks from erosion caused by high flows in Devereux Creek where it has been rerouted along the railroad tracks.



Figure 6. The Devereux Creek culvert under the railroad tracks remains blocked despite some clearance. (Middle left) In 2022, a ditch was excavated to facilitate diversion of Devereux Creek's flows away from the Creek toward Bell Canyon Creek. (Middle right) The Haskell's Landing Project and Devereux Creek Footbridge are in the background.





Figure 7. UPRR's blocked culvert (red line) diverts Devereux Creek from its natural course (dark blue line in lower right side of image) west 860 meters (light blue line) into Bell Canyon Creek (dark blue line in upper left corner of image). Google Earth. 2024.

Unblocking the culvert and Devereux Creek would replenish Creek flows and provide additional soil moisture to nourish riparian plants in the revegetation area, thereby improving success of the Vegetation Enhancement Plan. The blockage diverts runoff from roughly 15% of the Devereux Watershed upstream from Ellwood Mesa. Unblocking the culvert would therefore augment flows in Devereux Creek through the Ellwood Mesa Preserve.⁶⁷ Hundreds of dead and dying eucalyptus trees along Devereux Creek and in Ellwood Mesa have been ravaged by the lack of water and pose significant tree fall and fire hazards, requiring the City to spend millions of dollars to remove trees to protect public safety.⁶⁸ Restoring flows in Devereux Creek by unblocking the culvert would likely increase soil moisture levels and improve the health of these eucalyptus trees, reducing tree fall and fire hazards. The City is planning to restore Devereux Creek within the Preserve by planting native riparian vegetation.⁶⁹ Unblocking the culvert is expected to increase aquatic habitat in the Creek and create conditions conducive to riparian revegetation.⁷⁰



⁶⁷ EDC (2020) at 60 - 63.

⁶⁸ City of Goleta, *Ellwood Mesa Neighborhoods Hazardous Fuel Reduction Project Website*, available at <u>https://www.cityofgoleta.org/play/parks-recreation-open-spaces/ellwood-mesa-and-monarch-butterfly-</u>habitat/hazardous-fuel-reduction (December 7, 2023) ("City of Goleta (2023)").

⁶⁹ City of Goleta (2023).

⁷⁰ EDC (2020) at 60 - 63.



Figure 8. Eroding escarpments along the UPRR corridor provide a source for the sediment that continues to block the culvert and Devereux Creek. Note that the tan-colored sediment to the left of and below the eroding escarpment is conveyed during storms to Devereux Creek via a drainage.

Monarch butterfly overwintering aggregation sites require a certain microclimate, including high humidity levels and freshwater to support monarchs.⁷¹ EDC believes unblocking the culvert and Devereux Creek will increase humidity and enhance the quality of the Ellwood Main Monarch Overwintering Site within the Preserve. Similarly, UCSB's restored North Campus Open Space, Coal Oil Point Reserve, and Devereux Slough contain valuable wetlands which rely, in part, on freshwater inputs from Devereux Creek. Desilting the UPRR culvert and Devereux Creek is likely to benefit these downstream ecosystems and restoration projects.

In sum, the blocked culvert decreases the riparian and stream habitat quality within the revegetation area and undermines success of the Vegetation Enhancement Plan.

⁷¹ Xerces Society, *State of the Monarch Butterfly Overwintering Sites in California* at 5, available at <u>https://xerces.org/sites/default/files/2018-05/16-015_01_XercesSoc_State-of-Monarch-Overwintering-Sites-in-California_web.pdf</u> (June 2016).





Figure 9. Eroding gullies along the UPRR corridor provide a source of sediment which likely contributes to blocking Devereux Creek, preventing flows through the UPRR culvert and the Haskell's Landing revegetation site.

b. The Revegetation Area is Partly Protected from Human Intrusion, Nonnative Plants, Noise, and Lighting.

The revegetation area is located in a central open space along Devereux Creek which runs north to south through the Hideaways development. There is a well-designed network of walkways located outside of the revegetation area. Two footbridges cross through the revegetation area. The Creek buffer ranges from approximately fifty feet on the west side of Devereux Creek to up to two hundred feet on the east side to incorporate the native grasslands identified by EDC prior to project approval. Devereux Creek is protected from lighting, noise, and human intrusion where the buffer exceeds one hundred feet. However, where the buffer is less than one hundred feet, lighting and noise from surrounding residential buildings in the Hideaways may impair wildlife use of the restored habitats (e.g., nesting).

We saw no evidence of feral or pet cats preying on wildlife, however, surveys were conducted during the day and cats may hunt in the habitat area at night. Several common songbird species were identified, including California towhee, but we did not observe other wildlife. There was virtually no litter present in the revegetation area. Several nonnative plants were present. Despite this, vegetation in the revegetation area consisted primarily of native riparian and upland species.



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c. Invasive and Nonnative Species are Present in the Revegetation Area.

We observed several nonnative plant species, including invasive species in the revegetation area. Tamarix (*Tamarix ramosissima*) is a highly invasive exotic plant species which is spreading in riparian areas in the southwestern United States, including streams in Santa Barbara County.⁷² Two tamarix plants were present during surveys of the Haskell's Landing revegetation project. One was observed in the Creek in Section 4. (Figure 3) The other was documented in the revegetation area west of the Creek just north of Hollister Avenue. These plants were reported to CCBER, were documented in CCBER's 2022 report, and were subsequently removed.⁷³ Tamarix has not been documented extensively in Devereux Creek. EDC previously reported the presence of one tamarix plant in a tributary to Devereux Creek in the Sperling Ellwood Mesa Preserve southeast of the revegetation site to City of Goleta park managers in 2022.⁷⁴ Managers of the revegetation area should monitor for this species and remove any individuals found.

Nonnative Mexican feathergrass (*Stipa/Nassella tenuissima*) was also observed along the walkway in the revegetation area west of the Creek in Section 2. (Figure 10) This species is invasive in the Santa Barbara region.⁷⁵ Hunt documented fountain grass (*Pennisetum* spp.), acacia, and bladder pod vine (*Aruajia sericifera*).⁷⁶ These should be eradicated from the site.⁷⁷



Figure 10. Mexican feathergrass (*Stipa / Nassella tenuissima*) should be eradicated from the revegetation site (left) and surrounding landscaped areas (right). Brian Trautwein. January 5, 2024.

⁷² CalFlora, Tamarix webpage available at <u>https://www.calflora.org/app/taxon?crn=7917</u>; *See also* California Invasive Plant Council Tamarix webpage available at <u>https://www.cal-ipc.org/plants/profile/tamarix-ramosissima-profile/</u> (February 22, 2024).

⁷³ Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. Personal Communication with Aaron Kreisberg, UCSB Cheadle Center for Biodiversity and Ecological Restoration. 2022; *See also*: Stratton et al (2022).
⁷⁴ Brian Trautwein, Senior Analyst / Watershed Program Director, EDC. Report to City of Goleta Public Works Department, City Assist. August 22, 2022.

⁷⁵ Plan Right Website, available at <u>https://plantright.org/invasive/stipanassella-</u>

tenuissima/#:~:text=Stipa%20tenuissima%20is%20a%20great,America%20in%20Argentina%20and%20Chile. January 29, 2024).

⁷⁶ Hunt (2021).

⁷⁷ Stratton et al (2022).



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Catalina Island cherry (*Prunus ilicifolia* spp. *lyonii*) was observed onsite and is spreading by seed within the revegetation area. (Figure 11.) While native to the Santa Barbara Channel Islands and some coastal areas of mainland southern California,⁷⁸ EDC has documented this species in locations where it is spreading and outcompeting native plants.⁷⁹ This species is used for landscaping and may hybridize with the native holy-leaf cherry (*Prunus ilicifolia*). Mature and seedling Catalina Island cherry plants should be removed from the revegetation area and from throughout the Hideaways housing development.



Figure 11. Apparent Catalina Island cherry plants are spreading in the revegetation area. These plants should be removed and can be replaced with native holly-leaf cherry plants (*Prunus ilicifolia*). Brian Trautwein. January 5, 2024.

An unidentified apparent nonnative plant was also documented in the revegetation area. This species should be identified by a botanist and removed if it is nonnative. (Figure 12)

⁷⁹ Brian Trautwein, Senior Analyst / Watershed Program Director, EDC and Max Kalber, EDC Watershed Program Intern, *Goleta's Creeks and Watersheds: Opportunities for Enhancement and Restoration (Draft)* at 294, 301, and 442 (December 2021).



⁷⁸ CalFlora available at <u>https://www.calflora.org/app/taxon?crn=6896</u> (January 29, 2024).

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Figure 12. An unidentified nonnative tree or shrub was photographed in Section 4. Brian Trautwein. January 5, 2014.

- 7. <u>Highlights of the Haskell's Landing Revegetation Project:</u>
 - a. Positives
 - i. There is a low percentage of nonnative species in groundcover, shrub, and tree canopy layers.
 - ii. The site is managed by UCSB's CCBER, which possesses the skills needed to effectively manage the revegetation project and associated habitats.
 - iii. There is little human intrusion in the habitat area and virtually no litter.
 - iv. The sycamore trees planted as part of revegetation project are healthy and well-established.
 - v. The buffer protects Devereux Creek, native vegetation, and wildlife habitat where it exceeds one hundred feet.



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Figure 13. Western sycamore trees (*Platanus racemosa*) are doing well in the revegetation area. Brian Trautwein. January 5, 2014.

- b. Problems
 - i. The blocked UPRR culvert prevents freshwater inputs from the Devereux Creek Watershed north of Highway 101, resulting in a desiccated riparian corridor with unhealthy drought-impacted willow trees.
 - ii. Several nonnative invasive species are present, including Mexican feathergrass, Catalina Island cherry, and tamarix.
 - iii. Coyote brush, an aggressive native shrub which colonizes disturbed areas, is encroaching into the riparian, grassland, and wetland plant communities within the revegetation area. (Figures 3, 16, and 17)
 - iv. Willow trees are pruned in the revegetation area, and this may impair bird nesting. (Figure 18)



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Figure 14. Riparian habitat with sycamore and willow trees, mulefat, and coyote brush in Section 2 looking downstream from footbridge toward Hollister Avenue. Brian Trautwein. January 5, 2024.



Figure 15. View to northeast across Devereux Creek at lower footbridge. Sycamore, willow, and coast live oak trees, California sage, and giant wild ryegrass in Section 3 upstream from (left of) the footbridge. Brian Trautwein. January 5, 2024.



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8. <u>Site Recommendations</u>

Outreach and education should be undertaken with the neighbors to engage them in maintenance and protection of the restoration areas, including the following recommendations.⁸⁰

a. Unblock the UPRR Culvert and Devereux Creek.

The highest priority is to unblock the UPRR culvert and the upper section of Devereux Creek within the Haskell's Landing revegetation site to restore Devereux Creek's flow southward through the revegetation site, under Hollister Avenue, and into the Sperling Ellwood Mesa Preserve, North Campus Open Space, and Devereux Slough in UCSB's Coal Oil Point Reserve. We recommend that interested parties, including the Hideaways, UPRR, FCD, the City of Goleta, CCBER, and nonprofit organizations, collaborate to undertake any required studies, obtain a CDP, and unblock the culvert and Devereux Creek to restore flows in the Creek.

b. Remove Nonnative Invasive Plants and Plant Native Vegetation in the Haskell's Landing Riparian and Upland Revegetation Sites.

The second highest priority is to remove nonnative invasive plant species, including tamarisk, Mexican feathergrass, and Catalina Island cherry and replant appropriate native species in the Haskell's Landing Devereux Creek restoration site where native vegetation is limited. Bare areas should be seeded with appropriate native seeds.⁸¹ Interested partners, potentially including the Hideaways, the City, the Coastal Conservancy, and nonprofit organizations should consult with restoration biologists, such as CCBER regarding a replanting program. Partners, neighbors, and experts should collaborate regarding species to be planted, geographical parameters for seed and plant collection, invasive species removal, monitoring, and maintenance. We recommend planting the following native species:

- i. <u>Tree species</u>
 - coast live oak (*Quercus agrifolia*)
 - arroyo and sandbar willow (Salix spp.)⁸²
- ii. Riparian and oak woodland shrub and understory species
 - elderberry (Sambucus Mexicana)
 - lemonadeberry (*Rhus integrifolia*)
 - toyon (*Heteromeles arbutifolia*)
 - coffeeberry (*Frangula californica*)
 - gooseberry (*Ribes* spp.)
 - mulefat (Baccharis salicifolia)
 - hummingbird sage (Salvia spathacea)

⁸² Only plant willows if the UPRR culvert is unblocked to restore flows and create suitable hydrological conditions along Devereux Creek.



⁸⁰ Stratton et al (2022) at 1.

⁸¹ Id.
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- Santa Barbara honeysuckle (*Lonicera subspicata subspicata*)
- giant wild rye grass (*Leymus condensatus*)
- iii. Grassland and groundcover species
 - California wild rose (*Rosa californica*)
 - wild blackberry (*Rubus ursinus*)
 - mugwort (Artemesia douglasiana)
 - snowberry (*Symphoricarpos albus*)
 - purple and foothill needlegrass (*Nassella pulchra* and *Nassella lepida*)
 - coast range melic grass (*Mellica imperfecta*)
 - California brome grass (*Bromus carinatus*)
 - meadow barley (*Hordeum brachyantherum* spp. *brachyantherum*)
 - alkali rye (*Elymus triticoides*)
 - fasciculated tarplant (*Deinandra fasciculatum*)
 - Blue-eyed grass (*Sysirinchium bellum*)
 - Other species recommended by CCBER⁸³
- c. Consult a Biologist Regarding the Spread of Native Coyote Brush and Nonnative Grasses into Native Grassland, Riparian, and Wetland Restoration Areas.

Coyote brush is an important native shrub which occurs in coastal sage scrub, chaparral, and other plant communities.⁸⁴ Coyote Brush Scrub is considered a "locally sensitive vegetation community" in the Goleta area due to "the local losses."⁸⁵ Coyote brush harbors a large diversity of wildlife species.⁸⁶ According to the Peninsula Humane Society and SPCA,

"Coyote brush plays an important role in wildlife habitat. It provides cover and food for a variety of wildlife, including birds, mammals, and insects. Many species of birds, such as sparrows, finches, and quail, rely on coyote brush for nesting and foraging. Mammals, such as rabbits and deer, often use coyote brush for cover from predators. Additionally, insects, including bees and butterflies, are attracted to the flowers of coyote brush as a nectar source. The brush is wellsuited to compete with nonnative invasive species."

⁸⁶ Peninsula Humane Society and SPCA, *Coyote Brush* webpage <u>https://phs-spca.org/wildlife/coyote-brush/#:~:text=Coyote%20brush%20plays%20an%20important,brush%20for%20nesting%20and%20foraging</u> (last viewed August 26, 2024).



⁸³ Stratton et al (2022).

⁸⁴ CalFlora *Coyote Brush* webpage available at <u>https://www.calflora.org/app/taxon?crn=1031</u> (last viewed August 26, 2024).

⁸⁵ Letter from Erinn Wilson-Olgin, Environmental Program Manager I, South Coast Region, California Department of Fish and Wildlife to Mary Chang, City of Goleta re: *Comments on the Final EIR Heritage Ridge Residential Project, SCH #2015041014, Santa Barbara County* (April 25, 2022).

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Coyote brush is one of three plants listed in the General Plan's description of coastal sage scrub ESHA.⁸⁷ It is a pioneer species, often moving into disturbed areas through wind-blown seed dispersal and creating conditions for other native plants to become established through ecological succession in scrub communities.⁸⁸ However, it has become established and, in some areas, dominant in the riparian and native grassland restoration areas. (Figure 17) It is possible that coyote brush and nonnative grasses spreading into the native grassland, wetland, and riparian restoration areas should be controlled because they could take over these important native plant communities which were established as part of the revegetation project to mitigate the impacts of the housing project on native plant communities. The 2022 CCBER report included a similar recommendation to "possibly trim back a percentage of dead coyote brush."⁸⁹ During our January 2024 surveys, we observed piles of cut coyote brush, indicating that efforts are underway to control the spread of these beneficial but prolific native shrubs into native grassland, wetland, and riparian communities. (Figure 16) We recommend further consultation with biologists about this topic.



Figure 16. Coyote brush removed from native grassland area and stacked onsite. Brian Trautwein. January 10, 2024.



Figure 17. Coyote brush is an upland scrub pioneer species which often colonizes disturbed areas. It is spreading into the riparian area as shown here in Figure 4. Brian Trautwein. January 10, 2024.



⁸⁷ City of Goleta (2006) Policy CE 5.3.

⁸⁸ Lawrence Hunt, Hunt and Associates Biological Consulting Services, Letter to Mary Chang, Senior Planner, City of Goleta re: *Draft Comments on proposed SPA reduction and elimination of ESHA, Heritage Ridge Residential Development Project Revised Draft Environmental Impact Report (RDEIR), Goleta, Santa Barbara County, California.* (June 28, 2021).

⁸⁹ Stratton et al (2022).

d. Remove Dead Branches Only When Posing a Fire or Fall Threat.

The CCBER report recommended removing dead branches that are too small to serve as habitat after nesting season (Mid-August to Mid-October).⁹⁰ Observations indicate that several willow branches have been pruned. (Figure 18) Live willow branches are not very flammable and should not be pruned. Dead willow trees and snags should be left as standing deadwood for insects and cavity-nesting birds where safe. If dead or dying trees or branches pose a safety risk, for example next to a path or building, they should be removed and placed on the ground within the revegetation area to decompose. We noted that the homeowner's association is doing this in several places. We agree with Hunt this work should involve consultation with a biologist.⁹¹

e. Remove Above Ground Irrigation Lines.

Old irrigation lines should be removed if no longer in use.⁹² Plants can be spot watered by hand if needed.⁹³ Unblocking the UPRR culvert should deliver more stormwater to the Creek and revegetation area, reducing the need for supplemental watering to establish new plantings.

f. Consult a Biologist Regarding Ongoing Maintenance.

The Hideaways homeowners' association wisely consulted with leading experts on habitat restoration, including Larry Hunt, Dr. Lisa Stratton at CCBER, and Channel Islands Restoration. The association should continue to consult with these experts to guide maintenance at least annually.⁹⁴ Landscape companies touting habitat restoration experience often lack the biological experience and knowledge needed to successfully maintain restoration sites and require biological oversight.

g. Hunt and Associates Biological Consulting Services Recommendations.

We agree with Hunt's other recommendations, including keeping pedestrians on paths and dogs on leash, homeowner education, seeding, maintenance, and access.⁹⁵



Figure 18. Several willow branches have been pruned. Dead and dying willow trees and branches should be retained as habitat unless they pose a safety risk in which case they should be removed and placed on the ground to decompose. Brian Trautwein. January 5, 2024.

- ⁹² Stratton et al (2022) at 2; See also Hunt (2021).
- ⁹³ Id.
- 94 Hunt (2021) at 27.
- ⁹⁵ *Id.* at 27-28.



⁹⁰ Stratton et al (2022) at 2.

⁹¹ Hunt (2021).

B. St. Vincent's Housing Project, 4200 Calle Real, Santa Barbara, California

1. Background

The St. Vincent's Mercy Charities Affordable Housing Project, ("Housing Project") includes seventy-two multi-family dwelling units, a senior housing facility, new roads, parking facilities, open space, and recreational areas on 19.5 acres at 4200 Calle Real.⁹⁶ Cieneguitas Creek runs through the southern portion of the property. URS Greiner-Clyde prepared the Creek Restoration Plan ("Restoration Plan") for Lauterbach & Associates Architecture / Planning in April 2001 to mitigate the Housing Project's impacts on Cieneguitas Creek. It was intended to restore "the creek to a more natural condition" and create "a buffer zone with habitat on either side of the creek to enhance and protect riparian resources of the improved creek."⁹⁷ Construction and creek restoration began in 2005.

2. <u>Summary of Environmental Review</u>

The City of Santa Babara prepared a MND for the Housing Project. The MND identified potentially significant impacts to Cieneguitas Creek and the surrounding riparian habitat.⁹⁸ No significant impacts were identified for water resources.⁹⁹ Impacts to biological resources, including the Creek, were identified as potentially significant but mitigatable to less than significant levels. The primary mitigation measure was to restore the Creek's riparian habitat. The MND set forth the following impacts and mitigation measures related to the Creek.

- 3. <u>Impacts to Cieneguitas Creek</u>
 - a. Biological Resources
 - i. Impacts to locally historic, landmark, or specimen trees.
 - ii. Impacts to wetland habitat (marshland, riparian, and vernal pool).¹⁰⁰

4. <u>Mitigation Measures Addressing Impacts to Riparian Habitat</u>

- a. Biological Resources
 - i. Prior to construction: fence the fifty-foot buffer area around Cieneguitas Creek; Begin restoration as outlined in the Creek Restoration Plan; Temporary irrigation shall be constructed for restoration; Monitoring shall be extended



⁹⁶ City of Santa Barbara Community Development Department, *Mitigated Negative Declaration- MST*98-00749 Saint Francis Mercy Housing Project (2002) ("City of Santa Barbara (2002)").

⁹⁷ Id.

⁹⁸ Id.

⁹⁹ *Id.* at 50.

¹⁰⁰ *Id.* at 19.

beyond the Creek Restoration Plan's stated three years to a minimum of five years.¹⁰¹

- ii. Coast live oaks and other native trees shall be planted to the south and east of planned recreation fields to provide additional native cover.
- iii. Support footings for footbridges are located at a minimum of five feet from the top of the bank.¹⁰²
- iv. A planted buffer, consisting of native plants such as sycamores, elderberry, and cottonwood, shall be planted along the proposed path south of the baseball diamond.
- v. Protect a buffer along the western drainage.
- vi. Seeds and cuttings shall be collected by a qualified biologist prior to any ground-disturbing activity.¹⁰³
- vii. All trees shown on the Creek Revegetation Plan to remain shall be preserved, protected, and maintained.
- viii. The health of all existing trees identified to remain in the Creek Restoration Plan, and approved by the planning commission, shall be monitored by a qualified arborist throughout project construction.

b. Water Quality

- i. The applicant shall prepare and implement an Erosion Control Plan to maintain sediment onsite, including:
 - Stabilization of disturbed areas
 - Fencing of all non-construction areas to prevent disturbance.
 - Installation of silt fencing, sandbags, and hay bales fifty feet from the top of the bank and five feet from the top of the bank to prevent sediment transport.
 - Planting immediately following construction using heavy seeding with an approved mix of *Bromus carinatus, Eschscholzia californica, Lupinus succulentus, Plantago insularis,* and *Vulpia microstachys.*
- ii. Construction personnel shall not refuel vehicles or machinery or handle any solvents within fifty feet of the Creek.
- iii. No construction materials shall be disposed of within the banks of Cieneguitas Creek.

¹⁰¹ *Id.* at 22 - 23.
¹⁰² *Id.* at 23.
¹⁰³ *Id.* at 24.



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5. <u>Recommended Mitigation Measure</u>

a. Whenever feasible, native plant palette shall be extended beyond the required fifty-foot buffer zone.



Figure 19. Saint Vincent's Mercy Housing. Calle Real is visible below (south of) the facility. To the right (east) of the facility is Highway 154. The housing units are located on DePaul Drive and Pozzo Circle south of Verano Drive. Cieneguitas Creek's riparian revegetation area is located between the housing and Calle Real. Google Maps. 2023.

6. <u>Summary of Creek Restoration Plan</u>

The Creek Restoration Plan was submitted in January 2000 and revised and resubmitted in April 2001. The objectives of the Plan were to:

- Increase the aquatic, wetland, and riparian values of the existing Creek through restoration and enhancement actions in the Creek and buffer zone.
- Reduce indirect impacts of the development on Creek resources through the creation of riparian and upland habitats in the buffer zone.¹⁰⁴

The Creek Restoration Plan required modification of the Creek bank for erosion control, in-channel enhancement, enlargement of a sediment pond, channel bank restoration, buffer zone restoration, and stormwater treatment.¹⁰⁵ The site plan included a buffer zone on both sides of the

 ¹⁰⁴ John Gray, URS Greiner Woodward-Clyde, *Creek Restoration Plan- St. Vincent's/Mercy Charities Housing Project* at 1-1 (2001).
 ¹⁰⁵ Id. at 4-1 - 4-3.



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Creek, ranging from twelve feet to eighty feet, and averaging forty-two feet. A three-strand wire fence or a wooden rail fence was to be installed to discourage human entry to the riparian area.¹⁰⁶

a. Native Plant Installation

The Creek Restoration Plan consisted of five distinct ecological units. These units are located within the restoration site, with "A" plantings in the center of the Creek bed and each subsequent habitat type extending outward ending with "E" plantings near the edge of the restoration site. (Figure 20) Each unit has a distinct plant palette as shown below in Table 8.

Section	Scientific Name	Common Name	# to Plant
A: Emergent Wetland	Eleocharis macrostachya	common spikerush	235
	Juncus bufonius	toad rush	235
	Cyperus eragrostis	nutsedge	235
	Scirpus californicus	bulrush	235
B: Riparian Woodland/Scrub	Baccharis salicifolia	mulefat	125
	Salix lasiolepis	arroyo willow	125
	Artemisia douglasiana	mugwort	125
C: Riparian Transition	Rubus ursinus	wild blackberry	350
	Rosa californica	wild rose	350
	Mimulus aurantiacus	monkey flower	350
	Clematis ligusticifolia	creek clematis	350
D: Riparian Flats	Platanus racemosa	California sycamore	225
	Populus trichocarpa	black cottonwood	225
	Sambucus nigra	Mexican elderberry	225
	Distichlis spicata	saltgrass	20 lbs/acre
			(seeds)
	Melica imperfecta	small flowered melic	20 lbs/acre
			(seeds)
E: Coastal Scrub	Salvia mellifera	black sage	180
	Salvia apiana	white sage	180
	Malosma laurina	laurel sumac	180
	Haploppapus venetus	coast goldenbush	180
	Elymus triticoides	wild rye	180
	Erophyllum	golden yarrow	15 lbs/acre
	confertiflorum		(seeds)
	Vulpia fescue	zorro fescue	15 lbs/acre
			(seeds)

Table 8. Saint Vincent Mercy Housing Creek Revegetation Plant Palette

¹⁰⁶ *Id.* at 3-1. A wooden rail fence is located at the outer edge of the riparian area.



b. Restoration Schedule

The restoration site was to be graded no later than October 2000. A temporary irrigation system was required for use during the first several years of planting. Plant orders were to be placed with one or more native plant nurseries from the region prior to the end of 2000, with delivery expected for Fall 2001. Weeds were to be removed from the area over three consecutive "grow and kill treatments" between February and July 2001.¹⁰⁷ An ongoing rodent control program was to begin in the summer of 2001 to control gophers and rodents that threatened the native plants. Planting was scheduled to begin in September 2001, prior to winter rains and all container plants were to be installed no later than December 2001.

c. Irrigation, Maintenance, and Monitoring

Irrigation was intended for the first and second years but was retained for future use if needed. Frequency of irrigation was to be determined by the plant installation contractor.¹⁰⁸ Weeds were to be removed from the restoration sites by hand or selective spraying with Round-up on an ongoing basis for three years after installation of plants. Weeding was required at least three times per year.¹⁰⁹ Bimonthly site visits were to be conducted throughout the three-year maintenance and monitoring period to inspect plants, record survival, and remove weeds.¹¹⁰ An annual mitigation status report was to be prepared by April 1 of each year.¹¹¹

d. Success Criteria

All installed plants were to achieve a seventy percent survival rate by the end of the first year and eighty percent of the remaining plants were to survive by the end of the second and third years.¹¹² If survival goals were not met, then the Housing Project sponsors were required to replace plants to meet the original plant densities.¹¹³ If survivorship goals were achieved by the third year, monitoring was to be terminated. If survivorship goals were not met by the end of the third year, monitoring was required to continue only for replacement plants until they were established.¹¹⁴ Nonnative invasive plants were to be limited to no more than fifteen percent of the total vegetation cover.¹¹⁵

7. <u>Summary of Survey Methods</u>

EDC conducted a survey of the restoration area on August 10, 2022. We reviewed the Creek Revegetation Plan and MND for the Housing Project prior to our visit to identify the relevant mitigation measures, perimeter of the restoration site, goals of the restoration efforts, and species planted.

¹¹⁵ *Id*. Non-native grasses are not considered in this total.



¹⁰⁷ *Id.* at 4-8.

¹⁰⁸ Id.

¹⁰⁹ Id.

 $^{^{110}}$ *Id*.

¹¹¹ *Id*.

¹¹² Id. ¹¹³ Id.

 $^{^{110}}$ Id. 114 Id.

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The Creek Restoration Plan divided the restoration goals into five distinct sections (A – E) by habitat type. (Table 8) We conducted our assessment using these same five sections. We walked the extent of Cieneguitas Creek, from DePaul Drive at Calle Real to the Highway 154 culvert outfall, four times. (Figure 20) Sections A (emergent wetlands) and B (riparian woodland / scrub) are planted in close proximity, so we assessed for these areas during the first walkthrough. Sections C (transition zone), D (riparian flats), and E (coastal scrub) were assessed during three separate walkthroughs. We counted individual native plants by species within each Section and compared them to the number of plants the Plan required to be planted and survivorship criteria to determine if long-term restoration was successful.

8. Quantitative Assessment of Success

Three riparian tree species, including sycamore, willow, and oak trees, create a mature woodland and were in healthy condition. However, groundcover was lacking. There was a significant nonnative grass invasion along much of the south side of the Creek in Sections D and E. We also documented trimming and removal of trees in the riparian area which reduced habitat value. Following is our assessment of success.

<u>Section A (emergent wetlands)</u>: None of the four restored wetland plant species met the success criteria for survivorship and three of the four species were not observed. Only three individuals of the fourth species, nutsedge, were observed in Section A. (Table 9) Restoration of Section A was not successful based on percent survival.



Figure 20: Blue line represents boundary of Cieneguitas Creek revegetation areas. Yellow line represents pathway walked and streambed. Letters A - E represent the Plan's five planting zones. Google Maps. 2023.



<u>Section B (riparian woodland / scrub)</u>: Only one of the three species (arroyo willow) met the survivorship success criterion with 105 individuals present (84%). (Table 9) We observed only one mulefat plant and fourteen mugwort plants, far fewer than the 125 which were to be planted. Therefore, restoration of Section B was mostly unsuccessful based on percent survival.

<u>Section C (transition zone)</u>: Restoration of one species, wild blackberry, was moderately successful, while the three other species were unsuccessful. (Table 9) California wild rose and wild blackberry are rhizomatous and individual plants spread out to form patches of vegetation. Therefore, it was difficult to determine the number of plants that survived. For these species we estimated square foot cover to assess restoration success. No sticky monkey flower or creek clematis were observed although the Plan required planting of 350 of each. We noted significant invasion of non-native grasses and Canary ivy on the south bank.¹¹⁶ Restoration of Section C was partially successful in that wild blackberry persisted but mostly unsuccessful due to the absence of two species, limited presence of wild rose, and invasion by Canary ivy.

<u>Section D (riparian flats)</u>: None of the five species met the survivorship success criteria. (Table 9) We documented sixty sycamore trees, twenty-seven percent of the 225 that were to be planted. Three elderberries were surviving, just 1.3% of the 225 to be planted. Twenty-seven black cottonwoods survived (twelve percent). No saltgrass or small flowered melic grass, which were to be seeded, were observed. We observed additional native species in this area, including coast live oak, mule fat, coyote brush, and bush mallow. However, the plant understory was primarily comprised of invasive grasses (estimated at >90%). Restoration of Section D was not successful based on percent survival.

Section E (coastal sage): The Plan required planting of 180 of each species in Section E. None of the seven coastal sage scrub species met the success criteria for survivorship. (Table 9) We observed one black sage, no white sage, no coast goldenbush, no golden yarrow, no zorro fescue, and one laurel sumac. Wild giant ryegrass covered 150 square feet. Plants near the north side of Section E have been hedged near the entrance road. Native plants appear to have been replaced by a manicured grass lawn. Restoration of Section E was not successful based on percent survival.

The revegetation project at Saint Vincent's Mercy Housing Project was unsuccessful at establishing the required survivorship across the site. Only two species, Arroyo willow in Section B and wild blackberry in Section C, met the survivorship success criterion. (Table 9) There was lower than five percent survivorship for sixteen of the twenty-three species across the five Sections.¹¹⁷ (Table 9)

¹¹⁷ We observed this site in August 2022 during an historic drought which could have impacted the native plants.



¹¹⁶ Canary Island ivy (*Hedera canariensis*) is a highly invasive nonnative species. CalFlora Canary Island ivy webpage available at <u>https://www.calflora.org/app/taxon?crn=8467</u> (February 23, 2024).

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9. Qualitative Assessment of Success

Despite low survivorship of most species, several observations indicated the Restoration Plan was not a complete failure. We observed the following:

- Raptor feathers
- Presence of songbirds
- Signage discouraging entering riparian area
- Natural recruitment of coast live oaks
- High percent cover of riparian trees (primarily arroyo willow)



Figure 21. Feather of hawk species, showing usage of the riparian area by broader ecological community. Elijah Baker. September 2022.



Figure 22. Wooden barrier between St. Vincent's Housing and the restored area of Cieneguitas Creek, with required signage posted. Elijah Baker. September 2022.

10. <u>Site Recommendations</u>

We recommend revegetating the site along the same five habitat Sections as required by the initial Creek Restoration Plan to achieve the minimum percent survival success criteria. The long-term success of the arroyo willow population at this site suggests that other riparian tree and shrub species could be successfully restored here. This would increase native plant diversity and groundcover and improve success of the Restoration Plan.



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Section A		
	a.	Replant with original plant palette plus native scouringrush horsetail (<i>Equisetum hyemale</i>), common horsetail rush (<i>Equisetum</i>
	b.	<i>arvense</i>), and spreading rush (<i>Juncus patens</i>). Control invasive weeds.
Section B		
<u>Section D</u>	a.	Remove exotic plants.
	b.	Replant with more diverse plant palette, e.g., red willow, sandbar
		willow, coast live oak, California bay laurel.
	с.	Establish native groundcover species, including mugwort.
Section C		
	a.	Plant native species on the south side of the Creek near the
		footbridge in the open area currently dominated by non-native grasses and groundcover species
	h	Diversify original plant palette and replant
	с.	Plant arroyo, sandbar, and red willows, coast live oaks, wild
		blackberry, and Santa Barbara honeysuckle.
	d.	Establish native groundcover.
	e.	Remove large Shamel ash tree, an invasive species spreading in
		local creeks.
Section D		
	a.	Do not trim trees in the riparian area. (Figure 25)
	b.	Replant native riparian and oak woodland trees, shrubs, and understory species.
	с.	Diversify original plant palette.
	d.	Plant sycamore, coast live oak, and black cottonwood trees and oak woodland and riparian shrubs and understory plants south of lawn
		near Calle Real.
	e.	Prohibit dumping and install "No Dumping" signs (spent bouquets found along southern edge of restoration area near statue in turf).
Section E		
	a.	Replace ornamental landscaping north of Section E with native
		coast live oak woodland and/or coastal sage species.
	b.	Remove acacia trees, saplings, and seedlings from north side near a
		housing development about two meters from the fire hydrant.
	с.	Diversify original plant palette (e.g., canyon sunflower, Santa Barbara honeysuckle, snowberry, hummingbird sage)
	d.	Plant area between restoration area and Calle Real with coastal

sage scrub plantings, including California sage, wild giant ryegrass, purple sage, black sage, deerweed, Santa Barbara honeysuckle, and wild blackberry. (Figure 23.)



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All Sections:

- a. Retain dead trees (snags) as habitat unless posing significant fire risk. (Figure 25)
- b. Remove plastic erosion control material. (Figure 26)
- c. Implement annual creek cleanup with residents and nonprofit groups.
- d. Install "No Dumping" signs.



Figure 23. This unvegetated dirt area south of the revegetation site and north of Calle Real would make an ideal location to restore coastal sage scrub which would enhance habitat values within the restored riparian habitat, reduce erosion, and beautify the area. Elijah Baker. August 22, 2022.



Table 9. Assessment of Success Based on Percent Survival

Saint Vincent's Mercy Housing Project

Diant totale	(Entire oite)
Plant totals	(Entire site)

Section	Scientific Name	# Planted	# Observed	Percent survival	56% survivorship goal met?	_		
Section A - Wetland plants								
common spikerush	Eleocharis macrostachya	235	0	0%	No			
toad rush	Juncus bufonius	235	0	0%	No			
Nutsedge	Cyperus eragrostis	235	6	3%	No			
Bulrush	Scirpus californicus	235	0	0%	No	_		
Section B - Riparian Shrubs & sma	all trees (on bank)							
mulefat	Baccharis salicifolia	125	1	1%	No			
arroyo willow	Salix lasiolepis	125	105	84%	Yes			
mugwort	Artemisia douglasiana	125	14	11%	No	-		
Section C - Riparian shrubs (top of	f bank)							
wild blackberry	Rubus ursinus	350	*4,930 Sq/Ft	**	Yes			
California rose	Rosa californica	350	*250 Sq/Ft	**	No			
sticky monkey flower	Mimulus aurantiacus	350	0	0%	No			
creek clematis	Clematis ligusticilifolia	350	0	0%	No			
Section D - Grassland						OBSERVED		
western sycamore	Platanus racemosa	225	60	27%	No	coast live oak	Quercus agrifolia	
Mexican Elderberry	Sambucus nigra	225	3	1.30%	No	coyote brush	Baccharis pilularis	
black cottonwood	Populus trichocarpa	225	27	12%	No	bush mallow	Malacothamnus fascicul	atus
saltgrass	Distichlis spicata	Seeded	0	0%	No	mulefat	Baccharis salicifolia	
small flowered melic	Melica imperfecta	Seeded	0	0%	No	California sage	Artemisia californica	
Section E - Coastal sage scrub								
black sage	Salvia mellifera	180	1	0.56%	No			
white sage	Salvia leucophylla	180	0	0.00%	No	OBSERVED		
laurel sumac	Rhus laurina	180	1	0.56%	No	California sycamore	Platanus racemosa	47
Coast golden bush	Haploppapus venetus	180	0	0%	No	Mexican elderberry	Sambucus nigra	13
wild rye	Elymus triticoites	180	*150 Sq/Ft	**	No	black cottonwood	Populus trichocarpa	36
golden yarrow	Eriophyllum confertiflorum	180	0	0%	No	white Alder (dead)	Alnus rhombifolia	1
Zorro fescue	Vulpia fescue	180	0	0%	No	ļ		
Other native species obser	ved	Giant wild rye,	coast live oak sa	aplings,				
		California bay l	aurel, horsetail					
Nonnative plants observed		Unidentified grasses, bottlebrush, English/Algerian/Canary Island ivv. Shamel						
		ash, pine tree, palm tree, pepper vine, periwinkle,						
Brazilian pepper, black wood acacia, umberella papyrus, pampas grass								
	Fremont cottonwood, smilo grass, wild oat, castor bean, cocklebur							

*Measured in square feet **Unable to estimate % survival





Figure 24. Creek restoration signage should be retained to discourage entry into habitat. Brian Trautwein. September 2022.





Figure 25. Native trees within and adjacent to the restoration area should not be cut. Dead trees (snags) should be left as habitat unless they are in close proximity to homes or paths or are a fire hazard. Brian Trautwein. September 2022.





Figure 26. Plastic netting from erosion control should be removed. Elijah Baker. September 2022.





Figure 27. Spent bouquets are routinely discarded in the restoration area. Annual trash cleanups should be undertaken. Elijah Baker. August 22, 2022.



C. Patterson 101 Self-storage (Formerly California Allstore) 98 North Patterson Avenue, Santa Barbara County, California

1. Background

The California Allstore Project ("Project") at 98 North Patterson Avenue, Santa Barbara County, California was approved by Santa Barbara County in 1997. The Project was constructed in 1998. The site is currently operated under the name Patterson 101 Self-storage, which is the name we use in this report. Patterson 101 Self-storage is a personal storage facility with storage units and motorcycle and automobile storage. In addition, the Project included the construction of a 950 square foot apartment, as well as an access road, lighting, and parking. The Project includes 6.07 acres and is located west of Maria Ygnacio Creek, between Patterson Avenue and Ribera Drive, north of US Highway 101.

The County required restoration of Maria Ygnacio Creek to mitigate the impacts of the Project on the Creek. The Maria Ygnacio ESH Buffer Zone - West Bank Revegetation Plan ("Plan") was drafted by Julio Juan Veyna with Veyna Systems as mitigation for the Project.¹¹⁸ The Plan states, "The Revegetation Plan is designed to restore or enhance the biological values of a 485 lineal foot segment of the west Outer Terrace of the Maria Ygnacio Creek (ESH Buffer Zone) in the Goleta Valley of Santa Barbara County, California."¹¹⁹ The revegetation area covered 28,000 square feet (approximately 0.64 acres).¹²⁰ Revegetation began in 1998.

2. Project Impacts on Creek and Riparian Habitat

The Project's MND identified impacts to Maria Ygnacio Creek and the Creek's riparian habitat. The MND determined that each identified impact was a "[p]otentially significant impact which can be mitigated to non-significant levels."¹²¹ We summarize each of the Project's biological and water resources impacts below.

a. Biological Resources

- i. The loss of healthy native specimen trees.
- ii. A reduction in the numbers, a restriction in the range, or an impact to the critical habitat of any unique, rare, threatened, or endangered species of animals.
- A reduction in the diversity or numbers of animals onsite (including mammals, birds, reptiles, amphibians, fish, or invertebrates).¹²²

 122 *Id.* at 7 – 18.



¹¹⁸ Julio Juan Veyna, Veyna Systems, Maria Ygnacio ESH Buffer Zone - West Bank Revegetation Plan (Case No: 97-DP-007) (1998) ("Veyna (1998)").

¹¹⁹ *Id*. at 4.

¹²⁰ Id.

¹²¹ County of Santa Barbara Planning and Development, *Draft Negative Declaration for California Allstore* at 7 - 18 (1997) ("Santa Barbara County (1997)").

b. Water Resources/Flooding

- i. Changes in percolation rates, drainage patterns, or the rate and amount of surface water runoff.
- ii. Discharge into surface waters, or alteration of surface water quality, including but not limited to temperature, dissolved oxygen, turbidity, or thermal water pollution.
- iii. Alteration of the direction or rate of flow of groundwater.

3. <u>MND Mitigation Measures</u>

The MND identified the following mitigation measures related to the Creek:

a. Biological Resources

- i. All ground disturbance and native plant removal shall be prohibited in a fifty-foot setback from either side of the Maria Ygnacio Creek. The area shall be fenced with fencing type and location to be approved by the Santa Barbara County Planning and Development Department.
- ii. Landscaping shall be done with native plants and seed stock from local sources.
- Excavation work shall be avoided to the maximum extent possible within, or adjacent to, the sensitive habitat area.
 Where it must occur, excavation will be conducted with hand tools. If the use of hand tools is deemed infeasible, Planning and Development can authorize the use of equipment weighing five tons or less.
- iv. Erosion control measures shall be installed to prevent sediment from entering the riparian habitat.
- v. The applicant shall prepare and implement a habitat revegetation plan.
- vi. Outlet structures shall minimize disturbance to the natural drainage of the Creek.
- vii. The Creek bottom shall not be disturbed or altered by installation of any drain or outlet structure.
- viii. An energy dissipator will be employed below the drainpipe outfall to reduce erosion.
- ix. All proposed drainage devices shall be placed in the least environmentally damaging locations.¹²⁴



 $^{^{123}}$ *Id.* at 9 - 11. 124 *Id.* at 15 - 18.

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b. Water Resources/Flooding

- i. Sediment, silt, and oil traps installed to minimize pollutants entering riparian habitat.
- During construction, washing of concrete, paint, or equipment can only occur in designated zones where water can be collected and disposed of, to avoid pollutant runoff entering the riparian habitat. ¹²⁵

4. <u>Summary of Revegetation Plan</u>

Julio Juan Veyna, Principal of Veyna Systems prepared and submitted the Revegetation Plan to the County Planning and Development Department on November 6, 1997. The Plan was updated and resubmitted for approval on January 22, 1998.

a. Planting, Maintenance, and Monitoring Schedule

Plan implementation was divided into two phases. Phase 1 restoration was to begin in 1997 and Phase 2 in 1998 with an anticipated completion by 1999.¹²⁶ The Revegetation Plan schedule included a three-year maintenance and monitoring period. (Table 10)

Phase 1 (1997-1998)	Task
Phase 1.1	Obtain local seeds from immediate area or nearby creeks; Obtain
	cuttings of hard woods to be stored and planted in Fall 1998
Phase 1.2	Identify and tag native species for protection
Phase 1.3	Remove undesirable exotic species (during demolition phase)
Phase 1.4	Install temporary drip irrigation
Phase 1.5	Determine replacement plants; Employ erosion control
Phase 1.6	Plant cuttings and reseed (during grading phase)
Phase 1.7	Obtain plants grown from native creek stock
Phase 1.8	Maintain clear area and monitor
Phase 2 (1998-2000)	
Phase 2.1	Plant off-site propagated materials (at start of construction)
Phase 2.2	Augment buffer with trees and shrubs
Phase 2.3	Seed areas and protect
Phase 2.4	Maintain to completion, including rodent control
Phase 2.5	Replant as necessary
Phase 2.6	Maintain site through 1999
Phase 2.7	If self-sustaining, remove temporary drip irrigation (est. 2000)
Phase 2.8	Final inspection ¹²⁷

Table 10. Plan Phases



¹²⁵ *Id.* at 9 - 11.

¹²⁶ Veyna (1998) at 7.

¹²⁷ *Id.* at 12 - 13.

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The Plan required that plantings be inspected a minimum of once every six months and required written reports to the County Planning and Development Department to document restoration progress. The Plan aimed to create a self-sustaining population of native plants by 2000.

The Plan contains a list of species that could be planted but does not state which species were selected for planting, nor the specific number of individual plants to be planted. However, a map obtained from the County Planning and Development Department and signed by the Plan's author, Julio Juan Veyna, lists the following species and numbers to be planted.¹²⁸ This information is reproduced below in Table 11.

Plant Type	Scientific Name	Common Name	Number to Plant
Trees	Quercus agrifolia	coast live oak	22
	Alnus rhombifolia	white alder	5
	Platanus racemosa	California sycamore	8
	Populus trichocarpa	black cottonwood	3
	Sambucus nigra	Mexican elderberry	11
	Heteromeles arbutifolia	toyon	6
Shrubs	Salvia mellifera	black sage	29
	Ceanothus	blue blossom	16
		ceanothus	
	Romneya coulteri	Matilija poppy	9
	Baccharis pilularis	coyote bush	64
	Rhus integrifolia	lemonade berry	20
Vines	Rubus ursinus	wild blackberry	190
	Rosa californica	wild rose	169
Seed Mix	Oenothera biennis	evening primrose	2 lb
	Eschscholzia californica	California poppy	6 lb
	Bromus carinatus	California brome	3 lb
	Lupinus succulentus	succulent lupine	4 lb
	Stipa pulchra	purple needle grass	2 lb
	Mimulus aurantiacus	sticky monkey flower	4 lb

Table 11. Planting Plan

¹²⁸ It is not clear whether these numbers were followed because we identified larger numbers of some species which appeared to have been planted as part of the restoration project. Several other species were not present, indicating some species may not have been planted. Implementation may have been based on plant availability rather than on the numbers set forth on the Revegetation Plan map.



b. Overall Plan Goals

The Revegetation Plan set forth overall goals as follows:

- i. Employ bioengineering erosion control measures.
- ii. Short term restoration (Phase 1).¹²⁹
- c. Specific Goals for ESH Buffer

The Plan sets forth goals for the Creek buffer restoration area as follows:

- i. Remove Peruvian Peppers existing in Outer Terrace.
- ii. Remove existing understory non-native species. Replant with native vegetation.
- iii. Remove existing non-native species and replace them with natives.
- iv. Excavation work within or adjacent to sensitive habitats including native trees shall be avoided to maximum extent possible. Where excavation must be performed, it must be performed with hand tools only. If this is deemed impossible, excavation work may be authorized by Planning and Development to be completed with rubber-tired construction equipment weighing over five tons.¹³⁰
- *d.* Long-term Restoration Goal (Phase 2)
 - i. Establish multi-layered riparian forest cover along the west Outer Terrace ESH Buffer Zone.¹³¹
- e. Success Criteria

The January 22, 1998 Revised Plan lists the success criteria as eighty percent survivorship of tree species and eighty percent survivorship of groundcover species near the end of the three-year maintenance period.¹³² Additional success criteria are set forth below.

i. Vegetation: Overall Objectives

The Plan includes a measurable objective and success criterion of removing identified nonnative species. "The proposed revegetation plan will meet all of the proposed vegetation



¹²⁹ Veyna (1998) at 5.

¹³⁰ *Id.* at 6.

 $^{^{131}}$ Id.

¹³² *Id.* at 12.

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restoration goals set forth in this study, including removal of the identified non-native species."¹³³ The Plan states that there should be, "zero exotic or non-native species."¹³⁴

ii. Vegetation: Species Mix and Percent Cover

The Plan includes objectives for plant species composition in the restored area. "The restored areas shall support at least the Category 1 native species set forth in Table 1 for the planting zones. The species mix should resemble that proposed in the individual habitat categories. Strict adherence to obtaining all species shall not be a criteria (sic) for success."¹³⁵

5. <u>Survey Methods</u>

EDC conducted a survey of the restored area from adjacent publicly-accessible vantage points. We reviewed the Plan, associated map, and the MND to identify the restoration site boundaries and the species planted prior to conducting the survey.



Figure 28. Patterson 101 Self-storage facility. North Patterson Avenue is visible to the left (west) and Highway 101 is visible below (south of) the facility. To the right (east) of the facility is the Maria Ygnacio Creek riparian corridor running north to south. Google Earth. March 2021.

We divided the restoration site into four sections for ease of surveying vegetation and estimating percent cover of native vegetation, so that our work can be reproduced, and our recommendations can be more easily conveyed. (Figure 29) Within each section we developed two subsections (inside and outside of fence) for a total of eight survey units to aid our

¹³³ *Id.* at 11.
¹³⁴ *Id.*¹³⁵ *Id.*



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assessment. The first section is *Cover Behind Fence*, which includes the area from the easternmost wall of the Patterson 101 Self-storage facility to the chain-link fence erected in the restoration zone. The second is *Cover from Fence to Riparian Area*, which includes the area from the chain-link fence to the eastern edge of the revegetation area. (Figure 29)



Figure 29. Patterson 101 Self-storage facility with the riparian habitat bordering Maria Ygnacio Creek. Yellow lines divide the revegetation area into four sections. The orange line approximates the location of the chain-link fence. The red text boxes identify the section number assigned by EDC. Google Earth. March 2021.

We conducted a thorough walkthrough adjacent to the site, staying outside the propertylines. We estimated the percent cover of native species for both groundcover and shrub and tree canopy within the eight survey units to determine if restoration at Patterson 101 Self-storage was successful in the long-term. We tracked all species and counted individual plants observed to evaluate success of restoration efforts based on the Plan's criteria of eighty percent survivorship and "zero exotic or non-native species."¹³⁶ We also evaluated whether Category 1 native plant



¹³⁶ Id.

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species were present pursuant to the success criteria. Finally, we evaluated whether the Plan achieved its goals of creating a "multilayered riparian forest" and "self-sustaining" native plant populations.

6. <u>Observations and Quantitative Assessment of Success</u>

We made the following determinations based on observations regarding achievement of the Plan's Success Criteria and qualitative ecological health of the restored area.

a. Percent Cover

Estimated canopy cover ranged from poor (45%) to fair (65%) outside of the chain-link fence but was inadequate (10% - 50%) inside the chain-link fence. (Tables 13 - 16) Aerial photos show percent cover within the fence line was higher prior to vegetation removal inside the fence. Removal of trees and shrubs inside the fence accounts for this low percent cover.¹³⁷

Percent cover of native groundcover was inadequate throughout the restoration site, ranging from an estimated 0% - 5%. Restoration was unsuccessful with respect to percent cover.

b. Species Mix

The species mix does not approximate those in the Plan for each category as demonstrated in the tables below. Numerous species which were proposed for planting were absent from the site. Restoration was not successful with respect to species mix.

c. Presence of Nonnative Plant Species.

The Revegetation Plan sets forth success criteria of zero nonnative plants in the restoration, however, observations indicate the groundcover is essentially all nonnative plants in most of the restoration area. Invasive species propagating onsite include, but are not limited to, castor bean, kikuyu grass, and pittosporum. Therefore, the Plan does not currently achieve this criterion for success.

See tables and discussion below.

¹³⁷ We observed numerous stumps of native trees and shrubs, some of which were resprouting. Based on this observation and aerial photos (Figures 33 and 34), we conclude that native trees, including mature oak trees and shrubs were removed from within the fence in 2016. We hypothesize that tree and shrub removal was an effort to deter encampments, however EDC surveys have shown no evidence of encampments in this area. The native trees and shrubs required to be planted to mitigate the Project's impacts may have been removed to reduce fire hazards, however, we are not aware of fires in this area and the building appears constructed with metal siding. Removal of plants installed as part of the Revegetation Plan undermined success at this site and forms the basis for Global Recommendation D (Section IV below) to require permanent preservation of restoration areas.



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7. Observations and Qualitative Assessment of Success

Numerous qualitative observations indicate that the Plan has not been successful at creating self-sustaining native plant populations, multilayered canopies, and healthy riparian habitat.

- a. Coast live oak and willow trees, elderberries, and other native shrubs were cut to stumps both inside and outside the chain-link fence prior to our August 2022 survey. The location and size of the stumps and aerial photos indicate that some of the removed trees and shrubs had been planted as part of the Plan and were required mitigation, while other stumps appear to be from mature plants which preceded restoration efforts but were cut down following restoration efforts as shown in Figures 33 and 34. These tree removals occurred in mapped riparian ESHA and within a mapped monarch butterfly aggregation site ESHA.¹³⁸ (Figure 32)
- b. The herbaceous groundcover vegetation is routinely weedwhacked and comprised of virtually all nonnative plants.
- c. At least one rat trap with poison bait is present in the revegetation area and visible from the Highway 101 right-of-way. (Figure 30) Poisoned rats may be consumed by predators (e.g., birds of prey, grey fox, bobcat, coyote, etc.) and scavengers in the restoration area and the adjacent riparian habitat and by pets in nearby neighborhoods.¹³⁹
- d. A chain-link fence with barbed wire was erected and forms an impediment or barrier to wildlife movement in the middle of the restoration area.¹⁴⁰

¹⁴⁰ This observation led to Global Recommendation H below.



¹³⁸ Santa Barbara County, *Eastern Goleta Valley Community Plan ESHA Map* available at <u>https://files.ceqanet.opr.ca.gov/270235-1/attachment/K1mI6IqqhUKdpkAMr-Nsy7H2HwiNBtkeykMmJEQ-</u> <u>cWyo5BlUYTKcnkMhcE8YFSnvp7RDP6vK5ySAah1H0</u> (July 17, 2023).

¹³⁹ California Department of Fish and Wildlife, *Rodenticides* Webpage stating, "Throughout California, the use of poison baits to control rodents has injured and killed hundreds or thousands of wild animals and pets. Predatory and scavenging birds and mammals like owls, hawks, raccoons, bobcats, mountain lions, foxes, skunks and coyotes that eat dead or dying rodents that have consumed these baits will also be poisoned. Pets will also eat dead or dying rodents and unprotected bait." Available at <u>https://wildlife.ca.gov/Living-with-Wildlife/Rodenticides</u>. (January 18, 2024).

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Figure 30. At least one poison rat bait station has been set out within the riparian restoration area next to a cyclone and barbed wire fence. Rat poison works its way up the food chain and can kill predators and scavengers. January 29, 2024.

e. Construction debris is stockpiled in the restoration area inside the fence in an area that was required to be restored pursuant to the MND. Figure 31.



Figure 31. Boards and other miscellaneous items are stockpiled in the restoration area. January 29, 2024.



Figure 32. Excerpt from the 1993 Goleta Community Plan ESHA Map. The circle and butterfly symbol represent a mapped monarch butterfly overwintering site, and the cross-hatched area along Maria Ygnacio Creek is mapped ESHA which extends onto the Patterson 101 Self-storage site (the parcel located underneath the butterfly symbol).



Images from Google Earth support our assessment that healthy trees were cut down in the Patterson 101 Self-storage facility revegetation area in 2016. Below, we share images of the site taken six months apart in 2016. (Figures 33 and 34) The images show a stark contrast in the amount of vegetation present to the right (east) of the facility. While some of the change in vegetation from green to brown should be attributed to a change in seasons (February to August), closer inspection of the images shows a reduction in tree and shrub cover that is not seasonal. This is corroborated by our survey in which we identified multiple native trees and shrubs, both inside and outside of the chain-link fence, which have been cut down to stumps or have had limbs cut back.



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Figure 33. Image of Patterson 101 Self-storage facility. Note the densely vegetation riparian restoration area to the right (east) of the facility. Google Earth. February 2016.



Figure 34. Image of Patterson 101 Self-storage facility. Note the barren brown areas within the riparian restoration area demonstrating clearing of native trees and shrubs to the right (east) of the facility between February and August 2016. Google Earth. October 2016.

Additionally, native ground cover was severely lacking across the restoration area, with virtually all of the groundcover consisting of non-native grasses and weeds. The area appeared to be managed with weed-whacking which further disrupts the ability for native species to compete and survive.

8. <u>Quantitative Evaluation of Success</u>

Table 12 shows the survivorship results from our survey at Patterson 101 Self-storage.



Table 12. Survivorship

California Allstore at 98 North Patterson

Plant totals (Entire site)					
Species Count	Scientific Name	# Planted	# Observed	Percent surviving	80% survivorship goal met?
Coast live oak	Quercus agrifolia	22	42	190%	Yes
White alder	Alnus rhombifolia	5	0	0%	No
California sycamore	Platanus racemosa	8	10	125%	Yes
Black cottonwood	Populus trichocarpa	3	0	0%	No
Mexican Elderberry	Sambucus nigra	11	32	290%	Yes
Toyon	Heteromeles arbutifolia	6	3	50%	No
Black sage	Salvia mellifera	29	0	0%	No
Ceanothus	California lilac	16	0	0%	No
Matilija poppy	Romneya coulteri	9	0	0%	No
Coyote brush	Baccharis pilularis	64	0	0%	No
Lemonade berry	Rhus integrifolia	20	18	90%	Yes
Wild blackberry	Rubus ursinus	190	-	-	No
California wild rose	Rosa californica	64	-	-	No
Seed Mix					
Evening primrose	Oenothera biennis	2 lbs	0	0%	No
California poppy	Eschscholzia californica	6 lbs	0	0%	No
California brome	Bromus carinatus	3 lbs	0	0%	No
Succulent lupine	Lupinus succulentus	4 lbs	0	0%	No
Purple needle grass	Stipa pulchra	2 lbs	0	0%	No
Moneky <mark>f</mark> lower	Mimulus aurantiacus	4 lbs	0	0%	No
Naturally occuring nati	ive species		giant wild rye, coast live oak saplings		
Non-natives Unidentified invasive grasses, Tree tobacco, Nursturtium, English			obacco, Nursturtium, English/Algerian		
			ivy, mustard, o	ancerwart, white hore	hound, Matura tea tree, cersia lancea

The Patterson 101 Self-storage restoration project was unsuccessful at establishing 80% of the plants by species based on our 2022 surveys. Only four of fourteen species demonstrated 80% or greater survival. As shown in Table 12 above, we noted 0% survivorship for six of fourteen species of trees and shrubs installed as container plants, including white alder, black cottonwood, black sage, ceanothus, and coyote brush.¹⁴¹ We noted 0% survivorship of all native species planted through seed mixes.¹⁴²

In some cases, the number of survivors far-exceeded the number of planted species. For example, Coast live oak (190%), California sycamore (125%), and Mexican elderberry (290%) had greater than 100% survivorship. (Table 12) This leads us to believe that the numbers of plants included in the Plan's associated map do not represent the numbers of plants installed. It appears that certain species were overplanted. This makes it difficult to assess the successes and shortcomings of the Patterson 101 Self-storage revegetation project based on survivorship.

¹⁴² We observed this site in August 2022 during an historic drought which could have impacted the visibility of native groundcover species. Surveys were conducted from nearby public areas which also limited visibility.



¹⁴¹ The sixth species, Matilija poppy is not native to the Goleta area and should not have been included in the species list.

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However, while some of these plants have been pruned or cut to stumps, other plants are doing well.

The revegetation project was not successful given the low percent survival of ten of the fourteen tree and shrub species identified at this site and the lack of native vegetative groundcover. Patterson 101 Self-storage manages their area by weed-whacking groundcover and pruning and removing mature trees and shrubs, which significantly disrupts the vegetation community and undermines success. (Figures 33 and 34)

While success criteria were not met in 2022 - 2024, the health of some remaining western sycamores and coast live oaks as well as the February 2016 arial photograph (Figure 33) indicate that planting of oak woodland and riparian species was and could again be successful at this site. Replanting would increase the native vegetative cover and weeding would reduce the presence of nonnative and invasive species consistent with required and agreed-upon restoration success criteria goals for Patterson 101 Self-storage site.

- 9. Highlights
 - a. Positives
 - i. Eight of ten western sycamores planted for restoration are healthy and several are tall and established.
 - ii. We identified natural coast live oak recruitment at various spots. Oak propagation indicates the potential for self-sustaining native coast live oak woodland plant community and an opportunity to achieve restoration goals by planting and retaining coast live oak woodland species.
 - iii. Cooper's hawk feathers indicate the site is used by birds of prey.

b. Problems

- i. Patterson 101 Self-storage erected a chain-link and barbed wire fence that disrupts the riparian habitat. While the Plan accounts for a fence to be built on the property, the intended goal of the fence was to "protect ecologically sensitive habitat." The chain-link fence bifurcates the habitat restoration area, hinders and precludes wildlife movement, and therefore is not aligned with the Plan.
- Multiple trees, both inside and outside the chain-link fence, have been significantly cut back, in some cases to stumps, and pruned. (Figures 33 and 34) This includes trees that appear large enough to have preceded development as well



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> as trees and shrubs that appear to have been planted as part of restoration efforts. This has contributed to the failure to maintain compliance with the success criteria and Revegetation Plan goals of a multi-layered canopy and selfsustaining native plant populations.

- iii. The restoration site appears to be managed with weedwhacking both inside and outside of the chain-link fence, preventing native understory plant growth.
- iv. Two, six-inch-diameter PVC pipes measuring at least twenty feet long, were present outside of chain-link fence in 2022 and appeared leftover from project construction.
- v. Construction equipment and debris was stored along the backside of the building in 2022, in an area that the original Revegetation Plan indicates was designated for restoration. Some debris was removed but boards were still present in the restoration area in 2024. (Figure 31)
- vi. Rat poison is placed along the fence in the riparian zone.

10. <u>Site Recommendations</u>

We recommend the following actions to ensure the success of the restoration project:

- a. Replant and reseed pursuant to the Revegetation Plan to achieve Plan success criteria and goals. Exclude Matilija poppy, which is not native to the area.
- b. Limit weed-whacking at the restoration site to invasive weed control adjacent to the building consistent with Santa Barbara County Fire Department defensible space recommendations.¹⁴³
- c. Preserve live and dead trees.¹⁴⁴
- d. Replace rat poison dispensers with owl boxes, rat snap traps, and/or other nontoxic rodent control measures.
- e. Remove construction debris from east side of the building.
- f. Replace chain-link fence with wood rail fence or cut fourteen-inchby-fourteen-inch openings for wildlife at the bottom of the fence to aid wildlife movement into and out of the restoration area.
- g. Remove nonnative pittosporums which are propagating.



¹⁴³ Zone 1 is thirty-feet-wide. Zone 1 requires removal of dead plants, grass, and weeds. Zone 1 allows native plants, including trees spaced ten feet apart and which do not overhang roofs. *Santa Barbara County Fire Department Defensible Space Brochure* available at https://sbcfire.com/wp-content/uploads/2022/08/Defensible-Space-Brochure1.pdf (January 5, 2023).

¹⁴⁴ *Id*. Remove dead trees from Zone 1.

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- h. Remove nonnative castor bean plants and continue to eradicate seedlings.
- i. Remove nonnative Mediterranean spurge.
- j. Remove eucalyptus trees from the area, particularly the saplings encroaching on the riparian ESHA.
- k. Remove nonnative Cape ivy¹⁴⁵, kikuyu grass, and periwinkle from the west bank at the point where the property line fence meets riparian zone and wherever these species occur on the property.

We recommend replanting the following species at this site, using only locally sourced plants and seeds (i.e., collected from wild plant populations within Maria Ygnacio Creek).

Tree species

- a. *Quercus agrifolia* coast live oak
- b. Salix lasiolepis arroyo willow
- c. *Platanus racemosa* western sycamore
- d. Umbellularia californica California bay laurel

Shrub species

- e. Sambucus nigra Mexican elderberry
- f. Lonicera subspicata var. subspicata -Santa Barbara honeysuckle
- g. *Ribes amarum* bitter gooseberry
- h. *Heteromeles arbutifolia* toyon
- i. *Frangula californica* California coffeeberry
- j. Salvia mellifera black sage
- k. *Salvia leucophylla* purple sage
- 1. *Rhus integrifolia* lemonadeberry
- m. Rosa californica wild rose
- n. Leymus condensatus giant wild ryegrass

Groundcover species

- a. *Leymus condensatus* giant wild ryegrass
- b. *Salvia spathacea* hummingbird sage
- c. Artemisia douglasiana California mugwort
- d. *Rubus ursinus* wild blackberry
- e. Bromus carinatus California brome
- f. *Lupinus succulentus* succulent lupine
- g. *Stipa pulchra* purple needle grass
- h. Other coast live oak woodland groundcover species

¹⁴⁵ Cape ivy (*Delairea odorata*, prev. *Senecio mikanioides*), "a vine native to South Africa, has recently become one of the most pervasive and alarming non-native plants to invade the coastal areas of the western United States." Dr. Joe Balciunas, Chris Mehelis, and Maxwell Chau, United States Department of Agriculture - Agricultural Research Service Western Regional Research Center - Exotic & Invasive Weed Research Unit, *Biological Control of Cape ivy Project 2004 Annual Research Report* (2004).



Table 13. Estimated Percent Cover and Species Count in Section 1

Maria Ygnacio Creek

California Allstore at 98 North Patterson

Section 1			
Estimated Percent Cover Native Plants (of 1	00% each)		Notes
Canapy cover behind fence		50-55%	
Ground cover behind fence		0-5%	
Canapy cover riparian zone		65-70%	*25% of this made up by an oak preceeding restoration
Ground cover riparian zone		0-5%	
Cover behind fence measures from base of facility to	chainlink fence		
Cover riparian zone measures from chainlink fence to	to the preexisting tree line near riapa	rian zone	
Species Count	Scientific Name		
Coast live oak	Querous agrifolia	10	3 oak trees were cut down to stumps
White alder	Alnus rhombifolia	0	
California sycamore	Platanus racemosa	2	
Black cottonwood	Populus trichocarpa	0	
Mexican Elderberry	Sambucus nigra	5	
Toyon	Heteromeles arbutifolia	0	
Black sage	Salvia mellifera	0	
California lilac	Ceanothus	0	
Matilija poppy	Romneya coulteri	0	
Coyote brush	Baccharis pilularis	0	
Lemonade berry	Rhus integnitolia	1	Cut back (only about 1 foot tall)
Wild blackberry	Rubus ursinus		** 50 square feet
California wild rose	Rosa californica	0	
Seed Mix			
Evening primrose	Oenothera biennis	0	
California poppy	Eschscholzia californica	0	
California brome	Bromus carinatus	0	
Succulent lupine	Lupinus succulentus	0	
Purple needle grass	Stipa pulchra	0	
Monekyflower	Mimulus aurantiacus	0	
Naturally occuring native species		NA	
Non-natives		Unidentifed invasive grasses	



Table 14. Estimated Percent Cover and Species Count in Section 2

Maria Ygnacio Creek

California Allstore at 98 North Patterson

Section 2			
Estimated Percent Cover Native Plants			Notes
Canapy cover behind fence		35-40%	
Ground cover behind fence		0-5%	Construction debris/materials along back of building
Canapy cover riparian zone		60-65%	
Ground cover riparian zone		0-5%	
Courtablied/anco measuresfrombase offecility to c	:hainlink fonco		
Couvr <i>sipation sono</i> moasures from chainlink fonce to l	ta tho prooxirting troo lino noar ri	aparian zono	
Species Count	Scientific Name	Number Observed	Notes
Coast live oak	Quercus agrifolia	11	
White alder	Alnus rhombifalia	0	
California sycamore	Platanus racemosa	1	
Black cottonwood	Populus trickocarpa	0	
Mexican Elderberry	Sambucus nigra	э	
Toyon	Heteromeles arbutifolia	1	
Black sage	Sahva mellifera	0	
California lilac	Ceanothus	0	
Matilija poppy	Romneya coulteri	0	
Coyote brush	Baccharis pilularis	0	
Lemonade berry	Rhus integritalia	2	One individual cut back (only about 1 foot tall)
Wild blackberry	Rubus ursinus	0	
California wild rose	Rosa californica	-	30 square feet
Seed Mix			
Evening primrose	Oenothers biennis	0	
California poppy	Eschscholzia californica	0	
California brome	Bromus carinatus	0	
Succulent lupine	Lupinus succulentus	0	
Purple needle grass	Stipa pulchra	0	
Moneky flower	Alimulus ourontiocus	_ 0	
Naturally occuring native species		Giant wild rye, coast live oak sapli	ings
Non-notives		Unidentifed invasive grasses, tree	: tobacco, nasturtium, English / Algerian ivy hybrid,
		thistle, mustard, cancerwart, white	e horehound, matura tea tree


Table 15: Estimated Percent Cover and Species Count in Section 3

Maria Ygnacio Creek

California Allstore at 98 North Patterson

Section 3							
Estimated Percent Cover Native Plants (of 10	0% each)		Notes				
Canapy cover behind fence		45-50%	1 oak out to ground				
Ground cover behind fence		0-5%	Rat posion placed at points along chainlink fence				
Canapy cover riparian zone		50-55%	Sycamores are 30-40 feet tall and doing well				
Ground cover riparian zone		0-5%	Located one significant CA wild rose patch (producing seeds)				
Cover behind lence measures from base of facility to ch	ainlink fence						
Cover riparian zone measures from chainlink fence to to) the preexisting tree line near riapa	rian zone					
Species Count	Scientific Name						
Coast live oak	Quercus agrifolia	11					
White alder	Alnus rhombitolia	0					
California sycamore	Platanus racemosa	5					
Black cottonwood	Populus trichocarpa	0					
Mexican Elderberry	Sambucus nigra	7					
Toyon	Heteromeles arbutifolia	2					
Black sage	Salvia mellifera	0					
California lilac	Ceanothus	0					
Matilija poppy	Romneya coulteri	0					
Coyote brush	Baccharis pilularis	0					
Lemonade berry	Rhus integrifolia	4					
Wild blackberry	Rubus ursinus	•	[•] Large, naturally occurring patch beyond restored area				
California wild rose	Rosa californica		** 30 square feet				
Seed Mix							
Evening primrose	Denothera biennis	0					
California poppy	Eschscholzia californica	0					
California brome	Bromus carinatus	0					
Succulent lupine	Lupinus succulentus	0					
Purple needle grass	Stipa pulchra	0					
Monekyflower	Nimulus aurantiacus	0					
Naturally occuring native species:		NA					
Non-natives		Unidentifed invasive grasses, thistle, Cersia lancea					



Table 16. Estimated Percent Cover and Species Count in Section 4

Maria Ygnacio Creek

California Allstore at 98 North Patterson

Section 4								
Estimated Percent Cover Native Plants (of	(100% each)		Notes					
Canopy cover behind fence		10%	Four coast live oaks cut to stumps					
Ground cover behind fence		0-5%						
Canopy cover riparian zone		45-50%	One coast live oak out to stump; One live oak pre-existing Arrows willow out to stump.					
Ground cover riparian zone		0-5%	Anogowinow catto stamp					
Cover behind lence measures from base of facility to cha	inlink fence		-					
Cover riparian zone measures from chainlink fence to to t	he preexisting tree line near riapari	an zone						
Species Count	Scientific Name	Number Observed						
Coast live oak	Quercus agrifolia	20						
White alder	Alnus rhombikolia	0						
California sycamore	Platanus racemosa	2						
Black cottonwood	Populus trichocarpa	0						
Mexican Elderberry	Sambucus nigra	10						
Toyon	Heteromeles arbutifolia	0						
Black sage	Salvia mellifera	0						
Ceanothus	California lilac	0						
Matilija poppy	Romneya coulteri	0						
Coyote brush	Baccharis pilularis	0						
Lemonade berry	Rhus integrifalia	11						
Wild blackberry	Rubus ursinus		** 30 square feet					
California wild rose	Rosa californica	0						
Seed Miz								
Evening primrose	Clenothera biennis	0						
California poppy	Eschscholzia californica	0						
California brome	Bromus carinatus	0						
Succulent lupine	Lupinus succulentus	0						
Purple needle grass	Stipa pulchra	0						
Moneky flower	Attimutus aurantiacus	0						
Naturally occuring native species:		Giant wild rye; coast live oak saplings						
Non-natives		Unidentifed invasive grasses, English / Algerian ivy hybrid						



D. Hampton Inn, 5665 Hollister Avenue, Goleta, California

1. <u>Background</u>

The Hampton Inn, originally planned as the Old Town Hotel and Village Project ("Project") was proposed in 2001. The Project site is 4.86 acres and is located at 5665 Hollister. The hotel is a three-story building consisting of 110 rooms. The accompanying community consists of 38 townhouse-style condominiums. The City of Goleta completed a Supplemental EIR ("SEIR") in August 2002, tiering off the Goleta Old Town Revitalization Plan EIR (96-EIR-05).¹⁴⁶ The hotel and condominiums required the construction of new roads and parking facilities adjacent to Old San Jose Creek.¹⁴⁷ Construction occurred in 2006 and revegetation of the Creek was initiated the same year.

EDC reviewed the SEIR. The SEIR required preparation and implementation of a creek restoration plan by the Project applicant. EDC staff requested the creek restoration plan; however, the City of Goleta was unable to locate it. All background information for this site comes from the SEIR.

2. <u>Summary of Impacts to Creek and Riparian Habitat</u>

The SEIR for the Project identified potential impacts to Old San Jose Creek's riparian habitat, water quality, and flooding.¹⁴⁸ The identified impacts were anticipated to be significant, but feasibly mitigatable to less than significant levels.¹⁴⁹ Prior to the Project, the Creek section nearest Hollister was little more than a small drainage collecting runoff from nearby streets, rooftops, and parking lots. It supported several scattered willow trees and nonnative vegetation. Farther downstream on the Project site, the Creek supported a more developed riparian woodland with oak, willow, black cottonwood and sycamore trees and understory plants such as wild blackberry. Old San Jose Creek on the Project site was mapped as riparian habitat ESHA in the County's 1993 Goleta Community Plan.¹⁵⁰ (Figure 35)

The SEIR concluded that the Project would impact the Creek, including damage to or loss of native riparian habitat, impacts to southern tarplant, increased stormwater runoff, including non-point source pollution, noise, lighting, and human disturbances associated with construction and operation of the Project. The SEIR found that the Project would also increase runoff and peak stormwater flows, increasing the chances for flooding downstream.¹⁵¹



¹⁴⁶ City of Goleta, Supplemental EIR for Hampton Inn Project. August 2002. ("City of Goleta (2002)").

¹⁴⁷ Old San Jose Creek is the historic San Jose Creek channel located in Old Town Goleta. It receives only local runoff from Old Town because San Jose Creek was diverted into a concrete flood control channel paralleling Highway 217 in the 1960s.

¹⁴⁸ City of Goleta (2002) at 8 and 12.

¹⁴⁹ Id.

¹⁵⁰ City of Goleta (2006), Figure 4-1, Environmentally Sensitive Habitats Map available at <u>https://www.cityofgoleta.org/home/showpublisheddocument/28002/638155876848370000</u>.

¹⁵¹ City of Goleta (2002) at 12.

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Figure 35. 1993 Goleta Community Plan ESHA Map showing riparian habitat on the Project site was mapped as ESHA before the Project was approved. Santa Barbara County Planning and Development Department. Available at <u>https://content.civicplus.com/api/assets/dad0b829-866a-4010-80c1-07ab63eb7ee7</u>

3. <u>Summary of Mitigation Measures Addressing Riparian and Creek Impacts</u>

The SEIR identified the following mitigation measures to reduce impacts to the Creek to less than significant.¹⁵²

- a. Biological Resources
 - i. Design should minimize disruption to riparian resources and mature trees to the maximum extent possible.
 - ii. ESHA areas shall maintain a setback of fifty feet from the top-of-bank of creeks. The setback along the eastern portion of the site shall be twenty-five feet from the top-of-bank to the greatest extent feasible.
 - iii. New development adjacent to Old San Jose Creek shall include habitat restoration along the Creek, to be maintained by the developer.
 - iv. Development onsite shall include installation of landscaped buffer strips of native trees and shrubs between development and other active use areas and the edge of the revegetated area along Old San Jose Creek.
 - v. The native vegetation used to restore the Creek bank shall be incorporated into the landscape plan.



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- vi. ESHA area lost due to development shall be replaced at a five-to-one ratio (5:1) onsite or at an appropriate location within the Old Town planning area.
- vii. Temporary fencing protection shall be provided within the Creek and buffer area during grading and construction.
- viii. Exterior lighting within 100 feet of the buffer area shall be low intensity, shielded, and directed away from ESHA area.
 - ix. Erosion control measures shall be implemented to prevent runoff into the Creek/buffer area during grading and construction.
 - x. Stormwater outlet structures shall minimize disturbance to the Creek banks and channel.

b. Flooding and Water Resources

- i. New development shall be located outside of the floodway. Finish floor elevation shall be two feet above the 100-year flood elevation.
- ii. Final grading/drainage and erosion control plans shall be consistent with preliminary plans and shall ensure that there is no destabilizing effect on the Old San Jose Creek banks, particularly in areas where the development setback is less than fifty feet.
- iii. Habitat restoration plans along Old San Jose Creek shall ensure no loss of conveyance of peak flows.
- iv. Outdoor water use shall be limited through the use of drought tolerant landscaping, drip irrigation, grouping plant material by water needs, no turf on slopes of over four percent, extensive mulching, and the use of soil moisture sensing device to prevent unnecessary irrigation.

4. <u>Summary of Revegetation Plan</u>

EDC staff requested but were unable to obtain a creek revegetation plan for the Project. As such we do not know what specific planting, monitoring, and maintenance schedule was set, or what revegetation success criteria was agreed upon, if any. We cannot verify the complete list of plant species used for restoration or how many individuals were planted.

However, the SEIR notes that:

• The project plan calls for the removal of 33 trees, including acacia, apricot, ash, avocado, bottlebrush, Chinese elm, coral, cypress, loquat, palm, pine, rubber, and walnut.¹⁵³ None of these trees are located within the riparian corridor.



 $^{^{153}}$ *Id.* at 8 - 38.

• The landscape plan specifies the planting of 39 native large canopy trees, including coast live oak, holly oak, cork oak, and California sycamore.¹⁵⁴

The SEIR also notes that:

- New development of parcels adjacent to Old San Jose Creek shall include habitat restoration along the Creek by the developer for a period of three years or until established, whichever is earlier.¹⁵⁵
- Bioswales shall be incorporated into the restoration plan and removal of nonnative plants shall be specified in the habitat restoration plan.¹⁵⁶
 - 5. <u>Success Criteria</u>

The SEIR did not set forth success criteria for Creek revegetation. Instead, EDC based success on percent cover of tree canopy, shrubs, and groundcover consistent with our assessment of the other three projects.

6. <u>Summary of Survey Methods</u>

EDC conducted surveys of the restoration area on September 30, 2022, and January 4, 2024. We reviewed the SEIR for the Hotel Development Project prior to our visits to identify the perimeter of the restoration site, goals of restoration efforts, and mitigation measures related to the Creek.

We conducted our survey by splitting the restoration area into three distinct. (Figure 36) We walked the extent of Old San Jose Creek, from Hollister Avenue along a City of Goleta path adjacent to the western edge of the restoration site.

- 7. <u>Observations and Quantitative Assessment of Revegetation Success.</u>
 - a. Percent Cover

Revegetation success was mixed. Riparian tree establishment was extraordinarily successful, forming a riparian woodland with over ninety to ninety-five percent cover by native arroyo willow, western sycamore, coast live oak, California bay laurel, and black cottonwood trees in each of the three sections. (Table 17; Figures 36, 37, and 38.) Understory shrub and groundcover success was poor. Native groundcover and shrub understory, including toyon, ceanothus, California wild rose, wild giant ryegrass, and wild blackberry was estimated at <5% to 20% cover in the three sections. (Table 17; Figure 39)



¹⁵⁴ *Id*. at 36.

¹⁵⁵ *Id.* at 36 - 38. ¹⁵⁶ *Id.* at 38.

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Figure 36. Hampton Inn Old San Jose Creek Revegetation Project Site. The green polygon is the revegetation area. The red lines divide the revegetation area into three sections for the purpose of our evaluation. The yellow polygon is the Hampton Inn and Village Project boundary. Google Earth.

Section	Riparian Canopy	Shrubs and Groundcover
1	>95%	<10%
2	>90%	10-20%
3	>90%	<5%

Table 17. Estimated Percent Cover



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Figure 37. Riparian Habitat at Hampton Inn Revegetation Project, Hollister Ave. Looking west from Toyota of Santa Barbara. Brian Trautwein. December 28, 2023.



Figure 38. Hampton Inn Revegetation Project on Old San Jose Creek consisting of sycamore, coast live oak, and black cottonwood trees. Looking southwest from Toyota of Santa Barbara. Brian Trautwein. December 18, 2023.



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b. Species Mix

There is a good mix of native tree species present (six) but native shrubs and groundcover species diversity is low (six species). (Table 18)

Species	Common Name	Type of Plant	Native	Nonnative	Notes		
Quercus agrifolia	coast live oak	tree	X				
Populus trichocarpa	black cottonwood	tree	Х				
Salix lasiolepis	arroyo willow	tree	Х				
Umbellularia californica	California bay laurel	tree	Х				
Platanus racemosa	western sycamore	tree	Х				
Alnus rhombifolia	white alder	tree	X		Six dead trees		
Heteromeles arbutifolia	toyon	shrub	X				
Prunus ilicifolia	holly leaf cherry	shrub	X		Probably nonnative Prunus ilicifolia spp. lyonii		
Rosa californica	California wild rose	shrub	Х				
Rhus integrifolia	lemonadeberry	shrub	X				
Ceanothus	California lilac	shrub	Х				
Leymus condensata	wild giant rye	perennial grass	Х				
Rubus ursinus	wild blackberry	vine	Х				
Stipa miliacea	smilo grass	grass		Х	Outcompeting native groundcover		
Liquidambar styraciflua	Liquid amber	tree		X	sapling		
Fraxinus uhdei	Shamel ash	tree		Х	invasive		
Araujia sericifera	moth vine	vine		Х			
Prunus ilicifolia spp. lyonii	Catalina Island cherry	shrub		X	Spreading by seed. Figure 40.		

Tabla	10	Materia	and			4 Cmaala		-4	TT _o	4	T	C:4
гаріе	10.	Native	ana	Nonnaux	/е гіяп	i Specie	s Preseni	ы	няти	лоп	Inn	Sile
Idole	101	1140110	ana		U I Iuli	e o peere			1100111	J U U I I		NAGE





Figure 39. Native groundcover and understory species include scattered wild rose, wild giant rye, and wild blackberry. Groundcover was lacking throughout the revegetation area. Brian Trautwein. January 4, 2024.





Figure 40. Catalina Island cherry is native to the Santa Barbara Channel Islands. It is used in landscaping on the mainland. It has become naturalized in riparian areas. The large shrub by the bridge separating Sections 2 and 3 and all seedlings should be identified as the native holly leaf cherry and retained or the nonnative Catalina Island cherry and removed. Brian Trautwein. January 4, 2014.

Two nonnative trees are present: Shamel ash and liquid amber. (Figures 41 and 42) One approximately twelve-meter tall Shamel ash is present roughly thirty meters south of Hollister Avenue on the west side of the revegetation area in Section 1 next to the concrete path. Shamel ash is not formally designated as an invasive species, however, it is rapidly spreading within Goleta's riparian habitats and other riparian areas in southern California, including the Sepulveda Basin.¹⁵⁷ The nonnative liquid amber in Section 3 appears to have been planted. (Figure 42) It is approximately six feet tall.

¹⁵⁷ EDC, Draft *Goleta's Creeks and Watersheds: Opportunities for Enhancement and Restoration* at 147, 224, and 252 (December 2021); *See also* Sepulveda Basin Wildlife website, *Common Weeds and Exotic Plants in The*



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Figure 41. Liquid amber is a nonnative tree that was observed in Section 3 and should be removed from the revegetation area. Brian Trautwein. January 4,

Sepulveda Basin Wildlife Reserve Webpage, available at <u>https://www.sepulvedabasinwildlife.org/weeds.html</u> (January 31, 2021).





Figure 42. Shamel ash is an invasive tree that is spreading in local creeks and should be removed and replaced with native vegetation. Brian Trautwein. January 4, 2024.

Smilo grass is present. (Figure 43) This is an invasive species which is crowding out native understory and groundcover plants.¹⁵⁸ This species "appears to be increasing in riparian areas and canyons, especially in southern California."¹⁵⁹ As a result, native groundcover and understory cover is low. Another nonnative plant, moth vine, is growing into native shrubs in the revegetation area. (Figure 44)

¹⁵⁸ California Invasive Plant Council Website, *Stipa milicea* var. *milicea* Webpage available at <u>https://www.cal-ipc.org/plants/profile/piptatherum-miliaceum-</u>

profile/#:~:text=miliacea%20(smilograss)%20is%20a%20tufted,canyons%2C%20especially%20in%20southern%20 California (January 18, 2024). ¹⁵⁹ Id.





Figure 43. Smilograss (*Stipa milicea* var. *milicea*) is an invasive grass which is dominating the understory in the revegetation area and should be replaced with native groundcover and understory plants. Berian Trautwein. January 24, 2024.



Figure 44. Nonnative moth vine (*Araujia sericifera*) is present in the revegetation area. This plant is growing up into native shrubs and can potentially grow into and smother native shrubs and trees. Brian Trautwein. January 4, 2024.



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8. Qualitative Assessment of Success

We evaluated the qualitative success of the revegetation project. Litter and evidence of dumping were observed during both surveys, suggesting habitat degradation in the revegetation area. Contrasting this, the health of individual native trees other than white alder appeared good. The native trees are large and well-established.

Two bioswales required as a mitigation measure in the SEIR are located within the revegetation area. Bioswales are earthen drainage channels lined with vegetation that are intended to slow stormwater runoff and filter stormwater pollutants. The bioswales have been maintained devoid of vegetation and leaf litter in an apparent effort to maximize drainage. (Figures 45 and 46) Bioswales function through the biological activity of high-uptake plants as well as microorganisms in the soil. Maintenance which eliminates the plants reduces the effectiveness of the bioswales at filtering out stormwater pollutants.



Figures 45 and 46. Bioswales have been denuded and maintained free of vegetation. While this may facilitate drainage it does not mitigate stormwater quality impacts. Bioswales should be planted with native wetland plants such as rushes and horsetails. Elijah Baker. September 30, 2022.

Signs designating the area as environmentally important are present and appear to help minimize human intrusion into the riparian habitat. (Figure 47)





Figure 47. "Nature Preserve" signage helps keep people out of the revegetation area. Note the unidentified nonnative sapling growing to the right of the sign. Brian Trautwein. January 4, 2014.

Trees within the western edge of the riparian habitat are regularly pruned and leaf litter within ten feet of the edge is regularly raked. (Figure 50) This degrades the riparian habitat and increases the effects of human presence, noise, lighting, and erosion.

Six white alder trees observed were deceased, likely due to insufficient water. (Figure 48) We observed no living white alder trees.



Figure 48. Six deceased while alder trees (e.g., the closest tree in this photo) and no surviving white alder trees were observed in the revegetation area. Brian Trautwein. January 4, 2014.



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A utility box is present within the riparian habitat. (Figure 49) Utility maintenance requires workers to enter the revegetation area, which poses potential disturbance impacts to native wildlife and impacts to native plants.



Figure 49. These utility boxes and concrete pad located within the revegetation area near Hollister Avenue indicate that periodic human presence within the riparian woodland is necessary for utility maintenance, degrading the value of the revegetated riparian habitat. Brian Trautwein, January 4, 2024.

- 9. <u>Site Recommendations</u>
 - a. Remove smilo grass, moth vine, and all nonnative plants from the understory.
 - b. Replant native understory species, including wild rose, wild blackberry, mugwort, hummingbird sage, wild giant rye, gooseberry, and twinberry to achieve a minimum eighty percent cover by native understory shrubs and groundcover.
 - c. Remove Shamel ash and liquid amber.
 - d. Conduct annual monitoring and removal of nonnative plants.



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- e. Determine whether *Prunus* present is native *Prunus ilicifolia* or nonnative *Prunus ilicifolia* spp. *lyonii*. Remove all *Prunus ilicifolia* spp. *lyonii* shrubs and seedlings.
- f. Minimize vegetation pruning except where needed as directed by the Santa Barbara County Fire Department for fire safety.
- g. Relocate the utility boxes and associated concrete pad out of the ESHA if feasible, consistent with the intent of the Goleta Zoning Ordinance.¹⁶⁰
- h. Conduct annual Creek cleanups and post "No Dumping" signs.
- i. Plant and maintain native high-uptake species in bioswales, including rushes, such as spreading rush (*Juncus patens*) and common horsetail (*Equisetum arvense*).



Figure 50. The western edge of the riparian revegetation area is regularly raked, exposing soil to erosion, reducing nutrients, and degrading the riparian habitat. Raking leaf litter should be limited to the bare minimum necessary for fire safety. Brian Trautwein. January 10, 2024.

https://library.qcode.us/lib/goleta_ca/pub/municipal_code/item/title_17-part_iv-chapter_17_30-17_30_060 (January 18, 2024).



¹⁶⁰ City of Goleta Zoning Ordinance Section 17.30.060 D. Management of ESHAs stating, "Where there are feasible alternatives, existing sewer lines and other utilities that are located within an ESHA must be taken out of service, abandoned in place, and replaced." Available at

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IV. <u>Global Recommendations</u>

The EDC's field surveys of four private riparian revegetation sites in Santa Barbara County found that restoration is not always successful over the long-term. Revegetation was implemented between 1998 (Patterson-101 Self-storage) and 2013 (Haskell's Landing). The projects' revegetation plans were designed with varying degrees of rigor. Even the more rigorous plans did not meet all of their success criteria in 2022-2024. Additionally, restored areas can be altered or even cleared of vegetation after they have reached the compliance period, undermining the effectiveness of riparian restoration as mitigation for the impacts of projects. The following recommendations are designed to help ensure that impacts to riparian habitats and streams are avoided whenever feasible, and that unavoidable impacts are substantially lessened and effectively mitigated by successful revegetation and restoration projects.

- A. Require private development to avoid direct impacts to riparian and creek ESHAs. Where significant impacts to riparian habitat and creek ESHAs cannot be avoided, projects should not be approved.
- B. When impact avoidance is infeasible and denial would preclude all economic use of a parcel, allow the minimum use necessary to avoid a taking. Require higher riparian habitat replacement/mitigation ratios and onsite revegetation.¹⁶¹
- C. Require stream buffers of 100 feet or more measured from the edge of riparian vegetation or top of bank, whichever is farther. Require 200-foot buffers within the Goleta Mountainous Zone District pursuant to Policy ECO-EGV-5.5, and within all mountainous and rural areas.¹⁶²
- D. Place restored riparian habitats, creeks, and associated buffers in permanent conservation easements or deed restrictions.
- E. Develop a standardized and rigorous set of metrics for restoration success.
- F. Increase the restoration maintenance and monitoring period to ten years.
- G. Provide ample space outside of riparian habitats, revegetation areas, and buffers to accommodate defensible space and flood control facilities.
- H. Use native plant barrier plantings (e.g., wild rose, wild blackberry) as an alternative to fencing.
- I. Require local native plants from the vicinity of the project site to protect the genetic integrity of local plant populations.
- J. Locate new utilities and lighting and relocate existing utilities and lighting outside of riparian habitats, revegetation areas, and buffers.
- K. Consider drought tolerance as a factor when selecting plant species for restoration plans to increase success in the face of climate change.
- L. Revegetation and restoration plans should be peer-reviewed by independent restoration biologists prior to approval.

Each of these recommendations is expanded upon below.



¹⁶¹ The Santa Barbara County Eastern Goleta Valley Community Plan Policy ECO-EGV-2.5 at 140 requires a minimum 3:1 ratio to mitigate unavoidable direct impacts to riparian habitat and 4:1 for wetlands. Available at <u>https://content.civicplus.com/api/assets/c045b531-6a10-4bf5-9f34-d03284a623ae</u> (December 14, 2017) ("Santa Barbara County (2017)").

¹⁶² Santa Barbara County (2017) at 150.

A. <u>Require private development to avoid direct impacts to riparian and creek ESHAs</u> whenever feasible. Where significant impacts to riparian habitat and creek ESHAs cannot be avoided, projects should not be approved.

Mitigation in the form of habitat restoration often fails to successfully compensate for loss of riparian and stream habitat, function, and values. EDC strongly recommends that public agencies require project redesign to avoid impacts to creeks and riparian habitats and avoid approving projects that impact creek and riparian habitat, consistent with the Santa Barbara County Environmental Thresholds and Guidelines Manual.¹⁶³ Our analysis shows that riparian restoration required for private development often fails to meet success criteria over the long term. There are inadequate mechanisms to ensure successful restoration, and, in many cases, there are no mechanisms to ensure permanent preservation of restored areas. Projects should not be approved where impacts cannot be avoided.

B. <u>When impact avoidance is infeasible and denial would preclude all economic use</u> of a parcel, allow the minimum use necessary to avoid a taking. Require higher riparian habitat replacement/mitigation ratios and onsite revegetation.

When impacts cannot be avoided and denial would preclude all economic use of a parcel, only the minimum use necessary to avoid a taking must be approved. Higher mitigation ratios are needed to ensure no long-term loss of riparian and stream habitat function and value. Ratios for restoring riparian and stream habitat as mitigation for the impacts of private development vary. For example, the County's Eastern Goleta Valley Community Plan and Gaviota Coast Plan set forth a minimum three-to-one ratio (3:1) for ESHA and four-to-one (4:1) for wetlands.¹⁶⁴ Public agencies should adopt a standard minimum ratio of four acres restored for every acre of riparian habitat permanently impacted. This would ensure a consistent approach to mitigating impacts to streams and riparian habitats and ensure sufficient land is restored to compensate for the unavoidable impacts of private development projects.

Minimum mitigation ratios should increase with temporal impacts. For instance, for every year that elapses following the impact and before restoration is implemented, the ratio should increase (e.g., 4:1 if restoration precedes or is concurrent with impact, 5:1 if mitigation is delayed by a year, 6:1 if mitigation is delayed by two years, etc.).

Offsite revegetation projects fail to adequately mitigate the impacts to affected creek and riparian habitats, so permitting agencies should require onsite restoration / revegetation (i.e., revegetation / restoration should occur on the same site and same creek that would be impacted).¹⁶⁵



¹⁶³ Santa Barbara County Planning and Development Department, *Environmental Thresholds and Guidelines Manual* at 32 available at

https://www.sblafco.org/files/f2915ea5d/Information Item No 1 Attachment B Environmental Thresholds A mended January 2021.pdf (January 2021) ("Santa Barbara County (2021)").

¹⁶⁴ Santa Barbara County, *Gaviota Coast Plan* Policy NS-11 (Coastal) available at <u>https://cosantabarbara.app.box.com/s/d0q9mjo271x641anhmzjv2e2i24oq5c4/file/425259919356</u> (November 7.

https://cosantabarbara.app.box.com/s/d0q9mjo2/1x641anhmzjv2e2124oq5c4/file/425259919356 (November 2018) ("Santa Barbara County (2018)").

¹⁶⁵ Santa Barbara (2021) at 32 - 33.

C. <u>Require buffers of 100 feet or more measured from the edge of riparian vegetation</u> or top of bank, whichever if farther. Require 200-foot buffers within Mountainous and Rural Areas pursuant to Policy ECO-EGV-5.5.

Setbacks (or buffers) from creeks and riparian habitats are an important tool for avoiding direct impacts and minimizing indirect impacts on creeks and riparian habitats. Minimum buffers in local planning documents generally range from fifty feet in urban areas to 200 feet in mountainous areas. The City of Goleta has a minimum 100-foot buffer for new development from the top of bank or edge of riparian vegetation, whichever is farther.¹⁶⁶ Local cities and the County should increase creek buffers to a minimum of 100 feet in urban areas and 200 feet in rural and mountainous areas to minimize the effects of new development on creeks and riparian habitat. Larger buffers help avoid the need for riparian revegetation projects which this report demonstrates are often unreliable as mitigation measures.

D. <u>Place restored riparian habitats, creeks, and associated buffers in permanent</u> conservation easements or deed restrictions.

Public agencies should adopt policies and practices which require private applicants to place restored areas in permanent conservation easements and/or deed restrictions to ensure long-term success and protection of restored habitats. This is consistent with Santa Barbara County policies, including Gaviota Coast Plan Policy NS-11, but has not often been required.¹⁶⁷ Our research and surveys found that landowners have removed trees and groundcover, including endangered plants, and cleared bioswales that were required to be planted as mitigation for the impacts of private development projects. Without permanent preservation, planners and decisionmakers with the best of intentions cannot guarantee that habitats restored to mitigate permanent impacts to creeks and riparian areas will be protected into the future.

E. <u>Develop a standardized and rigorous set of metrics for restoration success.</u>

EDC recommends that the County of Santa Barbara, City of Goleta, and other agencies consider adopting CDFW's minimum success criteria for "percent cover" and "survival" to create uniform measurable standards to gage the success of revegetation projects in the region. CDFW's Streambed Alteration Agreement for the FCD's Annual Maintenance Plan and riparian revegetation requires, "All plantings shall have a minimum of 80% survival, by species, for the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years for the life of the project."¹⁶⁸ The revegetation plans across the four survey sites had widely different success criteria. For instance, the restoration plans have different percentages of plants that need to survive to achieve success and different standards for controlling invasive plant species. Uniform and effective success criteria would enhance success and create a level playing field for project applicants.



¹⁶⁶ City of Goleta (2006) Policy CE 2.2.

¹⁶⁷ Santa Barbara County (2018) Policy NS-11; *See also A Planner's Guide to Conditions of Approval and Mitigation Measures* Measure Bio-6 at pp 24-25 available at <u>https://content.civicplus.com/api/assets/8f086209-cfab-4c87-ad7e-5498774e74ea</u> (July 17, 2023).

¹⁶⁸ CDFW (2015) at 17.

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F. Increase the restoration maintenance and monitoring period to ten years.

EDC recommends that restoration and revegetation plans have a minimum ten-year maintenance and monitoring period to ensure success. Revegetation plans considered in this report had different maintenance and monitoring periods, with some at three years and others at five years. The frequency of monitoring within that period also varied greatly. Yet even projects with five years of maintenance and monitoring had limited success. We found in many cases that once revegetation projects are signed off by the permitting agencies, monitoring and maintenance stops, and success declines in subsequent years resulting in long-term failure of revegetation projects.¹⁶⁹

Additionally, restoration projects must consider the uncertain impacts of climate change, including increased frequency, intensity, and duration of droughts and the increased risk of flooding. By setting a ten-year maintenance and monitoring period, agencies can better ensure restoration success while also accounting for climatic variations that can disrupt newly restored habitats.

G. <u>Provide ample space outside of riparian habitats, revegetation areas, and buffers</u> to accommodate defensible space and flood control facilities.

Project planning should incorporate sufficient creek setbacks as well as an additional distance wherein vegetation management for defensible space and/or flood control facilities, such as detention basis and access roads, could occur. Including defensible space or flood control facilities within habitat areas and buffers, including revegetation areas, increases human activities, such as vegetation management, and reduces the value and effectiveness of the habitats and buffer areas. Locating defensible space and flood control facilities outside the buffer (e.g., farther than 100 feet away from habitats and revegetation areas) would ensure that vegetation removal for defensible space and flood control infrastructure do not compromise habitat values and restoration projects. Larger setbacks protect life and property from wildfires, debris flows, and floods and protect creeks and clean water.

Climate change is increasing the rate at which wildfires occur and spread in California.¹⁷⁰ It is essential that approved projects be designed with larger setbacks to accommodate defensible space outside of habitat and revegetation areas and buffers. Our surveys found that some landowners remove plants from restored riparian habitat, possibly to create defensible space. Future projects must consider the restoration and protection of ESHA as well as the potential for natural disasters like wildfires, debris flows, and flood events. If the defensible space or flood control facilities would be located within the habitat, restored habitat, or buffers, then the project should be redesigned or should not be approved.

¹⁷⁰ Max Kalber, Goleta Watershed Program Intern, EDC and Brian Trautwein, Senior Analyst / Watershed Program Director, EDC, *Goleta Watersheds and Wildland Urban Interfaces: Enhancing Fire Safety and Riparian Forest Health* at 12 – 23 (November 2021).



¹⁶⁹ Natalie Blackwelder, EDC Watershed Program Intern, and Brian Trautwein, Senior Analyst/Watershed Program Director, EDC, *San Jose Creek Flood Control Revegetation Sites and Los Carneros Mitigation Bank Review and Recommendations* (October 24, 2022).

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H. <u>Use native plant barrier plantings (e.g., wild rose, wild blackberry) as an</u> <u>alternative to fencing</u>.

Private development near creeks often includes fences to limit public access to private property and to habitats. However, fences can impede or preclude wildlife movement along streams.¹⁷¹ Native brambles, such as California wild rose and wild blackberry, form dense, thorny thickets which can inhibit human access while allowing for wildlife movement and migration. Native plant barriers should be used as an alternative to fences in restoration project designs whenever feasible. Where native plantings may not be feasible, wildlife-friendly fence designs are another option.¹⁷²

I. <u>Require restoration plans to use local native plants from the vicinity of the project</u> site to protect the genetic integrity of local plant populations.

When conducting restoration of native plant communities, it is imperative that the new plants be grown from local seed stock collected from native plant populations collected at or near the site. Using local native plants protects the genetic integrity of the local native plant populations, enhances successful establishment of the native plant species, and ensures compatibility with local ecosystem functions and structure.¹⁷³ For example, when non-local native plants, such as plants from the appropriate species but from different locations, are used, the flowering time may differ from the local population triggering cascading effects with respect to pollinators and seed production. Generally, seeds and plant materials such as cuttings must be collected from the site being restored or from within the seed dispersal footprint for each native plant species.

J. <u>Locate new utilities and lighting and relocate existing utilities and lighting outside</u> of riparian habitats, revegetation areas, and buffers.

Utility lines, including electrical and phone lines, and gas, water, and sewer pipelines often cross through or follow creek corridors, resulting in the need for maintenance and replacement within ESHA. New utility lines and pipelines should be installed outside riparian habitats, including restoration sites, to the maximum extent feasible. Doing so will reduce future impacts of utility maintenance and replacement, including tree pruning and removal.

Security lighting is sometimes installed in and near creek habitats and restoration areas, adversely affecting nocturnal wildlife. While lighting can be necessary for public safety in certain areas, for example along well-used bike paths, lighting should be prohibited in riparian and stream areas and habitat restoration areas. When lighting is necessary in or near habitats, low-intensity lights with hoods or shields to direct lighting to the ground and away from habitats should be utilized to minimize effects on wildlife in riparian and revegetation areas.

¹⁷³ Jayne Belnap, *Genetic Integrity: Why Do We Care? An Overview of the Issues* <u>https://www.fs.usda.gov/rm/pubs/int_gtr315/5_belnap.pdf</u> (April 12, 2021).



 ¹⁷¹ National Wildlife Federation, *Fences for Wildlife* available at <u>https://www.nwf.org/Northern-Rockies-and-Pacific-Region/Conservation/Wildlife-Connectivity/fencingforwildlife</u> (January 18, 2024).
¹⁷² Id.

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K. <u>Consider drought tolerance as a factor when designing restoration plant palettes</u> <u>due to the effects of climate change.</u>

Restoration plans should seek to create or enhance the specific plant communities and habitat types being impacted, i.e., should be in-kind replacement. However, plans should also account for climate change by planting species which are expected to survive under future climatic conditions, including more frequent, longer, and more intense droughts. For example, white alders generally occur next to perennial streams. Nearly every white alder planted at the four revegetation sites has died, likely due to drought or planting in locations with inadequate water. Willows appeared desiccated at some sites, probably because of the historic California drought. Droughts may also be a factor for low native groundcover at the revegetation sites. We suggest project applicants and permitting agencies consider plant palettes which account for and are resilient to climate change to increase success. This could include a shift to more drought-tolerant plant species.

A potential downside to this recommendation is that mitigation may not be in-kind (e.g., may exchange willow riparian woodland for oak riparian woodland). In-kind replacement is appropriately required or encouraged.¹⁷⁴ However, given climate change, establishment of native plant communities may be more successful with a shift toward more drought-tolerant native plant communities. If such an approach is considered, EDC recommends that the habitat mitigation ratios be increased to account for the lack of in-kind replacement. We recommend 6:1 (8:1 for wetlands) for revegetation projects that do not replace impacted vegetation in-kind.

L. <u>Revegetation and restoration plans should be peer-reviewed by independent</u> restoration biologists prior to approval.

Restoration and revegetation plans for private developers may seek to keep implementation costs low in order to save money. For example, maintenance periods may be truncated and monitoring frequency may be low. Plans may allow for purchase of seeds from non-local sources and may not include requirements for permanent preservation of restored habitats to reduce costs. In some cases, peer review by independent restoration biologists may correct shortcomings and increase success.¹⁷⁵ Permitting agencies should always require applicants to fund peer review of restoration plans to increase success and ensure unavoidable impacts to riparian habitats and streams are fully mitigated.

¹⁷⁵ See e.g., Hunt & Associates Biological Consulting Services' peer reviews of Santa Barbara Ranch and DMF-Ma habitat restoration plans (February 7, 2023; June 27, 2023; and January 8, 2024).



¹⁷⁴ Santa Barbara County *Environmental Thresholds and Guidelines Manual* at 33 available at <u>https://www.sblafco.org/files/f2915ea5d/Information_Item_No_1_Attachment_B_Environmental_Thresholds_A</u> <u>mended_January_2021.pdf</u> (2021).

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End of Report

