

**Draft Least Environmentally Damaging Alternatives Analysis
Camp Hess Kramer and Gindling Hilltop Camps (PL21-0051)
11495 & 11677 Pacific Coast Highway, Unincorporated Ventura County**

January 26, 2024

I. Introduction

Camp Hess Kramer and Gindling Hilltop Camps have operated on this same property since the 1950s. Through the decades, the property has hosted thousands of youth through outdoor education and summer camps, as well as hundreds if not thousands of various non-profits covering myriad causes and interest areas. The Woolsey Fire of 2018 destroyed the Camps and caused significant damage to the Little Sycamore Creek watershed. The purpose of the rebuild project is to restore the site and its beneficial and community uses in a more resilient, accessible manner.

Critical to understanding the urgency of rebuilding Camp is the fact that the California State Legislature has recognized the crucial need for the restoration of Camp as a public- and community-benefit project in its allocation of nearly 24 million dollars of state funding toward the rebuild.

This funding will be distributed through the Mountains Recreation Conservation Authority (MRCA), an organization dedicated to the protection of the Santa Monica Mountains, as a means to assure the preservation and continuation of the Camp use development and facilities under the stewardship of the Applicant, as summarized in the Governing Board of MRCA's finding "that the reconstruction of youth camps will provide significant public benefits."¹

The purpose of this document is to comply with County of Ventura Coastal Zoning Ordinance (CZO) Section 8178-2.3.b Least Environmentally Damaging Alternatives Analysis. As provided in Section 8178-2.6.1.a, the objective of the analysis is to determine that "the development consists of a feasible project design alternative that results in the least damage (i.e., direct/indirect/cumulative impacts) to ESHA, when compared to other feasible alternatives, and protects ESHA (both on-site and off-site) against significant disruption of habitat values;" To do so, Section 8178-2.3, b.1 requires that at least two project design alternatives are to be evaluated. This analysis presents three potential rebuild alternatives, two of which constitute feasible design alternatives.

This analysis starts with a site use and permit history for Camp Hess Kramer and Gindling Hilltop Camps ("Camp") dating back to the 1950s through the Woolsey Fire of 2018 and subsequent debris flows and flooding that followed shortly thereafter. Discussion of the rebuild project as a years-long collaborative effort with the County and the various design choices made over time during such process is also provided. Project objectives are highlighted as a key

¹ Mountains Recreation Conservation Authority May 6, 2020, Resolution No. 20-50.

consideration in both formulating feasible design alternatives for the rebuild project and in evaluating design alternatives as to their ability to achieve project objectives.

It is important to note that the rebuild will restore the property while maintaining the decades-long, legally established outdoor education youth camp and related uses, development, facilities and activities, with **no increase to population or levels of use authorized under the existing Conditional Use Permit.**

II. Camp Hess Kramer and Gindling Hilltop Camp operated continuously on this site since the 1950s until the Woolsey Fire. The Camp's development, structures and uses are authorized under an approved Conditional Use Permit and associated Restrictive Covenant.

Camp Hess Kramer and Gindling Hilltop Camps has operated on the 187-acre site in unincorporated Ventura County since the late 1950s (Attachment 1 Vicinity Map). The property was developed over time and, prior to the Woolsey Fire, consisted of numerous structures and facilities varying widely by year built, architectural style, size, and construction methods. They ranged from simple wood construction sheds and camping cabins, to more modern residential and assembly buildings. The oldest building on-site was built in 1952 and the newest was built in 1991 (Attachment 2 – Pre-Fire Site Plan).

Development of the property is constrained by steep slopes, environmentally sensitive habitat, and Little Sycamore Creek, and is therefore clustered in three areas of Lower Camp, Middle Camp, and Upper Camp with an almost two-mile long central access road connecting Yerba Buena Road through Upper Camp. The road extends from Yerba Buena Road near the Pacific Coast Highway (elevation ~ 51 feet), up to Gindling Hilltop Camp (elevation ~ 721 feet).

The Camp use and related development, structures, facilities and activities have been legally established on the site, authorized most recently via a Conditional Use Permit (CUP) approved by the County consistent with its certified Local Coastal Plan, County case number LU10-0069 (Attachment 3 – Approved CUP Plans). As provided in CZO Section 8.178-2.4.2.d, areas occupied by such legally established development shall not constitute ESHA. See Attachment 4 for the Notice of Land Use Entitlement that includes the CUP's comprehensive project description for the camp use. Development, structures, facilities, use areas, maximum allowable day and overnight population, number and frequency of third party events and maximum attendees, and the like are covered by the CUP.

The CUP included a condition of approval relating to ESHA (Condition No. 25) requiring the recordation of a Restrictive Covenant, which was recorded October 4, 2017 via document 20171004-00129270-0. Importantly, the Covenant addresses the extensive replacement of Camp facilities necessitated by the 2018 and subsequent damage and destruction: "The Permittee shall not remove any vegetation or install any new structures within areas of the project site that contain such ESHA, except for the repair, replacement, and maintenance of roads and facilities (e.g., infrastructure, structures, and ancillary facilities) that are permitted pursuant to this CUP."

The rebuild project is consistent with the Covenant in effectuating the repair, replacement, and maintenance of the Camp's roads and facilities, including infrastructure, structures, and ancillary facilities in order to restore the Camp's legally established use of the site in the wake of the destructive wildfire and mudslides. See Attachment 4, CUP Condition No. 25, Coastal Area Plan Permanent Preservation of Environmentally Sensitive Habitat Areas (ESHA) in the M Overlay Zone.

III. The rebuild project is the product of years of study and collaboration with the County of Ventura

The County has been collaborating with the Applicant for more than five years, starting with a site visit in November 2018 after the Fire, but before winter storm damage further destroyed Camp facilities. The following list of meetings and submittals does not include every instance, but is provided as evidence of the extensive collaboration involved:

- Management Review Committee 2019
- Development Review Committee submittal September 25, 2020
- Formal discretionary submittal: May 3, 2021 accepted May 10, 2021
- Time Extension for County response granted June 8, 2021
- Alternatives analysis for Baruh, Tennis, Tree removal provided to the County June 24, 2021
- Ventura County Incomplete Letter #1 received July 1, 2021
- Ventura County Addendum to Incomplete Letter #1 received July 2, 2021
- Work Session 1: August 5, 2021
- Applicant Response to questions provided August 25, 2021, included design revision
- Work Session 2: August 31, 2021
- Applicant response to Work Session 2 provided September 2, 2021
- County response to September 2021 submittal received October 22, 2021
- Work Session 3: November 16, 2021
- Site plan revision and discussion provided to the County December 9, 2021
- Second formal submittal March 2022
- Second Incomplete Letter received June 7, 2022
- On-site meeting with Fire staff regarding fuel modification June-July 2022
- Conference call with Envicom to discuss ISBA comments June-July 2022
- On-site meeting with Rincon to discuss Cultural Resources comments June-July 2022
- Third Formal Submittal August 2022
- Receipt of Third Incomplete Letter inquiring as to subjects not previously raised by the County, and peer review comments on cultural/historic resources and biological resources
- On-site meeting June 24, 2022 with County Fire staff and Landscape Architect to confirm fuel modification boundaries
- On-site meeting July 27, 2022 with County staff and Rincon consultants related to historic and cultural resources
- Conference call July 14, 2022 to review biological resource peer review comments

- November 2, 2022 letter from Ventura County entitled Determination of Application Completeness
- August 24, 2023 letter from Ventura County entitled Outstanding Items to Complete Initial Study Biological Assessment
- August 28, 2023 Meeting between Applicant and County
- September 26, 2023 resubmittal of updated ISBA
- November 2, 2023 receipt of additional comments on ISBA
- November 7, 2023 meeting with County staff to discuss cleanup items

Across this time, numerous design decisions and site plan changes relating to the rebuild project for restoration and replacement of the Camp were made in the interest of achieving the optimal and feasible rebuild scenario in terms of resource protection and the vested rights for Camp use, development, and operations.

IV. Camp seeks to rebuild the property destroyed by Woolsey Fire while not intensifying use over the approved CUP levels

The Woolsey Fire obliterated almost all of the structures on site, and subsequent rain and mud flows resulted in additional damage to the site, including vehicle and pedestrian bridges, the creekside parking lot and other infrastructure (Attachment 5 Site Inventory).

The proposed rebuild will replace development, structures, facilities and uses lost in the Woolsey Fire, and does not propose any modifications to the Camp's uses and the scope, levels and types of activities from those authorized in the approved CUP (e.g., maximum daytime and overnight population, number or size of events, etc.), including the following:

- **Activities and Occupants.**
Summer camp sessions for campers, school children ranging in age from 3rd through 12th grade, providing a multitude of activities including, but not limited to, archery, basketball, climbing, ropes, soccer, tennis, swimming, hiking, arts and crafts, dancing and singing, and worship; and availability by reservation and lease to private groups for camping from August through June.
- **Employees.** 32 full-time employees and six part-time employees, including 11 full-time residents and six summer residents during the summer camp season.
- **Daily Population.**
A maximum total daily population of 1,113 people including a maximum total daily population outside the summer camp session of 557 guests and staff (the same as the maximum overnight population). During the summer camp session, a maximum overnight population of 557 guests and staff. In addition to the overnight population, the following, additional daily population during the summer camp session. Up to six occasions with a daily population of 556 persons, in addition to the 557-person overnight population, for a maximum total daily population of 1,113 people for family visitation, camp alumni socials, or similar occasions. Except for those six occasions, a daily population of 100 persons in addition to the 557-person overnight population for a maximum total daily population of 657 people, to account for guests, camp counselors, adult chaperones, summer camp staff, non-resident employees, vendors, and religious services and ceremonies.
- **Overnight Population.**
Maximum overnight population of 557 people. [Overnight guests and camp staff will sleep in either of the following areas: in cabins and buildings within the CR-zoned areas of the site; or at an overnight campground site located in the northeast corner of APN 700-0-060-260 (zoned COS-10 ac/M) where seven wooden platform structures are used for spending the night outdoors in sleeping bags.]
- **Third Party Events.**

A maximum of 60 third-party events within the calendar year during periods other than summer camp sessions.

The purpose of the project is to rebuild Camp Hess Kramer and Gindling Hilltop Camp using this opportunity and significant investment to create a more accessible, sustainable, and resilient Camp, through inclusion of creek and habitat restoration efforts and the creation of a more efficient development configuration.

As explained in Sections VI.B. through VI.F, while there is an increase in total square footage of development [and the number of structures] with the rebuild principally due to updated code requirements and standards, the total number of beds accommodated is less than existed and was permitted prior to the Fire.

V. Project objectives are a key consideration in formulating a feasible rebuild project and in assessing design alternatives

The rebuild project advances a number of key objectives critical to reopening this fundamental community resource. The objectives include compliance with a variety of applicable codes (e.g., California Building Code) and accreditation requirements of the American Camp Association² (ACA) which govern over 16,300 camps in the United States.

These objectives include the following:

1. Reconstruct Camp Hess Kramer and Gindling Hilltop Camps to restore the continued full use of the site as a resource-dependent recreational summer camp.
2. Provide a quality educational and recreational experience for children, campers, visitors and users of all types through a rebuild project that meets current accessibility standards both within and between structures and use areas.
3. Resume pre-fire uses, activities and program offerings to continue to serve no more than CUP-approved populations (overnight, day use, special events, year-round).
4. Restore and re-stabilize Little Sycamore Creek to enhance stream habitat within the site area and improve its overall functioning.
5. Reduce environmental effects of camp use and operations compared to the pre-fire baseline by:
 - a. Removing paved vehicle parking from creek area
 - b. Installing new stormwater infrastructure to improve water quality
 - c. Using recycled water to offset a portion of irrigation demand
 - d. Reducing energy and water usage through installation of replacement facilities and infrastructure that meet current codes
 - e. Performing creek restoration activities along Little Sycamore Creek
 - f. Supporting long-term habitat health through establishment of an on-site plant nursery.

² <https://www.acacamps.org/> “The American Camp Association is a community of camp professionals who, for over 100 years, have joined together to share our knowledge and experience and to ensure the quality of camp programs. Because of our diverse 10,000 plus membership and our exceptional programs, children and adults have the opportunity to learn powerful lessons in community, character-building, skill development, and healthy living — lessons that can be learned nowhere else.”

6. Avoid and minimize potential project effects through siting of proposed structures within previously disturbed areas and pre-fire footprints where feasible.
7. Compensate for tree removals.
8. Resolve historic flooding issues from offsite sources.
9. Improve onsite drainage patterns to meet current standards (e.g., distributed stormwater treatment).
10. Reduce fire risk through use of building and fuel management techniques to meet current standards for high fire areas.
11. Relocate structures where feasible outside of the 100' creek buffer area.
12. Improve onsite circulation and access to meet the needs of Camp users and emergency personnel.
13. Provide for greater diversity, equity, and inclusion in accommodations and programming through implementation of ADA accessibility improvements.
14. In the post COVID-19 era, provide accommodations such as showers and bathrooms within individual cabins, rather than in one single shared common shower and bathroom building.
15. Address drainage from both onsite and offsite sources to reduce erosion and damage on-site and to Little Sycamore Creek.
16. Consolidate vehicle parking in the southern periphery of the site to limit vehicle access within core use areas and enhance the camp environment.
17. Improve and enhance security (e.g., Security Booth, and Welcome Center).
18. Conform to updated applicable Building Codes to incorporate improved safety, sustainability and efficiency features
 - a. California Building Code
 - b. California Plumbing Code
 - c. California Energy Code
 - d. Cal Green Code
19. Meet current American Camp Association (ACA) Accreditation Requirements.
20. Remove incompatible maintenance uses and segregate year-round resident uses from core Camp areas.
21. Rebuild the property and achieve restoration in a manner consistent with the non-profit status of the Applicant, and with respect to funding sources (i.e., individual donor and government contributions).

VI. Any alternative for the Rebuild Project must meet updated current codes and standards that preclude feasible alternatives for certain aspects of the rebuild

Rebuilt structures and access roads are required to conform to certain updated current standards such as the California Building Code and the County's Floodplain Management Ordinance as two examples. In addition, the rebuild must address certain long-standing issues such as off-site drainage which historically entered the site and caused various flooding and creek erosion issues to the Camp and banks of Little Sycamore Creek.

Certain improvements to the roads and bridges are required by the Fire Department for emergency access and are critically important to other aspects of the rebuild project, such as the ability to perform the proposed creek restoration.

Of note, no alternative can be considered which would shift pre-fire uses or structures from Lower or Middle Camps (more constrained by steep slopes and adjacent to Little Sycamore Creek) to Upper Camp (flatter, not creek-adjacent). Any intensification of Upper Camp facilities would trigger a Fire Department requirement to widen a significant portion of Camp's central access road as it winds up the hillside resulting in new, permanent impacts to expand the road beyond its existing extents, and involving prohibitive costs as further described below.

A. Gindling Hilltop Camp ("Upper Camp") Redevelopment and Access

Gindling Hilltop Camp was established in 1968 when the 80-acre property adjoining Camp Hess Kramer was acquired by the WBT organization. Known interchangeably as Hilltop Camp, Upper Camp or simply "GHC," this portion of Camp is located remotely from Lower and Middle Camps, separated by significant topography and over a mile of single-lane access road. Due to its remote location, it provides for a smaller, more intimate Camp experience and serves as a more specialized program within Camp's Summer Camp season.

Also due to its remote location, Upper Camp has separate dining and overnight accommodations from Lower and Middle Camp, and has separate recreational offerings as well. This separate program space serves certain campers and guests who may need more one-on-one attention or supervision, or who thrive in smaller settings as opposed to the larger groups that occupy Lower and Middle Camps. The ability to provide an outdoor wilderness camp and recreation experience to a smaller subset of the community is one of the many ways Upper Camp serves as a singular asset to the community at large, including nonprofit community youth organizations.

In considering rebuild of the Camp overall, one might be tempted to relocate certain structures and uses away from Lower and Middle Camp due to Little Sycamore Creek and associated habitat and other constraints. However, while Upper Camp is a flatter area with fewer topographic constraints, the access road to Gindling is long (1.2 mile stretch of road from Middle Camp) as it climbs from 175 feet to 715 feet in elevation, and narrow (single-lane, 12 feet wide in most places with no shoulders). As such, it does not meet Fire Department standards. The Fire Department has determined that the Gindling access road can remain as-is, consistent with their "Policy 204," only so long as the hilltop rebuild conforms to pre-fire structure sizes and locations, and does not result in a single additional square foot above the pre-fire total.

The estimated additional disturbance for improving the road between Middle and Upper Camps is over an acre (50,640 SF) of new road surface alone (meaning the equivalent, if not greater, impact area to ESHA), plus a new retaining wall between 4 and 6 feet high for the entire 1.2 miles, at an estimated 3,517 CY of grading for road widening and retaining wall construction. Therefore, this option is inherently infeasible and is not discussed in greater detail. Yet, this data can be useful as a basis for comparison to the impacts of the proposed redevelopment under Alternatives 1 through 3 which involve no shift of improvements to Gindling.

At the same time that the access road limits the ability of Upper Camp to absorb structures and uses from Lower or Middle Camps, it also results in squeezing out certain existing Upper Camp uses that must be replaced in Lower or Middle Camps.

This is due to a variety of reasons described later in this document. Briefly, cabins at Upper Camp built to their pre-fire sizes cannot accommodate the same number of beds due to current standards as to the minimum space requirements per bed and minimum distances between beds. In addition, certain sleeping arrangements are competing for space to meet new required code improvements (e.g., Building Code and ADA requirements) within the same original footprints.

Consequently, the number of beds lost at Upper Camp proposed by the rebuild under any scenario would be 68 fewer beds as compared to pre-Woolsey Fire development. In fact, the total number of Camp beds overall with the rebuild is lower than the pre-Woolsey Fire. Here we note that bed count does not translate to overnight population. Some excess is required due to the need to organize and accommodate the population by certain criteria (e.g. age, grade, gender³ or other organizing principles).

	Pre-Woolsey Fire Bed Count	Estimated Bed Count (Alternative 1)	Estimated Bed Count (Alternative 2)	Estimated Bed Count (Alternative 3)
Upper Camp	194	126	126	126
Middle Camp	332	265 (-20%)		404
Lower Camp	130	104 (-20%)		116
Total	656	495	648	646

B. 2022 California Building Code and ADA Accessibility

The Building Code dictates a number of features as outlined below. Of particular interest for the Camp is ADA accessibility and the opportunities to expand access to campers and guests with specialized mobility needs. In November 2020, the project architect presented an approach to Ventura County Building and Safety for accessibility in and around Camp that involves breaking the Camp into zones, with each zone having a drop-off area. Within each zone, amenities would be accessible, while travel between zones would require assistance, such as a shuttle. Ventura County has acknowledged the infeasibility of providing an accessible path of travel between all recreation areas and buildings due to the distances and steep slopes. The County noted that it is acceptable to provide equivalent facilitation by shuttling campers between use areas with established drop off zones.

In some instances, to advance accessibility the project provides more than the code minimum – e.g., total number of accessible cabins or number of plumbing fixtures- because the tradeoff of a slightly larger cabin size is more than justifiable given the goal of providing a mostly accessible Camp that can adjust to different distributions of age groups, genders, physical needs, etc.

³ Any number of criteria is used depending on the time of year (e.g. Summer season vs off-season). Examples of criteria include age, gender, grade, gender identity. Group affiliation also determines accommodations, as more than one school or organization can be in attendance at a time in the off-season.

throughout the site. This is particularly relevant when serving non-profit groups off-season like the Wounded Warriors.

It is important to note the following as to accessibility features:

- All construction on the rebuild project is under the newer umbrella occupancy of C Organized Camp as defined and regulated by Section 18897 of the Health and Safety Code. (CBC 450.1.1)
- As such a minimum of 20 square feet per occupant of superficial area is required within the cabins. The proposed cabin layouts provide 21-23 square feet of superficial area per occupant. (CBC 450.3.2)
- The project must comply with Chapter 11A/11B for accessibility. This results in a minimum number of residential units/cabins and all other common use buildings being fully ADA compliant, including 4 camper guest rooms, 2 staff rooms, and all residences (CBC 1102A.3, 1104A.1, 11B-224.2). The design provides 14 camper guest rooms to allow for distribution in different areas of Middle Camp and to accommodate off-season groups with varying levels of mobility. All general use buildings are required to be accessible per CBC Chapter 11B. Due to site constraints, Ventura County Building and Safety advised that it was acceptable to set up use areas, or zones as described above, that are served by permanently marked ADA drop off zones. The Site Code Compliance Plans show the drop off zones and connecting pathways they serve.
- ADA restrooms are 30% larger than standard. Doors and their landings are larger, turn around space must be provided as well as wider paths of travel within buildings.
- The pool must provide 4 water closets, 5 showers, 3 lavatories, and 1 drinking fountain within 300 feet of the pool. This same count would have been required for the previous, slightly smaller pool. (CBC 3116.13.1)

C. 2022 California Plumbing Code

As proposed, plumbing fixtures are marginally above the minimum required. The square footage that might be saved by eliminating “extra” fixtures is marginal and would not reduce project effects in any appreciable way.

- Table 422.1 of the 2019 California Plumbing Code defines the minimum number of plumbing fixtures required based on building use and size. Due to site constraints, the required fixture count cannot be provided at all buildings: instead, the aggregate overall counts are distributed across Lower Camp. For example, Baruh Hall (identified on plans as 18.N) is now the gymnasium and is required to have 3 water closets, 1 lavatory, and 1 drinking fountain. The design of this building combines these fixtures in the same building as the pool fixtures (“Pool Building” 19.N).
- In Middle Camp, more fixtures than the minimum required are provided due to the programmatic need to have campers get ready in a short period of time.

D. 2022 California Energy Code

- Buildings are required to have more insulation for better efficiency, meaning that previous 2x4 foot-wide exterior walls are all now 2x6 or 2x8 walls.

- Pool heating equipment is required to be more efficient with multi-phased systems with heat exchangers that are larger than in the past. The simple boiler system that was in place pre-fire is not allowed by code for replacement construction. (CEC 110.4)

E. 2022 Cal Green Code

- All primary entrances are required to have a 4ft minimum overhang/awning resulting in larger roof areas and building coverage. (5.407.2.2.1)

F. 2019 American Camp Association Accreditation Requirements

Prior to the fire, Camp was able to maintain accreditation based on a number of allowances given the age of the Camp and its structures (i.e., “grandfathered”). With the rebuild, such allowances no longer apply. Therefore, a significant effort has been needed to formulate the rebuild design in order for the Camp to retain its accreditation status.

In terms of beds, the accreditation requirements include minimum space requirements per bed and minimum distances between beds. As a result, cabins built to their pre-fire sizes cannot host as many beds. Therefore, to accommodate the approved Camp overnight population, more overall building space is needed to fit the same number of campers.

With the proposed rebuild, the total number of beds provided is reduced from pre-fire totals. Given the need to keep Upper Camp at exactly the same footprints as before the fire, beds have been shifted from Upper Camp to Middle Camp. Bed counts by Camp area are tallied on project plans General Sheets (see S&S Architectural plans G0.02 and G0.03).

- Sleeping quarters are required to provide 36” minimum clearance between beds and 30 square feet per occupant minimum, inclusive of bed. The proposed cabin layouts provide 31-34 square feet per occupant. (FA.9)
- A health center with a minimum of 12 beds (calculated based on the maximum number of campers and staff), with one isolation room is required. (FA.12)
- Continuous supervision must be provided at a ratio of 1 staff to 8 campers for unstructured time in addition to higher levels of staff for specialty activities like swimming, archery, climbing, etc. For the Camp’s 364 maximum campers, this results in at least 46 staff from dinner through breakfast. (ST.35)

G. Fire Department

1. Access

As discussed in Section VI.A. of this document, the rebuild opportunity in Upper Camp is constrained by access road improvements that would otherwise be triggered by changing or adding any square footage or use to Upper Camp. Therefore, Lower and Middle Camps have shouldered the burden of rebuild in terms of square footage and arrangement of structures to meet various code requirements (e.g. ADA). Because the rebuild in Lower and Middle Camps 1) does not qualify as a rebuild for the purposes of Fire Department Policy 204, which otherwise exempts project from access improvements, and 2) because pre-Woolsey Fire access was legal-

non-conforming to current standards for access, a significant amount of access road improvements and widening are required with this project.

However, where allowed by the Fire Department, the design preserves existing condition, or creates “pinch points”⁴ or incorporates other minor adjustments to standard to accommodate site conditions. Examples of this include allowing the vehicle bridge 2V to be 14 feet wide, and bridge 7V to remain at 16 feet wide rather than the 20 foot width required for the full length of road from the entrance to the northern extent of Middle Camp. The Fire Department has also allowed the road to split into two segments for a short distance in order to preserve an existing mature 43” diameter western sycamore tree. As well, an existing entrance and segments of a driveway from Yerba Buena (Gate 2, just north of building 6.E) into the Camp and around building 7.E are also being allowed to remain 14-15 feet wide. Overall however, widening the access road from the main entrance through the northern extent of Middle Camp to a minimum of 20 feet is not avoidable and no feasible alternatives exist. The access improvements additional widths are most clearly represented on the civil grading and drainage plans.

2. Fuel modification

The CZO requirement for a Least Environmentally Damaging Alternatives Analysis is not applicable to projects that are limited to an expanded fuel modification zone for existing, legally established structures⁵. In this case, the project proposes to rebuild and replace legally established structures that were destroyed by a natural disaster.

We note therefore that prior to the Woolsey Fire, the areas of fuel modification were annually inspected and accepted by Ventura County Fire, however they did not meet updated current and increased standards for fuel modification. Therefore, an increase in the amount of fuel modification land area will result with the rebuild project regardless of the chosen Alternative. In other words, certain impacts attributable to such fuel modification presented in the accompanying ISBA are not reflected for purposes of this design alternatives analysis.

H. Bridges

Camp Hess Kramer extends along either side of Little Sycamore Creek, requiring bridges across the Creek to traverse Camp by vehicle or on foot. The table below lists each of the bridges, their status after the Woolsey Fire, and the proposed action. Each bridge has been assigned a number starting with 1 for the first and southernmost bridge, and ending with the northernmost crossing, followed by a letter. A “-P” indicates pedestrian bridge, and a “-V” indicates a vehicle bridge. The inclusion of both vehicle and pedestrian bridges is critical to separating people and cars throughout Camp, and is considered a matter of both safety and connectivity.

⁴ Smaller segments of road less than 20’ in width that do not compromise the overall ability for emergency response vehicles to pass.

⁵ §8178-2.3.b. Least Environmentally Damaging Alternatives Analysis: If the proposed project would potentially result in adverse impacts to ESHA or encroach within the buffer zone, an alternatives analysis shall be provided to determine whether the project constitutes the least environmentally damaging alternative. This requirement is not applicable to a project that is limited to an expanded fuel modification zone for existing, legally established structures.

There will be both temporary and permanent effects associated with reconstruction and replacement of bridges. These are all replacements of bridges that existed prior to the fire, with the exception of 5-P which converts an informal wooden plank to a pedestrian bridge. Importantly, all abutments of proposed bridges are located outside of the top of bank of the Creek.

Bridge #	Vehicle or Pedestrian	Existed Pre-Woolsey Fire	Survived Fire/ Destroyed by Fire	Proposed
1-P	Pedestrian	Yes – Pedestrian access to new archery/volleyball	Destroyed	Replace
2-V	Vehicle	Yes – Vehicle access to basketball/volleyball/new archery	Destroyed	Replace
3-P	Pedestrian	No	NA	Replaces 7-P and provides access between Breuer Lawn and basketball.
4-V	Vehicle	Yes- Along main access road.	Survived	Replace at 20' wide per Fire Department
5-P	Pedestrian	Informal. Shown on CUP-approved plans as a wooden plank connecting pool to northernmost edge of confidence building.	Destroyed	New – to connect Ropes and Climbing to Baruh Hall and Amphitheater plaza
6-V	Vehicle	Yes – Along main access road just north of pool.	Survived	Replace at 20' wide per the Fire Department
7-P	Pedestrian	Yes – Provided access to old Archery area which no longer exists	Destroyed	To be replaced with 3-P
8-V	Vehicle	Yes – Along main access road	Survived	No Change
9-P	Pedestrian	Yes – Provides access to Chapel	Destroyed	Replace
10-A-V <i>Arizona Crossing</i>	Vehicle	Yes – Arizona crossing over Creek, not a bridge.	Survived	No Change

I. Drainage

Installation of stormdrain outlets and outlet protection/dissipation structures is included in the rebuild project in order to resolve historic drainage issues across the site and to meet current requirements related to project-related onsite stormwater. These outlets occur in eight general locations along the Creek.

All but one stormdrain outlet handles offsite stormwater, which not only damages Camp property, but contributes to Creek bank erosion as it carves an overland path across Camp to Little Sycamore Creek. The below table identifies the stormdrain outlets by location and plan sheet.

As seen below, only one of the eight outlet locations is needed solely for the Camp improvements. Another four outlets have a dual use, handling both offsite and onsite drainage. The last three are designed to handle offsite drainage only.

Of note, all of these same stormdrain outlets would be needed in a scenario where Camp is rebuilt solely within pre-fire building footprints. Particularly near Scout's Grove, the amount of water cascading via sheet flow down the canyon regularly flooded that area, and caused creek bank erosion as it made its way into the Creek. During the fire and flood events, this caused significant damage to Yerba Buena Water Company infrastructure (water well, pump station, and water lines).

Stormdrain #	Location	Plan Sheet (of May 2021 submittal set)	Carries Offsite or Onsite Drainage	Notes
1	West of proposed at-grade parking	C12	Onsite	Outlet for stormwater from tennis/parking area after being treated in bioswale.
2	Southwest of proposed Welcome Center	C12	Offsite	Addresses historic flooding and erosion issue from offsite stormwater which enters the site under Yerba Buena Road and erodes landform and creek bank upon entry to Creek.
3	West of proposed climbing wall Northeast of Baruh. Outlets on West and East side of Creek at this location.	C14	Offsite	Captures significant runoff from Yerba Buena Road to the east. Captures runoff from hillside west of Baruh.
			Onsite	Captures stormwater from Baruh and plaza area.
4	Just south of bridge 6V	C15	Offsite	Captures offsite drainage from hillside slope to the east
			Onsite	Captures onsite drainage from access path connecting Gildred to main road north of the bridge.
5	Just north of bridge 6V	C15	Offsite	Captures drainage from hillside adjacent to the west.
			Onsite	Captures drainage from pool deck area.
6	South of Outdoor Chapel	C16	Offsite	Captures significant runoff from Yerba Buena Road
7 (surface outfall, not stormdrain)	Middle Camp just South of Cabin 29	C17	Onsite	Captures stormwater from a portion of the cabin area and road in Middle Camp
8	East of Scout's Grove	C18	Offsite	Captures significant runoff from two canyons above Scout's Grove and Pines which contribute to erosion of the Creek bank as it enters the creek via overland flow.

Outside of bridges and storm drain outlets, with their associated dissipation structures, all other activity within the Creek is for the sole purpose of increasing and enhancing habitat and ecosystem functioning through this corridor as shown on the plans by ESA. This work should be considered and counted toward any restoration or mitigation required for impacts to wetland ESHA by the project. Please refer to Section VII.B.3 herein, and the Basis of Design report and plan sheets R-1 through R-12 by ESA for additional detail regarding proposed Little Sycamore Creek restoration activities.

J. Lighting and Utilities

Certain trenching for new and replaced utilities as well as the addition of new and replaced lighting would be required in any rebuild scenario. Lighting will meet the Coastal Zoning Ordinance requirements for limited lighting in ESHA and the like. Careful attention has been paid to balance low levels of light with the requirements for lighting of safe dispersal areas, as well as the safety of the children attending Summer Camp and visitors and users of the site throughout the year. The removal of certain structures and uses immediately adjacent to the Creek (e.g. parking lot, pre-fire cabins 35-41, maintenance supervisor's residence), as proposed in Alternatives 2 and 3, reduces total lighting area adjacent to the creek.

VII. Three Potential Alternatives were Considered in Selecting the Least Damaging Feasible Design Alternative for Rebuilding Camp

As provided in CZO Section 8178-2.3.b., the purpose of the Least Environmentally Damaging Alternatives Analysis is to determine the feasible design alternative that results in the least damage to ESHA when compared with other feasible design alternatives and protects against significant disruptions of habitat values.

This Least Damaging Environmental Alternatives Analysis presents three potential design alternatives for the rebuild project, two of which have been determined to constitute feasible design alternatives:

- 1) Alternative 1: Rebuild structures in pre-fire locations, footprints and sizes
- 2) Alternative 2: Rebuild Camp as previously proposed (May 2021)
- 3) Alternative 3: Rebuild Camp as currently proposed (October 2022)

A. Alternative 1: Rebuild structures in pre-fire locations, footprints and sizes

Theoretically, Camp could - through ministerial permits and consistent with the existing approved CUP - replace destroyed structures in their same pre-fire locations, footprints and sizes. However, a significant amount of grading and new disturbance would still result. The additional disturbance would result from the following requirements:

1. Rebuilt structures need to conform to today's building codes and current accreditation requirements.

As further described in Section VI, rebuilt structures must conform to a variety of current codes, including requirements to provide ADA accessibility. Conforming with the current code as to ingress and egress and ADA accessibility would require significant exterior upgrades and grading for installation of items like ramps, accessible paths of travel between uses and structures, and safe harbor areas. Therefore, in this scenario an amount of additional grading and loss of usable space occurs.

In addition, rebuilding within prior footprints would result in a significant loss of function that existed prior to the Woolsey Fire. While the horizontal dimension and footprint of some of these structures and uses could remain somewhat similar, that could come at a loss of interior space and reductions in capacity because new structures would need thicker exterior walls, more floor area dedicated to internal circulation for wheel chair accessibility, additional plumbing fixtures, and larger restroom stalls.

2. Certain improvements to roads and bridges through Lower Camp would still be required per County fire and flood control requirements (See Section VI.G).

Similar to pre-fire Camp's incongruities with current codes for construction type and accessibility, circulation throughout Camp did not meet current Fire Department standards or current flood control standards. Some segments of the Camp's access road and most of its bridges would still need to be widened and elevated, along with their approaches, resulting in a similar amount of grading and disturbance near and adjacent to the Creek that follows the access road.

- 1) Structures that had been located near the Creek would also need to be elevated consistent with flood control requirements, resulting in substantial grading and the potential for habitat and tree impacts to accommodate the increase in grade.
- 2) An area of geologic interest was identified near the Middle Camp cabins as part of the rebuild design efforts, which necessitates a certain setback, as well as raising the elevation of the finished floors within that area of Camp.
- 3) Historic drainage issues across the site stemming from offsite drainage coming on to the property as well as on-site drainage must be addressed to meet today's post-construction standards (See section VI.H).
- 4) Dead and hazardous trees would need to be removed where they pose a safety hazard, as well as where they would preclude the necessary road and bridge improvements and ADA upgrades as an example.

In these ways, this building replacement scenario would carry with it a significant amount of grading and disturbance, all while eliminating usable space and function that is critical to restoring the range, scope and level of facilities and activities of the pre-fire Camp authorized under the CUP.

Critically, this replacement scenario would preclude the ability to capitalize on the rebuild to perform Creek restoration activities and would leave the paved vehicle parking area directly adjacent to the top of bank of Little Sycamore Creek.

3. Key Features of Alternative 1 in Tabular Format

Table 1: Alternative 1	
Number of Structures	83
Building coverage	46,523 SF(Lower) 23,212 SF (Middle) 35,516 SF (Upper) 105,251 SF (total) Approximate based on approved CUP plans
Square footage	52,119 SF(Lower) 18,354 SF (Middle) 25,928 SF (Upper) 96,401 SF (total)
Proposed population	Approximately 495 overnight guests estimated based on the reduction in the number of beds versus the 557 overnight guests and staff under the CUP
Number of beds	Estimated: Approximately 495 versus the pre-Fire bed count of 656, a total reduction of 161 beds. Loss of 68 beds at Upper Camp, plus an estimated 20% (+/-) loss of capacity in Lower and Middle Camps to meet current codes and accreditation requirements
CY cut and fill	Unknown but significant and similar in magnitude to Alternatives 2, 3 Estimated Lower Camp: Cut and fill for road improvements, bridges, and stormwater ⁶ of 4,100 CY of cut, Estimated fill soils to raise Baruh Hall above base flood elevation: 1,300CY Estimated Middle Camp: Roads, bridges, stormwater ⁷ of 2,310 CY cut Fill soils: 9,000 CY cut, 12,000 CY fill due to the need to elevate Middle Camp cabins to account for slope instability. Fill soils: 1,400 CY to raise creek-adjacent cabins approximately 3' Fill soils: 950 CY of fill to raise approaches to bridges 4V and 6V Upper Camp Upper: 2,100 CY
Impacts to ESHA as mapped with Restrictive covenant	Encroachments limited to fuel modification changes, temporary impacts to restore prior use (e.g., mapping error has ESHA over sport courts)
Impacts on ESHA	As this option failed to constitute a feasible design alternative, impacts were not calculated.

⁶ Per Table 4.4 Stantec Project Description dated May 2021: 1,900 CY cut for roads, 900CY cut for bridges, 1,300 CY cut for stormwater improvements.

⁷ Per Table 4.6 Stantec Project Description dated May 2021: 2,000 CY cut for roads, 10 CY cut for bridges, 300 CY cut for stormwater improvements.

Impacts to Buffer Zones	The same structures and paved parking sited in the buffer zone prior to the Woolsey Fire would continue to exist with a prolonged useful life. Additional disturbance in the buffer zone would occur in meeting current codes and policies for flooding and ADA accessibility.
Includes Creek Restoration	Limited to minimum amount required as mitigation for drainage improvements and bridge replacements in creek
Tree Removal	201 (of which 140 are dead/damaged)
Feasible Design Alternative?	No, due to failure to meet project objectives of the rebuild project to restore the Camp to full capacity and to provide restoration and enhancement of Little Sycamore Creek, including the substantial reduction to 495 total beds below levels sufficient to accommodate the 557 person overnight population and the retention of structures and parking areas in proximity to creek.

As noted in Table 1, Alternative 1 does not constitute a feasible design alternative due to its failure to achieve key project objectives, including the ability to rebuild Camp to the prior legally established levels of use, the proposed habitat restoration along Little Sycamore Creek, and the relocation of structures and uses (including parking areas) proximate to the Creek.

B. Alternative 2: Rebuild Camp Hess Kramer as previously proposed (May 2021)

After years of design consideration and collaboration with Ventura County staff, a comprehensive submittal was made in May 2021. The submittal packet comprises Alternative 2 and includes a variety of design decisions that are reflected in both Alternatives 2 and 3, as well as changes and decisions made between the first Management Review by County staff in 2019. The main components of Alternative 2 are described here.

1. Relocates structures and uses away from Little Sycamore Creek, and combines certain building footprints to maximize reuse of previously disturbed areas vs. creation of new impacts

The structures and uses moved away from Little Sycamore Creek and consolidated or relocated into other areas include:

- The main entrance to Camp is relocated to the southern edge of Camp in order to take advantage of the new main parking area and minimize vehicle traffic throughout Camp. The reassignment of the main entrance is a critical component of moving the parking lot away from the Creek.
- Building 1 “Chef’s House” is replaced with a larger Welcome Center, taking advantage of the previously disturbed area, while addressing significant historic drainage issues and creating an organized and secure first stop for visitors to the site with a bus turnaround in front.
- The footprint of pre-fire buildings 2, 3 and 5 which housed maintenance activities are combined into a single building for more efficient use of previously disturbed land. The prior maintenance uses are relocated to Scout’s Grove and thereby isolated from recreation and camp use areas.

- The 885 SF Maintenance Supervisor’s residence, (pre-fire building 4) will not be rebuilt in its pre-fire location approximately 10 feet from top of bank of Little Sycamore Creek. Instead, this use will be absorbed into other structures. The pre-fire footprint of this structure will be converted to an area for passive recreation use and creek restoration.
- Buildings 9, 10, 12 and 13 “The Browns” are proposed to be demolished, with a replacement building located more than 100 feet from top of bank, at no point closer than the Browns had been at their greatest setback from the Creek.
- Cabins 35 through 41 have been relocated so that the cabins are no longer 8-10 feet from the top of bank of Little Sycamore Creek. The road alignment in this area swaps places with these cabins resulting in a distance from top of bank to road of more than 20 feet, and from top of bank to cabins of more than 50 feet.

2. Relocates parking from its historic creekside location to the tennis court area

One of the main goals of the rebuild project is to remove vehicle parking from its current location adjacent to the Creek. The pre-fire parking area is paved right up to the Creek’s edge and requires cars to travel a loop extending through the main area of Lower Camp and exit at the southern end of Camp. Parking cars adjacent to the Creek is not consistent with the purpose, nor reflective of the values, of an outdoor camp. Certain Coastal Plan policies would prohibit and discourage this historic location for parking and would promote the removal of such vehicle encroachments, including the attendant noise, air quality and water quality effects, from core Camp areas.

The rebuild project therefore presents a unique and important opportunity to restore this area as “The Meadow,” which will be dedicated to passive uses more sensitive and compatible with Little Sycamore Creek and the surrounding Camp setting.

Given the constraints (topography, habitat) of Lower Camp, and the need to preserve and protect ESHA and recreation area(s), there are limited options to locate parking. Below are a few options that were considered but rejected:

- 1) Option 1. An option to scatter the number of required spaces among various areas such as road shoulders or adjacent to buildings is not efficient use of space, presents connectivity issues and disrupts the pedestrian-oriented Camp setting. In addition, it would require an inefficient, larger total footprint than a well-designed, consolidated parking area.
- 2) Option 2. Existing flat areas in Lower Camp (Gil Fitch Field and Breuer Lawn) accommodate essential active and passive recreation activities. In addition, Gil Fitch Field serves as temporary overflow parking for events (per the approved CUP) and is therefore not available to be converted to permanent parking use. Gil Fitch Field also functions as a dispersal area for the wastewater treatment system that cannot be paved over.
- 3) Option 3. Middle Camp is dedicated to overnight uses and does not contain a single contiguous area with appropriate topography to accommodate parking. It is further from the main roadways and would introduce significant car traffic into an area that has not historically had a vehicular presence other than cars passing through. An overnight camp with accommodations overlooking parked vehicles is also not compatible with the desired natural camp environment.

- 4) Option 4. Moving parking to the remote Upper Camp would introduce significant challenges to intra-camp mobility for both the able-bodied and those with non-typical mobility due to distance and access grade.

Use of the existing tennis court area at the southern edge of the site provides the best location as it would keep cars out of the center of Camp and restrict and consolidate overall automobile-serving features of Camp within a single location. In addition to the benefits to water quality, air quality and habitat that relocating the parking will have, this approach retains fundamental recreational features – namely, tennis - which is an essential element of an outdoor camp.

In other words, rather than dedicating square footage suitable for creekside restoration and enjoyment to paved parking, shifting parking to the entrance gains an efficient use of space with tennis courts on top and parking below. This helps camouflage the parking use and preserves the recreational character of Camp as opposed to more visible parking. While some tree removals are necessary to relocate the parking to the periphery of the site, the majority are non-native and/or in poor health.

Anticipating the potential visual impact as viewed from the Pacific Coast Highway, the Applicant team developed a planting plan to screen the parking lot and mitigate the effect. As shown on the Planting Plan (sheet L8.10), five Western Sycamore and six Pacific Madrone trees are proposed along the southern edge together with other plants such as Prostrate Glossy Abelia, Beach Strawberry, Rupturewort and Trailing myoporum. In addition to this planting, topography also screens the view of the parking lot from PCH.

In summary, the proposed solution of elevating tennis on top of parking achieves numerous goals:

- Maintains existing legally established recreational elements
- Provides adequate parking for CUP-approved and allowed uses and special events
- Removes automobile use as a creekside focal point in Lower Camp
- Improves overall Camp circulation while focusing automobile use to the southernmost edge
- Enhances the Camp atmosphere by limiting traffic through core Camp areas
- Reduces impervious surfaces by stacking the two compatible uses
- Capitalizes on the topography of the southernmost edge to “hide” the parking use
- Improves water quality by moving parking away from the Creek
- Improves the health of the trees and the Creek corridor in this area by removing cars
- Reduces the air quality, noise and other disruptions attendant to vehicle presence in core Camp areas
- Improves water quality by constructing parking to meet current stormwater standards
- Protects views from PCH through installation of native planting
- Removes non-native and fire damaged trees
- Replaces fire-destroyed trees with native Western Sycamore and Pacific Madrone

3. Proposes Creek Restoration Activities

Removing the parking lot, cabins 35 through 41, and the Maintenance Supervisor's residence (pre-Fire building 4) from their Creek adjacent locations provides additional space for Creek restoration activities and tree planting within the riparian area associated with the Creek. The grading near the Creek that would have otherwise been required to elevate these structures consistent with flood control standards is also avoided.

Crucially, removing these structures from their pre-fire footprints avoids the need to hard bank or otherwise armor the creek banks in these locations to prevent future flooding events from impacting structural development.

The Creek restoration is more fully described in the Geomorphic Conditions Update and Basis of Design for Little Sycamore Creek, Camp Hess Kramer (ESA, April 2021), and depicted on plan sheets R1 through R20. The three primary objectives of the restoration work in Little Sycamore Creek are to:

- 1) Remove flood-deposited sediment and debris to restore an open, stable and resilient channel for conveying creek flows and sediment [(Noting that this process is naturally occurring in the interim)];
- 2) Revegetate the channel corridor to restore riparian ecological functions and enhanced landscape connectivity; and
- 3) Integrate the restored creek channel and riparian corridor with the overall site plan and camp programming.

In service of these objectives, the proposed restoration project is organized into zones, with each comprising a different selection of approaches depending on bank characteristics. These include Zone 1 for layback and revegetation of over-steepened or eroded banks, Zone 2 for selective grading and revegetation, Zone 3 for removal of invasive species and planting natives, Zone 4 removal of manmade debris (e.g., broken concrete), and Zone 5 widening and resetting of channel geometry plus habitat planting.

4. Baruh Hall and Swimming Pool Area

Both Baruh Hall and the pool building were destroyed by the fire, and the swimming pool filled with mud and debris with the subsequent storms. It is not possible to repair the pool, rather must be completely replaced.

Baruh Hall (Building 18) was approximately 5,796 square feet and located adjacent to a swimming pool of approximately 80 x 34 feet and a pool building. Though Baruh Hall and the swimming pool were proximate to each other, they were of little mutual benefit. Baruh had restrooms but no changing area or showers, and its primary use was as an indoor theater.

The pre-fire location of Baruh Hall, pool building, and pool is in the floodway of Little Sycamore Creek. There are four options for rebuilding Baruh and the pool building;

- 1) reconstruct the buildings in their current location using floodproofing up to a certain elevation,
- 2) grade the pads to elevate them above the flood level,
- 3) shift the building footprints to move the building out of the floodway or
- 4) some combination of the three.

While these options address the floodway issue, they must to be considered within their site context, taking into account factors such as those listed below:

- The goal to limit the total amount of grading
- Potential impacts to or from the adjacent hillside
- Avoiding grading/development outside the previously identified disturbed areas of Camp (per ESHA Restrictive Covenant)
- ADA path of travel and transitions from elevated pads
- Proximity to the road and the Fire Department's road widening requirement
- Stormwater runoff and treatment
- Existing infrastructure under the existing access road
- Efficient design and compatibility with surrounding Camp uses such as the existing adjacent amphitheater built into the hillside.
- A code requirement to provide dedicated restrooms and the need to provide showers and changing areas for pool users⁸
- An increase in the flexibility in programming (utility) of Baruh Hall and overall functioning of this summer camp (primary purpose of the site) by offering a slight increase in square footage. The structure of Baruh Hall itself will only increase by approximately 500 square feet to 6,311 square feet, which is the smallest footprint achievable while still hosting previously-existing basketball uses inside.

To raise Baruh Hall above the flood plain in its current location would have required between 2 and 3 feet of fill. Then, at its new finished floor elevation, significant challenges to meeting ADA requirements arise.

More specifically, in its pre-fire location, the south side and northeast edge of Baruh Hall sat approximately 5-feet from the edge of the existing road. Similarly, the southwest end of Baruh was less than 10 feet from the amphitheater. The pool building was just 10 feet from the pool. Given the tight space, ADA-compliant paths of travel into Baruh and between buildings and uses and the pool are not feasible given the elevation changes in such a short distance. The road edge would need to be raised as well, causing additional impacts adjacent to the Creek, and the potential for additional tree removals to accommodate the associated grading.

Thus, shifting the building footprint to the proposed location was chosen as it not only moves the building out of the floodway, but does so without causing additional design challenges related to accessibility and grade changes. In addition to being the less impactful option, the relocation of structures creates a plaza in front of the existing amphitheater in this location built into the hillside. While the proposed location does require some grading of the adjacent slope, the amount of grading is limited by utilizing the western and southern walls of the structure to serve structural and retaining functions.

⁸ Restrooms are a code requirement for swimming pools. Showers and changing rooms are not required when pool users have access to such facilities in adjacent living quarters however in this case the living quarters are not immediately adjacent, and are in a different zone for ADA accessibility. Also note, the restrooms are serving the needs of Building 18 (Baruh/gymnasium) thereby eliminating potential additional square footage in Baruh.

The previously existing pool building (Building 19, 405 SF per CUP) is proposed to be relocated and replaced with a 1,962 SF pool equipment building with showers and restrooms. The increase in size of the pool building is to accommodate restrooms and showers for campers of all mobility types. This amenity was not previously provided and created challenges for camp operations. The pool building also needs to increase in size to accommodate modern pool equipment. The pool size itself will increase a negligible amount from approximately 80-feet by 34-feet to 90 feet by 40-feet.

5. Scout's Grove

Scout's Grove is a previously disturbed but underutilized location that can support additional structural development, while avoiding significant impacts to ESHA. This is the only available location that does not involve compromising recreation and outdoor use areas which are fundamental to an outdoor camp.

Prior to the Fire - and as shown on the CUP-approved plans – Scout's Grove was a comparatively flat area developed with a pump house ("Shed G"), an outdoor gathering area with benches, and a stage platform. Further up Camp Fire Road from the gathering area was a water tank and "Shed I." A path can be seen on the CUP approved plans as well. These pedestrian paths connected these use areas to the south and north to the cabin areas.

In the May 2021 Alternative, Scout's Grove was proposed to include three structures – the two staff residences (39N and 40N) and the maintenance structure (41N). The structures are set close to the Camp Fire Road and west of the existing oak grove to preserve large, healthy trees.

The uses in Scout's Grove are removed from other areas on-site because the staff residence and maintenance uses are not compatible with uses at most of the rest of Lower and Middle Camps. This is because the maintenance area houses 1) the "back of house" use of the maintenance building and 2) the occupant type is year-round staff as opposed to the seasonal occupant type housed elsewhere around Camp. Further, these uses best fit in a detached, more remote location to avoid potential use conflicts (e.g., safety hazards of maintenance activities vs. children), and in order to minimize massing and associated visual impacts closer to the PCH.

6. Proposed development is far below that which is allowed under the Coastal Zoning Ordinance

Per CZO Section 8175-2.1 the maximum building coverage allowed by the code in the CRE zone is 25% of lot area. The rebuild project as proposed in Alternative 2 overall proposes coverage of just 26% of this allowed maximum. The maximum building coverage and proposed building coverage by Camp area is as follows:

	Max Building Coverage Per §8175-2.1	Proposed Coverage	Percent of Max Building Coverage (%)
Lower Camp	185,130 SF	94,422	51
Middle Camp	119,790 SF	37,436	31
Upper Camp/ Gindling Hilltop	283,140 SF	33,451	[?]

Site-wide	588,060 SF	165,137	26
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7. Key Features of Alternative 2 in Tabular Format

Table 2: Alternative 2 (May 2021)			
Number of Structures	63		
Building coverage	94,250 SF (Lower) 37,436 SF (Middle) 33,451 SF (Upper) 165,137 SF (total)		
Building square footage	102,238 SF (Lower) 43,117 SF (Middle) 25,928 SF (Upper) 171,283 SF (total)		
Proposed population	No change from CUP		
Number of beds	648		
CY cut fill	Lower Camp		
	Grading Purpose	CY Cut	CY Fill
	Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)	16,500	9,500
	Stockpiled material		3,500
	Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)	1,900	
	Bridges	900	
	Stormwater treatment excavation	1,300	
	Creek Restoration	7,100	200
	Lower Camp Subtotal	27,700	13,200
	Middle Camp		
	Grading Purpose	CY Cut	CY Fill
	Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)	9,000	12,000
	Stockpiled material		7,600
	Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)	2,000	
	Bridges	10	
	Stormwater treatment excavation	300	
	Creek Restoration	5,400	100
	Middle Camp Subtotal	16,800	19,700

	Upper Camp: Limited to over-excavation and recompaction for replacement structures. Estimated at 2,100 CY grading.
Impacts on ESHA	3.18 acres for beneficial habitat restoration 3.48 acres buildings, structures, and grading, 2.18 acres circulation (concrete, asphalt, pathways) 0.16 acres utilities ⁹ [Note temporary or permanent as in Alternative 2?]
Impacts to Buffer Zones	Impacts were not separately calculated for buffer zones
Includes Creek Restoration	Yes
Tree Removal	201 (of which 140 are dead/damaged)
Feasible Design Alternative?	Yes
Cut and fill calculations based on 30% preliminary design plans and were not updated between Alternatives 2 and 3 given the preliminary nature of the design plans. ESHA and buffer zone impacts per ISBA dated May 2021 which were further refined beyond site plan changes between 2021 and 2023 and therefore are not completely comparable for purposes of comparison to Alternative 3.	

C. Alternative 3: Proposed Project - Rebuild Camp Hess Kramer as currently proposed (October 2022 plan issue date)

After additional design consideration and further consultation with Ventura County subsequent to the May 2021 submittal (Alternative 2), the proposed project was again redesigned. Several basic design decisions reflected in Alternative 2 are shared by Alternative 3, such as the Creek restoration activities, among others. The restoration project was further refined in terms of numbers and species for planting, but did not change in concept between Alternatives 2 and 3; therefore, the comparison of numbers of plantings between Alternatives 2 and 3 would not be a useful metric to compare the two Alternatives.

Both Alternative 2 and Alternative 3, to the extent feasible, rebuild the majority of structures in the same areas as were previously developed with slight modifications (e.g., to account for access, flooding, drainage, avoidance of hazards, reduction of grading, etc.). The exception is in one instance, Scout's Grove, where the dictates of meeting current codes (as described in section VI) and the objective to segregate incompatible maintenance and year-round residency uses from core Camp areas results in certain activity in this use area that had not previously contained structures. Careful consideration has been given to the Scout's Grove area as further described in Section 4 below, resulting in a reduction in the number of buildings sited there under Alternative 3 as shown in the October 2022 site plan.

⁹ As totaled in Stantec ISBA dated May 2021. Quantities were later refined based on corrections to data and are extremely limited due to site plan changes. Does not include fuel modification.

The main differences between Alternative 2 and Alternative 3 are outlined below. Other imperceptible adjustments to the location of the entry booth and a trash enclosure were also made but do not warrant detailed discussion here.

1. Eliminate One Tennis Court and reduce Parking Footprint, Lighting Eliminated

The purpose of the revision to this area in Alternative 3 was to reduce the potential impacts to ESHA (particularly trees), archeological resources (via a reduction in footprint), and visual resources (i.e., Pacific Coast Highway and neighbors), while maintaining essential recreational facilities for this outdoor recreational Camp. In addition, proposed lighting was eliminated from the tennis courts except for code-required egress lighting.

After studying the site plan and space requirements for tennis courts, the design team determined that there isn't another viable location for the courts that won't sacrifice other programs or otherwise impact ESHA. The drawings propose removal of one court (the eastern court) from the project for the following benefits:

- The footprint of the courts is reduced from 20,738 square feet to 15,517 square feet
- The courts are shifted north as tight as possible to the existing wastewater treatment structure to keep new foundations in areas previously disturbed
- The grading at the corner of the Pacific Coast Highway (PCH) and Yerba Buena is limited to the entry drive and relocated driveway down to the parking lot
- The tennis courts are set 48 feet from the property line on the PCH and are barely visible behind existing trees
- The pedestrian bridge on the north side of the courts is relocated to the west to retain an oak tree previously identified for removal
- The following trees previously identified for removal will be retained with this reduced size:
 - Brazilian Pepper tree w/ a health rating of 3
 - (15) Mousehole trees w/ a health rating of 2 or more
 - (7) Eucalyptus trees w/ a health rating of 2 or more
 - Unidentified tree w/ a health rating of 2

2. Access Road Changes

In response to feedback from Ventura County Fire Department, the proposed revisions made with Alternative 3 included widening roadways and adjusts turn arounds. Below are the Fire-Department required revisions differentiating Alternative 3 from Alternative 2. To the extent these result in additional impacts (e.g., increased paved surfaces), these also result in additional impacts. However it is not possible to avoid these additional impacts given they are being required by the Fire Department.

- Entry drive at Administrative Gate 3-E is widened to 20'-0". The gate is relocated to the north, outside the Yerba Buena side setback. 60 feet of space is provided for vehicle queuing before the gate. With this widening, additional trees will need to be removed including two olive and one pomegranate tree.

- Access road northwest of bridge 8-V is widened to 20'-0". Due to an existing Sycamore (tree 105) with health rating of 2 and an adjacent steep upslope, the design team proposes that the drive narrow to 15'-6" only at this tree.
- Access road to the Village is widened to 20'-0" north of Cabin 38.N.
- Access road between Cabins 27.N and 28.N is widened to 20'-0". Cabin 28.N is repositioned accordingly.
- Main access road north of Maintenance 41.N is modified to accommodate the required turn around. The road from the turn around to Cabin 32.N is widened to 20'-0".
- The hammerhead previously shown on sheet C18 (north of the road split north of 41N) has been eliminated. This turning movement can be accommodated within the revised road.
- In Alternative 3, the road segment between Middle and Upper Camps remains as it existed prior to the Fire, similar to Alternative 2.

3. Baruh Hall Grading Note

Baruh Hall and the swimming pool have been adjusted several times. Understanding the County's policy concern regarding minimization of grading and preservation of landforms, the Applicant again met with its geotechnical consultant who reviewed the landforms and provided a memo concluding that the slope is likely remnant stockpile soil from when the nearby hillside amphitheater was created, and for the purpose of accessing the middle rows of seats. Therefore, Baruh is modifying an area of manmade soil stockpile, not a natural landform.

4. Scout's Grove – REDUCED

In Alternative 3, Scout's Grove is reduced to two buildings instead of three, a change that offers additional buffer from the existing oak trees, and a slight reduction in the area impacted by associated fuel modification. To offset the loss of the separate structure, building 39.N was enlarged by 1,703 SF.

	Alternative 2 May 2021 Submittal SF and Building Coverage	Alternative 3 December 2022 Revision SF and Coverage	Change +/- SF and %
39.N (Scout's Grove Staff Cabin)	2,392 SF (Area) 1,661 SF (Coverage)	4,096 SF (Area) 2,612 SF (Coverage)	+ 1,703 SF (Area) + 71.2% (Area) + 951 SF (Coverage) + 57.3% (Coverage)
40.N (Scout's Grove Staff Cabin)	2,898 SF (Area) 1,807 SF (Coverage)	Deleted	- 2,898 SF (Area) - 100% (Area) - 1,807 SF (Coverage) - 100% (Coverage)
41.N (Maintenance)	2,128 SF (Area) 1,240 SF (Coverage)	2,128 SF (Area) 1,240 SF (Coverage)	No Change
Totals		- 1,194 SF (Area) - 16.1% (Area) - 856 SF (Coverage)	

	- 18.2% (Coverage)
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To understand the minimization of effects made by this change, consider the following:

- The removal of building 40.N increases the distance between building footings and healthy oak trees. The separation distance in Alternative 2 was 20'-0" compared to the proposed increased separation distance to 30'-6" to 39'-6" = 50-100% increase in building separation from healthy oaks.
- The building coverage (area to roof eave) for the Scout's Grove buildings is reduced from 4,708 sf to 3,852 sf = 18.2% reduction of building coverage.
- The building area for the Scout's Grove buildings is reduced from 7,418 sf to 6,224 sf = 16.1% reduction of building footprint coverage.
- The fire fuel modification zone for the Scout's Grove buildings is reduced from 70,832 sf to 63,893 sf = 9.8% reduction of fire fuel modification zone.

The site plan comparison for the changes to Scout's Grove are shown in the figure on the following page.



Scout's Grove as depicted on the
CUP-approved plans
(not to scale)

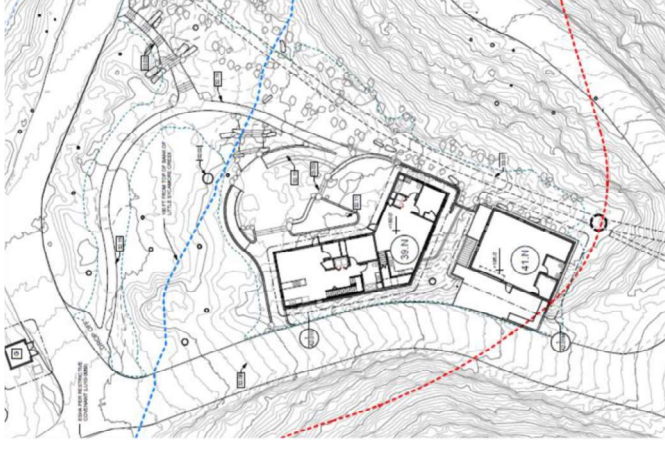


Alternative 2

Scout's Grove as Proposed May 2021

Blue line indicates 100 feet from top of bank
of Little Sycamore Creek

(not to scale)



Alternative 3

Scout's Grove as Proposed October 2022

Blue line indicates 100 feet from top of
bank of Little Sycamore Creek

(not to scale)

5. Proposed development is far below that which is allowed under the Coastal Zoning Ordinance

Per CZO Section 8175-2.1 the maximum building coverage allowed by the code in the CRE zone is 25% of lot area. The rebuild project as proposed in Alternative 3 overall proposes coverage of just 26% of this allowed maximum. The maximum building coverage and proposed building coverage by Camp area is as follows:

	Max Building Coverage §Per 8175-2.1	Proposed Coverage	Percent of maximum (%)
Lower Camp	185,130 SF	86,939 SF	47%
Middle Camp	119,790 SF	35,961 SF	30%
Upper Camp/ Gindling Hilltop	283,140 SF	32,155 SF	11%
Site-wide	588,060 SF	155,055	26%

6. Key features of Alternative 3 in tabular format

Table 3: Alternative 3																
Number of structures	61															
Building coverage	86,939 SF (Lower) 35,961 SF (Middle) 32,155 SF (Upper) 155,055 SF (total) Reduced by 10,082 SF from Alternative 2															
Building square footage	88,146 SF (Lower) 42,301 SF (Middle) 25,928 SF (Upper) 156,375 SF (total) Reduced by 14,908 SF from Alternative 2															
Proposed population	No change from CUP															
Number of beds	646															
CY cut fill	Lower Camp <table border="1"> <tr> <td rowspan="4">[DOES NOT CHANGE FROM ALT 2]</td><td>Grading Purpose</td><td>CY Cut</td><td>CY Fill</td></tr> <tr> <td>Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)</td><td>16,500</td><td>9,500</td></tr> <tr> <td>Stockpiled material</td><td></td><td>3,500</td></tr> <tr> <td>Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)</td><td>1,900</td><td></td></tr> </table>			[DOES NOT CHANGE FROM ALT 2]	Grading Purpose	CY Cut	CY Fill	Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)	16,500	9,500	Stockpiled material		3,500	Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)	1,900	
[DOES NOT CHANGE FROM ALT 2]	Grading Purpose	CY Cut	CY Fill													
	Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)	16,500	9,500													
	Stockpiled material		3,500													
	Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)	1,900														

	Bridges	900	
	Stormwater treatment excavation	1,300	
	Creek Restoration	7,100	200
	Lower Camp Subtotal	27,700	13,200
	Middle Camp		
	Grading Purpose	CY Cut	CY Fill
	Site Grading (for structural development and recreation/use areas, paths, i.e., the balance of items not listed below)	9,000	12,000
	Stockpiled material		7,600
	Road expansion/widening (for Fire Department required improvements e.g., turnarounds, increased road width, etc.)	2,000	
	Bridges	10	
	Stormwater treatment excavation	300	
	Creek Restoration	5,400	100
	Middle Camp Subtotal	16,800	19,700
	Upper Camp: Limited to over-excavation and recompaction for replacement structures. Estimated at 2,100 CY grading.		
Impacts on ESHA ¹⁰	4.57 acres habitat restoration (reported as temporary impact for planting/installation etc.) 0.27 acres (permanent), 0.685 acres (temporary) buildings structures and grading 0.25 acres (permanent) circulation (concrete, asphalt, pathways) 0.12 acres (temporary) utilities ¹¹		
Impacts to Buffer Zones	Impacts were not separately calculated for buffer zones		
Includes Creek Restoration	Yes		
Tree removal	185 ¹² (of which 113 dead/damaged)		
Feasible Design Alternative?	Yes		
Notes: Cut and fill calculations based on 30% design plans and were not updated between Alternatives 2 and 3 given the preliminary nature of the design plans ESHA impacts as of November 2023 after further refinements to mapping both related and unrelated to site plan changes			

¹⁰ Analysis relies on ISBA dated November 2023. ESHA impacts provided in October 2022 ISBA were later clarified and updated, submitted and accepted in 2023 by Ventura County RMA, and represent the same project proposed in October 2022.

¹¹ As totaled in Stantec ISBA dated November 2023. Quantities expressed correct mapping and calculation errors made in Alternative 2. Difference between Alternatives 2 and 3 based on site plan changes are far less than represented.

¹² ISBA dated October 2022 presents the tree removals as 205 which is in error.

VIII. Alternative 3, the currently proposed project is the Least Damaging Alternative

The comparison of key data required under the Coastal Zoning Ordinance does not provide the full context for purposes of the selection of a feasible design alternative as the Least Environmentally Damaging Alternative. As described throughout this document, many of the site design decisions for the Camp rebuild cannot be adjusted or negotiated, due to the applicability of current code requirements and the need to address long-standing issues such as substandard drainage improvements. Meeting these codes and standards will create a more inclusive, resilient camp both in terms of the environment (e.g., reducing in creek damage caused by unaddressed erosion patterns), and the multitude of users and their levels of mobility (e.g., improving access for nonprofits and community benefit organizations) of the Camp.

The following summary chart incorporates certain design considerations not presented in the previous tabulations in order to present a more comprehensive picture. Note that Alternative 1 is included solely for comparison purposes since it is not a feasible design alternative.

	Alternative 1 (Not a Feasible Design Alternative)	Alternative 2 May 2021 Submittal	Alternative 3 October 2022 Submittal
Key Features	<ul style="list-style-type: none"> • Parking lot remains central feature at top of bank of creek • Certain access and circulation remains non-conforming • Certain upgrades still required resulting in new disturbance • Increased Fuel Modification area still required • Reduced ability for creek restoration • Loss of 20% overnight guest capacity • Not feasible due to required upgrades for current codes. • Still results in impacts to ESHA, grading and impacts for roads and bridges, and reconfiguration of Middle Camp for slope stability issues. 	<ul style="list-style-type: none"> • Relocates parking to tennis court and elevates tennis • Adds Welcome Center • Replaces "Browns" (pre-fire structures 9, 10, 12, and 13) with consolidated Dining Hall (13.N) • Reconfigures Baruh/Swimming • Proposes three structures in Scout's Grove • Rebuilds Upper Camp to same footprint, with loss of 68 beds 	<ul style="list-style-type: none"> • Similar key features as Alternative 2 • Additional circulation changes per Fire requirements • Reduces tennis/parking area • Reduces Scout's Grove to two buildings • Rebuilds Upper Camp to same footprint, with loss of 68 beds

	Alternative 1 (Not a Feasible Design Alternative)	Alternative 2 May 2021 Submittal	Alternative 3 October 2022 Submittal
Number of Structures (not including certain infrastructure e.g. tanks and pump houses)	83	63	61
Building coverage proposed	46,523 SF(Lower) 23,212 SF (Middle) 35,516 SF (Upper) 105,251 SF (total) <i>Approximate based on approved CUP plans</i>	94,250 SF (Lower) 37,436 SF (Middle) 33,451 SF (Upper) 165,137 SF (total)	86,939 SF (Lower) 35,961 SF (Middle) 32,155 SF (Upper) 155,055 SF(total) <i>Reduced by 10,082 SF from Alternative 2</i>
Square footage	52,119 SF(Lower) 18,354 SF (Middle) 25,928 SF (Upper) 96,401 SF (total) <i>SF as reported in approved CUP records</i>	102,238 SF (Lower) 43,117 SF (Middle) 25,928 SF (Upper) 171,283 SF (total)	88,146 SF (Lower) 42,301 SF (Middle) 25,928 SF (Upper) 156,375 SF (total) <i>Reduced by 14,908 SF from Alternative 2</i>
Proposed population	No change from approved CUP, capacity for overnight accommodation significantly impacted	No change from approved CUP	No change from approved CUP
Number of Beds	Estimated: Approximately 495 ¹³ Actual unknown. Loss of 68 beds at Upper Camp calculated, and an estimated 20% loss of capacity in Lower and Middle Camps to meet current codes and accreditation requirements	648	646
Cubic Yards of Grading (includes grading for all purposes including restoration)	Unknown but significant and similar in magnitude to Alternatives 2, 3 Estimated Lower Camp: Cut and fill for road improvements, bridges, and stormwater ¹⁴ of 4,100 CY of cut,	Lower Camp: 27,700 cut 13,200 fill Middle Camp: 16,800 cut 19,700 fill Upper Camp: 2,100 CY	Same as Alternative 2

¹³ Estimate based on 68 fewer beds at Upper Camp plus 20% loss in Lower and Middle Camps to accommodate bed spacing requirements of ACA, building code requirements and space required for ADA accessibility.

¹⁴ Per Table 4.4 Stantec Project Description dated May 2021: 1,900 CY cut for roads, 900CY cut for bridges, 1,300 CY cut for stormwater improvements.

	Alternative 1 (Not a Feasible Design Alternative)	Alternative 2 May 2021 Submittal	Alternative 3 October 2022 Submittal
	<p>Estimated fill soils to raise Baruh Hall: 1,300CY</p> <p>Estimated Middle Camp: Roads, bridges, stormwater¹⁵ of 2,310 CY cut,</p> <p>Fill soils: 9,000 CY cut, 12,000 CY fill due to the need to elevate Middle Camp cabins to account for slope instability.</p> <p>Fill soils: 1,400 CY to raise creek-adjacent cabins approximately 3'</p> <p>Fill soils: 950 CY of fill to raise approaches to bridges 4V and 6V</p> <p>Upper Camp: Upper: 2,100 CY</p>		
Impacts to ESHA as allowed within mapped Restrictive Covenant ¹⁶	Encroachments limited to fuel modification changes, temporary impacts to restore prior use (e.g., mapping error has ESHA over sport courts)	Creek restoration, drainage improvements, utility replacement, improvements at outdoor Chapel, grading at cabin 28.N, portions of cabins 32.N and 33.N ¹⁷	Creek restoration, drainage improvements, utility replacement, improvements at outdoor Chapel, grading at cabin 28.N, portions of cabins 32.N and 33.N ¹⁸
<p>Impacts to ESHA</p> <p>(acreages represented for Alternative 2 do not represent true impacts due to mapping and impact calculation errors)</p>	<p>Impacts not calculated, but anticipated due to include increased fuel modification and other reasons as listed in Key Features for this option</p> <p>No beneficial creek restoration would occur in a like-for-like rebuild except as required for impacts from bridge replacements and drainage improvements</p>	<ul style="list-style-type: none"> • 3.18 acres for beneficial habitat restoration • 3.48 acres buildings, structures, and grading, • 2.18 acres circulation (concrete, asphalt, pathways) • 0.16 acres utilities¹⁹ 	<ul style="list-style-type: none"> • 4.57 acres habitat restoration (reported as temporary impact) • 0.27 acres (permanent), 0.685 acres (temporary) buildings, structures, and grading • 0.25 acres (permanent) circulation (concrete, asphalt, pathways)

¹⁵ Per Table 4.6 Stantec Project Description dated May 2021: 2,000 CY cut for roads, 10 CY cut for bridges, 300 CY cut for stormwater improvements.

¹⁶ See discussion of Restrictive Covenant in Section II this document.

¹⁷ These encroachments for 28.N 32.N and 33.N occur in exchange for relocating Cabins 35-41 away from Little Sycamore Creek.

¹⁸ These encroachments for 28.N 32.N and 33.N occur in exchange for relocating Cabins 35-41 away from Little Sycamore Creek.

¹⁹ As totaled in Stantec ISBA dated May 2021. Quantities were later refined based on corrections to data and very limited based on site plan changes. Does not include fuel modification.

	Alternative 1 (Not a Feasible Design Alternative)	Alternative 2 May 2021 Submittal	Alternative 3 October 2022 Submittal
			<ul style="list-style-type: none"> • 0.12 acres (temporary) utilities²⁰ <p>Differences between Alternative 2 and 3 do not represent true additional impacts, rather are reflective of refinements to the mapping and data</p>
Impacts to Buffer Zones	Leaves parking and structures in creek buffer zones	Impacts were not separately calculated for buffer zones	Impacts were not separately calculated for buffer zones
Tree Removal	Unknown but anticipated to include removal of 1) dead, fire-compromised trees near use areas and structures 2) trees as necessary to accommodate drainage improvements, bridge replacements, 3) other code-required upgrades as discussed in VI and VII.A.	201 (of which 140 are dead/damaged)	185 (of which 113 are dead/damaged)
Feasible Design Alternative?	No	Yes	Yes

The rebuild of Camp necessarily includes development in areas that would normally be within the buffer zone of Little Sycamore Creek, however this condition also occurred prior to Woolsey Fire. Both Alternatives 2 and 3 leverage the Camp's ability to rebuild Camp in pre-fire disturbed areas pursuant to disaster rebuild policies and consistent with the Restrictive Covenant. Both options do well to limit ESHA impacts given the size of the property and the extent of the rebuild efforts necessary to restore the Camp. Many of the impact areas are attributable to creek restoration. Alternatives 2 and 3 also similarly provide Camp with the opportunity to increase habitat values along the Creek, increase energy and water use efficiency, and solve various operational and functional challenges arising from a decades-long patchwork of development. Neither Alternatives 2 or 3 would result in a significant disruption of habitat values. Notably, both Alternatives 2 and 3 capitalize on the opportunities due to the damage and destruction to voluntarily incorporate positive restoration and habitat enhancement including Creek restoration.

²⁰ As totaled in Stantec ISBA dated November 2023. Quantities expressed correct mapping and calculation errors made in Alternative 2. Difference between Alternatives 2 and 3 based on site plan changes are far less than represented.

In comparing the two Alternatives, Alternative 3 more fully meets the objectives for rebuilding the Camp while reducing the number of buildings, total building coverage, total square footage, fuel modification impacts, tree removals, and ESHA impacts generally.

The project design under Alternative 3 has been well thought out and constitutes the best option for rebuilding on this site while continuing the stewardship of this extraordinary resource and providing enhanced access to the full range of development, uses, facilities and activities for summer camp residents and the many nonprofit organizations and guests that would not otherwise enjoy the natural outdoor wilderness experience it provides.

Therefore, Alternative 3 is the “feasible project design alternative that results in the least damage (i.e., direct/indirect/cumulative impacts) to ESHA when compared to other feasible alternatives and protects ESHA against significant disruption of habitat values, as provided in CZO Section 8178-2.6.1a.”)

Alternatives Analysis for Little Sycamore Creek Restoration

**Camp Hess Kramer and Gindling Hilltop Camps (PL21-0051)
11495 & 11677 Pacific Coast Highway, Unincorporated Ventura County**

May 21, 2024

I. Introduction

This Alternatives Analysis for Little Sycamore Creek Restoration is a companion document to the Draft Least Environmentally Damaging Alternatives Analysis, Camp Hess Kramer and Gindling Hilltop Camps (PL21-0051), 11495 & 11677 Pacific Coast Highway, Unincorporated Ventura County (“draft LEDAA”) dated January 26, 2024.

The purpose of this document is to augment the information provided in the draft LEDAA by providing more detail regarding alternatives considered by Wilshire Boulevard Temple Camps (“WBT”) for work proposed within and immediately adjacent to Little Sycamore Creek as part of the Camp Hess Kramer and Gindling Hilltop Camps Woolsey Fire Rebuild Project (“Project”).

As discussed in the LEDAA, Camp Hess Kramer and Gindling Hilltop Camps (collectively “Camp”) have operated on this same property since the 1950s. Through the decades, the property has hosted thousands of youth through outdoor education and summer camps, as well as hundreds if not thousands of various non-profits covering myriad causes and interest areas. The Woolsey Fire of 2018 destroyed the Camps and caused significant damage to the Little Sycamore Creek watershed. The purpose of the rebuild project – of which Little Sycamore Creek Restoration is an important piece - is to restore the site and its beneficial and community uses in a more resilient, accessible manner.

II. Background

The Camp use and related development, structures, facilities and activities on site have been legally established on the site, authorized most recently via a Conditional Use Permit (CUP) approved by the County consistent with its certified Local Coastal Plan, County case number LU10-0069 (Attachment 3 – Approved CUP Plans). As provided in CZO Section 8.178-2.4.2.d, areas occupied by such legally established development shall not constitute ESHA. See Attachment 4 for the Notice of Land Use Entitlement that includes the CUP’s comprehensive project description for the camp use. Development, structures, facilities, activities, use areas,

maximum allowable day and overnight population, number and frequency of third-party events and maximum attendees, and the like are covered by the CUP.

The CUP included a condition of approval relating to ESHA (Condition No. 25) requiring the recordation of a Restrictive Covenant, which was recorded October 4, 2017 via document 20171004-00129270-0. Importantly, the Covenant addresses the extensive replacement of Camp facilities necessitated by the 2018 and subsequent damage and destruction: “The Permittee shall not remove any vegetation or install any new structures within areas of the project site that contain such ESHA, except for the repair, replacement, and maintenance of roads and facilities (e.g., infrastructure, structures, and ancillary facilities) that are permitted pursuant to this CUP.”

The rebuild project is consistent with the Covenant in effectuating the repair, replacement, and maintenance of the Camp’s roads and facilities, including infrastructure, structures, and ancillary facilities in order to restore the Camp’s legally established use of the site in the wake of the destructive wildfire and subsequent flood and debris flow events. See Attachment 4, CUP Condition No. 25, Coastal Area Plan Permanent Preservation of Environmentally Sensitive Habitat Areas (ESHA) in the M Overlay Zone.

III. Little Sycamore Creek

Camp Hess Cramer’s Lower and Middle Camps are bisected by Little Sycamore Creek. A main goal for the proposed rebuild is to create a more resilient Creek by widening the span of replacement bridges, replacing certain structures and uses further from the Creek, removing certain ad-hoc improvements (retaining walls, bank stabilization, etc) installed over time, and setting back and restoring the creek banks to a more natural state. A critical component and contributing factor to creek health is addressing historic drainage issues across the site which led to creek bank erosion, steepening of creek banks and confinement of the channel.

History of development in Little Sycamore Creek

As Camp was developed, bridges were installed at several points to accommodate the access road through Camp, which also serves as a critical access for neighboring property owners, as well as the Yerba Buena Water Company.

Various approaches were taken to stabilize the banks of Little Sycamore Creek in an effort to establish and then protect this access. For example, bridges were constructed out of surplus railroad boxcar supports, and in at least one area, tires and concrete rubble were buried into creek banks to harden and constrain the banks in an effort to prevent erosion.

These bridges and stabilization efforts reflected common practice at the time they were installed, which would not be the approach taken today. In addition, in some cases these features exacerbated flood damage by limiting the creek channel’s conveyance capacity.

Post-Woolsey Fire Flood and Debris Flow

In November 2018 the Woolsey Fire burned much of the Camp and the creek’s watershed. When seasonal rains started in the weeks following the fire, the site experienced destructive flooding in

the mainstem and a tributary on the east side of the creek, as well a landslide from Yerba Buena Road, debris flows from the valley sides, and a mix of overwhelming site specific sediment deposition and localized channel and bank erosion.

Sediment from these processes deposited in the channel, completely blocking several bridge openings and causing flooding throughout parts of the lower camp. The Camp arranged an emergency response and performed work under emergency permits (Ventura County # PL19-0005 and USACE #SPL-2019-00052-GLH) which included removal of 14,000 cubic yards (approximately) of sediment and debris from the creek channel, as well as actions to temporarily stabilize the creek, improve conveyance capacity and reduce the vulnerability of the Camp to further flows, erosion and deposition.

WBT sought Emergency Coastal Development Permits from Ventura County and other agencies (ACOE, RWQCB, CDFW) to perform emergency creek work in an attempt to limit additional damage to Camp's buildings, structures and infrastructure. Emergency permits were issued for initial creek work (reference PL19-0005) and a follow up Coastal PD was approved and issued by Ventura County for that emergency work.

Proposed Project Components in Little Sycamore Creek

Prior to the Woolsey Fire, WBT had been exploring ways to improve the habitat value and functioning of Little Sycamore Creek, and protect Camp infrastructure. The rebuild project provides an opportunity to reimagine the creek in a holistic fashion. As such, the rebuild project seeks to remove relic improvements from the creek, and employ more resilient and sustainable nature-based approaches with the rebuild, in particular with the creek restoration and riparian habitat enhancement elements.

The purpose of the creek restoration component of the rebuild of Camp is to restore the channel functions of Little Sycamore Creek through 1) the removal of flood-deposited sediments and debris to re-establish pre-flood conditions and topography and 2) to implement a suite of channel and bank improvements. These actions seek to stabilize the channel and riparian corridor within the Camp.

The proposed restoration includes structural and non-structural components.

Non-Structural Creek Bank repair

The Restoration Plans by ESA organize creek restoration into five Zones. These Zones do not represent five discreet areas of the creek, rather five different approaches to be taken at various locations along the creek based on the condition of the creek channel and banks.

Zone 1 - Layback and revegetate: Grading and bank stabilization measures including specific areas of bank reconstruction to address over-steepened and eroding banks. Banks shall be graded to 2:1 to 3:1 slopes to allow for installation of biotechnical stabilization structures such as brush mat and vegetated soil lifts (VSL) as well as revegetation and establishment of native riparian plant species. Grading will conform to existing adjacent grades to protect and preserve mature trees within Zone 1 grading areas. Typical activities include targeted clearing and grubbing,

excavation and grading to establish stable slope profile, construction of bank stabilization structures, erosion control and revegetation.

Zone 2 - Selective grading and revegetate: targeted grading in specified locations to remove overburden on over-steepened banks to allow for installation of toe protection structures and revegetation and establishment of native riparian plant species. Grading activities will avoid mature trees within Zone 2 grading areas. Typical activities include targeted clearing and grubbing, grading to establish stable slope profile, installation of toe protection structures, erosion control and revegetation.

Zone 3 - Remove invasives and revegetate: limited grading on creek banks and riparian areas where more extensive removal of invasive plant species occurs. Grading activities will avoid mature trees within Zone 3 grading areas. Typical activities include targeted clearing and grubbing focused on management of non-native plant species, preparation of soil surface, erosion control and revegetation.

Zone 4 - Remove debris and revegetate: moderate grading to remove ad-hoc materials including but not limited to concrete rubble, damaged masonry walls, tire revetments, landscaping debris and post-flood stockpiled sediment. Grading activities will avoid mature trees within Zone 4 grading areas. Typical activities include excavation and removal of debris, conform grading and surface preparation in disturbed areas, erosion control and revegetation.

Zone 5 - Floodplain grading and habitat planting: grading to widen creek channel, reset channel geometry and reconnect low floodplain areas at discrete locations within the riparian corridor. Grading will conform to existing grades to protect and preserve mature trees as 'tree islands' within Zone 5 grading areas. Typical activities include clearing and grubbing, excavation and grading to establish annually connected floodplain, and targeted habitat plantings.

The proposed planting palette¹ includes a variety of native tree and plant species.

Structural Improvements

The restoration described above will compliment structural augmentations to the creek. Structural improvements include replaced bridges and stormdrain improvements.

Where necessary and part of the design near replacement bridges and stormdrain outlets, other structural features proposed in the creek include boulder weirs, rock/boulder toe protection, boulder grade control (roughened channel structure), , rock sill and emergency overflow.

The location and extents of these other structural features (e.g. boulder weirs) were determined based on hydraulic and scour analyses of the creek. They therefore represent an application of an analytical and engineering-based approach for where and how much of a given measure is necessary to support stability of the system and achieve resilient and healthy creek habitat functions.

¹ Subject to approval by the County and other applicable regulatory agencies

Replacement Bridges

As previously discussed, Camp Hess Kramer extends along either side of Little Sycamore Creek, requiring bridges across the Creek to traverse Camp by vehicle or on foot. Prior to the fire, there were eight (8) bridges and one (1) at-grade crossing. Five (5) of these bridges were destroyed by the fire, and the remaining three (3) were damaged. Two (2) of the surviving bridges (4-V and 6-V) are proposed to be replaced. The replacement bridges will be wider to meet Fire Department standards, and the span will be longer in order to remove confinement of the creek channel, and construct abutments outside of the creek banks. The new bridges will also be higher, to the extent practical, to provide additional freeboard. Thus, the temporary and permanent disturbance for these replacement bridges should be considered beneficial to the creek in correcting long-standing issues and precluding the need for future reinforcement of this critical infrastructure.

The table below lists each of the bridges, their status after the Woolsey Fire, and the proposed action. Each bridge has been assigned a number starting with “1” for the first and southernmost bridge, and ending with the northernmost crossing, followed by a letter. A “-P” indicates pedestrian bridge, and a “-V” indicates a vehicle bridge. The inclusion of both vehicle and pedestrian bridges is critical to separating people and cars throughout Camp, and is considered a matter of both safety and accessibility.

There will be both temporary and permanent impacts associated with reconstruction and replacement of bridges. These are all replacements of bridges that existed prior to the fire, with the exception of 5-P which converts an informal wooden plank to a pedestrian bridge.

Importantly, all abutments of proposed bridges are located outside of the top of bank of the creek.

Bridge #	Vehicle or Pedestrian	Existed Pre-Woolsey Fire	Survived Fire/ Destroyed by Fire	Proposed
1-P	Pedestrian	Yes – Pedestrian access to new archery/ volleyball	Destroyed	Replace
2-V	Vehicle	Yes – Vehicle access to basketball/ volleyball/ new archery	Destroyed	Replace
3-P	Pedestrian	No	NA	Replaces 7-P and provides access between Breuer Lawn and basketball.
4-V	Vehicle	Yes- Along main access road.	Survived	Replace at 20' wide per Fire Department
5-P	Pedestrian	Informal. Shown on CUP-approved plans as a wooden plank connecting pool to northernmost edge of confidence building.	Destroyed	Replaces informal wood plank crossing with new pedestrian bridge connecting Ropes and Climbing area to Baruh Hall and Amphitheater plaza
6-V	Vehicle	Yes – Along main access road just north of pool.	Survived	Replace at 20' wide per the Fire Department
7-P	Pedestrian	Yes – Provided access to old Archery area which no longer exists	Destroyed	To be replaced with 3-P

Bridge #	Vehicle or Pedestrian	Existed Pre-Woolsey Fire	Survived Fire/ Destroyed by Fire	Proposed
8-V	Vehicle	Yes – Along main access road	Survived	No Change
9-P	Pedestrian	Yes – Provides access to Chapel	Destroyed	Replace
10-A-V <i>Arizona Crossing</i>	Arizona Crossing	Yes	Survived	No Change

Drainage Improvements

Installation of stormdrain outlets and outlet protection/dissipation structures in Little Sycamore Creek is included in the rebuild project in order to resolve historic drainage issues across the site and to meet current stormwater quality requirements. These drainage improvements are a benefit over the baseline condition at Camp, and will result in a net benefit to the health and function of Little Sycamore Creek.

Stormwater conveyed to the creek from onsite development will now be treated via a suite of approaches prior to being discharged into the creek². These include:

- infiltration basins
- infiltration trenches
- bioretention
- permeable pavement
- bioretention with underdrains
- planter boxes
- vegetated swales
- vegetated filter strips

Prior to the fire, stormwater from offsite routinely damaged Camp property and contributed to creek bank erosion as it carved an overland path across Camp to Little Sycamore Creek. Due to the history of development of the Camp starting in the late 1950s, drainage had previously not been addressed in a holistic fashion, or in accordance with modern design components such as infiltration features and bioswales. The rebuild of Camp Hess Kramer provides the opportunity to incorporate such features.

These outlets occur in eight (8) general locations along the creek. The below table identifies the stormdrain outlets by location and plan sheet.

As seen below, only one of the eight outlet locations is proposed solely for drainage stemming from Camp improvements. Another four outlets have a dual use, handling both offsite and onsite drainage. The last three are designed to handle offsite drainage only.

² See Preliminary Drainage & Stormwater Treatment Report by Stantec dated May 1, 2021

Of note, all of these same stormdrain outlets would be needed in a scenario where Camp is rebuilt solely within pre-fire building footprints. Particularly for example, near Scout's Grove, the amount of water cascading via sheet flow down the canyon regularly flooded that area, and caused creek bank erosion as it made its way into the channel. During the fire and flood events, this caused significant damage to Yerba Buena Water Company infrastructure (water well, pump station, and water lines).

Stormdrain #	Location	Plan Sheet (of May 2021 submittal set)	Carries Offsite or Onsite Drainage?	Notes
1	West of proposed at-grade parking	C12	Onsite	Outlet for stormwater from tennis/parking area after being treated in bioswale.
2	Southwest of proposed Welcome Center	C12	Offsite	Addresses historic flooding and erosion issue from offsite stormwater which enters the site under Yerba Buena Road and erodes landform and creek bank upon entry to Creek.
3	West of proposed climbing wall Northeast of Baruh. Outlets on West and East side of Creek at this location.	C14	Offsite	Captures significant runoff from Yerba Buena Road to the east. Captures runoff from hillside west of Baruh.
			Onsite	Captures stormwater from Baruh and plaza area.
4	Just south of bridge 6V	C15	Offsite	Captures offsite drainage from hillside slope to the east
			Onsite	Captures onsite drainage from access path connecting Gildred to main road north of the bridge.
5	Just north of bridge 6V	C15	Offsite	Captures drainage from hillside adjacent to the west.
			Onsite	Captures drainage from pool deck area.
6	South of Outdoor Chapel	C16	Offsite	Captures significant runoff from Yerba Buena Road
7 (surface outfall, not stormdrain)	Middle Camp just South of Cabin 29	C17	Onsite	Captures stormwater from a portion of the cabin area and road in Middle Camp
8	East of Scout's Grove	C18	Offsite	Captures significant runoff from two canyons above Scout's Grove and Piness which contribute to erosion of the Creek bank as it enters the creek via overland flow.

Creek Restoration

Outside of bridges and stormdrain outlets, with their associated dissipation structures, all other activity within Little Sycamore Creek is for the sole purpose of expanding and enhancing habitat and ecosystem functions through this corridor as shown on the plans by ESA. **This work should be considered and counted toward any restoration or mitigation required for impacts to wetland ESHA by the project.** Please refer to Section VII.B.3 herein, and the Basis of Design report and plan sheets R-1 through R-12 by ESA for additional detail regarding proposed Little Sycamore Creek restoration activities.

Location	Construction Activity	Construction Area	Depth of Excavation/Quantity of Excavation and fill	Construction Duration
CREEK CHANNEL AND RIPARIAN RESTORATION AND ENHANCEMENT				
Lower Camp Little Sycamore Creek Sta. 0+00 to Sta. 25+00	Excavation and removal of flood-deposited sediment and debris Clear and grub; remove invasive plant species Tree protection Reconstruct 289 linear feet of eroding banks utilizing biotechnical measures Layback and stabilize 3,468 linear feet of over-steepened banks Construct 615 linear feet of boulder toe protection (vegetated rock slope) including at bridges Install 1 boulder grade control/ dissipation structure (roughened ramp)	Construction Area: 1.92 acres OHW Work Area (estimate): 0.44 acres Total Footprint: 1.92 acres	Depth: 0' to 7' Earthwork: Sediment/Debris Removal (Cut): 7,029 CY Bank Reconstruction (Fill): 196 CY Net Cut: 6,833	20 weeks
Middle Camp Little Sycamore Creek Sta. 25+00 to Sta. 43+29	Excavation and removal of flood-deposited sediment and debris Clear and grub; remove invasive plant species Tree protection Layback and stabilize 1,726 linear feet of over-steepened banks Install 1 boulder grade control structure (roughened ramp) Construct 410 linear feet of toe protection (vegetated rock slope) including at bridges Install 4 boulder weirs Construct 3 stormwater outlet/energy dissipation structures	Construction Area: 0.95 acres OHW Work Area (estimate): 0.22 acres Total Footprint: 0.95 acres	Depth: 0' to 9' Earthwork: Sediment/Debris Removal (Cut): 5,341 CY Bank Reconstruction (Fill): 37 CY Net Cut: 5,304	20 weeks
RIPARIAN HABITAT RESTORATION (PLANTING)				

Creek Corridor Little Sycamore Creek Sta. 0+00 to Sta. 43+69	Remove invasive plant species 0 trees removed Plant trees Plant riparian vegetation	Construction Area: Lower Camp: 1.92 acres Middle Camp: 0.95 acres Total Footprint: 2.87 acres	No excavation or fill would take place for revegetation or tree planting	8 – 10 weeks
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Alternatives Considered

The proposed project is a rebuild of an outdoor camp operating on this site since the late 1950s that had been constructed over time, using typical means and methods common to the various era(s) of construction. The proposed project provides the opportunity to replace and rebuild Camp in a more holistic fashion and utilizing modern approaches to stormwater.

Alternative 1 – Rebuild to Pre-Fire Conditions

Similar to, and as detailed in Alternative 1 in the companion document³, Alternative 1 is infeasible, and provided as a theoretical alternative. First, this alternative is infeasible because new construction, even when replacing fire-destroyed structures must meet current building, fire, and other codes as applicable, as well as regulations related to stormwater controls. As a consequence, maintaining pre-fire footprints would result in a significant reduction in use of the site below historic and permitted levels rendering the project infeasible.

A simple replacement of pre-fire structures and uses would also result in additional damage to the creek. For instance, failing to address stormwater from offsite would allow ongoing damage to the Camp property particularly in the vicinity of the proposed Welcome Center, along with erosion to the creek between Scout’s Grove and cabins in Middle Camp as well as other areas. Failure to rebuild using current detention, filtration, and stormwater controls would also result in inferior stormwater quality entering the creek.

A rebuild of pre-fire conditions would also retain a parking lot in the center of camp beneath large sycamores and extending up to the top of bank of the creek, with stormwater crossing the parking area and entering the creek without any prior filtration.

Rebuilding or retaining vehicle bridges 4-V and 6-V would leave pinch-points in place, where bridge abutments are comparatively close together, and requiring additional hard banking to protect those abutments from creek flows as they approach and accelerate through the constriction.

³ Draft Least Environmentally Damaging Alternatives Analysis, Camp Hess Kramer and Gindling Hilltop Camps (PL21-0051), 11495 & 11677 Pacific Coast Highway, Unincorporated Ventura County (“draft LEDAA”) dated January 26, 2024

Importantly, a rebuild to pre-fire conditions would preclude the proposed creek restoration activities. These proposed activities include removal of ad-hoc hard bank stabilization materials previously placed in the creek, non-native plant removal and revegetation, selective grading and planting for bank stabilization purposes, and planting of numerous native trees and other plant species that will improve overall creek habitat functions and health.

Alternative 2 – Creek Restoration Confined by Pre-Fire Conditions

In 2011-2012, almost a decade before the Woolsey Fire, Camp Hess Kramer underwent a creek restoration visioning process. This process, conducted by ESA, included observation and study of 4,200 linear feet of the creek, and made recommendations for both one-time actions as well as adaptive management techniques. The goals of the plan were to stabilize the creek, improve habitat and aesthetic values, and support the Camp use. The recommendations fell into the following categories: Creek stewardship, stabilization, creek enhancement, and stormwater management.

The main constraint of this alternative was that all existing Camp improvements would remain in place, including for example, existing bridges with limited spans across the creek, and the vehicle parking lot adjacent to and up to the edge of the creek bank. In addition, virtually no improvements to stormwater drainage across the site were included in this alternative. Due to these limitations, additional hard bank stabilization and engineered improvements would be needed. For example, this alternative proposed numerous locations for channel stabilization structures, and called for bypass culverts to be installed in the creek banks and outside of the bridge abutments to provide limited, albeit additional conveyance capacity around the bridges.

In all, this alternative was never implemented due to lack of funding, and more importantly, because it failed to take a holistic approach to creek restoration. In other words, this alternative is a triage solution requiring more engineered solutions both in terms of number of locations of hard bank stabilization and reinforcement of poorly designed and ad-hoc improvements.

Alternative 3 – Current proposal (May 2021)

Alternative 3 is the proposed project as described in detail in this document consisting of bridge replacement, drainage improvements, non-native vegetation removal, and creek channel and bank stabilization and riparian habitat enhancement. Here it is important to note that the natural process of sediment transport occurring over the past few storm seasons have reduced the total amount of sediment removal that is anticipated to be required and performed by the project.

Alternatives Comparison

	Alternative 1 Repair/rebuild to pre-fire conditions (Not a Feasible Alternative)	Alternative 2 2011-2012 Creek Master Plan	Alternative 3 Current Proposal per October 2022 submittal and as analyzed in Ventura County IS/MND
Summary	Rebuilds 8 bridges, maintains existing ad-hoc hard-bank improvements in creek, retains existing bridge abutment widths, retains historic drainage issues, retains central parking lot up to top of bank in Lower Camp, excludes non-native removal	Retains 8 bridges. Install armoring at toe-slopes for existing bridges until funding for replacement bridges was located, proposed 13 locations for armoring with rock ramps and grade control structures.	Retains 1, replaces 7 bridges, including replaced vehicle and pedestrian bridges, widening of the two primary vehicle bridges, and stormdrain outlets at 8 locations along the creek, and rock-toe protection at 5 locations.
Main differentiator from other Alternatives	<u>Not a viable alternative</u> given Fire Department access requirements, disallows creek restoration	Fails to take a holistic approach, retains existing impediments to creek function, requires additional hard bank stabilization measures to protect bridges in place	Resolves historic drainage issues, replaces and enhances accessibility for a variety of Camp users, provides for restoration of Little Sycamore Creek
Bridge abutment locations	Extend into creek, creating pinch points resulting in continued erosion and damage up- and down-stream	Same as pre-fire locations mostly within or at top of bank, requires installation of culverts box behind abutments of two bridges to provide additional conveyance capacity	Outside of top of bank
Improves habitat and functioning of Little Sycamore Creek?	No	Minimal. Intent was to improve functioning by reinforcing banks and increasing creek conveyance, however bridges and overall site constraints remain	Yes
Meets current codes and requirements (e.g. for drainage, flood control, fire, access)?	No	No – Proposal included some stormwater improvements, however they were not designed to resolve drainage issues across the site per current requirements, and travel width for bridges would not be widened for Fire Dept. access	Yes

	Alternative 1 Repair/rebuild to pre-fire conditions (Not a Feasible Alternative)	Alternative 2 2011-2012 Creek Master Plan	Alternative 3 Current Proposal per October 2022 submittal and as analyzed in Ventura County IS/MND
Temporary Impacts within creek	Not calculated. Limited to existing locations plus buffer to perform required installation and repair work	Not calculated. Associated with construction access and installation of proposed new engineered improvements	3.11 acres for habitat and creek restoration purposes ⁴ . Removal of abutments being replaced, Removal of ad-hoc stabilization (e.g. tires), grading and layback of vegetated soil lifts for planting, disturbance associated with non-native plant removal.
Number of bridges and location of abutments	8 - Abutments on creek banks, restricting creek flow	8 - Abutments on creek banks, restricting creek flow, plus bypass box culvert at bridges 6V and 8V, and other structural reinforcement	8 - Abutments outside of creek banks, each with corresponding rock toe protection in creek
Location and extents of new permanent impacts in the creek	None as no additional site work to meet code would occur in this theoretical alternative.	Precise areas not calculated. Included 7 rock ramps, 5 grade control structures (precise dimensions not designed), added concrete to stabilize undercut masonry block downstream of bridge 1P, 150 linear feet of armoring downstream of bridge 6V	New permanent impacts of 0.425 acres for grading/structures and utilities. ⁵ 8 stormdrain outlets with associated rip-rap or boulder dissipation structure, 5 locations for rock toe protection
Invasives removal	None	Not calculated, limited in scope.	Invasive plant removal across 2.87 acres of creek riparian habitat
Grading in Creek	Not calculated. Limited to temporary grading for access into creek.	Not calculated	12,500 CY of cut primarily to remove mud/debris deposited sediment. <u>Actual sediment removal will be significantly less.</u> Estimate was per 2020 conditions, and sediment transport by natural processes since then has significantly reduced

⁴ Per ISBA by Stantec Waters and Wetlands Table Acres of New Impact using CDFW Jurisdictional waters as they encompass the largest jurisdiction around the creek, capturing USACE, RWQCB and CCC One-parameter wetlands, plus riparian area.

⁵ Per ISBA by Stantec Waters and Wetlands Table Acres of New Impact using CDFW Jurisdictional waters as they encompass the largest jurisdiction around the creek, capturing USACE, RWQCB and CCC One-parameter wetlands, plus riparian area.

	Alternative 1 Repair/rebuild to pre-fire conditions (Not a Feasible Alternative)	Alternative 2 2011-2012 Creek Master Plan	Alternative 3 Current Proposal per October 2022 submittal and as analyzed in Ventura County IS/MND
			remaining sediment from debris/mud flows of 2019
Meets Project Objectives	No	No	Yes

I. Conclusion

In consideration of the alternatives, proposed Alternative 3 is the Least Damaging Alternative that achieves habitat restoration goals, complies with the regulatory context, and meets project objectives.

IV. References

Geomorphic Conditions Update and Basis of Design for Little Sycamore Creek, Camp Hess Kramer by ESA dated April 2021

Initial Study Biological Assessment Report for the Camp Hess Kramer/Gindling Hilltop Camp Woolsey Fire Rebuild Project by Stantec dated September 26, 2023.

Little Sycamore Canyon Creek Wilshire Boulevard Temple Camps Geomorphic Assessment and Recommendations by ESA dated March 22, 2012

Preliminary Drainage & Stormwater Treatment Report by Stantec dated May 1, 2021

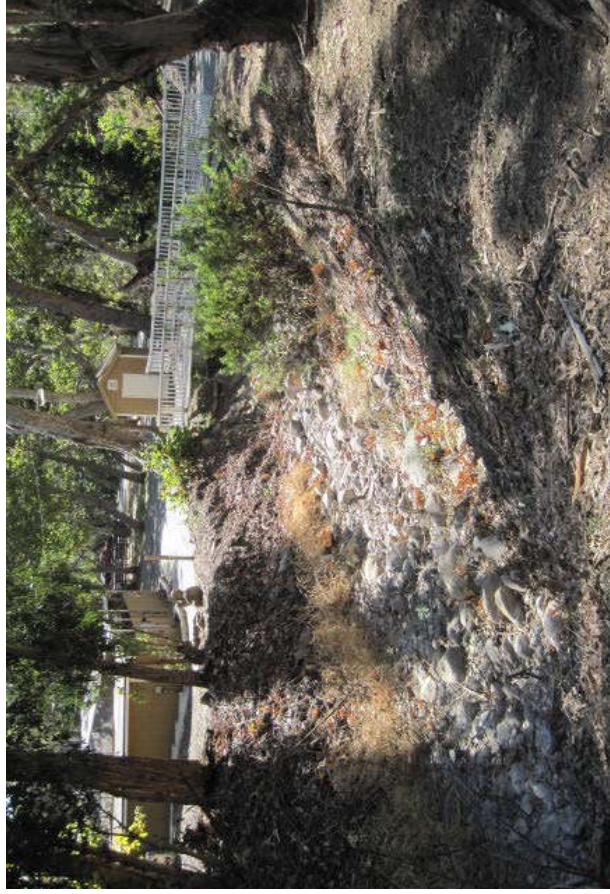
Project Plans as submitted October 2022 by Stantec (Civil Grading & Drainage) and ESA (Creek Restoration)

LITTLE SYCAMORE CANYON CREEK WILSHIRE BOULEVARD TEMPLE CAMPS

Geomorphic Assessment and Recommendations

Prepared for
Siegel & Strain Architects

March 22, 2012



LITTLE SYCAMORE CANYON CREEK WILSHIRE BOULEVARD TEMPLE CAMPS

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INTRODUCTION

ESA PWA staff performed site visits to Little Sycamore Canyon Creek on November 1st and 2nd 2011. We conducted a reconnaissance level assessment of the creek channel's geomorphic conditions extending from the Middle camp (channel ford) at the upstream limit to the crossing under the Pacific Coast Highway at the downstream limit – a distance of approximately 4,200 linear feet. The focus of the assessment included:

- Identify the overall geomorphic condition of the creek (stable, eroding, etc)
- Identify and prioritize opportunities to restore degraded sections of the creek focusing on ecological, educational and recreational values
- Identify opportunities to improve creek stability and resiliency, reduce flood impacts and enhance the stormwater quality

In addition to the visual assessment we reviewed survey cross sections and the long profile of the channel using topographic data (provided by Siegel & Strain). Topographic form and geometries provide important information relative to the function and condition of the creek. Different degrees of channel confinement indicate different geomorphic processes that affect the creek environment. For example, deeply confined cross sections often indicate either channel downcutting (incision) and/or encroachment of fill onto the banks. Confined reaches typically have a lower flood capacity and higher erosive energy than non-confined reaches. This concentrated energy causes damage both to the creek ecosystem and to human structures such as bridges and adjacent roads. By contrast, unconfined reaches have floodplains between the bed and banks of the creek that allow higher flows to spread out and dissipate energy before attacking the banks. This supports a more stable ecosystem and also reduces the impact of creek erosion and flooding on the built environment. Below are example photographs and cross sections of unconfined and confined reaches to illustrate the range of conditions found in Little Sycamore Creek.

GENERAL OBSERVATIONS

The overall form and alignment of Little Sycamore Canyon Creek through the Middle and Lower Camps appears to be mostly natural, with a slightly sinuous planform characterized by a boulder step-pool channel bed typical of creeks in the Santa Monica Mountains. Initially, the creek appeared stable with a number of natural features as compared to creeks in more developed settings. However, with more detailed inspection it is clear that a legacy of historic and ongoing management actions have had a subtle but significant impact on the creek's form, ecological function and flood capacity within the camp. Typically, these actions are relatively minor as individual impacts, however the cumulative impact over multiple decades has degraded the creek and associated features. Actions include:

Management Action	Unintended Consequence
Dumping organic debris (lawn cuttings, brush, etc) and rubble over the creek banks	Burial of low channel floodplain, confinement of channel cross section; increased erosion; reduced flood capacity
Constructing building pads and roadway along the top of the creek bank that encroaches into the creek	Confinement of channel cross section; increased erosion, potential increases in flooding downstream
Channelization of creek with rock, concrete and ad hoc bank protection	Location dependent; can accelerate bed erosion locally and increase bank erosion downstream
Installation of undersized bridges	Increased flooding upstream; increased erosion downstream of bridge
Construction of earth and cobble berms to reduce flooding	Increased erosion along berm; increased flooding upstream and downstream

The combination of dumped debris (organic and construction materials) and ad hoc berms has significantly affected the creek over several decades. The piles have formed a soil mantle over the banks at several locations, constricting the width and flood capacity of the creek. Over time many of these mantles appear to have been “locked in” by placing asphalt and/or cobbles at the top of the bank and in some cases dumping protective rock over the toe of bank. As a result the banks have become higher, further confining the flood flows and concentrating erosive energy in the channel.

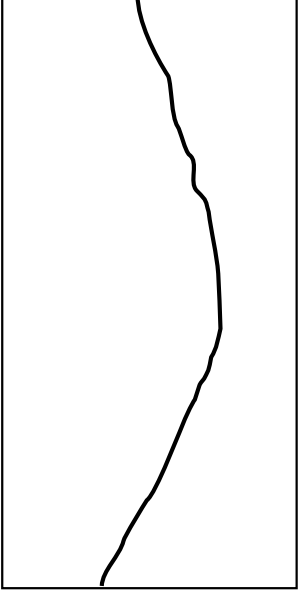
REACH DESCRIPTIONS

For the purposes of this assessment we have separated the creek into five (5) reaches based on geomorphic conditions and other physical structures as dividing points. For each reach we describe the existing condition, suggested restoration and management actions, and opportunities and constraints. The reaches are shown in Figure 1A and Figure 1B (Appendix A). Each reach was classified into one of three confinement classes; Low, Medium or High confinement.

- Low confinement reaches have a relatively high width:depth ratio so that as runoff volume increases during a storm the flow tends to spread out laterally rather than become deeper. This allows erosive energy to be dissipated on the bed and low floodplain of the creek rather than attacking the banks. Creek sections with a high width:depth ratio also tend to support more riparian habitat on low floodplain benches that are frequently inundated. Low confinement reaches are considered to be stable; they should support high quality and more diverse habitat and should have relatively low rates of erosion.



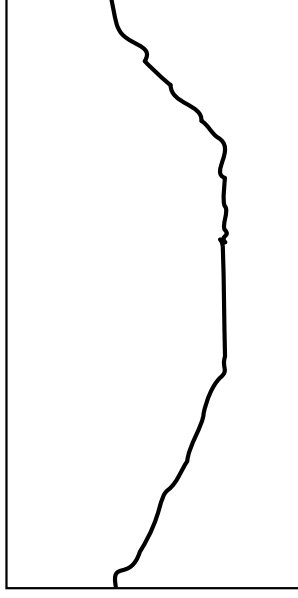
Low confinement



- Medium confinement reaches have a lower width:depth ratio, so increases in runoff volume are expressed more as increases in flow depth than width. This condition increases the erosive energy, focuses energy more directly on the creek banks, and has steeper banks that may not support riparian vegetation as much as Low confinement reaches. Medium confinement reaches are considered to be unstable, with active erosion and limited habitat.



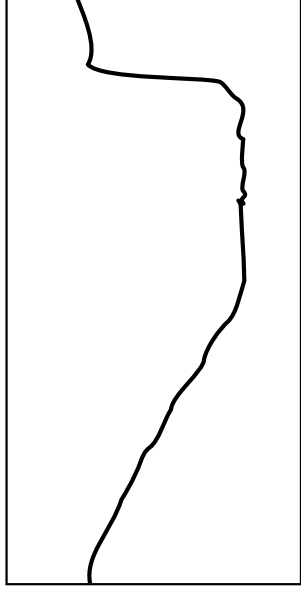
Medium confinement



- High confinement reaches have the lowest width:depth ratios found in Little Sycamore Canyon Creek and are deeply entrenched. The banks are almost vertical, often actively eroding, and support few riparian trees. High confinement reaches are highly unstable, characterized by major bank failures, channel incision and/or potential damage to adjacent infrastructure during flood events.



High confinement



SUMMARY

Based on our geomorphic assessment, overall site analysis and other background information we recommend a set of actions to stabilize and enhance Little Sycamore Canyon Creek at the Wilshire Boulevard Temple Camps. These recommendations incorporate specific one-time actions to address acute problems as well as adaptive management-based activities to support long-term function of the creek as a resource within the camp and larger landscape. The recommendations are intended to address goals to stabilize the creek, improve habitat and aesthetic values, and support educational and recreational programs in the camp. The recommendations generally fall under the following three categories and are outlined in more detail within the memo:

- **Creek Stewardship (CS):** landscape maintenance activities based on creek function and health; educational programming to establish understanding of the site and watershed.
- **Stabilization (S):** discreet actions/projects to stabilize the creek channel and banks at actively eroding sites.
- **Creek Enhancement (CE):** discreet actions/projects to reestablish natural fluvial processes and the riparian corridor such as floodplain benches, road realignment, wider bridges, etc.

- **Stormwater Management (SM):** actions/landscape and utilities features to reduce the impacts of concentrated stormwater runoff and provide passive treatment of runoff

These recommendations to improve Little Sycamore Canyon Creek can be implemented independently or grouped as projects over time based on camp priorities, phases of development and implementation of other associated Master Plan components and available funding. Table 1 provides a prioritization of recommended actions for stabilization and enhancement of Little Sycamore Canyon Creek to guide near term decision-making. Priority actions are based on our assessment of acute problems as well as cost benefits. Many of the actions described below are expected to provide additional indirect benefits related to channel function and habitat value.

Table 1 Priorities for Improving Little Sycamore Canyon Creek

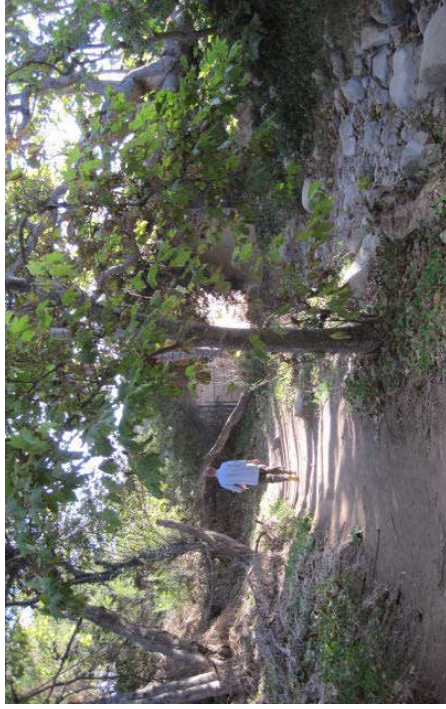
Priority	Action	Location	Description
1	CE	Entire creek	Revise landscape maintenance procedures to eliminate dumping of debris into the creek; remove existing debris from banks and channel
2	S	Multiple; 1, 3, 4, 8, 11, 12	Design and construct channel stabilization structures (boulder step-pools, rock ramps)
3	CE	Road crossing 2 (STA. 13+50) and 3 (STA. 18+50)	Replace or retrofit existing bridges to expand channel capacity, improve hydraulics, reduce erosion, flooding and channel instability
4	S	STA. 17+00 to STA. 18+50	Stabilize the landslide in Reach 3. Analyze, design and construct project to stabilize the bank including armoring the toe of slope
5	CE	STA. 9+50 to STA. 13+00	Design and construct floodplain benches and remove berms to improve flood conveyance, reduce erosion, improve habitat and aesthetic values and create educational and recreational asset
6	SM	Middle Camp	Capture, contain and direct stormwater runoff into system of bioswales, planted detention basins, etc to reduce erosion and sediment

1 REACH 1

Reach 1 extends from the culvert under Pacific Coast Highway (STA. 0+00) to the first road bridge at STA. 9+00 (adjacent to the Maintenance Superintendent's Residence). This reach is moderately to highly confined; with the highest creek banks in the camp, and moderate bank erosion focused on outside bends. There is evidence of ongoing debris disposal and dumping on the creek banks.

1.1 PRIORITY RESTORATION OPPORTUNITIES

- (CS) Remove dumped organic debris
- (CS) Vegetation management on banks focused on control and removal of exotic species
- (S) Stabilize undercut masonry block bank downstream of 1st road bridge (STA 7+00)
- (CE) Remove asphalt surface (seasonal volleyball) and asphalt trail on right bank between STA 3+50 and STA 7+00, approximately
- (CE) Remove or reconfigure asphalt basketball courts; grade floodplain bench on right bank and revegetate between STA. 1+50 and STA. 3+50
- (CE) Replace or expand 1st road bridge (STA. 9+00) to reduce erosion downstream and improve flood conveyance



Medium confined section just upstream of the Pacific Coast Highway crossing and beach, STA 0+50



High confinement area and outside bend erosion adjacent to playing fields, STA. 4+00



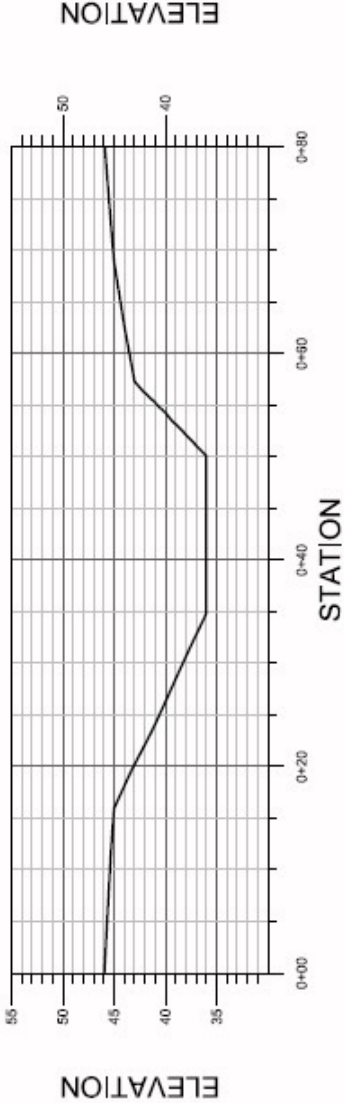
Asphalt basketball court (STA 1+50 to STA 3+50)

Potential Actions: remove asphalt surface, excavate and grade a lower area to create an active floodplain bench



Medium confinement between playing fields and asphalt basketball court (~STA 5+00, Cross section 1A).

Potential Actions: remove dumped material on left bank, remove asphalt trail and lower ground on right bank, preserve sycamores





Medium confinement between 1st road bridge and footbridge
(~STA. 7+00)

Potential Actions: remove asphalt surface, excavate and grade a lower area to create an active floodplain bench



High confinement extending 50-80 feet downstream of road bridge at STA. 9+00

Potential Actions: remove non-native plant species (ivy) and replant with native tree and plant species



High confinement and bed erosion downstream of the 1st road bridge at STA. 9+00

Potential actions: widen or replace bridge, stabilize eroded knickpoint with rock ramp, manage/remove non-native vegetation

2 REACH 2

Reach 2 extends from the 1st road bridge at STA. 9+00 along the Breuer Lawn and the parking lot to the 2nd road bridge at STA. 15+60. This reach is mostly moderately confined with some distinct areas that are highly confined adjacent the bridges. The reach has areas that are highly impacted by the cumulative effect of dumped debris from the banks. Dumping and debris disposal has reduced the channel width over time, increasing erosion on exposed outer bends as well as reducing flood conveyance.

2.1 PRIORITY RESTORATION OPPORTUNITIES

A significant Creek Enhancement opportunity in this reach is to create a series of terraced floodplain benches on the left bank while preserving the existing Sycamores on a mid-channel 'tree island'. The new floodplain features would restore channel-floodplain connectivity, reduce confinement and upstream flooding, and make the creek a focal point in the heart of the camp. Required and integral actions include:

- (CE) Remove the berm on the left bank
- (CE) Widen the 2nd road bridge (by the art area) by either replacing the existing structure with a wider span or adding a box culvert to the right side. This is one of two high priority bridge widening projects in the camp.
- (CE) Remove part or all of the parking lot
- (S) Lay back and stabilize the right bank

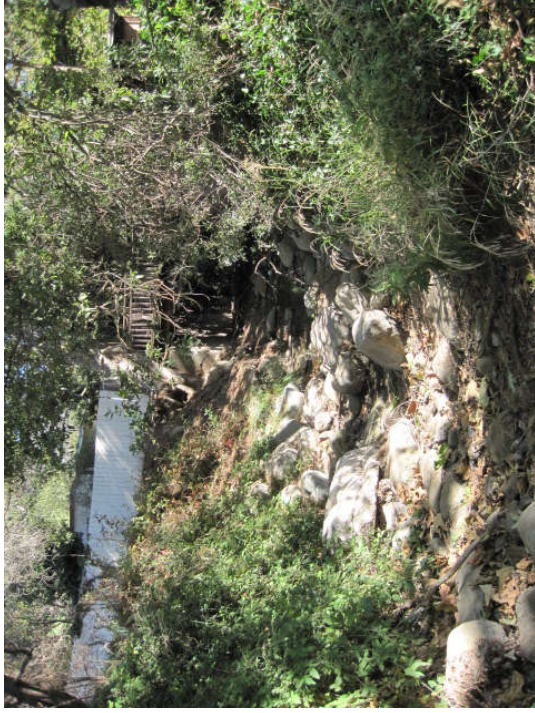
2.2 OTHER RECOMMENDED ACTIONS IN REACH 2 INCLUDE:

- (CE) Widen the 1st road bridge to reduce flow constrictions and associated flooding and erosion.
- (CS) Remove dumped debris and restore banks with native vegetation
- (CE/S)) Remove bridge remnants on right bank between Breuer Lawn and parking lot and stabilize drop structure with boulder step-pool or rock ramp
- (S) Lay back and stabilize the steep outer bend (right bank) opposite Breuer Lawn



Highly confined conditions upstream of the 1st road bridge at STA 9+00

Potential Actions: widen or stabilize existing bridge



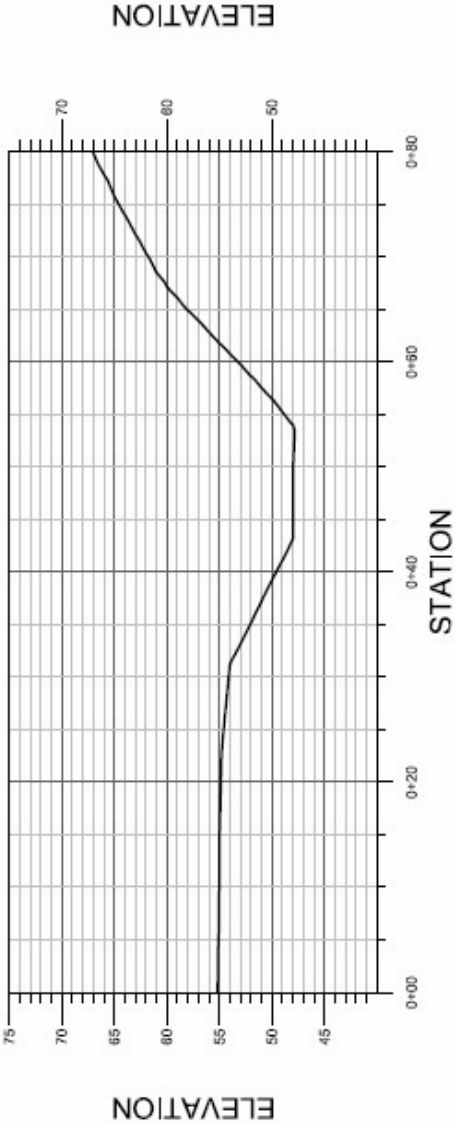
Medium confinement through the maintenance area to the road bridge

Potential Actions: remove dumped debris from left bank, vegetation management



Local severe bank erosion opposite
Breuer Lawn

Potential Actions: lay back and stabilize
banks while preserving mature
Sycamores and Oaks

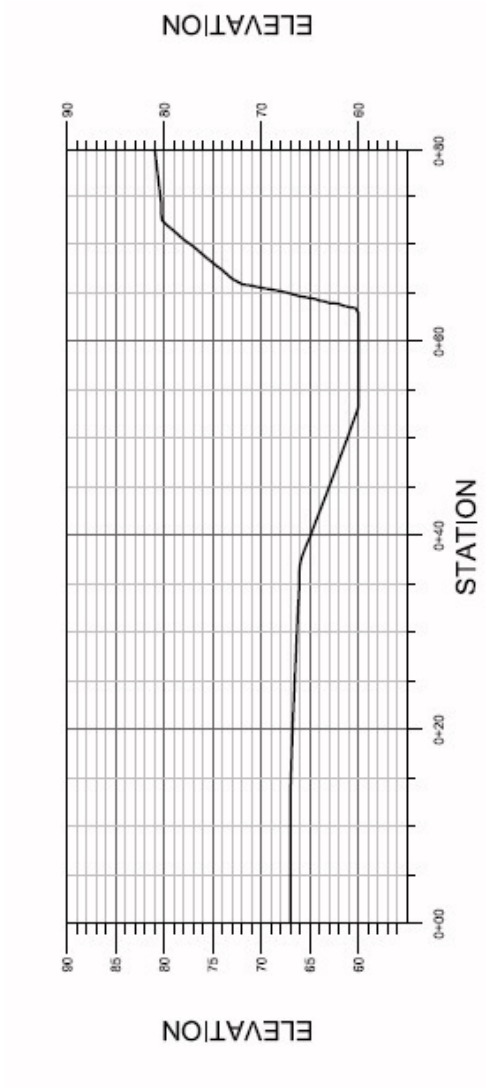


Typical cross section in Reach 2 (Cross section 2A)



Medium confinement typical of conditions throughout the parking lot area (Cross section 2B)

Potential Actions: cut floodplain bench on left bank while preserving trees, regrade and stabilize right bank, shorten and install erosion control for stormwater culvert on right bank



Cross section in Reach 2, STA. 9+50



Earth and organic matter dumped on banks downstream of road bridge at STA 15+60

Potential Actions: remove dumped material and revegetate banks, replace or widen bridge



Earth and organic matter dumped on banks downstream of road bridge at STA 15+60

Potential Actions: remove dumped material and revegetate banks, replace or widen bridge



Undercut grade control at 2nd road crossing

Potential Actions: replace or widen bridge and stabilize bed with a boulder step-pool structure or rock ramp

3 REACH 3

Reach 3 extends from the 2nd road bridge at STA. 15+60 past the rope course, Baruh Hall, the swimming pool, and the dance stage to the pedestrian bridge at the archery course (STA 25+20). This reach has a diverse combination of conditions encompassing the least disturbed sections (between the archery course and the dance stage) and the most unstable sections (around the swimming pool). A landslide on the left bank opposite the swimming pool is being undercut by the creek, in part due to the upstream straightening and channelization adjacent to the swimming pool.

3.1 PRIORITY RESTORATION OPPORTUNITIES

3.1.1 Stabilize the landslide opposite the swimming pool. This requires several steps:

- (CE) Widen the 3rd road bridge by either replacing the existing span or adding a high flow box culvert to reduce flow constriction and lower flow velocities (this is one of the two highest priority road widening or replacement projects in the camps)
- (S) Build up the failing drop structure to create a more gentle series of steps and to prevent bed scour adjacent to the landslide
- (CE) There are two approaches to stabilizing the bank adjacent to the landslide toe:
 - Lay back the bank to a gentler gradient and vegetate (losing the road)
 - Restore the original bank gradient with a structural buttress (allowing the road to be replaced)
- (S) Armor the outside bend to protect the toe of the landslide

3.1.2 Lower and restore the floodplain area around the dance stage:

- (CE) Remove the berm on the left bank
- (CE) Regrade the left bank to create a floodplain bench
- (CS) Remove eucalyptus trees and replant with native riparian trees
- (S) Replace failing drop structure with boulder step-pool
- Replace the dance stage on the lower floodplain area

3.1.3 Retrofit stormwater culvert

- (SM) Open up the culvert that drains under the rope course
- (SM) Create a bioswale to receive and direct culvert flows to creek by the 2nd road bridge

3.2 OTHER ACTIONS

- Remove debris from the creek alongside the rope course and replant with native vegetation



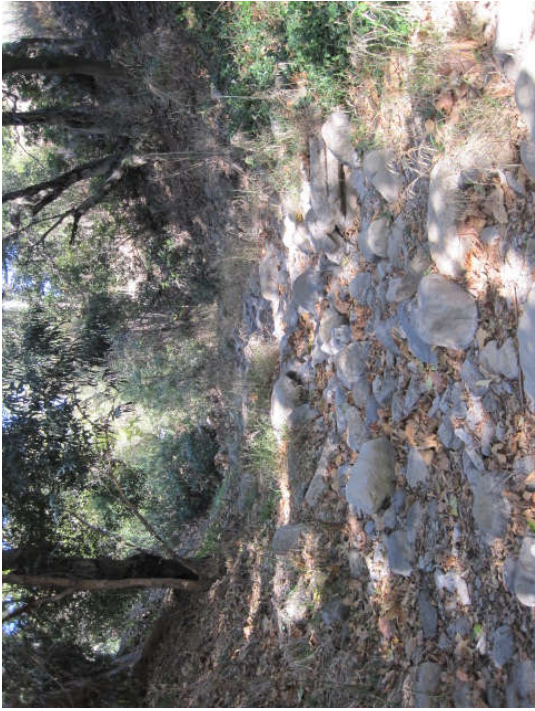
Medium confinement around rope course

Potential Actions: remove dumped debris



Earth dumping above grade control structure adjacent to the rope course (looking upstream). Reach is classified as Medium confinement.

Potential Actions: remove dumped debris



30-foot sub reach of Low confinement in a mostly Medium reach opposite Baruh Hall

Potential Actions: remove non-native hedge between Baruh Hall and the creek



Failing grade control structure adjacent to the landslide

Looking south (left) onto the toe of the landslide where flow impinges



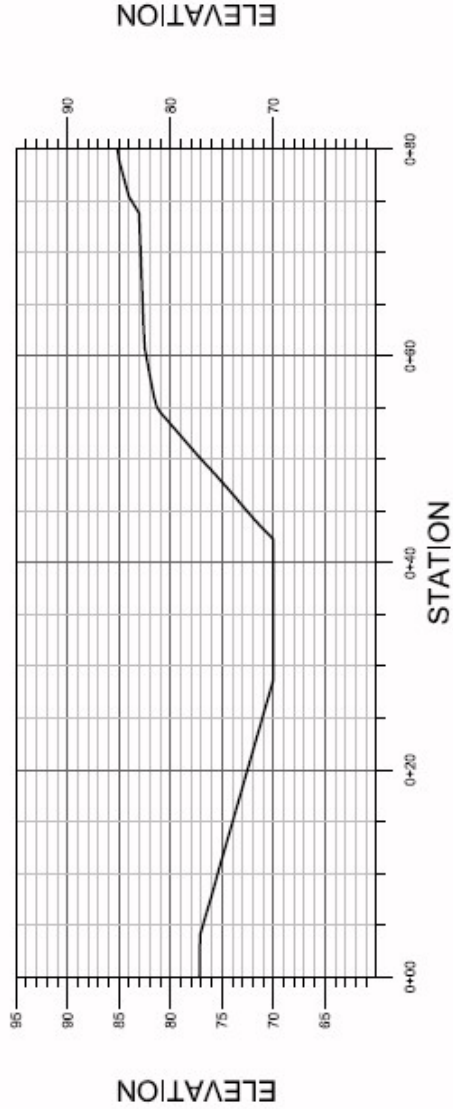
Highly confined reach upstream of bridge, adjacent to pool. This artificially straightened reach causes flow to concentrate and impinge on the toe of the landslide immediately downstream of the 3rd road bridge (left side below bridge in photo).

Potential actions: Widen bridge, lay back left bank (removing road) or buttress left bank (reconstructing road), stabilize landslide toe with vegetated rock, stabilize failing drop structure.



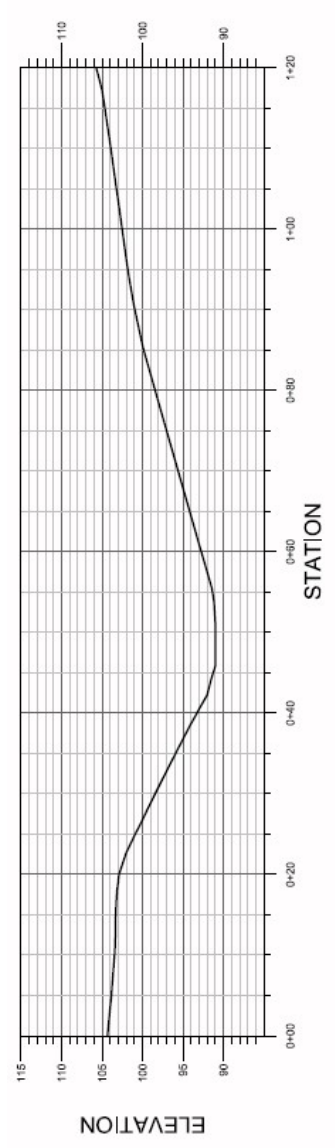
High confinement in the concrete-lined, straightened reach upstream of the swimming pool. Note undercutting of concrete retaining wall. Cross section 3A.

Potential Actions: repair failing sections of bank





Low confinement area downstream of the archery bridge, upstream of the dance stage. This reach is one of the least disturbed areas of Little Sycamore Creek and shows how much of the remaining creek may have appeared prior to development. Cross section 3B.



4 REACH 4

Reach 4 extends from the pedestrian bridge at the archery course (STA. 26+20) past the chapel and the 3rd road bridge to the pedestrian bridge at the downstream end of Middle Camp (STA 30+15). This reach is severely confined and has the highest proportion of hardened channel, with several sections defined by vertical masonry block and concrete walls.

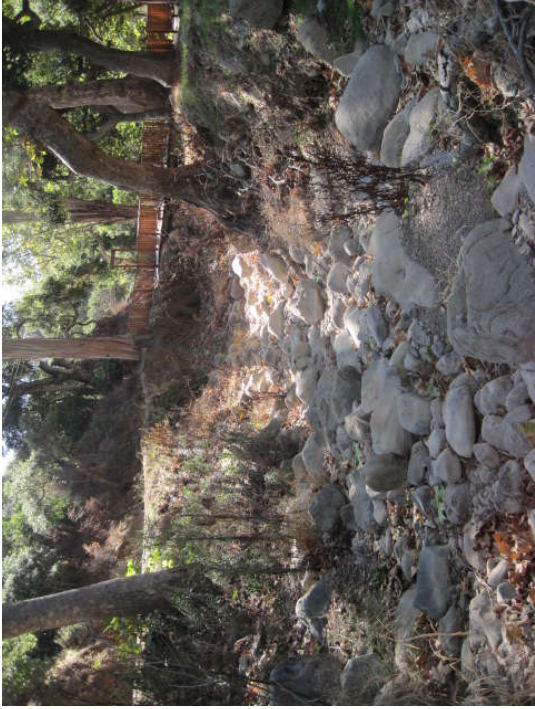
4.1 PRIORITY RESTORATION OPPORTUNITIES

- (S) Repair failing grouted drop structures and replace with boulder drop-pools
- (CE) Remove tire bank stabilization structures and replace with rock and biotechnical stabilization



Medium confinement around the archery footbridge

Potential Actions: No recommended actions



Transition to medium confinement near the archery area

Potential Actions: No recommended actions

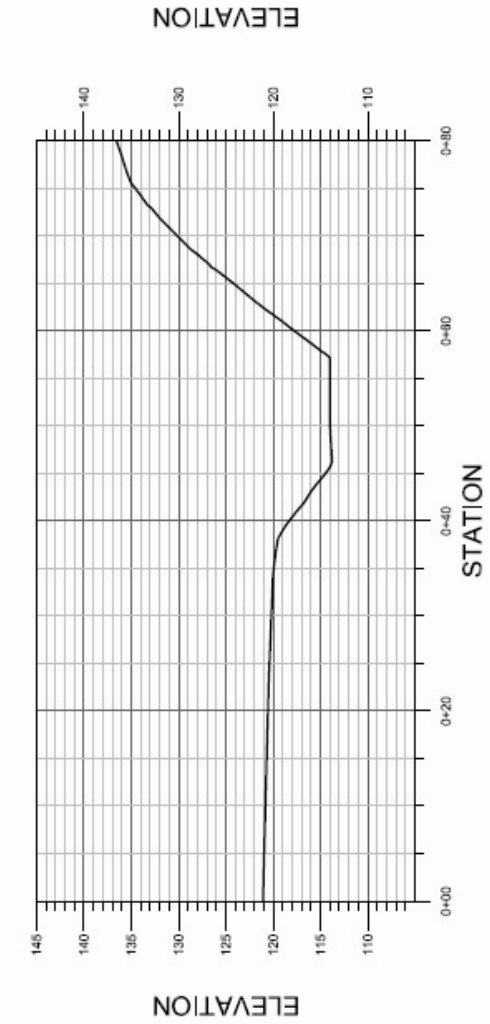


Failing drop structure by stormwater discharge pipe at STA 26+40

Potential Actions: replace failing drop structures with boulder step-pool or ramps



Deeply confined reach downstream of chapel. Cross section 4.

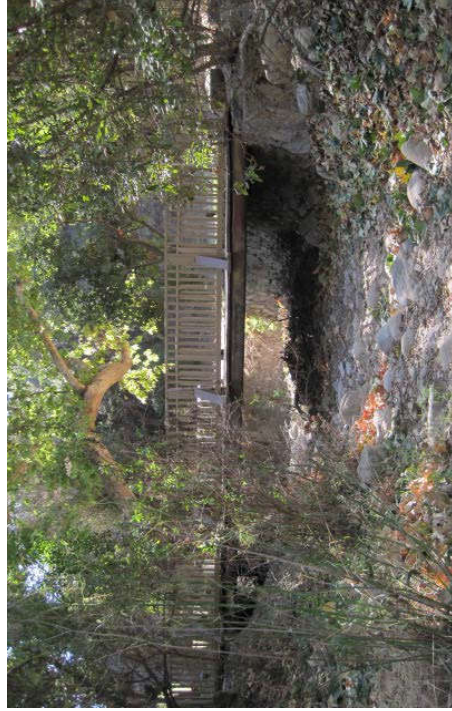




Close up of tire bank stabilization

Potential Actions: remove tires and replace with biotechnical bank stabilization

Looking upstream at road bridge (STA 29+10) showing channel incision on the downstream end.



Medium confinement looking downstream towards 3rd road bridge

Potential Actions: No recommended actions

5 REACH 5

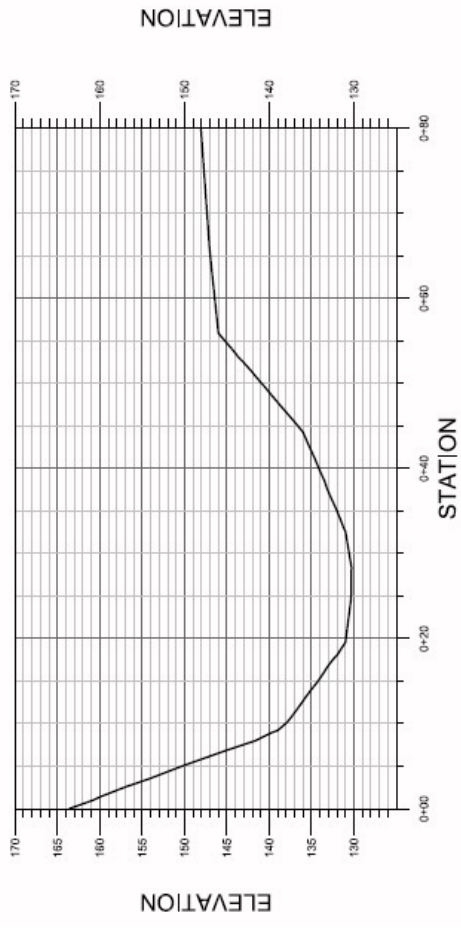
Reach 5 runs from the pedestrian bridge (STA 30+15) through Middle Camp to the ford crossing at the upstream property boundary (~STA 37+20). Overall the creek is moderately confined in this reach. Some organic material and dirt has been dumped on to the north bank, steepening it adjacent to the cabins. The south bank is eroded into bedrock and is naturally steep.

5.1 PRIORITY RESTORATION OPPORTUNITIES

- (CS) Remove dumped debris from north bank
- (S) Replace ford at upstream boundary with bridge for all-season access
- (S) Stabilize undercut drop structure at upstream boundary
- (SM) Formalize and control surface runoff from hillslope currently passing down road



Typical view of 'Medium' level confinement in Reach 5.
(Note: image is looking upstream while cross section is oriented looking downstream.) Cross section 5.



Grade control structure at ford on upstream property boundary. Note undercutting of road crossing.

Potential Actions: replace ford with bridge, stabilize drop with boulder step-pool

6 RECOMMENDED CREEK IMPROVEMENT ACTIONS

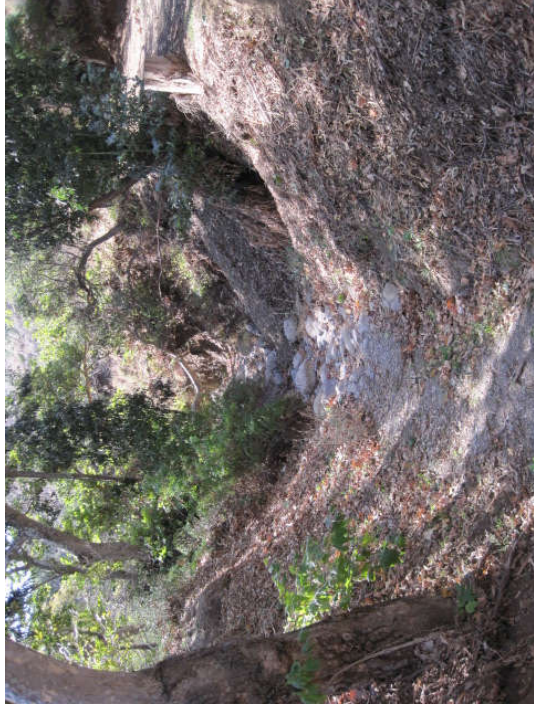
Recommended actions range from adaptive management-based creek stewardship actions and best management practices to more specific and ambitious stabilization and enhancement actions. Recommended actions are shown on Figures 2A and 2B (Appendix A).

6.1 CREEK STEWARDSHIP ACTIONS (CS)

Creek Stewardship focuses on landscape maintenance activities based on long-term creek function and health; educational programming to establish understanding of the site and watershed. Actions include adapting and revising current landscape maintenance procedures to eliminate dumping deleterious debris (brush, lawn cuttings, cobble and rubble) into the creek. Additional actions include:

- Removal of historically-dumped soil and debris to restore the original creek cross section, and replanting with native vegetation
- Removal of non-native invasive plants such as English Ivy and replacement with appropriate native vegetation
- Phased removal of eucalyptus trees and replacement by natives such as Sycamore and Oak
- Use of biotechnical bank stabilization techniques if future bank erosion occurs (instead of ad hoc measures such as concrete rubble and tires)
- Water quality monitoring programs
- Vegetation and biotic conditions survey programs
- Volunteer creek clean-up and planting days

Example of a reach where dumped debris has confined the creek cross section and created steep, unvegetated banks



6.2 STABILIZATION ACTIONS (S)

Stabilization includes discreet actions/constructed projects intended specifically to stabilize the creek channel and banks at actively eroding sites. Little Sycamore Canyon Creek is actively eroding in several locations and the degree and implications of the erosion varies significantly. Stabilization actions include:

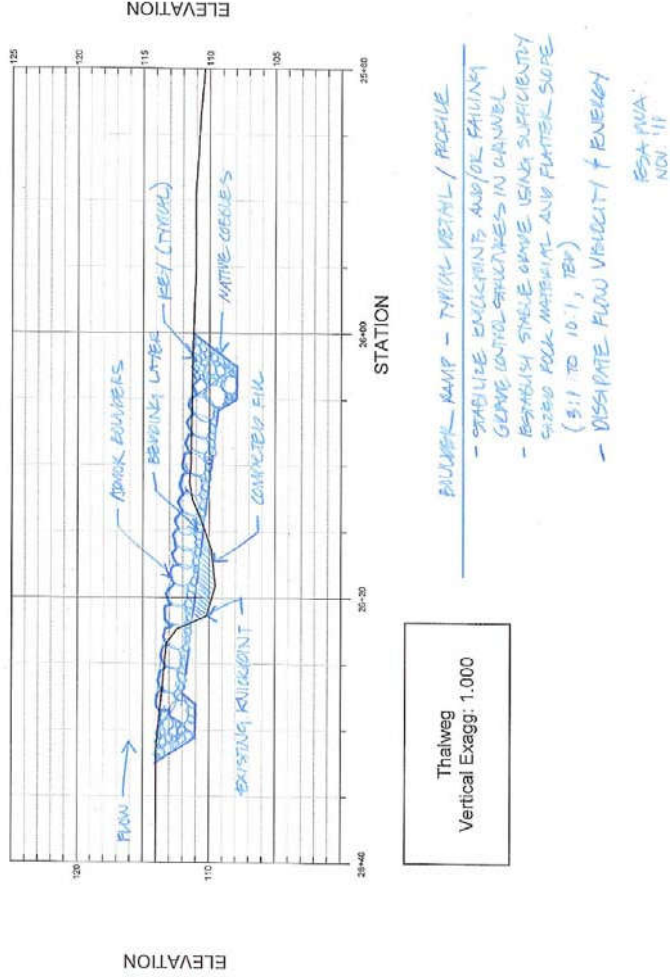
- Stabilize failing grade control structures by retrofitting/replacing them with loose (not grouted) boulder step-pools or roughened rock ramps.
- Stabilize the landslide in Reach 3. This would involve either laying back (excavating) the existing left bank (eliminating the failed road section) or reconstructing the bank on a stabilized toe structure (allowing the road/trail to be reincorporated). In both cases a rock toe would be required to prevent future bank erosion. It should be noted that although stabilizing the bank toe will increase slope stability compared to current conditions, it will not be sufficient in itself to prevent some future movements in the landslide.



Road bridge #2 is undersized for the channel and flows resulting in channel incision and flooding.



Example of a failing concrete drop structure.



Conceptual Sketch of Channel Stabilization Structure (Boulder Ramp)

6.3 CREEK ENHANCEMENT ACTIONS (CE)

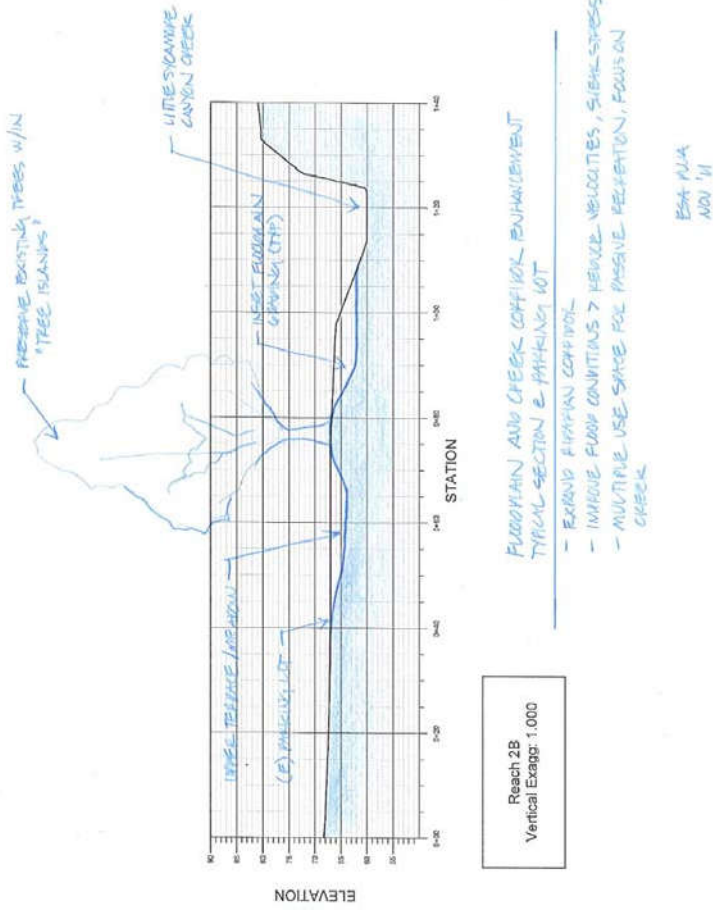
Creek Enhancement involves discreet actions/constructed projects to reestablish natural fluvial processes and the riparian corridor such as floodplain benches, road realignment, new bridges, etc. Suggested actions include the following:

- Replace bridges with wider spans or retrofit the existing bridges with box culverts to increase conveyance capacity. The highest priority bridges for replacement are road bridges 2 and 3. Road bridge 1 would also benefit from widening, though this is not as high a priority.
- Remove berms, widen portions of creek and lay back eroding and slumping banks to a more gentle angle to create low flow floodplains and benches, and to reduce flooding and erosion



A potential floodplain grading site (by the lower camp parking lot). Actions would include removing the shed and berm on the left, and lowering the terrace by approximately 6 feet to form a floodplain area next to the creek. The mature sycamores in the background would be preserved on a linear island between the creek and the floodplain.

Conceptual Sketch of Floodplain Bench



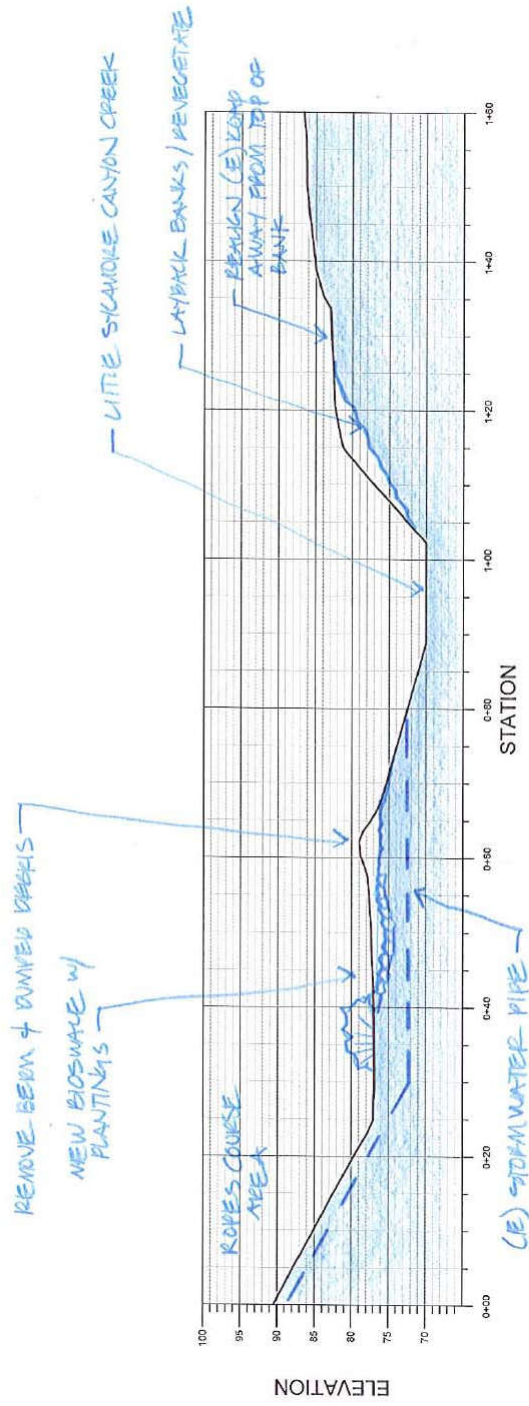
6.4 STORMWATER MANAGEMENT ACTIONS (SM)

Stormwater management includes reconfiguration of landscape and utilities features to reduce the impacts of concentrated stormwater runoff and provide passive treatment of runoff. Activities to reduce the erosive effect of stormwater include:

- Remove asphalt areas and replace with pervious surfaces
- Redirect concentrated runoff (roofs, driveways, parking areas, etc) to vegetated bioswales, planted detention basins, etc
- Retrofit the culverts entering the creek opposite the rope course and detain/infiltrate the runoff through a bioswale



Rope course showing the existing stormwater pipeline alignment (dashed line). Insert shows example of a bioswale infiltrating stormwater.



BANK STABILIZATION AND STORMWATER IMPROVEMENTS TYPICAL SECTION & CONFIDENCE BUILDING AREA

- LAY BACK OVER-STEEPENED BANKS, REALIGN ROAD
- REMOVE BERM AND DUMPED DEBRIS
- REASON & CONNECT STORMWATER PIPE TO VEGETATED BIOSWALE / ABANDON FROM CREEK
- MAINTAIN ROPES COURSE

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NOV '11

Conceptual Sketch of Stormwater Treatment Bioswale

APPENDIX A

Figures

Figure 1A Site Map and Reach Classification

Figure 1B Site Map and Reach Classification

Figure 2A Map of Recommended Creek Improvement Actions

Figure 2B Map of Recommended Creek Improvement Actions

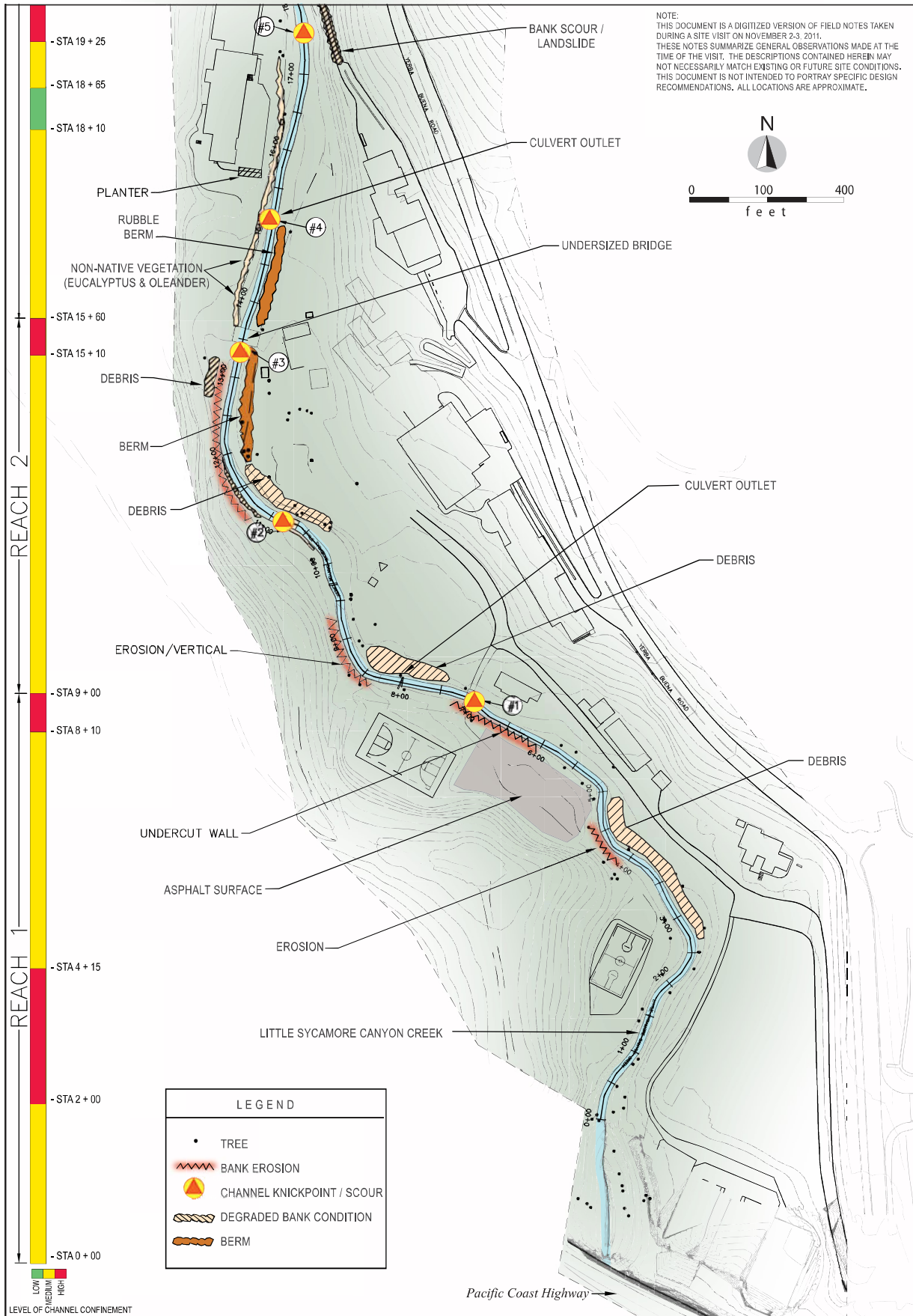


figure 1A

WTBC-Little Sycamore Canyon Creek

Site Map and Reach Classifications

