November 17, 2020

CASE#: CDP_2019-0032
DATE FILED: 8/27/2019
OWNER & APPLICANT: SCOTT & ELIZABETH WAHLBERG
AGENT: WYNN COASTAL PLANNING
REQUEST: Standard Coastal Development Permit request to construct a single-family residence and ancillary development.
LOCATION: In the Coastal Zone, 1± miles north of the Town of Gualala center, 0.1± mile west of the intersection of Big Gulch Road (CR 543) with State Route 1 (SR 1), located at 47101 Big Gulch Road, Gualala; APN: 145-121-18.
ENVIRONMENTAL DETERMINATION: Categorically Exempt
SUPERVISORIAL DISTRICT: 5
STAFF PLANNER: JULIANA CHERRY
RESPONSE DUE DATE: December 1, 2020

PROJECT INFORMATION CAN BE FOUND AT:
https://www.mendocinocounty.org/government/planning-building-services/public-agency-referrals

Mendocino County Planning & Building Services is soliciting your input, which will be used in staff analysis and forwarded to the appropriate public hearing. You are invited to comment on any aspect of the proposed project(s). Please convey any requirements or conditions your agency requires for project compliance to the project coordinator at the above address, or submit your comments by email to pbs@mendocinocounty.org. Please note the case number and name of the project coordinator with all correspondence to this department.

We have reviewed the above application and recommend the following (please check one):

☐ No comment at this time.

☐ Recommend conditional approval (attached).

☐ Applicant to submit additional information (attach items needed, or contact the applicant directly, copying Planning and Building Services in any correspondence you may have with the applicant)

☐ Recommend denial (Attach reasons for recommending denial).

☐ Recommend preparation of an Environmental Impact Report (attach reasons why an EIR should be required).

☐ Other comments (attach as necessary).

REVIEWED BY:

Signature ___________________ Department ___________________ Date _______________
CASE: CDP_2019-0032

OWNER: SCOTT & ELIZABETH WAHLBERG

APPLICANT: SCOTT & ELIZABETH WAHLBERG

AGENT: TARA JACKSON AND BLAIR FOSTER, WYNN COASTAL PLANNING & BIOLOGY

REQUEST: Standard Coastal Development Permit to construct a single family residence and ancillary development.

LOCATION: In the Coastal Zone, 1± miles north of the Town of Gualala center, 0.1± mile west of the intersection of Big Gulch Road (CR 543) with State Route 1 (SR 1), located at 47101 Big Gulch Road, Gualala (APN: 145-121-18).

APN/S: 145-121-18-00

PARCEL SIZE: 0.88 ACRE

GENERAL PLAN: Rural Residential (RR5(1):U)

ZONING: Rural Residential (RR:5)

EXISTING USES: Vacant Land

DISTRICT: 5

RELATED CASES:

<table>
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<tr>
<th>ADJACENT GENERAL PLAN</th>
<th>ADJACENT ZONING</th>
<th>ADJACENT SIZES</th>
<th>ADJACENT LOT ZONING</th>
<th>ADJACENT USES</th>
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<td>RR5[RR1]</td>
<td>±1 Acre</td>
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<td>Residential</td>
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REFERRAL AGENCIES

LOCAL
- Department of Transportation (DOT)
- Environmental Health - FB
- South Coast Fire District
- North Gualala Water Company

STATE
- California Coastal Commission
- California Dept. of Fish & Wildlife

FEDERAL
- US Department of Fish & Wildlife

ADDITIONAL INFORMATION: This November 2020 packet includes revised and updated information, including:
- 9-21-2020 Revised Application Forms
- Coastal Habitat Mitigation and Enhancement Plan, WRA, July 2020
- ESHA Survey Addendum, WRA, July 27, 2020
- Response to Coastal Commission Comments, Brunsing Associates, June 11, 2020

On November 1, 2019, CDP_2019-0032 was distributed to agencies for comment. Agency comments were received and this packet includes the applicant’s response to comments received. If you would like a copy of the 2019 Referral Packet, please contact Planner Cherry. Included with the 2019 packet were: Application forms with revised project description (p 2), revised site plan (p 7), CalFire Permit #53-19 (pp 16-18); and Gualala Community Services District letter (p 15); Addendum (page 1) and Environmentally Sensitive Habitat Area Survey (pp 2-61); and Geotechnical Investigation Report.

Please send your comments to cherryj@mendocinocounty.org

STAFF PLANNER: J CHERRY or cherryj@mendocinocounty.org  DATE: 11/8/2020
ENVIRONMENTAL DATA

1. MAC:
Gualala Municipal Area Council. See exhibit Water Districts

2. FIRE HAZARD SEVERITY ZONE:
Moderate Fire Hazard Rating. See exhibit Fire Hazard Zones & Responsibility Areas

3. FIRE RESPONSIBILITY AREA:
South Coast Fire Protection District. See exhibit Fire Hazard Zones & Responsibility Areas

4. FARMLAND CLASSIFICATION:
Urban & Built-Up Land. See exhibit Farmland Classifications

5. FLOOD ZONE CLASSIFICATION:
No

6. COASTAL GROUNDWATER RESOURCE AREA:
Critical Water Area. See exhibit Ground Water Resources

7. SOIL CLASSIFICATION:
Western Soil 225. See exhibit Western Soils Classifications

8. PYGMY VEGETATION OR PYGMY CAPABLE SOIL:

9. WILLIAMSON ACT CONTRACT:
No

10. TIMBER PRODUCTION ZONE:
No

11. WETLANDS CLASSIFICATION:
Estuarine & marine wetland. See exhibit Wetlands

12. EARTHQUAKE FAULT ZONE:
No

13. AIRPORT LAND USE PLANNING AREA:
No

14. SUPERFUND/BROWNFIELD/HAZMAT SITE:
No

15. NATURAL DIVERSITY DATABASE:
Yes

16. STATE FOREST/PARK/RECREATION AREA ADJACENT:

17. LANDSLIDE HAZARD:
Bluff topography. See exhibit Topographic Map

18. WATER EFFICIENT LANDSCAPE REQUIRED:

19. WILD AND SCENIC RIVER:

20. SPECIFIC PLAN/SPECIAL PLAN AREA:

21. STATE CLEARINGHOUSE REQUIRED:
Coastal Commission, CalFire, CDFW

22. OAK WOODLAND AREA:

23. HARBOR DISTRICT:

FOR PROJECTS WITHIN THE COASTAL ZONE ONLY

24. LCP LAND USE CLASSIFICATION:
RR-5[RR-1]. See exhibit LCP Land Use Map 31: Gualala

25. LCP LAND CAPABILITIES & NATURAL HAZARDS:
Non-prime agricultural lands. Coastal erosion non-critical for present development. See exhibit LCP Land Capabilities & Natural Hazards.

26. LCP HABITATS & RESOURCES:
Off shore rocky intertidal areas. See exhibit LCP Habitats & Resources

27. COASTAL COMMISSION APPEALABLE AREA:
Appeal Jurisdiction. See exhibit Post LCP Certification & Appeal Jurisdiction

28. CDP EXCLUSION ZONE:
No

29. HIGHLY SCENIC AREA:
No

30. BIOLOGICAL RESOURCES & NATURAL AREAS:
See Biological and Botanical Scoping Survey and its amendment prepared by WRA

31. BLUFTOP GEOLOGY:
See Geotechnical Investigation Report prepared by Bruinsing & Associates
# COASTAL ZONE APPLICATION FORM

## APPLICANT

<table>
<thead>
<tr>
<th>Name</th>
<th>Scott and Elizabeth Wahlberg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailing Address</td>
<td>30555 Trabuco Canyon Road</td>
</tr>
<tr>
<td>City</td>
<td>Trabuco Canyon</td>
</tr>
<tr>
<td>State</td>
<td>CA</td>
</tr>
<tr>
<td>Zip Code</td>
<td>92679</td>
</tr>
<tr>
<td>Phone</td>
<td>(949) 505-2097</td>
</tr>
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</table>

## PROPERTY OWNER

<table>
<thead>
<tr>
<th>Name</th>
<th>Same as above</th>
</tr>
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<tr>
<td>Mailing Address</td>
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<td></td>
</tr>
<tr>
<td>Zip Code</td>
<td></td>
</tr>
<tr>
<td>Phone</td>
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## AGENT

<table>
<thead>
<tr>
<th>Name</th>
<th>Tara Jackson, Wynn Coastal Planning</th>
</tr>
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<tbody>
<tr>
<td>Mailing Address</td>
<td>703 North Main Street</td>
</tr>
<tr>
<td>City</td>
<td>Fort Bragg</td>
</tr>
<tr>
<td>State</td>
<td>CA</td>
</tr>
<tr>
<td>Zip Code</td>
<td>95437</td>
</tr>
<tr>
<td>Phone</td>
<td>(707) 964-2537</td>
</tr>
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## PARCEL SIZE

- .88

## STREET ADDRESS OF PROJECT

47101 Big Gulch Road

## ASSESSOR'S PARCEL NUMBER(S)

145-121-18

I certify that the information submitted with this application is true and accurate.

[Signature]

Date: 9/21/2020

[Signature]

Date: 9/15/2020

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PBS Received 9-21-2020

PLANNING & BUILDING SERV
FORT BRAGG CA

APN 145-121-18
COASTAL ZONE - SITE AND PROJECT DESCRIPTION QUESTIONNAIRE

The purpose of this questionnaire is to relate information concerning your application to the Planning and Building Services Department and other agencies who will be reviewing your project proposal. Please remember that the clearer picture that you give us of your project and the site, the easier it will be to promptly process your application. Please answer all questions. Those questions which do not pertain to your project, please indicate "Not Applicable" or "N/A".

THE PROJECT

1. Describe your project and include secondary improvements such as wells, septic systems, grading, vegetation removal, roads, etc.

Construct a 1611 sq. ft. single-family residence with 1,294 sq. ft. of decks, and a 511 sq ft attached garage; maximum building height of 25' above natural grade; total square footage of single-family residence with detached garage is 2122 sq ft. Install roof-mounted solar panels, septic tank, (to accommodate STEP system) 4ft tall split rail/wire mesh fence with gate, water storage tank, propane tank, 21ft tall flag pole, trenching for utilities including to existing sewer. Proposing two well locations. If proposed well A produces sufficient water will convert it to a production well. If it does not produce sufficient water, propose drilling in proposed well B location and upon sufficient water will convert to production well. Proposed driveway will be gravel at entrance and then transition to concrete.

2. If the project is residential, please complete the following:

<table>
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<tr>
<th>TYPE OF UNIT</th>
<th>NUMBER OF STRUCTURES</th>
<th>SQUARE FEET PER DWELLING UNIT</th>
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<tr>
<td>Single Family</td>
<td>One</td>
<td>2122</td>
</tr>
<tr>
<td>Mobile Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multifamily</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If Multifamily, number of dwelling units per building:

3. If the project is commercial, industrial, or institutional, complete the following:

Total square footage of structures: __________________________
Estimated employees per shift: __________________________
Estimated shifts per day: __________________________
Type of loading facilities proposed: __________________________

4. Will the proposed project be phased?  □ Yes  □ No
If Yes, explain your plans for phasing.
5. Are there existing structures on the property?  □ Yes  □ No
If yes, describe below and identify the use of each structure on the plot plan.

6. Will any existing structures be demolished?  □ Yes  □ No
Will any existing structures be removed?  □ Yes  □ No
If yes to either question, describe the type of development to be demolished or removed, including the relocation site, if applicable.

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FORT BRAGG CA

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7. Project Height. Maximum height of structure 25'-0' feet.

8. Lot area (within property lines): 3,833.280 square feet  □ acres

9. Lot Coverage:

<table>
<thead>
<tr>
<th></th>
<th>EXISTING</th>
<th></th>
<th>NEW PROPOSED</th>
<th></th>
<th>TOTAL</th>
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<tr>
<td></td>
<td>square feet</td>
<td>square feet</td>
<td>square feet</td>
<td>square feet</td>
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<tr>
<td>Building coverage</td>
<td>0</td>
<td>0</td>
<td>3173</td>
<td>3173</td>
<td></td>
</tr>
<tr>
<td>Paved area</td>
<td>0</td>
<td>0</td>
<td>895</td>
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</tr>
<tr>
<td>Landscaped area</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Unimproved area</td>
<td>3,833.280</td>
<td>3173</td>
<td>3173</td>
<td>3833280</td>
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GRAND TOTAL: 3833280 square feet
(Should equal gross area of parcel)


11. Parking will be provided as follows:

<table>
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<th>Number of Spaces</th>
<th>Existing</th>
<th>Proposed</th>
<th>Total</th>
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<tr>
<td>Number of covered spaces</td>
<td>2</td>
<td>Size 18' x 10'</td>
<td></td>
</tr>
<tr>
<td>Number of uncovered spaces</td>
<td></td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>Number of standard spaces</td>
<td></td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>Number of handicapped spaces</td>
<td></td>
<td>Size</td>
<td></td>
</tr>
</tbody>
</table>
12. Utilities will be supplied to the site as follows:

A. Electricity
   - Utility Company (service exists to the parcel).
   - Utility Company (requires extension of services to site: 1200 feet 0 miles
   - On Site generation, Specify: ________________________________
   - None

B. Gas
   - Utility Company/Tank
   - On Site generation, Specify: Propane Tank
   - None

C. Telephone: □ Yes □ No

13. Will there be any exterior lighting? □ Yes □ No
   If yes, describe below and identify the location of all exterior lighting on the plot plan and building plans.
   Title 24 and night sky approved exterior lighting fixtures installed along the perimeter of the house as marked on A1.1.

14. What will be the method of sewage disposal?
   - Community sewage system, specify supplier Guatalu Community Service District
   - Septic Tank
   - Other, specify ________________________________

15. What will be the domestic water source?
   - Community water system, specify supplier ________________________________
   - Well
   - Spring
   - Other, specify ________________________________

16. Is any grading or road construction planned? □ Yes □ No
   If yes, grading and drainage plans may be required. Also, describe the terrain to be traversed (e.g., steep, moderate slope, flat, etc.).
   Flat

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For grading and road construction, complete the following:

A. Amount of cut: ________________________ cubic yards
B. Amount of fill: _______________________ cubic yards
C. Maximum height of fill slope: __________________ feet
D. Maximum height of cut slope: __________________ feet
E. Amount of import or export: __________________ cubic yards
F. Location of borrow or disposal site: ____________________________
17. Will vegetation be removed on areas other than the building sites and roads? □ Yes □ No
   If yes, explain:

18. Does the project involve sand removal, mining or gravel extraction? □ Yes □ No
   If yes, detailed extraction, reclamation and monitoring may be required.

19. Will the proposed development convert land currently or previously used for agriculture to another use? □ Yes □ No
   If yes, how many acres will be converted? ____________ acres (An agricultural economic feasibility study may be required.)

20. Will the development provide public or private recreational opportunities? □ Yes □ No
    If yes, explain:

21. Is the proposed development visible from:
   A. State Highway 1 or other scenic route? □ Yes □ No
   B. Park, beach or recreation area? □ Yes □ No

22. Will the project involve the use or disposal of potentially hazardous materials such as toxic substances, flammables, or explosives? □ Yes □ No
    If yes, explain:

23. Does the development involve diking, filling, dredging or placing structures in open coastal waters, wetlands, estuaries or lakes?
   A. Diking □ Yes □ No
   B. Filling □ Yes □ No
   C. Dredging □ Yes □ No
   D. Placement of structures in open coastal waters, wetlands, estuaries or lakes □ Yes □ No

   Amount of material to be dredged or filled? __________ cubic yards.

   Location of dredged material disposal site: __________________________

   Has a U.S. Army Corps of Engineers permit been applied for? □ Yes □ No

If you need additional room to answer any question, attach additional sheets.
July 27, 2020

Scott Wahlberg
30555 Trabuco Canyon Road, Suite 100
Trabuco Canyon, California 92679

Re: Addendum to Environmentally Sensitive Habitat Area (ESHA) Survey, 47101 Big Gulch Road, Mendocino County, California (CDP 2019-0032)

Introduction

The purpose of this addendum is to report the results of an additional site visit to 47101 Big Gulch Road (Study Area) in December 2019 to gather additional data in order to address California Department of Fish and Wildlife (CDFW) comments received in an email dated December 16, 2019. Comments received by CDFW requested further clarification of species cover within the non-native grassland to provide evidence that the nativity of the stand is not met (i.e. without 10 percent or more cover of native species), as well as further clarification on compensatory mitigation activities to mitigate impacts to stream, slough sedge, tufted hair grass (Deschampsia caespitosa) meadow, and coastal bluff morning glory (Calystegia purpurata ssp. saxicola) ESHA buffer.

The data gathered included plant cover data within the native and non-native grasslands and extent of iceplant. This is an addendum to the Environmentally Sensitive Habitat Area (ESHA) Survey drafted in May 2019 (WRA 2019).

Assessment Methodology

On December 27, 2019, WRA conducted a site visit to map the extent of iceplant (Carpobrotus chilensis) to be eradicated within the Study Area, and to gather species composition and relative and absolute percent cover of plant species within the tufted hair grass and common velvetgrass (Holcus lanatus) meadows. To map the extent of iceplant, the perimeter of iceplant was walked using a GPS unit. Areas of iceplant included portions of the Study Area where iceplant is characteristic in the canopy layer and above the edge of the cliff. Areas of iceplant are located outside of the mapped portions, however, these areas are located on unstable bluff face and cannot safely be eradicated; therefore they were not included. A rapid assessment following California Native Plant Society (CNPS) protocol (CNPS 2019) was conducted within the tufted hair grass meadow (native grassland) and common velvetgrass meadow (non-native grassland) to determine percent cover of plant species. The rapid assessment is not based on a taped plot, but visually estimated (the plot), within a representative portion of the entire stand with up to 20 of the dominant or characteristic species and their cover values recorded (CNPS 2019).
Assessment Results

Grassland Assessment

The area mapped as common velvet grass meadow is approximately 60 percent absolute cover of velvet grass. Native species within the common velvet grass includes tufted hair grass at 5 percent absolute cover, California blackberry (Rubus ursinus) at 5 percent absolute cover, golden aster (Heterotheca sessiliflora ssp. sessiliflora) at 5 percent absolute cover, and beach strawberry (Fragaria chiloensis) at 2 percent absolute cover; additional native species are present but at less than 1 percent cover. Therefore, native species comprise approximately 20 percent absolute cover within the common velvet grassland meadow.

Various sources were reviewed to determine if the frequency of native species within the velvet grass meadow met criteria for determining nativity. The membership rules for an area to be considered common velvet grass meadow is common velvet grass relative cover has to be greater than 50 percent (CNPS 2020). Additionally, the reference cited by CDFW regarding the new guidance, Classification of the Vegetation Alliances and Associations of Sonoma County Volume 1 and 2 (CDFW 2015), was reviewed to determine if the area mapped as common velvet grass may fit another alliance. The Sonoma County report states “if native species are present and co-dominant, key to an alliance dominated or characterized by natives”. The definition provided for “characterized” is a plant species’ cover is evenly distributed, providing a consistent structural component. Additionally, the Sonoma County report states that an area is mapped as common velvet grass if common velvet grass is dominant. The report goes on to state that an area mapped as tufted hair grass is “dominated or co-dominated by tufted hair grass, California oat grass (Danthonia californica), and/or coyote thistle (Eryngium armatum); if velvet grass has highest cover, those three species have at least 10 percent cover singly or combined”. Because the latter two species are not present and tufted hair grass has less than 10 percent cover, the area mapped as common velvet grass meadow does not meet tufted hair grass meadow. Additionally, the tufted hair grass is isolated to the western most portion and not evenly distributed within the common velvet grass meadow, so this also does not meet the definition of “characterized.” Further, common velvet grass has 60 percent cover and is dominant. Therefore, the area mapped as common velvet grass meets the membership rules of common velvet grass in both the Manual of California Vegetation, Online Edition as well as the Sonoma County report and should be considered as such.

As the tufted hair grass and the majority of the native species occur primarily in the western portion of the common velvet grass meadow, it could be concluded that the velvet grass is encroaching in a westerly direction and portions to the east have been invaded in the past. Development within the common velvet grass meadow will reduce the threat of common velvet grass to tufted hair grass meadow as it will reduce number and extent of seed production and other propagates (i.e roots, vegetation). Further, through proposed compensatory mitigation measures described below, portions of the common velvet grass will be planted with tufted hair grass and common velvet grass will be removed.

Compensatory Mitigation

The Study Area contains 0.51 acre of 50-foot ESHA buffer, with 0.31 acre occurring in the Least Damaging Area (LDA). The total proposed development footprint is 0.10 acre, with approximately 0.06 acre of 50-foot ESHA buffer permanently impacted through development activities (Figure 1).
To compensate for the 0.06 acre impacts to the buffer and a single coastal bluff morning glory, enhancement mitigation is recommended. A Habitat Mitigation and Monitoring Plan (HMMP) will be drafted outlining the enhancement efforts, methods of monitoring the efforts, and success criteria to be met to ensure enhancement efforts are successful. Efforts will include enhancement of 0.06 acre of coastal bluff scrub and 0.06 acre of common velvetgrass meadow and are summarized below.

Approximately 0.06 acre of iceplant is located along the westernmost edge of the Study Area within coastal bluff scrub and tufted hair grass grassland (Attachment 1). Because the scrub and grassland are suitable habitat for coastal bluff morning glory, removal of the iceplant is expected to allow for the expansion of native species into the native habitat, thereby creating additional suitable habitat for the morning glory. The areas mapped as iceplant contain 10 to 50 percent absolute cover of iceplant. The westernmost portion has 50 percent cover, while the southern portion has 10 percent. Iceplant is known to have the potential to spread widely and quickly, outcompeting natives and converting habitat; therefore any presence of iceplant poses a potential threat to native species/habitat. In areas suggested for iceplant removal, all iceplant will be removed and will need to be removed on a regular basis (once or twice per year) and have 0 percent cover for the duration of the monitoring period. The removal of the iceplant is expected to allow for native species to naturally expand into the open habitat with no supplemental planting.

In addition to enhancement of suitable habitat for tufted hair grass and coastal bluff morning glory through ice plant removal, enhancement of 0.06 acre in the portion of 50-foot buffer within the LDA will be conducted to mitigate impacts to the ESHA buffer.

The entire LDA provides opportunities for enhancement to mitigate impacts. However, enhancement efforts will focus in the region within the 50-foot buffer as these areas are closest to existing EHSA and were observed to have the highest density of native species. Enhancement efforts will remove non-natives and supplement native species cover with the planting of additional individuals of native species already present or suitable for existing habitat, with a focus on tufted hair grass. The goal of enhancement efforts is to increase absolute cover of native species relative to existing conditions.

An HMMP will be drafted to outline the locations of restoration, methods of restoration and success criteria. The HMMP will incorporate the above efforts and cover values.

**Summary**

In summary, the common velvet grass meadow meets criteria to be designated as non-native grassland due to absence of characteristic species and high percent cover of non-native plants. The removal of iceplant in 0.06 acres of tufted hair grass meadow and coastal bluff scrub as well as enhancement of 0.06 acre within the LDA will provide sufficient mitigation of the loss of ESHA buffer and a single coastal bluff morning glory, as mitigation efforts will expand suitable habitat for coastal bluff morning glory and enhance non-native grassland to native grassland in quantities similar to quantities impacted.
References

[CDFW] California Department of Fish and Wildlife. Classification of Sonoma County Vegetation Vol and Vol 2. 2015. Available online at:


[CNPS] 2019. CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Releve Field Form. February. Available online at:

WRA. 2019. Environmentally Sensitive Habitat Area (ESHA) Survey, 47101 Big Gulch Road, Gualala California. May.
Coastal Habitat Mitigation and Enhancement Plan

47101 Big Gulch Road
Gualala, Mendocino County, California

Prepared For:
Scott Wahlberg
30555 Trabuco Canyon Road
Trabuco Canyon, CA 92679

Contact:
Doug Spicher
spicher@wra-ca.com

Rhiannon Korhummel
korhummel@wra-ca.com

Date:
July 2020

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SEP 21 2020
PLANNING & BUILDING SERV
FORT BRAGG, CA
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Appendix A – Figures: Proposed Residence and Enhancement Areas
Appendix B – Plant Species Observed in the Project Area
1.0 INTRODUCTION

This Environmentally Sensitive Habitat Area (ESHA) Management Plan is provided in support of the property owners' proposed development at 47101 Big Gulch Road, Gualala, Mendocino County, California (Study Area). The purpose of the ESHA Management Plan (Plan) is to outline an approach to project construction adjacent to on-site ESHA and to provide a plan for the enhancement of impacted ESHA. The Plan includes best management practices (BMP) to avoid or minimize impacts to said ESHA as well as improve through enhancement of the on-site biological communities.

A Coastal Development Permit (CDP 2019-0032 Wahlberg, pending) for development of a single-family residence on the Study Area has been submitted to the County of Mendocino. In coastal properties, the Mendocino County Local Coastal Program (LCP) and the California Coastal Act (CCA) require the establishment of buffer zones to protect sensitive communities and other unique environmental features designated as ESHA\textsuperscript{1}. ESHA within the Study Area are fully described in the Environmentally Sensitive Habitat Area (ESHA) Survey (WRA 2019).

This Plan proposes to conduct enhancement activities within existing native and naturalized biological communities within the Study Area to improve the qualities of ESHA buffer from existing conditions. The intention of the plan is to ensure a minimum of 80 percent increase of native species absolute cover, relative to baseline cover. This criteria is set with the intention that the enhancement activities will be successful beyond the monitoring period and the ESHA buffers will have improved over existing conditions. Because of space limitations imposed by the boundary of the Parcel itself, enhancement activities are proposed in limited areas. The enhancement areas are all currently naturalized, non-native habitat, with the exception of some areas within an existing coastal bluff scrub.

2.0 DEFINITIONS

In several locations throughout this Plan, native and non-native plant species are mentioned. The following definitions of these terms have been included to assist the Project Area owner or manager in determining the status of plant species on the Study Area.

2.1 Native Plants

For the purposes of this ESHA Management Plan, “native” refers to plant species that are believed by the scientific community to have been present in coastal Mendocino County prior to the settlement of Europeans. The Jepson Manual (Hickman 1993), The Jepson Manual, 2nd Edition (Baldwin et al. 2012), Jepson eFlora (eFlora 2020), A Flora of the Vascular Plants of Mendocino County, California (Smith and Wheeler 1991), or online CalFlora Database (Caflora 2020) can be

\textsuperscript{1} The Mendocino County LCP defines ESHA as the sensitive resource itself (e.g., wetland, rare plant) and 50 feet outward (buffer) from said resource. To clarify for the reader, WRA discusses ESHA boundaries as two-fold: (1) the literal extent of the sensitive resource and (2) the 50-foot buffer, understanding that both are considered ESHA. For example, a shore pine forest is typically delineated at the dripline of the furthest extent of contiguous or near-contiguous canopy of shore pine trees (i.e., literal extent of the ESHA), while all areas 50 feet from this dripline are also accounted for (i.e., 50-foot buffer of the ESHA); both the literal extent and the 50-foot buffer constitute the entirety of the shore pine forest ESHA.
references for determining if a plant is native or non-native. The monitoring biologist, local botanists, or the local chapter of the California Native Plant Society (CNPS) can assist in the identification of plants and help determine if a plant found onsite or in nurseries can be considered locally-native. Cultivars of native plants should not be planted as these species may cross-pollinate with existing native species on-site.

2.2 Non-native Plants

As described above, any plant species not considered native to local coastal habitats are defined as "non-native". Non-native plants may pose no serious threat to the native coastal plant communities, and can be appropriately maintained in formal landscaping or vegetable gardening, with restrictions explained in Section 5.1. Certain non-native plants may also be defined as invasive, as described below, of which strict exclusion and management should be considered.

2.3 Invasive Plants

Non-native species with the potential to displace native plants, alter native vegetation (plant communities), diminish wildlife habitat, alter near surface hydrology, and/or otherwise have negative impacts on the local, native habitats are considered “invasive”. Invasive plants are most often, but not always, non-native species that are able to encroach upon and dominate or disrupt the native habitat being restored or preserved. Native species can be considered invasive if they grow aggressively on a site only because of human disturbance, such as high soil nutrients resulting from pollution, and they adversely affect the diversity or desirable functions of a native community.

The monitoring biologist and the property manager can refer to the California Invasive Plant Inventory (Cal-IPC 2020), Invasive Plants of California's Wildlands (Bossard et al. 2000), and Pest Ratings of Noxious Weed Species and Noxious Weed Seeds (CDFA 2003) to assist them in determining if a plant is an invasive species. Cal-IPC ranks invasive species as “High”, “Moderate”, or “Limited” impact, and any species from these lists found within the Study Area should be evaluated for potential threat to management goals. Even species ranked as “Limited” impact for California as a whole can have severe impacts on a particular Study Area due to local disturbance history and site conditions. Conversely, invasive species may occur in certain habitats and pose few threats due to on-site physical or biological conditions that limit the species ability to alter or disrupt the ecological functions of native habitats and species.

3.0 EXISTING CONDITIONS

The 0.59-acre Study Area is located west of Highway One approximately 2.0 aerial miles northwest of Gualala within a small subdivision. Currently the Study Area is undeveloped, situated on the western most portion of a coastal point. Historically, the regional land use was grazing, hay production, rural residential, timbering and fishing; however historic land use within the Study Area is unknown. Surrounding land use consists of properties with single-family homes on parcels of less than an acre.
3.1 Physical Environment

3.1.1 Climate and Hydrology

The Study Area is located within the coastal fog zone of Mendocino County where summer temperatures are buffeted by fog and fog drip contributes to annual rainfall totals. The average monthly maximum temperature of Point Arena (CA047009), located approximately 12 miles northwest of the Study Area, is 66.7 degrees Fahrenheit, while the average monthly minimum temperature is 40.2 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with an annual average of 41.28 inches. Precipitation bearing weather systems are predominantly from the west with the majority of rain falls between November and March, with a combined average of 33.08 inches (WRCC 2018).

The local watershed is Point Arena Creek-Frontal Pacific Ocean (HUC 12: 180101080906) and the regional watershed is Alder Creek-Frontal Pacific Ocean (HUC 8: 18010108), with no blue-line streams evident on the Gualala 7.5-minute quadrangle (USGS 1977) nor on NWI. One stream is located on the northern portion of the Study Area; water flows either intermittently or ephemeral as no water was flowing during the site visit in August. Outside of the stream, precipitation appears to infiltrate and/or runoff rapidly enough to prevent the formation of inundation or sculpt swales or channels.

3.1.2 Topography and Soils

The Study Area is situated on a coastal terrace, with a coastal bluff face between Bourns Gulch and Big Gulch watersheds. The majority of the topography is relatively flat (2 to 5 percent slopes) with the exception of the bluff face which is extremely steep (50 to 75 percent slopes) as it falls into the ocean and adjoining coastal strand. The aspect is neutral to westerly, with a slight northwesterly slope to the Study Area. Elevations range from approximately 8 to 60 feet above mean sea level.

The Soil Survey of Mendocino County, Western Part (USDA 2006) indicates that the Study Area contains one soil mapping unit: Windy hollow loam, 0 to 5 percent slopes. The parent soil series is described below.

Windy hollow Series: This series consists of very deep fine loamy soils formed in alluvium of igneous, metamorphic, and sedimentary rock situated on marine terraces at elevations ranging from 80 to 900 feet. These soils are somewhat poorly drained, with very slow through rapid runoff, and moderately slow permeability. Natural vegetation includes perennial and annual grasslands, and land uses include livestock grazing and wildlife habitat (USDA 2006).

A representative pedon of this series consists of an A-horizon of strongly to moderately acid (pH 5.3-5.6), dark brown (10YR 3/3), when moist, loam from approximately 0 to 16 inches depth. This is underlain by a B-horizon of moderately to slightly acid (pH 5.9-6.2) yellowish brown (10YR 5/4), when moist, gravelly clay loam from approximately 16 to 61 inches depth (USDA 2006).
3.2 Biological Environment

3.2.1 Vegetation

The Study Area's location, topography, soils, and climate affect the native vegetation that persists on-site. Land use history has affected the native plant communities creating areas dominated by non-native herbaceous species, particularly perennial grasses. The vegetation of the Study Area is typical of the North Coast with a mix of planted trees and ruderal herbs within the more disturbed portions along roadsides and neighboring parcels and common coastal native species in the less impacted portion on the coastal terrace and bluffs. The Study Area contains six broadly defined plant communities (vegetation alliances): (1) common velvet grass meadow (non-native grassland); (2) tufted hair grass meadow (native grassland/coastal terrace prairie); (3) northern coastal bluff scrub; (4) Monterey Cypress woodland; (5) coastal brambles; and (6) slough sedge swards. Additionally, an intermittent/ephemeral stream is located within the Study Area.

Northern Coastal Bluff Scrub. No Rank. Northern coastal bluff scrub is dominated by low growing perennial shrubs and herbs and occurs on coastal bluffs and terraces exposed to constant high winds and salt spray along the northern California coastline (Holland 1986). Within the Study Area the northern coastal bluff scrub was dominated by a mixture of woody shrubs and perennial and annual grasses, including seaside daisy (Erigeron glaucus), coast buckwheat (Eriogonum latifolium), golden aster (Heterotheca sessiliflora ssp. bolanderi), maritime brome (Bromus maritimus), beach strawberry (Fragaria chiloensis), Bodega morning glory (Calystegia purpurea ssp. saxicola), coast morning glory (Calystegia purpurea ssp. purpurea), and ice plant (Carpobrotus chilensis). This community was located along the exposed northern, western and southern perimeter (Appendix A, Figure 2). This community is considered to be an ESHA as it supports special-status plants and is generally regarded by the County and CCC as an area of special biological importance.

Tufted Hair Grass Meadows. Rank G5S4. Tufted hair grass meadows are dominated by tufted hair grass and typically occur on coastal bluffs and terraces along the California coastline (CNPS 2018b). Tufted hair grass meadow occurred primarily in the central portion of the Study Area on the exposed terrace (Figure 2). Tufted hair grass was dominant and additional observed species included rough cats ears (Hypochaeis radicata), golden aster, Henderson's angelica (Angelica hendersonii), maritime brome, six week fescue (Festuca myuros), and velvet grass (Holcus lanatus). This community is considered to be an ESHA as it supports special-status plants and is generally regarded by the County and CCC as an area of special biological importance.

Slough Sedge Swards. Rank G4S3. Slough sedge swards are areas dominated by slough sedge and typically occur in fresh to saline seasonally flooded swales and shallowly inundated woods, meadows, roadside ditches, coastal swamps, and river banks on mucky soils with high organic matter (CNPS 2018b). Within the Study Area, two small patches of slough sedge sward were located within the stream gully, adjacent to and within the top of bank (TOB) of the stream (Figure 2). These areas were dominated by slough sedge with poison oak (Toxicodendron diversilobum), maritime plantain (Plantago maritima), pennyroyal mint (Mentha pulegium), bentgrass (Agrostis sp.) and rush (Juncus sp.). Evidence of hydric soils (redox concentrations along pore linings) and hydrology (oxidized rhizospheres) were observed within these patches. This community is considered to be an ESHA as it meets the LCP and CCC definition of a wetland.
Stream. An intermittent/ephemeral stream is located along the northern boundary of the Study Area. The stream enters the Study Area from a neighboring parcel and flows southwest to the ocean (Figure 2). The eastern portion of the stream (edge of Study Area to western edge of Monterey Cypress) flows within a small channel with a TOB approximately 3-feet wide and a barren dirt thalweg. The banks are vertical and approximately 3-feet high. Vegetation on the banks of the stream along this portion is dominated by California blackberry (Rubus ursinus) and velvet grass. There is a shift in depth of bedrock along a small portion of the stream, causing an approximately 8-10 foot drop in the stream elevation along a steep surface of bedrock (see Appendix D for photographs of the feature) at which point the stream enters a small gully. The gully is approximately 10 to 12 feet deep with nearly vertical walls. Within this portion of the stream, the TOB ranges from 3 to 5 feet wide and has a scoured bedrock thalweg. There is no vegetation within the TOB except for a few small patches of slough sedge sward as described above. While no water was flowing at the time of the site visit in August, evidence of hydrology observed included water stained rocks, sediment deposition, and scour. This feature is considered and ESHA as it meets the LCP and CCC definition of a stream.

Common Velvet Grass Meadows. No Rank. Common velvet grass meadows are areas dominated by velvet grass typically located on coastal bluffs and terraces, moist pastures, and wetlands at the driest moisture levels (CNPS 2018b). Within the Study Area, common velvet grass is located in the less exposed eastern portion (Figure 2). Areas mapped as common velvet grass were dominated by velvet grass and included other non-native species including wild radish (Raphanus sativus), sweet vernal grass (Anthoxanthum odoratum), bull thistle (Cirsium vulgare), and fennel (Foeniculum vulgare). Native species observed included California blackberry, coyote brush (Baccharis pilularis), woolly sunflower, and Douglas iris (Iris douglasii). One individual of Bodega morning glory was observed within this community. This community is not an ESHA.

Coastal Brambles. Rank G4S3. Coastal brambles are areas dominated by native blackberry (Rubus spp.) and typically located on coastal bluffs, headlands, exposed slopes and gaps in forest lands within the northern Coast Range (CNPS 2018b). Within the Study Area, a patch of coastal brambles, dominated by California blackberry was located along the TOB of the stream. Poison oak was nearly 50 percent of the canopy. Additional associated species included Henderson's angelica, slough sedge, and yarrow (Achillea millefolia). This community is not an ESHA as it is dominated by California blackberry.

Monterey Cypress Woodland – Planted. No Rank. Within the eastern portion of the Study Area, planted Monterey cypress (Hesperocyparis macrocarpa) form a small stand. The understory is non-native grassland similar to the common velvet grass community described above. Two planted Monterey cypress which were planted on a neighboring property are located along the stream. Historical aerial photographs (Google Earth 1998-2013), and the linear patterns of the placement of the trees indicate that they were planted for visual screening and a windbreak. Although Monterey cypress is endemic to California, it is not considered native north of San Francisco (Baldwin et al. 2012, CNPS 2018, Cal-IPC 2018).

3.2.2 Plant and Wildlife Species

The Study Area contains a floristic diversity consistent with the plant communities, general setting (marine terrace), and land use history of coastal Mendocino County. Sixty-one species have been observed within the 0.59-acre Study Area, of which 40 are considered native to California and 39 to coastal Mendocino County. Three special-status plant species occur within the Study Area,
Mendocino coast paintbrush (Castilleja mendocinensis, CRPR 1B), coastal bluff morning glory (Calystegia purpurata ssp. saxicola, CRPR 1B), and short-leaved evax (Hesperevax sparsiflora var. brevifolia, CRPR 1B); consequently these are considered rare plant ESHA. These species are situated in the western most portion of the Study Area within the tufted hair grass meadow and northern coastal bluff scrub. A single individual of coastal bluff morning glory is located within the common velvetgrass meadow.

The Study Area supports an array of wildlife species common to the North Coast of California. Birds likely utilize the site for nesting, cover, overwintering, foraging, and resting. Special-status wildlife have been evaluated, with only Behren’s silverspot butterfly (Speyeria zerene behrensii, FE) initially deemed to have the potential to utilize the Study Area. Protocol-level survey for the known larval food plant, dog violet (Viola adunca) was conducted in June 2019 and no dog violet was observed, therefore while initially determined to have potential, Behren’s silverspot butterfly is unlikely to occur in the Study Area. Surveys for non-special-status bird species protected under the Migratory Bird Treaty Act (MBTA) have been intentionally deferred because it may not be necessary to do so (see Section 5.3).

### 4.0 PROJECT DESCRIPTION AND IMPACTS

#### 4.1 Project Description

The Project Area consists of the entire Least Damaging Area (LDA), the location of which was determined though a buffer analysis (WRA 2019). The entire Project Area is within 100-foot ESHA buffers, with the western portion of the Project Area situated within the 50-foot buffer. The proposed project consists of a new single-family residence, attached garage, and driveway. The design is for a 1,500 square foot residence and a 500 square foot garage. The house will have a raised wraparound deck. The dwelling will connect to a new well and septic tank and connection to existing utilities (sewer, electric), install a 325 gallon propane tank, and an 5,000 gallon water storage tank. The proposed residence footprint will be entirely within Monterey cypress woodland and non-native grassland areas. Prior to the development of the residence, test wells will be drilled to determine if there is sufficient water within the property. The location of the preferred test well is in the south east portion of the LDA; if testing indicates insufficient water at that location, an additional site is proposed, in the northern portion of the LDA. Access to the test well locations may require an access route to be created from Big Gulch Road to the well. The access route will be created using a small excavator/grading which will scrape the vegetation for some or all of the length of the route. Tree limbing may occur to gain access to the test well locations.

A fence will be installed as a barrier of visitation to the literal extent of on-site ESHA. For portions of the fence within the enhancement areas, posts will be placed on 10-foot centers, and back-filled with native soil with no concrete or other exogenous fill. The fence should be a minimum of 4 feet tall. The wraparound deck will also inhibit visitation to the literal extent of on-site ESHA as it will physically inhibit visitation and will also provide an area for recreating on the property which is not in ESHA.

No alternatives were explored for the location of the proposed residence as the location of existing ESHA and County building code and setbacks highly constrain potential locations to a single area, the LDA, identified during the ESHA impacts assessment (WRA 2019). Due to ESHA limitations
adjacent to the very limited potential development areas and geotechnical hazards (coastal bluff), it is anticipated that the issuance of the CDP 2019-0032 will require compensatory mitigation for impacts to the 50-foot ESHA buffer as condition of approval. Therefore, this Plan is intended to compensate for said impacts and guide the enhancement of ESHA and ESHA buffer. The Plan also provides information for future stewardship of the enhancement areas as well as the Project Area as a whole.

4.2 Project Impacts

As noted above, the proposed residence is located within the LDA of the Study Area. Given the constraints imposed by the size of the parcel, building regulations and setbacks, and location of existing ESHA, no alternative locations are possible, and it is not possible to avoid all impacts to the 50-foot buffer of on-site ESHA.

Approximately 0.13 acre of 50-foot buffer of stream, slough sedge sward, coast morning glory, and coastal bluff scrub is located within the LDA. Of this, 0.06 acre will be permanently impacted as well as a single coastal bluff morning glory. Impacts associated with project construction are shown in Appendix A. Temporary impacts include trampling of non-native grassland for the purposes laying down materials and equipment during construction. Permanent impacts include vegetation and tree removal and excavation of non-native grasslands for the footprint of the proposed residence. The construction footprint required for this site would result in an unknown extent of temporary impacts, all entirely within non-native grassland and Monterey cypress woodland, but no impacts to the literal extent of ESHA, except for a single individual of coastal bluff morning glory.

Project related activities will not directly impact the literal extent, but will be in the 50-foot buffer of other on-site ESHA, including stream, tufted hairgrass meadow, slough sedge swards, coastal bluff scrub, and coastal bluff morning glory.

5.0 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

Measures designed to avoid or minimize impacts to potential ESHA within the Study Area have been incorporated into the project design. Where it is not possible to avoid impacts to potential ESHA, mitigation measures are included to compensate for such impacts.

5.1 General Measures

5.1.1 Pre-Construction

- Prior to ground disturbance or clearing of herbaceous vegetation associated with the digging of the test wells, the edge of ESHA shall be clearly marked with flagging to prevent entry. If test well drilling is to occur during the dry season and the access road is to be located the furthest extent feasible from the stream ESHA, erosion control measures may be excluded. Additionally, appropriate measures outlined in Section 5.1.2 shall be followed. If test well digging is conducted during the wet season, erosion control measures will be installed between work areas and edge of ESHA at a distance sufficient to prevent
impacts to ESHA. Appropriate measures outlined in 5.1.3 will be implemented following ground disturbance to reduce runoff.

- Prior to any ground disturbance or clearing of herbaceous vegetation associated with the proposed residence, a combination silt fence and high visibility construction fence shall be installed around the construction impact area along the stream ESHA (to the north of the proposed residence). In the direction of remaining ESHA (to the west), high visibility construction fencing only shall be installed. The locations of the fencing and any potential ESHA boundaries in the vicinity of construction shall be clearly delineated by a qualified biologist.

- Where and when feasible, perennial native species shall be "salvaged" from the designated construction area to be relocated to an appropriate sized container and maintained until such time they can be transplanted into a designated enhancement area. During the fence delineation, the qualified biologist shall identify "candidate" native plants for relocation (e.g., robust perennial herbs, small native shrubs).

- Prior to construction, project contractors shall be informed of the sensitive resources within the Study Area. Project contractors shall be trained in proper implementation of erosion and sediment control techniques.

5.1.2 During Construction

- Construction and well drilling should occur during the dry season (generally April 15 through October 15, weather dependent), and/or periods of substantial dry weather to minimize potential erosion and sedimentation (during the wet season: five days or greater of less than 0.25 inch of rainfall with a 10-day preceding rainfall of less than one inch, and a 25-day preceding rainfall of less than three inches). Should work necessarily occur during the wet season, erosion control measures (e.g., silt fencing) will be deployed. Likewise, a biological monitor should inspect the site during wet season work to ensure that erosion control measures are appropriate and effective.

- No grading, placement of fill material and/or equipment, or other ground disturbance may occur beyond the designated construction impact area without County of Mendocino approval and consultation with a qualified biologist. The fencing shall be inspected by a qualified biologist at least once during construction to ensure that no encroachment into potential ESHA has occurred. The combination silt fence/construction fence may only be removed once all construction activities are completed and revegetation has occurred.

- No activities may occur that will disturb vegetation, topography, or hydrology beyond the construction impact area, both during and following construction, including, but not limited to laying down of materials or equipment, parking of vehicles, regular and frequent visitation, side cast of excess building materials.

- Solid materials, including, but not limited to, wood, masonry, rock, glass, paper, or other materials shall not be stored outside of the construction impact area. Solid waste materials shall be stored within designated areas outside of the literal extent of ESHA, in clearly delineated designated areas.

- Fluid materials, including, but not limited to concrete, wash water, lubricants, gasoline, diesel, solvents, and paint used during construction shall not be disposed of on-site and shall be stored or confined as necessary to prevent spillage into natural habitats including the potential onsite ESHA. Spill prevention devices (e.g., drip pans) shall be available for all fluids necessary to construction activities. If a spill of such materials occurs, the area
shall be cleaned immediately and contaminated materials disposed of properly. The affected area shall be restored to its original condition.

- At least one cubic yard of cut topsoil from foundation work and other construction related activities shall be relocated to a tarpaulin and covered with mulch. This topsoil will serve as a slurry medium for post-construction seed scattering in the enhancement areas (Section 6.0). The cut topsoil shall be stored in the on-site non-native grassland or Monterey cypress woodland portion of the Project Area.

5.1.3 Post-construction

- Immediately following completion of construction activities, areas of bare soil outside of proposed enhancement areas shall be seeded with fast-growing native annual and perennial herbaceous species to reduce the potential for erosion (Table 1). Certified weed-free straw and/or mulch shall be lain down with the seed. Those areas of unearthed bare soil from construction related activities within the proposed enhancement areas shall be seeded and planted from the recommended plant palette (Tables 2 and 3).

- Landscape plantings in the immediate vicinity of the proposed residence shall be preferentially species native to coastal Mendocino County. Those non-native species selected for landscape plantings or gardening shall not be invasive species listed with CalIPC (2020) or CDFA (2003), or have the potential to escape into the remainder of the Parcel. A qualified biologist and/or landscape contractor can assist the property owners to determine which species would meet these criteria. Planting of non-native species, as defined in this HMMP, shall not occur within the proposed enhancement areas, on-site ESHA, or the non-native grassland within the 50-foot ESHA buffer (Appendix A).

- A fence will be erected (during the project) to provide a barrier between the residence and the coastal bluff scrub ESHA, tufted hair grass meadow ESHA, and stream ESHA. Visitation to these habitats shall be kept to a minimum and for the purpose of typical property management and habitat enhancement (e.g., removal of invasive weeds). The property owners (current and future) shall inform all guests, contractors, or other visitors to the property that frequent entry into these habitats is forbidden for reasons other than property and habitat management.

- Monitoring of enhancement areas, a photographic record, and a report documenting the implementation of the enhancement efforts shall be submitted to the County of Mendocino. The report shall be drafted on an annual basis for 5 years and will be submitted no later than December 31.
Table 1. Potential Seed Palette for Impacted Areas

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Phenology &amp; Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bromus carinatus</em></td>
<td>California brome</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Bromus maritimus</em></td>
<td>maritime brome</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Dactylis glomerata</em></td>
<td>Kentucky bluegrass</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Deschampsia caespitosa</em></td>
<td>tufted hair grass</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Achillea millefolium</em></td>
<td>common yarrow</td>
<td>perennial for</td>
</tr>
<tr>
<td><em>Eriogonum arvense</em></td>
<td>California poppy</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Eryngium armatum</em></td>
<td>coyote thistle</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Lupinus bicolor</em></td>
<td>miniature lupine</td>
<td>annual forb</td>
</tr>
<tr>
<td><em>Lupinus littoralis</em></td>
<td>seashore lupine</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Panicum acuminatum</em></td>
<td>western witch grass</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Sisyrinchium bellum</em></td>
<td>blue-eyed grass</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Claytonia perfoliata</em></td>
<td>Miner’s lettuce</td>
<td>annual forb</td>
</tr>
<tr>
<td><em>Viola adunca</em></td>
<td>dog violet</td>
<td>perennial forb</td>
</tr>
</tbody>
</table>

*Species not documented from Study Area but native to coastal sites in Mendocino County

5.2 Measures for 50-foot buffer

The following measures will offset the impacts to the 50-buffer of above mentioned ESHA:

- All of the General Measures (Section 5.0) shall be followed to avoid or minimize impacts to the ESHA and associated 50-foot ESHA buffer.
- No storage, laying down, or use of equipment or materials shall be conducted within the literal extent of ESHA.
- An enhancement plan shall compensate for impacts to the 50-foot buffer of the impacted ESHA buffer (Section 6.0)

5.3 Measures for Breeding Birds

The bird breeding season typically extends from February 1 to August 15. If feasible, project activities (vegetation/tree removal, the initiation of mechanized ground disturbance) are recommended to be performed in avian non-breeding season from August 16 to January 31. If such is not feasible, a qualified biologist shall perform a pre-construction breeding bird survey within 14 days of the onset of construction and/or vegetation removal. All active bird nests observed during the survey will be protected by an exclusion buffer in which no work activities are allowed. The size of each work exclusion buffer will be determined by the qualified biologist; relevant factors include bird species, nest location (e.g., height off ground), and levels of ambient visual and acoustic disturbances in the area. Exclusion buffers shall remain in place until all young at each respective nest are no longer dependent upon the nest structure. A biologist should monitor buffered nest sites regularly (e.g., weekly) during the breeding season to ensure the implemented buffer is sufficient to protect the nest site from potential disturbances.
6.0 ENHANCEMENT ACTIVITIES AND MONITORING

Project construction will require work within portions of the 50-foot buffer of several on-site ESHA, but will not impact the literal extent of any of these ESHA, except for a single coastal bluff morning glory. Mitigation for impacts to these ESHA is proposed in the form of on-site habitat enhancement. As several ESHA are located at the edge of the LDA, the 50-foot buffer of each ESHA will not be addressed individually; instead a more holistic approach which will serve to enhance the buffer of all of them as two groups is proposed: stream/wetland buffer and tufted hair grass/coastal bluff scrub/coastal bluff morning glory buffer (bluff/grasslands). The stream/wetland buffer will include enhancement with species more suitable for stream/riparian and the bluff/grasslands buffer will include enhancement with species more suitable for bluff/grasslands.

Approximately 0.13 acre of 50-foot ESHA buffer and a single coast morning glory is located within the Project Area. Approximately 0.06 acre of 50-foot ESHA buffer and a single coastal bluff morning glory will be permanently impacted through the development of the proposed residence. To mitigate for impacts, 0.06 acre of ESHA 50-foot buffer within the Project Area as well as 0.06 acre of coastal bluff scrub/tufted hair grass meadow within the Study Area is proposed for enhancement.

Proposed enhancement activities include: (1) planting of native perennial species; (2) seeding of native perennial and annual herbaceous species; (3) removal and/or control of invasive plants; (4) removal of iceplant within coastal bluff scrub and tufted hair grass meadow; and (5) general maintenance of the on-site ESHA and non-ESHA areas within the Study Area. These proposed enhancement activities are detailed in the following sections for each of the affected habitat types.

Due to limited size of parcel and location of home, the propane tank and water tank are proposed to be located within an enhancement area. Access to these features will be provided with a designated path to prevent impacts to enhancement plantings. It is expected that the placement of these tanks will not have a significant impact on enhancement activities or area of enhancement as planting can occur all around the tanks and designated access will prevent trampling. Shadowing of the tanks on the enhancement plantings is not expected to be an impact as proposed plants are shade tolerant.

6.1 ESHA Ecology and Existing Conditions

6.1.1 Stream/Slough Sedge Sward (CCC Stream/Wetlands)

Ecology

Streams are a ubiquitous aquatic feature in the landscape of the California coast. Vegetation associated with streams depends upon topography and location in the landscape (i.e. exposed bluffs or wooded valleys). Slough sedge (Carex obrupta) is also a ubiquitous perennial sedge along the temperate portions of the California coast, typically associated with stream and riparian habitats and moist openings in grasslands and forests (Jepson eFlora 2020; Calflora 2020, CNPS 2020). The Slough sedge swards community is typically more than 50 percent cover of slough sedge associated with additional wetland species, including wax myrtle (Morella californica), Pacific reed grass (Calamagrostis nutkaensis), brambles (Rubus spp.), and rush (Juncus spp.)(CNPS 2020).
Existing Conditions

An intermittent/ephemeral stream is located along the northern boundary of the Study Area. The stream enters the Study Area from a neighboring parcel and flows southwest to the ocean. The eastern portion of the stream (edge of Study Area to western edge of Monterey Cypress) flows within a small channel with a top of bank (TOB) approximately 3-feet wide and a barren dirt thalweg. The banks are vertical and approximately 3-feet high. Vegetation above the banks of the stream along this portion is dominated by California blackberry (Rubus ursinus) and velvet grass. There is a shift in depth of bedrock along a small portion of the stream, causing an approximately 8-10 foot drop in the stream elevation along a steep surface of bedrock, at which point the stream enters a small gully. The gully is approximately 10 to 12 feet deep with nearly vertical walls. Within this portion of the stream, the TOB ranges from 3 to 5 feet wide and has a scoured bedrock thalweg. There is no vegetation within the TOB except for a few small patches of slough sedge. Within the Study Area, two small patches of slough sedge sward were located within the stream gully, adjacent to and within the top of bank (TOB) of the stream. These areas were dominated by slough sedge with poison oak (Toxicodendron diversilobum), maritime plantain (Plantago maritima), pennyroyal mint (Mentha pulegium), bentgrass (Agrostis sp.) and rush (Juncus spp.).

6.1.2 Northern Coastal Bluff Scrub

Ecology

Northern coastal bluff scrub occurs in a very narrow band along coastal bluffs, headlands, and marine terraces along the California coastline (Ford and Hayes 2007, Holland 1986). Vegetation alliances are difficult to discern due to a highly variable and diverse flora composing these scrubs, but they can be dominated by one of several coastal shrubs including coyote brush (Baccharis pilularia), salal (Gaultheria shallon), seaside daisy (Erigeron glaucus), golden aster (Heterotheca sessiliiflora ssp. bolanderi), gumplant (Grindelia stricta), woolly sunflower (Eriophyllum lanatum var. arachnoidem), poison oak (Toxicodendron diversilobum), and blue blossom (Ceanothus thyrsiflorus). This community is typically composed of a mix of dwarfed shrubs and a prevalence of succulent herbs due to consistent salt spray winds (Ford and Hayes 2007, Holland 1986). Soils tend to be rocky and poorly developed, further limiting the size of the woody vegetation and virtually excluding trees with the exception of scattered individuals of shore pine (Pinus contorta ssp. contorta), Bishop pine (Pinus muricata), and tanoak (Notholithocarpus densiflorus).

Coastal bluff scrub experiences natural disturbance from bluff erosion, but most frequently has been threatened by intensive grazing, development, and intentional type conversion (i.e., pasture conversion). In an undisturbed state, coastal bluff scrub is fairly resistant to invasive species due to the extreme environment, but Pampas grass (Cortaderia jubata), Bermuda grass (Cynodon dactylon), and French broom (Genista monspessulana) can affect the native diversity of this community. Natural changes in species assemblage are not well documented, but presumably these communities are relatively stable with succulent herbaceous species dominating on bluff faces, while shrub species increase away from the bluff face on flatter marine terraces and headlands.

Existing Conditions
As noted above (Section 3.2), the Study Area’s coastal bluff scrub is composed of several species. A clear dominant species is difficult to determine within this community due the high floristic diversity. As is typically seen in these habitats, succulent herbaceous species are more prevalent on the bluff face, while the bluff face-flat interface contains more shrubs. The rare plants, Mendocino coast paintbrush, short-leaved evax, and coastal bluff morning glory, are situated within this community. The existing extent of this community within the Study Area is likely similar to historic extent as it is situated on the westernmost portion and along steep bluff face, which is typical for this habitat.

6.1.3 Tufted Hair Grass Grassland (Coastal Terrace Prairie)

Ecology

Coastal terrace prairie is known from marine terraces, headlands, and hillslopes throughout coastal California. These grasslands contain the highest plant species diversity of all North American grasslands, and can be dominated by one or more of several native perennial grasses (Stromberg et al. 2001, Stohlgren et al. 1999, Holland 1986, Ford and Hayes 2007). Several vegetation alliances have been documented as coastal terrace prairie (Sawyer et al. 2009). Soils tend to be deep fine-textured mollisols, with a range of hydrologic conditions.

Coastal terrace prairie, as with most California grasslands, has become invaded by non-native grassland species; however, these grasslands are susceptible to invasion from native shrubs and trees as well (Stromberg et al. 2001, Ford and Hayes 2007). In the absence of natural disturbance (e.g., fire, native grazers), management may be necessary to prevent these habitats from becoming invaded by woody species (Ford and Hayes 2007). In coastal Mendocino, non-native grasses such as common velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), and large rattlesnake grass (*Briza maxima*) are probably the biggest invasion threat to this community type, and these grasses can be difficult to control without intensive management.

Existing Conditions

The Study Area contains coastal terrace prairie best described as tufted hair grass meadow (CNPS 2020). Tufted hair grass was dominant and additional observed species included rough cats ears (*Hypochaeris radicata*), golden aster, Henderson’s angelica (*Angelica henderoni*), maritime brome (*Bromus maritimus*), six week fescue (*Festuca myuros*), and velvet grass (*Holcus lanatus*). This meadow is relatively free of non-native species with the exception of common rough cat’s ear and six week fescue, which are ubiquitous, moderately invasive (Cal-IPC 2020) non-native species in coastal Mendocino County.

For unknown reasons, a clear line between tufted hair grass meadow and common velvetgrass meadow is present within the Study Area, where each species is significantly more dominant in its’ respective habitat. However, several species seen in the tufted hair grass meadow are also present in the westernmost portion of the common velvetgrass meadow.

6.1.4 Coastal Bluff Morning Glory

Ecology
Coastal bluff morning-glory is a perennial forb in the morning-glory family (Convolvulaceae) that blooms from May to September. It typically occurs on bluffs within coastal dune and coastal scrub habitat at elevations ranging from 30 to 330 feet (CDFW 2020, CNPS 2020) in Mendocino, Sonoma, Marin, Contra Costa, and Lake Counties (CNPS 2020a). Known associated species include Bishop pine (Pinus muricata), shore pine (Pinus contorta ssp. contorta), coyote brush, tree lupine (Lupinus arboresus), poison oak, Douglas iris, California blackberry, sea lettuce (Dudleya farinosa), bracken fern (Pteridium aquilinum), ice plant (Carpobrotus edulis), seaside woolly sunflower (Eriophyllum staechadifolium), common velvet grass, sweet vernal grass (Anthoxanthum odoratum), and little rattlesnake grass (Briza maxima) (CDFW 2020). The plant grows in full to partial sun on many soil types and is somewhat drought tolerant (CNPS 2020c Calscape).

Existing Conditions

Within the Study Area, coastal bluff morning glory is primarily along a band in the westernmost portion of the Study Area within the coastal bluff scrub and tufted hair grass meadow. Approximately 17 individuals were observed in this region. One individual is in the northwest corner of the Study Area and one individual is in the eastern portion of the Study Area within the common vernal grass meadow.

6.2 Site Preparation and Implementation of Enhancement Areas

The proposed enhancement areas will occur within the Project Area and in the western most portion of the Study Area (Figure 2). Within the western most portion of the Study Area, enhancement of native habitat (coastal bluff scrub and coastal terrace prairie) and coastal bluff morning glory habitat will occur over approximately 0.06 acre through the removal of dense patches of iceplant. Additionally, enhancement areas will occur over approximately 0.06 acre within the Project Area in the portion of common velvetgrass meadow located within the 50-foot buffer through removal of non-native species and planting of native species.

The following activities shall be conducted to increase the native species cover of the non-native grassland and encourage type conversion to native coastal habitats. It should be noted that grassland restoration is an extremely difficult endeavor and that complete type conversion to native habitat requires long-term intensive management; therefore, this Plan calls for enhancement rather than restoration.

The following activities are scheduled to perform the site preparation and implementation of the enhancement. Tables 2 and 3 are recommended plant palettes for native planting and/or seeding of stream/wetland and bluff/grassland enhancement areas, respectively. Most of these species are located on-site and seed collection from local stock is recommended to maintain regional genetic integrity; however, the recommended volume of seed may not be available wherein which stock may be purchased from a seed supplier with preference of stock collected from coastal Mendocino County. Additional species that have not been observed from the Study Area have been included as these species are frequent members of coastal plant assemblages in Mendocino County. Depending on nursery availability, additional species may need to be substituted/added to this palette which shall be recommended by a qualified biologist. No planting or seeding is recommended for the iceplant removal area as native species are expected to naturally recruit the areas exposed following iceplant removal.
In addition to nursery live plant and seed stock, prior to construction a qualified biologist or landscape contractor will select perennial native species to be salvaged from sites scheduled for development. Salvaged plants will be immediately temporary relocated to an appropriate sized pot and maintained (i.e., watered, pruned) until such time that the site is prepared for its relocation. Salvaged plants shall only be taken from areas scheduled for permanent impacts (e.g., residence). Likewise, a qualified biologist, landscape contractor, and/or the property owners may collect on-site seed from perennial and annual species to supplement nursery stock. Seeds shall be stored in a cool, dark, dry place until such time that the site is prepared for their relocation. Alternatively, or additionally, seed may be grown-out by a landscape contractor into plugs or small pots and utilized as part of the container live plants in the native planting.

Planting and seeding shall occur in the fall following completion of the residential construction to avoid incidental impacts to the enhancement area. Planting and seeding shall occur in the autumn, ideally after the first substantial rain event (greater than 0.25 inch of rainfall), while soil temperatures are still relatively high, but soil moisture is increasing. No irrigation system will be installed for the enhancement areas, but hand-watering and/or sprinkler-watering may be deployed at the discretion of the property owner. Should supplemental watering be conducted, it is recommended that a qualified biologist be consulted prior to doing so.

The Project Area’s non-native grassland is dominated by common velvet grass, a cespitose perennial which is a pronounced invasive species that is very difficult to completely eradicate. The following methods are recommended for site preparation to reduce the vigor of on-site common velvet grass and other non-native species currently dominating the non-native grassland habitat. Ideally a combination of these methods would be employed, but practicability and risk aversion may result in deploying only one or two. Additionally, methods may vary spatially; for instance an area with 100 percent cover of non-native species may be solarized followed by spot treatment with herbicide, while an area with mixed native and non-native species may receive only repeated mowing followed by hand removal of individuals or patches of non-native perennials. Prior to the installation of live plants and broadcast seeding of native species, a qualified biologist will inspect the site along with a landscape contractor and the property owners to develop an agreeable strategy for enhancement activities. Treatment methods for site preparation may include:

- **Mowing**: A mowing regime beginning in March of the year of the implementation of the enhancement activities. Mowing shall be repeated monthly to reduce the vigor of common velvet grass and sweet vernal grass.

- **Removal**: The extent of common velvet grass and other non-natives makes removal across the entire enhancement area impracticable; however, selected removal of species should be conducted in areas where planting will occur. Hand removal is the preferred method, with common velvet grass bunches dug up and side cast onto a tarpaulin, wheel barrow, or other impervious surface to capture seed and other potential propagules. The cleared areas for planting should be eight to ten times the surface dimension of the replacement (e.g., eight to ten square feet cleared for a 12-inch diameter pot). Hand removal of iceplant (*Carpobrotus edulis*) is the recommended method to remove this species from the coastal bluff scrub area and anywhere else it may occur.

- **Solarization**: Covering expanses of non-native herbaceous species with impermeable, opaque barriers, such as Visqueen or cardboard, to prevent sunlight and create high temperatures, thereby killing or diminishing plant vigor. Ideally, solarization would occur
over more than one growing season, but the barrier should be removed in the wet season to prevent alteration of surface hydrology. Additionally, the barrier should be placed in areas where natives are not present or all native perennial species should be removed and transplanted prior to implementing a solarization regime.

- **Mulching**: Laying down wood chip in a thick blanket (six inches or greater), can have a similar effect to herbaceous vegetation as solarization (above). Mulching provides a pathway for air and water to enter the soil surface, as well as provides some nutrient input; however, the existing "buried" vegetation can persist and emerge through mulch. Mulch is recommended around installed plantings to buffer solar heat, retain soil moisture and nutrients, and provide a barrier for emergence/reemergence of non-native herbs.

- **Controlled Burn**: Generally, non-native grasses are not well fire adapted. Depending upon intensity and season of the burn, the density of non-native vegetation, it can kill or diminish the vigor of perennial grasses, as well as diminish the seed bank. Clearly caution and safety must be exercised when hosting a controlled burn, and CalFire and/or the local fire department should be consulted for precautions and safety measures. Given the site limitations and fire hazard, a controlled burn should be confined to burn piles or low-intensity spot treatment of preselected tussocks of non-native grasses. Likewise, the burn should not be conducted during the summer or early fall when available moisture is generally low and fire risk at its peak.

- **Herbicide Application**: There are several herbicides that have demonstrated effectiveness against common velvet grass and other non-native grasses. Timing and method of application typically depends upon type of herbicide. Broadcast use of herbicide within the enhancement areas is not recommended because of the presence of on-site ESHA, particularly stream/wetlands, but spot treatment may be beneficial in some areas and thus remains an option. Any herbicide treatment shall be conducted by a licensed pesticide applicator and shall avoid all native plants so as to not have a deleterious effect on the enhancement activities. Likewise, method and timing of application shall follow the prescribed treatments issued by the manufacturer of the chosen herbicide product.

### Table 2. Potential Planting Palette for Stream/Wetland Enhancement

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Phenology &amp; Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Frangula californica</em> (F. purshiana)</td>
<td>Coffeeberry (Cascara)</td>
<td>evergreen tree/shrub</td>
</tr>
<tr>
<td><em>Morella californica</em></td>
<td>wax myrtle</td>
<td>evergreen shrub</td>
</tr>
<tr>
<td><em>Salix hookeriana</em></td>
<td>coastal willow</td>
<td>deciduous shrub</td>
</tr>
<tr>
<td><em>Rubus californicus</em></td>
<td>California blackberry</td>
<td>evergreen tree</td>
</tr>
<tr>
<td><em>Gaultheria shallon</em></td>
<td>salal</td>
<td>evergreen shrub</td>
</tr>
<tr>
<td><em>Vaccinium parviflora</em></td>
<td>red huckleberry</td>
<td>deciduous shrub</td>
</tr>
<tr>
<td><em>Sambucus racemosa</em></td>
<td>red elderberry</td>
<td>deciduous shrub</td>
</tr>
<tr>
<td><em>Carex obnupta</em></td>
<td>slough sedge</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td><em>Polystichum munitum</em></td>
<td>sword fern</td>
<td>perennial fern</td>
</tr>
<tr>
<td><em>Athryrium filix-femina</em></td>
<td>lady fern</td>
<td>perennial fern</td>
</tr>
<tr>
<td><em>Equisetum telmateia</em></td>
<td>giant horsetail</td>
<td>perennial fern</td>
</tr>
<tr>
<td><em>Clinopodium douglasii</em></td>
<td>yerba buena</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Iris douglasiana</em></td>
<td>Douglas iris</td>
<td>perennial forb</td>
</tr>
<tr>
<td><em>Tellima grandiflora</em></td>
<td>Fringe cups</td>
<td>perennial forb</td>
</tr>
</tbody>
</table>
Table 3. Potential Planting Palette for Scrub/Grassland Enhancement

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Phenology &amp; Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaultheria shallon</td>
<td>salal</td>
<td>evergreen shrub</td>
</tr>
<tr>
<td>Diplacus aurantiacus</td>
<td>sticky monkey</td>
<td>evergreen shrub</td>
</tr>
<tr>
<td>Achillea millefolium</td>
<td>common yarrow</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Angelica hendersonii</td>
<td>Henderson’s angelica</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Armeria maritima ssp. californica</td>
<td>California seapink</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Deschampsia cespitosa</td>
<td>tufted hair grass</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td>Bromus maritimus</td>
<td>maritime brome</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td>Fragaria chiloensis</td>
<td>bluff strawberry</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Danthonia californica</td>
<td>California oat grass</td>
<td>perennial graminoid</td>
</tr>
<tr>
<td>Erigeron glaucus</td>
<td>seaside fleabane</td>
<td>perennial subshrub</td>
</tr>
<tr>
<td>Heterotheca sessiliflora var. echioides</td>
<td>Bristly goldenaster</td>
<td>perennial subshrub</td>
</tr>
<tr>
<td>Eriophyllum staechadifolium</td>
<td>seaside woolly sunflower</td>
<td>perennial subshrub</td>
</tr>
<tr>
<td>Grindelia stricta var. platyphylla</td>
<td>Oregon gumweed</td>
<td>perennial subshrub</td>
</tr>
<tr>
<td>Heracleum maximum</td>
<td>cow parsnip</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Iris douglasiana</td>
<td>Douglas iris</td>
<td>perennial forb</td>
</tr>
<tr>
<td>Lupinus littoralis</td>
<td>seashore lupine</td>
<td>perennial forb</td>
</tr>
</tbody>
</table>

Following the site preparation (e.g., solarization, mulching, combination of methods), the landscape contractor will install the live plants in selected locations pre-arranged with the qualified biologist and property owners. Native seed will be hand broadcast across the enhancement areas. Supplementary seeding will occur at the immediate locations of live plantings and additional seed will be held over for a second year to apply an additional treatment. The following methods will be applied to each live-planting location:

- Immediate area cleared of non-native species with hand tools (approximately eight to ten times the area of the pot size).
- An appropriately sized hole dug for the live plant and hand irrigation within the hole.
- Once the plant is installed, weed mat, cardboard, or other weed barrier will be placed around the live plant.
- Mulch will be applied to the weed mat area mixed with a native seed slurry (see below).

The following methods will be applied to the seed stock (nursery and on-sited collections):

- Seed shall be soaked for a period of 24 hours prior to distribution within the non-native grassland enhancement area.
• Should species require specific treatment (e.g., scarification of lupine seeds), the landscape contractor shall perform such treatments to increase the likelihood of successful germination.

• Seed shall be hand sown or scattered with hand tools; because of the relatively small size of the enhancement area, a seed drill is not recommended.

• Fine mulch and native soil (from topsoil cut during construction (Section 5.1.2) shall be mixed with the wetted seed and water to form a slurry which will act as a tackifier and potentially provide additional seed in the seedbank and native mycorrhizae.

6.3 Monitoring and Success Criteria of the Enhancement Areas

Monitoring of the enhancement areas will involve establishing at least two monitoring transects per area (stream/wetland buffer, scrub/grassland buffer, iceplant removal area), but more may be added depending on post-activity site conditions. These transects will be established prior to the construction activities and monitoring shall be performed at that time to develop a baseline to which the post-enhancement activities will be compared. Reference sites are not proposed for the enhancement activities.

Five years of annual monitoring will be conducted by a qualified biologist and occur in the late spring to mid-summer at the height of the bloom / identifiable period of native species in coastal Mendocino County. The first year monitoring shall occur immediately following the enhancement activities, most likely in fall. Visual estimates of species absolute cover will be recorded from 0.25 meter square quadrats located at regularly spaced intervals along the transects. Each species within the quadrat will be recorded and a cover estimated.

The sum of the percent cover values for each species will then be averaged to determine absolute cover and divided by the sum of all species' cover values (total vegetative cover) to determine the relative cover for each species. These data will then be examined to assess whether the species cover is meeting the success criteria.

In addition to the transect data, to capture the entire flora of the enhancement area, the entirety of such will be traversed and all species will be documented. Photographs will be taken from selected photopoints to be established at the time of the initial monitoring, but shall at a minimum include photographs taken of the established transects.

During the monitoring, the presence of non-native invasive species included in the Cal-IPC “High” List (Cal-IPC 2020) as well as other species with the potential to substantially compromise the enhancement effort will be visually assessed throughout the enhancement areas. This will account for any invasive species that do not fall within the monitoring quadrats. Corrective actions will be recommended for those species that pose a threat to the enhancement. For individuals or small populations of invasive species, hand-pulling may be conducted at the time of monitoring, but only after they have been accounted for and documented for the annual report.

Success of the proposed enhancement areas will require the successful establishment of species native to coastal Mendocino County and control of invasive species that may invade these areas. The final (Year 5) success criteria will be summarized in a final report and shall be considered the completion of the enhancement period. Years 1 through 4 are intended to be evaluations to ensure that the enhancement activities and subsequent, potential contingency activities are leading to the final year success. The goal of proposed enhancement activities within the 50-foot
buffer is to increase native plant absolute cover by 80 percent, relative to baseline absolute cover, by the end of the five years. Each enhancement area will be individually assessed for the success criteria (i.e. both areas of enhancement will meet the percent cover). Additionally, the area of iceplant removal will have 0 percent cover of iceplant each year.

Year 1 (summer following fall installation)

- Planted forbs, grasses, and shrubs will have a minimum 95 percent survival rate.
- Native species diversity will be the same or increase from that determined during the baseline monitoring.
- Native species absolute cover will increase at least 20 percent from that determined during the baseline monitoring.
- No new invasive species from Cal-IPC “High” List or other non-natives with the potential to threaten the enhancement area will be established in the enhancement areas.
- For invasive species currently occurring in the enhancement areas, the percent cover those species will not exceed their cover assessed in the baseline monitoring.
- In the iceplant restoration area, iceplant will have 0 percent cover.
- No litter or other human detritus will be present in the enhancement areas.

Year 2

- Planted forbs, grasses, and shrubs will have a minimum 90 percent survival rate.
- Native species diversity will be the same or increase from that determined during the baseline monitoring and Year 1.
- Native species absolute cover will increase at least 30 percent from that determined during the baseline monitoring.
- No new invasive species from Cal-IPC “High” List or other non-natives with the potential to threaten the enhancement area will be established in the enhancement areas.
- For invasive species currently occurring in the enhancement areas, the percent cover those species will not exceed their cover assessed in the baseline monitoring.
- In the iceplant restoration area, iceplant will have 0 percent cover.
- No litter or other human detritus will be present in the enhancement areas.

Year 3

- Planted forbs, trees and shrubs will have a minimum 85 percent survival rate.
- Native species diversity will be the same or increase from that determined during the baseline monitoring.
- Native species absolute cover will increase at least 40 percent from that determined during the baseline monitoring.
- No new invasive species from Cal-IPC “High” List or other non-natives with the potential to threaten the enhancement area will be established in the enhancement areas.
- For invasive species currently occurring in the enhancement areas, the percent cover those species will not exceed their cover assessed in the baseline monitoring.
- In the iceplant restoration area, iceplant will have 0 percent cover
- No litter or other human detritus will be present in the enhancement areas.

Year 4

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• Planted forbs, trees and shrubs will have a minimum 80 percent survival rate.
• Native species diversity will be the same or increase from that determined during the baseline monitoring.
• Native species absolute cover will increase at least 60 percent from that determined during the baseline monitoring.
• No new invasive species from Cal-IPC "High" List or other non-natives with the potential to threaten the enhancement area will be established in the enhancement areas.
• For invasive species currently occurring in the enhancement areas, the percent cover those species will not exceed their cover assessed in the baseline monitoring.
• In the iceplant restoration area, iceplant will have 0 percent cover
• No litter or other human detritus will be present in the enhancement areas.

Year 5

• Planted forbs, grasses, and shrubs will have a minimum 75 percent survival rate.
• Native species diversity will be the same or increase from that determined during the baseline monitoring.
• Native species absolute cover will increase 80 percent from that determined during the baseline monitoring.
• No new invasive species from Cal-IPC "High" List or other non-natives with the potential to threaten the enhancement area will be established in the enhancement areas.
• For invasive species currently occurring in the enhancement areas, the percent cover those species will not exceed their cover assessed in the baseline monitoring.
• In the iceplant restoration area, iceplant will have 0 percent cover
• No litter or other human detritus will be present in the enhancement areas.

6.4 Breeding Birds

Impacts to breeding birds will be avoided during the proposed construction; therefore specific restoration actions tied to breeding birds is not proposed. However, the enhancement activities will positively affect bird (and other wildlife) habitat and will therefore compensate for the potential loss of bird habitat from residential construction. The following measures are recommended, but should not be considered requirements as part of this plan:

• Bird-friendly landscaping through the planting of native shrubs and non-invasive ornamental species that provide forage, nectar, and/or cover for songbirds, passerines, and hummingbirds.
• Construction and installation of bird boxes to provide potential nesting sites for songbirds, owls, and other birds.

7.0 CONTINGENCY MEASURES

Applying an adaptive management approach to enhancement activities increases the likelihood of overall success. Annual monitoring, both qualitative and quantitative will inform the monitoring biologist(s) of what activities are more successful and allow for the application of contingency measures. Notes regarding plant vigor relative to irrigation regime, weather, soil moisture, etc.
shall be performed during the annual monitoring. Those plants exhibiting greater vigor shall constitute the bulk of the contingency plantings and seedings, should such measures need to be deployed.

If necessary, contingency recommendations will be included in the annual monitoring report, and such measures will deployed at a seasonally appropriate period (i.e., plantings during the spring or fall with warm soil temperatures and more available soil moisture). The results of the contingency measures will then be reported in the subsequent annual monitoring report. If necessary, the monitoring period will extend beyond the five year period proposed here until such time that the enhancement activities meet their stated final year (year five) success criteria.
8.0 REFERENCES


WRA, Inc. 2019. Environmentally Sensitive Habitat Area Survey 47101 Big Gulch Road, Gualala Mendocino County. May
Appendix A

Figures
Appendix B

Observed Plant Species within the Project Area
### Appendix B. Plant species observed in the Study Area on August 18, 2018, June and December 2019.

<table>
<thead>
<tr>
<th>Family</th>
<th>Scientific name</th>
<th>Common name</th>
<th>Origin</th>
<th>Life Form</th>
<th>Rare Status¹</th>
<th>Invasive Status²</th>
<th>Wetland indicator³</th>
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<td>Carpobrotus chilensis</td>
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| Cakile maritima  | Sea kale    | Brassicaceae | perennial grasslike her...
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<th>Rare Status</th>
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<th>Wetland indicator</th>
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All species identified using the Jepson Manual, 2nd Edition (Baldwin et al. 2012) and A Flora of Sonoma County (Best et al. 1996); nomenclature follows The Jepson Flora Project (eFlora 2018) unless otherwise noted.
Sp.: “species”, intended to indicate that the observer was confident in the identity of the genus but uncertain which species
Cf.: intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

1 Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2018)
   FE: Federal Endangered
   FT: Federal Threatened
   SE: State Endangered
   ST: State Threatened
   SR: State Rare
   Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
   Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
   Rank 2A: Plants presumed extirpated in California, but more common elsewhere
   Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
   Rank 3: Plants about which we need more information – a review list
   Rank 4: Plants of limited distribution – a watch list

2 Invasive Status: California Invasive Plant Inventory (Cal-IPC 2006)
   High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
   Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance;
              limited- moderate distribution ecologically
   Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
   Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

3 Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)
   OBL: Almost always a hydrophyte, rarely in uplands
   FACW: Usually a hydrophyte, but occasionally found in uplands
   FAC: Commonly either a hydrophyte or non-hydrophyte
   FACU: Occasionally a hydrophyte, but usually found in uplands
   UPL: Rarely a hydrophyte, almost always in uplands
   NL: Rarely a hydrophyte, almost always in uplands
   NI: No information; not factored during wetland delineation
June 11, 2020

Mr. Scott Wahlberg
30555 Trubaco Canyon Road
Trubaco Canyon, CA 92679

RE: Response to California Coastal Commission Comments, Geotechnical Investigation, Planned Wahlberg Residence, 47101 Big Gulch Road, Gualala, Mendocino County, California

Dear Mr. Wahlberg:

This letter is in response to the California Coastal Commission (CCC) review comments regarding the geotechnical investigation report, dated March 7, 2019, prepared by Brunsing Associates, Inc. (BAI). The CCC review comments were presented in a letter dated January 24, 2020. The CCC wants justification of BAI’s 2019 reduced bluff retreat rate, especially in light of the fact that BAI had determined a higher retreat rate at the property during a study in 2005. The CCC also is requesting an evaluation of erosion within the creek channel between the Wahlberg property and the northerly neighboring property. The CCC also questioned the effect on bluff retreat due to the presence of a large sea cave at the property.

When we worked on the northerly neighboring residence, 47100 Big Gulch Road (47100) in 1993, we had only the 1964 and 1981 aerial photographs for our study. To provide a bluff setback for that project, we relied on our previous coastal project experience from the early 1980’s to the early 1990’s. In our 1993 geotechnical investigation we recommended an arbitrary, 50-foot bluff setback (basically a “ballpark” number). When the architect and client complained that they needed 5 more feet to make their design layout work, we obliged them. We “felt” that we had enough of a safety factor that 5 feet less of a setback wouldn’t matter. Therefore, we informally changed our bluff setback to 45 feet. The undersigned, Erik Olsborg, provided bluff setback stakes as described in our field memorandum dated January 10, 1994. On January 13, 1994 our project geologist, Chuck Huyette (retired) verified that the house foundation excavations were in conformance with our bluff setback, as described in his attached, field construction inspection report.

While doing a reconnaissance in 2005 for a prospective buyer of 47101, Olsborg looked over at the house and bluff on neighboring 47100. The view of 74100 from 47101 is shown on Site Photograph A. Plate 1. Olsborg realized that the bluff retreat rate was much less than estimated in 1993. In addition, BAI could now study both a 2002 vertical and a 2002 oblique aerial photograph in addition to our 1964 and 1981 aerial photographs. Therefore, our estimated bluff retreat rate was reduced to 2.5 to 3 inches per year. Instead of a 45 feet bluff setback recommended for the northerly neighboring property, we recommended a 37.5 feet setback. We based that setback upon a retreat rate of 3 inches per year for 75 years; the resulting bluff loss would be on the order of 18.75 feet. Applying a safety factor of 2, we recommended a bluff setback of 37.5 feet in 2005 for 47101.

By the time of our 2018-2019 investigation of the Wahlberg property (47101), BAI had acquired aerial photographs of the area ranging from 1952 to 2018. We could now compare changes in the bluff (or
the lack thereof) over the last 66 years. In addition, while in the field looking at 47101, Olsborg looked over at the house and bluff at 47100. It appeared to Olsborg that the house to bluff distance hadn’t changed much from 1994. That observation wasn’t mentioned in our geotechnical investigation report. That observation as well as our expanded range of aerial photographs, provided the basis for reducing our bluff retreat rate at the Wahlberg property down to 0.5 inches per year. In order to confirm our bluff retreat estimate, Olsborg and staff geologist Zach Mason returned to the site on February 17, 2020. With the house keeper’s permission, we measured from the house to the nearest portion of the bluff with a 100-foot tape (Site Photograph B, Plate 2). The measurements varied from just over 50 feet to 44.5 feet (Site Photograph C, Plate 3).

These measurements confirm that the bluff at 47100 has eroded back only 6 inches over the last 26 years, for a retreat rate of just 0.23 inches per year. The lithology at 47100 is the same as 47101. Thus, the same bluff retreat rate should apply to both properties.

It should be noted that for our bluff retreat rate analysis that incorporates sea level rise in the Wahlberg report, we used a current retreat rate of one-inch per year. We estimated that this current rate should remain the same for the next 11 years. After that, as sea level rise takes effect locally, the bluff retreat rate should slowly increase. By 2070, we estimated that the bluff retreat rate should be approximately 4 inches per year. Based upon that amount of bluff retreat, plus a safety factor of 1.5, we arrived at a bluff setback of 26 feet.

The mouth of the seasonal creek channel that runs between 47101 and 47100 has down cut to hard rock near the ocean bluff (Site Photograph D, Plate 4). The rest of the creek channel is within weathered sandstone. The likelihood that the creek channel will significantly down cut further or meander beyond its current channel is very low. Further, BA1’s foundation recommendations place the house footings 30 to 42 inches below existing grades; approximately two feet into weathered bedrock. Creek meandering is of little concern at this site.

The sea cave at the property is not of concern with regard to bluff retreat for the following reasons:

- The sea cave is out on the point, well away from the planned building area, as shown on the attached Plate 5, 1979 and 2013 Coastline Oblique Aerial Photographs from our 2019 geotechnical investigation report.
- The sea cave is a result of long term erosion; the sea cave is little changed from 1979 to 2013, as can be seen.
- The sea cave does not go into the bluff very far; the sea cave does not extend into the inlet to the northeast.
In summary, our bluff retreat rate at the Wahlberg property, one-half inch per year, rounded up to one inch per year for our analyses, is accurate. We see no need to modify our report conclusions or recommendations. Furthermore, creek channel erosion is of little concern.

Respectfully Submitted,

Erik E. Olsborg
Engineering Geologist – 1072

Keith A. Colorado
Geotechnical Engineer – 2894

Cc: Blair Foster, Wynn Coastal Planning
FIELD MEMORANDUM

TO: Janet Mackennan

DATE: Jan 10, 1994

JOB NO.: 106712

ATTN: 47100 Big Creek Rd

PROJECT: Capener, Service

SUBJECT: Bluff Setback

I measured and staked the bluff setback. The stakes are set 20 feet back of the bluff edge - the area susceptible to slough/collapse over the next 5-30 years. The house can be 25 feet from these stakes for a modified bluff setback of 45 feet.

BACE should review the foundation excavations during the digging operation, prior to setting rebar.

C.C. Dr. Capener

PLEASE REPLY TO SIGNED: Erik E. Olshag
UNSATISFACTORY CONDITIONS PREVIOUSLY REPORTED (Give report date only. Circle dates of items corrected in this report and explain below.)

REMARKS

I met on-site with the contractor Rich Frederickson and architect Janet Mackinnon.

I outlined bluff set back - closest footing 45 feet from bluff edge, and took photos.

I observed topsoil removal in planned slab on grade areas 12 inches topsoil remaining, no roots observed, protected form.

All footings positioned at least 18 inches into firm subsoil and one between 3 feet and 4 feet below adjacent natural ground elevation. All footings tested poured form into lower terrace/weathered foundation materials. Floor support pads and southwest portions of the structure foundations not excavated yet. Rich says he would finish these tomorrow using staker forms & steel. He will not call for County Inspection until next Thursday or sooner. Due to the need to retum next Tuesday to check removal, Rich asked if he could use native as 24" fill under slabs. I said yes but Rich should reassure that he has been properly conducting the moisture conditioning if it rains. I told Rich if he uses granular backfill & vibra plate BACE should probe periodically to check compaction. Rich said they would use granular.

Initial
Looking north

Measuring from the house to the bluff edge at 47100 Big Gulch Road
Measurement at the bluff edge 47100 Big Gulch Road

REFERENCE:
BAI photos, 02/17/20