



February 23, 2015

Bret Taber  
5366 Stonehurst Drive  
Martinez, CA 94553

**RE: 5720 Highway One Response Letter to County of Mendocino Request for Alternatives Analysis**

Mr. Taber,

The following letter is an amendment to the Coastal Act Compliance Report dated June 2014 produced by our office and submitted to the County of Mendocino Planning and Building Department (County). In response to our report, the California Coastal Commission issued comments on November 7, 2014 and the County issued several comments regarding alternatives analysis in a letter dated January 27, 2015. We prepared comments for the CCC in a letter dated December 29, 2014. Here we are addressing the request for more information from the County, including an alternatives analysis and updated development within the 50-foot buffer table. Pending further comments from the County, Coastal Commission, or other interested parties, WRA will amend the report in its entirety at your request.

The following describes several alternatives to the Proposed Residence, for a total of six potential project locations. WRA developed Alternatives A-C locations based on the following assumptions:

- The footprint must be entirely within the property lines;
- The footprint must be entirely outside of the literal extent of on-site ESHA;
- The footprint must be entirely outside of the extent of the previous restoration area;
- The footprint shall be 2,600 square feet, the square footage of the existing residence (inclusive of garage and decks);
- The footprint shall not be located on the sea bluff face.

Table 1 summarizes property's constraints vis-à-vis development of a single-family residence. Table 2 provides the requested update to Section 20.496.020(A)(4) of the Coastal Zoning Code for the project, with additional analysis included in 20.496.020(A)(4)(c), per request of the County.

## **Analysis of Project Alternatives**

### Proposed Residence, One-story

The Proposed Residence is the initial proposed alternative (Figure 1), and involves the construction of an approximately 4,573 square foot single-family residence including a courtyard and garage in the central portion of the property. This residence would replace approximately 2,668 square feet of an existing single-family residence including deck and garage. Expansion of the existing footprint is necessary due to the presence of a sea cave situated beneath a portion of the residence. To meet engineering and geotechnical requirements, the updated residence must “straddle” the sea cave for a total length of 100 feet. Likewise, the Proposed Residence also meets the 75-year sea bluff setback requirement. Updates to the septic system will be necessary, and a septic report has been provided to the County. The proposed septic area is in the northeastern portion of the property where percolation tests resulted in an acceptable location for a septic and leach field. Septic lines will be routed beneath the existing driveway and will not be sited within the literal extent of any on-site ESHA. Additionally, this location was chosen because it is entirely outside of the literal extent of all on-site ESHA, is not within the direct flow line of a wetland ESHA, is outside of the previous restoration area, and is the furthest acceptable location away from the sea bluff and sea cave. The Proposed Residence is entirely within the 100-foot and 50-foot buffers of on-site ESHA, but is situated entirely outside of the literal extent of ESHA and previous restoration areas.

Because the Proposed Residence will take advantage of the existing residence’s footprint and part of the asphalt driveway, several potential construction-related impacts will be avoided. First, siting the Proposed Residence at the location of the existing residence will not necessitate the installation of an all-weather Calfire turnaround, updates to the existing driveway for Calfire ingress/egress standards, or the expansion/extension of the existing driveway. Calfire has granted an exemption because this alternative would be considered a remodel, and the existing ingress/egress would be “grandfathered” as such. Given the property’s several ESHA and geotechnical constraints, this exemption reduces the potential impacts to ESHA buffers associated with such upgrades and eliminates the need to grade and overlay impermeable surfaces unnecessarily.

Second, grading and shaping will not be necessary because it takes advantage of the existing residence and garage footprint, as well as portions of the asphalt driveway, and the proposed expansion takes advantage of the existing neutral slope of this part of the property; however, for pier and foundation expansion a total of 158 cubic yards of off-haul are necessary. The existing structure will be removed and off-hauled from the site, but the entirety of its existing footprint will be utilized under the Proposed Residence alternative, a footprint that currently has no biological value because it is currently developed. Additionally, portions of the removed foundation will be incorporated into the new design to further reduce impacts from trenching, particularly on the eastern side of the residence. Re-use of these areas will reduce the likelihood of impacts to the root systems of trees within adjacent Shore Pine Forest ESHA.

Third, the re-use of existing grade and the neutral slope adjacent to the existing residence eliminates the need to conduct surface grading and shaping to account for slope changes; however, cut from foundation and piers will be necessary under this alternative (approximately 158 cubic yards). The on-site wetlands’ (i.e., Pacific Reed Grass Meadow) primary hydrologic source is from an off-site watershed with the majority of flows through a broad, indistinct swale arising from the east. As such, the elimination of surface grading from this alternative, as well as its location outside of the wetland’s dominant flow line, reduces potential sediment migration

and alteration to localized surface hydrology. Likewise, retaining walls or other structures to prevent sediment or slope migration are unnecessary in this location.

Fourth, because the Proposed Residence relies on the location of the existing residence, it will be unnecessary to extend the water lines and power lines currently supplying the existing residence. Siting the residence elsewhere would necessitate new trenching and/or installation of overhead power lines that would necessarily be within ESHA buffers, and possibly through the literal extent of ESHA (e.g., Pacific Reed Grass Meadow).

Fifth, trees and shrubs are not located within the footprint of this alternative, and Calfire vegetation management requirements have been waived for this location. Therefore, trees and shrubs (e.g., Shore Pine Forest) would not have to be removed, eliminating impacts to such as well as reducing the potential impact to nesting birds.

#### Proposed Residence Location, Two-story

The construction of a two-story residence at the Proposed Residence's location would not result in a smaller footprint (Figure 1). The foundation design uses two piers at the ends of the grade beam; the typical use of two piers at each end is necessary to improve stiffness and performance of the foundation grade beams due to the long span conditions (Beam 1 requires one pier at one end because of the reduced loads because it is carrying mostly deck). As such the proposed length is necessary to properly support a residence over the sea cave.

Conversely, a two-story residence would result in an increase in size to the foundation elements, including the pier and concrete beam sizes to support the added weight of a second story. The area over the existing garage foundation cannot be utilized for a second story as the existing garage foundation is not designed for spanning the sea cave, and retrofitting would require extensive demolition, grading (600 cubic yards), shoring, and foundation work, unnecessary under the Proposed Residence scenario (above).

#### Alternative A

Alternative A is situated in the southwestern portion of the property and involves the development of a 2,600 square foot residence (Figure 2). This Alternative would not be sited on the existing residence's footprint, but rather be sited in a new location and therefore would not take advantage of that site's existing developed areas creating additional impacts discussed below. As with all other alternatives, upgrades to the septic system will be necessary, which would be located in the northeastern portion of the property. Similar to the Proposed Residence, the septic line would be sited beneath the existing driveway, but would require additional trenching within the site's ESHA buffers. As with all other alternatives, Alternative A is entirely within the 100-foot and 50-foot buffers of on-site ESHA, but is situated entirely outside of the literal extent of ESHA and previous restoration areas.

Because Alternative A will not take advantage of the footprint of the existing residence, several construction-related impacts would be incurred. First, the existing residence and garage will require demolition, including the removal of the foundation. Complete removal of the existing residence would require substantial rehabilitation to the removed footprint. Due to several decades of development, the soils have become compacted, denatured, and likely incorporative of non-native materials. Consequently, this area would require remediation, which would like involve the importation of clean fill and topsoil accompanied by native species plantings. Many problem weeds are specifically adapted to compacted, denatured, and/or recently disturbed

soils, and as such these areas would likely require prolonged management to ensure that invasive plants did not become introduced. Required mitigation for impacts from any residential upgrades should be preferentially sited within existing native (e.g., Blue Blossom Scrub) or naturalized (Non-native Grassland) habitats which offer a greatly increased likelihood of successful restoration.

Second, Calfire requires the installation of an all-weather turnaround, as well as updates and extension (500 square feet) to the existing driveway, and fire-safe management of vegetation within 100 feet which would include the removal of trees and shrubs. Specific locations for the Calfire required upgrades have not been analyzed under this Alternative, but would necessarily be located within the ESHA buffers and likely require incursion into the literal extent of on-site ESHA.

Third, there is a slight grade break at the location of Alternative A of approximately two feet at the midpoint. Grading and shaping will be necessary to level the grade break, and retaining walls will be necessary to prevent sediment migration. Total grading, including cut soil for the foundation and piers will account for approximately 200 cubic yards of off-haul.

Fourth, in addition to cut soil for the foundation and leveling, extending water lines and power lines will be necessary. Trenching for the installation of water lines and/or installation of overhead power lines would necessarily be sited within the ESHA buffers and possibly through the literal extent of ESHA.

Fifth, although this Alternative is outside of Shore Pine Forest, there are several individuals of shore pine trees (*Pinus contorta* ssp. *contorta*) located at the proposed location. Removal of these trees would be necessary to site the residence within this Alternative's footprint.

Sixth, to fit this Alternative outside of the literal extent of on-site ESHA and the previous restoration area, the footprint encroaches on the sea bluff and sea cave setbacks. There is no configuration of footprint that meets the replacement 2,600 square feet that can avoid both of these geotechnical hazards. Therefore, this Alternative does not comply with the necessary 75-year bluff and cave setbacks.

### Alternative B

Alternative B is situated in the north-central portion of the property and involves the development of a 2,600 square foot residence (Figure 3). This Alternative would not be sited on the existing residence's footprint, but rather be sited in a new location and therefore would not take advantage of that site's existing developed areas. As with all other alternatives, upgrades to the septic system will be necessary, which would be located in the northeastern portion of the property. Likewise, as with all other alternatives, Alternative B is entirely within the 100-foot and 50-foot buffers of on-site ESHA, but is situated entirely outside of the literal extent of ESHA and previous restoration areas.

Because Alternative B will not take advantage of the footprint of the existing residence, several construction-related impacts would be incurred. First, similar to Alternative A, the existing residence and garage will require demolition, including the removal of the foundation. See Alternative A above for project impacts resultant from removal of the existing residence.

Second, Calfire requires the installation of an all-weather turnaround, as well as updates to the existing driveway, and fire-safe management of vegetation within 100 feet which would include

the removal of trees and shrubs. See Alternative A above for project impacts resultant from meeting Calfire requirements.

Third, there is a slight grade break at the location of Alternative B of approximately four feet at the midpoint. Grading and shaping will be necessary to level the grade break, and retaining walls will be necessary to prevent sediment migration. Total grading, including cut soil for the foundation and piers will account for approximately 560 cubic yards of off-haul.

Fourth, trenching and/or installation of additional power lines will be necessary to provide this residence with water and electrical. See Alternative A above for project impacts resultant from providing the residence with utilities.

Fifth, to fit this Alternative outside of the literal extent of on-site ESHA and the previous restoration area, the footprint is sited near the northern property line. The County requires a 30-foot property line setback. In its current configuration this Alternative is approximately four feet from the property line, and therefore does not comply with the required setback.

Sixth, to fit this Alternative outside of the literal extent of on-site ESHA and the previous restoration area, the footprint is partially situated above the sea cave. There is no configuration of footprint that meets the replacement 2,600 square feet that can avoid this geotechnical hazard and avoid the literal extent of ESHA and/or the previous restoration area. Therefore, this Alternative either violates the necessary 75-year sea cave setback or encroaches on ESHA and the previous restoration area.

### Alternative C

Alternative C is situated in the northeastern portion of the property and involves the development of a 2,600 square foot residence (Figure 3). This residence would replace the existing residence; however it would be sited in a new location. As with the Proposed Residence and other alternatives, upgrades to the septic system will be necessary; however, the footprint is situated within the acceptable septic and leach field location. Likewise, Alternative C is entirely within the 100-foot and 50-foot buffers of on-site ESHA, but is situated entirely outside of the literal extent of ESHA and previous restoration areas.

Because Alternative C will not take advantage of the footprint of the existing residence, several construction-related impacts will be incurred. First, similar to Alternatives A and B, the existing residence and garage will require demolition, including the removal of the foundation. See Alternative A above for project impacts resultant from removal of the existing residence.

Second, Calfire requires the installation of an all-weather turnaround, as well as updates and extension (1,000 square feet) to the existing driveway, and fire-safe management of vegetation within 100 feet which would include the removal of a substantial number of trees and shrubs. See Alternative A above for project impacts resultant from meeting Calfire requirements.

Third, to account for substantial grade breaks, it will be necessary to grade to level a building pad. Grading and shaping will be necessary to level the grade break, and retaining walls will be necessary to prevent sediment migration. Total grading, including cut soil for the foundation and piers will account for approximately 455 cubic yards of off-haul. Additionally, although this Alternative has been specifically sited within a Monterey Cypress Grove, it will require the removal of up to 50 trees including individual shore pines (outside of the Shore Pine Forest), and associated trenching, grading, and cutting will likely impact tree roots beyond the Monterey

Cypress Grove.

Fourth, trenching will be necessary to provide this residence with water. See Alternative A above for project impacts resultant from providing the residence with utilities.

Fifth, to fit this Alternative outside of the literal extent of on-site ESHA and the previous restoration area, the footprint is sited near the northern property line. The County requires a 30-foot property line setback. In its current configuration this Alternative is approximately nine feet from the property line, and therefore does not comply with the required setback.

Sixth, to fit this Alternative outside of the literal extent of on-site ESHA and the previous restoration area, the footprint is sited beneath existing power lines. Therefore, this location conflicts with the existing PG&E power line easement.

Seventh, this Alternative is sited in the proposed septic and leach field. This area was selected to provide septic because it meets requisite percolation rates, it is outside of the literal extent of on-site ESHA, and it is the furthest acceptable location from the sea bluff and the sea cave. Other areas within the property were not been tested for septic because they are either within the sea cave setback, sea bluff setback, literal extent of ESHA, and/or the previous restoration area. Siting the septic area within the PG&E power line easement is an acceptable use, and would take advantage of the existing and ongoing vegetation management performed by PG&E to maintain the safety of their power lines.

#### No Project

The entire parcel is constrained by ESHA and ESHA buffers, with only a few hundred square feet outside of the 50-foot buffer. The existing residence is dilapidated and contains asbestos and lead paint, two domestic health hazards that would require extensive remediation to make the dwelling habitable. More importantly, this residence partially spans a sea cave, which poses a significant and geotechnical hazard, which is irremediable without expanding the footprint the residence (BAI 2014). If no project is approved the residence and associated septic system could collapse into the ocean; potentially trapping or causing injury to occupants as well as the potential for contamination of the bluff and ocean with asbestos, lead, sewage, and other material detritus.

#### **Summary of Constraints and Potential Impacts**

Table 1 summarizes the property's constraints analyzed through each Alternative. It is the professional opinion of WRA that working within these constraints the Proposed Residence is the least environmentally damaging alternative for replacement residence. This alternative takes full advantage of areas that have been developed for several decades, essentially repurposing the area. The expansion of the footprint is necessary to ensure the safety and stability of the updated residence, and prevent contamination should the sea cave fail and collapse the existing residence. Likewise, the existing residence contains contaminants in lead and asbestos that are significant hazards to human health, rendering the dwelling virtually uninhabitable (No Project). Siting the residence in Alternatives A through C present violations of several required setbacks, and will result in increased grading, trenching, and soil cutting over the Proposed Residence to provide for grade leveling, utility lines, and Calfire mandated updates. Likewise, these Alternatives would require the removal of the existing residence resulting in the exposure of compacted and denatured soils that would be labor intensive and expensive to remediate and rehabilitate to native habitat. Rather, mitigation for the Proposed

Residence would be preferentially sited within one or more of the footprints of Alternatives A through C. These areas have a much higher likelihood of success for habitat restoration than that of the existing residence. Finally, a two-story residence relies on the same footprint as the Proposed Residence to meet the geotechnical standards, but would require more cut soil to maintain the structural viability and sheer value of adding a second story.

Table 1. Summary of Constraints and Project Alternatives

<b>CONSTRAINTS</b>	<b>Proposed Residence, 1-story</b>	<b>Proposed Residence Location, 2-story</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>No Project</b>
Avoids Literal Extent of ESHA?	Yes	Yes	Yes (No)	Yes (No)	Yes	Yes
Avoids 50- and 100-foot ESHA Buffer?	No	No	No	No	No	No
Avoids Previous Restoration Area?	Yes	Yes	Yes (No)	Yes (No)	Yes	Yes
Meets Sea Bluff Setback?	Yes	Yes	No	Yes	Yes	Yes
Meets Sea Cave Setback?	Yes	Yes	No	No	Yes	No
Meets Property Line Setback?	Yes	Yes	Yes	No	No	Yes
Meets PG&E Setback?	Yes	Yes	Yes	Yes	No	Yes
Meets Setback from Proposed Septic Area?	Yes	Yes	Yes	Yes	No	Yes
Off-haul Volume (cubic yards)	158	600	200	560	455	N/A
Driveway Extension Necessary?	No	No	Yes	No	Yes	No
Tree Removal Necessary?	No	No (Yes)	Yes	No	Yes	No
Calfire Turnaround Required	No	No	Yes	Yes	Yes	No
Calfire Fire-safe Vegetation Management Required	No	No	Yes	Yes	Yes	No
Calfire Driveway Upgrade Required	No	No	Yes	Yes	Yes	No

Table 2. Mendocino County Coastal Zoning Code Section 20.496.020

Section 4: Development within 50 feet of ESHA	
<p><b>4. Permitted Development.</b> Development permitted within the buffer area shall comply at a minimum with the following standards:  <b>4 (a).</b> Development shall be compatible with the continuance of the adjacent habitat area by maintaining the functional capacity, their ability to be self-sustaining and maintain natural species diversity.</p>	<p>The Proposed Residence will take advantage of the existing residence’s footprint to reduce the amount of vegetation removal. The majority of vegetation removed is non-native in origin and does not constitute a natural community ESHA.</p> <p>Alternatives A-C will not take advantage of existing residence’s footprint. Removed footprint of existing residence would be labor intensive and expensive to remediate and rehabilitate to native habitat.</p> <p>A vegetation planting plan for visual screening and mitigation will incorporate native species to enhance existing habitats on-site.</p>
<p><b>4 (b).</b> Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.</p>	<p>The Proposed Residence has been situated in the least environmentally damaging location within the property, and relies heavily on the existing residence’s footprint. The proposed updated footprint is entirely within the literal extent of non-ESHA. The existing residence and Proposed Residence footprints are approximately located within the center of the parcel, thereby avoiding to the maximum extent possible both the on-site ESHA and property boundaries. The existing residence and Proposed Residence footprints are situated greater than 30 feet from the sea bluff.</p> <p>Alternatives A-C violate several setbacks including, to varying degrees, sea bluff, sea cave, property line, septic area, and PG&amp;E easement. Likewise, all three are also entirely within ESHA buffers.</p>
<p><b>4 (c).</b> Development shall be sited and designed to prevent impacts which would degrade adjacent habitat areas. The determination of the best site shall include consideration of drainage, access, soil type, vegetation, hydrological characteristics, elevation, topography, and distance from the natural stream channels.</p>	<p><i>Drainage &amp; Hydrological Characteristics:</i> The Proposed Residence is situated, partially, on an existing residence’s footprint and driveway where soils have become compacted and denatured. Localized drainage in this area will be unchanged. Expansion out of the existing footprint and driveway will be less than the total square footage for Alternatives A-C. The Proposed Residence may interrupt the flow of surface hydrology shunting waters toward or away from on-site ESHA that could be deleteriously affected. Alterations to surface flow may be mitigated by the installation of French drains, LID standards in hardscaping/landscaping, or other designs that migrate waters around house on its course.</p> <p><i>Access:</i> The Proposed Residence will rely on existing access in the form of a gravel/asphalt driveway. Alternatives A and C will require expansion of access, and Alternatives A-C will require upgrades to access for Calfire requirements.</p> <p><i>Soil Type:</i> All of the potential footprints are situated on the same soil type, Bruhel-Shinglemill complex. The Proposed Residence relies heavily on the existing residence’s footprint which has for several decades created compacted and denatured soils. Alternatives A-C will result in the</p>

	<p>permanent loss of usable soil from their footprints, and driveway access and improvements. Remediation of the existing residence under Alternatives A-C would be difficult to achieve.</p> <p><i>Vegetation:</i> All of the Alternatives have been sited outside of the literal extent of ESHA. The Proposed Residence relies heavily on the existing footprint and driveway which is devoid of vegetation and expansions will be into non-native grasslands. Permanent loss to vegetation from Alternatives A-C will be greater than that from the Proposed Residence. Revegetation of the existing footprint under Alternatives A-C would be extremely difficult and likely to result infestation of invasive plants in not actively managed. Mitigation shall occur in the form of restoration plantings in non-ESHA habitats (e.g., Non-native Grassland) and enhancement plantings in depauperate ESHA habitats (e.g., Shore Pine Forest, Blue Blossom Scrub).</p> <p><i>Topography:</i> The Proposed Residence takes advantage of existing level grade from the residence and driveway, which is on grade (neutral) with adjacent areas. Alternatives A-C require substantial grading to level the areas. Standard BMPs will be deployed during construction to prevent sediment migration.</p> <p><i>Natural streams:</i> Natural streams are not situated within the property. The nearest stream channel is greater than 300 feet from the property, and the property's slope does not fall toward this channel. No BMPs or other considerations are recommended to protect streams as they will not be affected by the project.</p> <p>Temporary impacts may include grading, shaping, cut-and-fill, and lay-down of soils. These shall be minimized and sited locations where standard BMPs can be applied to minimize effects.</p>
<p><b>4 (d).</b> Same as 4 (a).</p>	<p>See above.</p>
<p><b>4 (e).</b> Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel. Mitigation measures, such as planting riparian vegetation, shall be required to replace the protective values of the buffer area on the parcel, at a minimum ratio of 1:1, which are lost as a result of development under this solution.</p>	<p>The Proposed Residence is situated in the least environmentally damaging area within the property (see analysis above). There are no areas outside of the 50-foot buffer within which to site a residence.</p> <p>A vegetation planting plan will be developed to provide both enhanced habitat and visual screening. Immediate vegetation impacts are overwhelmingly to non-native species. Restoration and enhancement areas have been outlined. Non-native and invasive species will be removed/controlled in ESHA habitats; supplemental plantings of coastal bluff and coastal prairie species will be implemented in grassland and near the sea bluff face; native trees and shrubs shall be planted in the on-site forested habitats; and native trees shall be planted as</p>

	visual screening on the existing access road.
<p><b>4 (f).</b> Development shall minimize the following: impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution, and human intrusion into the wetland, and minimize alteration of natural landforms.</p>	<p>The Proposed Residence is sited in the least environmentally damaging location and as such will result in fewer impacts comparative to project Alternatives.</p> <p><i>Impervious Surfaces:</i> The Proposed Residence relies heavily on the existing residence's footprint and driveway. The driveway does not require expansion, and Calfire improvements are unnecessary. Alternatives A-C require an increase in impervious surfaces to meet Calfire standards and provide access.</p> <p><i>Removal of Vegetation:</i> The Proposed Residence relies heavily on existing unvegetated areas, and the required expansion is into areas dominated by non-native species. Alternatives A-C will require greater areas of vegetation removal, and Alternatives A and C will require the removal of native trees. A vegetation plan will be developed for mitigation for native vegetation.</p> <p><i>Bare Soil:</i> The Proposed Residence will not increase the amount of bare soil on the property. Landscaping will rely heavily on native species. Standard BMPs will be deployed during construction to prevent sediment migration.</p> <p><i>Noise, Dust, Artificial Light, &amp; Air Pollution:</i> The Proposed Residence will be constructed during daylight hours, and BMPs will be deployed to prevent dust migration. Noise associated with construction will be kept to a minimum, and breeding bird surveys will be conducted should construction fall within the breeding bird season. The Proposed Residence requires the least amount of grading of the project alternatives and therefore will minimize the number visitations from heavy machinery (i.e., air pollution).</p> <p><u>Post-construction:</u> routine noise and light from residential activities is expected. Several occupied residences are within 500 feet of the Proposed Residence. External lighting will be minimized, and only located where safety and access concerns are essential.</p> <p><i>Nutrient Runoff:</i> The Proposed Residence will be landscaped, preferentially with native and non-invasive drought resistant plants. Artificial fertilizers will not be deployed in native and naturalized habitats, and use in landscaped areas will be kept to a minimum.</p> <p><i>Human Intrusion:</i> The Proposed Residence will be inclusive a wood fence to minimize human visitation to the on-site wetland ESHA (Pacific Reed Grass Meadow). Visitation will be kept to restoration activities and where essential for routine property management.</p>
<p><b>4 (g).</b> Where riparian vegetation is lost due to development, such vegetation shall be</p>	<p>Not applicable: no riparian vegetation is present within the property.</p>

<p>replaced at a minimum ratio of 1:1 to restore the protective values of the buffer area.</p>	
<p><b>4 (h).</b> Aboveground structures shall allow peak surface water flows from a 100 year flood to pass with no significant impediment.</p>	<p>Not applicable: no streams are present within the property.</p>
<p><b>4 (i).</b> Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.</p>	<p>The Proposed Residence would not have a significant impact on the biological diversity of the property. The buffer shall be enhanced with native plant species and prepared by a licensed landscape architect with coastal habitat restoration experience.</p>
<p><b>4 (j).</b> Priority for drainage conveyance from a development site shall be through the natural stream environment zones, if any exist in the development area. In the drainage system design report or development plan, the capacity of natural stream environment zones to convey runoff from the completed development shall be evaluated and integrated with the drainage system whenever possible. No structure shall interrupt the flow of groundwater within a buffer strip. Foundations shall be situated with the long axis of interrupted impermeable vertical surfaces oriented parallel to the groundwater flow direction.</p>	<p>The Proposed Residence will be partially situated on an existing residence footprint and asphalt driveway. There are no streams within 300 feet of the Proposed Residence or property.</p>
<p><b>4 (k).</b> If findings are made that the effects of developing an ESHA buffer area may result in significant adverse impacts to the ESHA, mitigation measures will be required as a condition of project approval. Noise barriers, buffer areas in permanent open space, land dedication for erosion control, and wetland restoration, including off-site drainage improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats.</p>	<p>Impacts to the ESHA buffer will not have a long-term negative effect on the ESHA. The Proposed Residence is entirely within the 100-foot buffer of several on-site ESHA, and majority within the 50-foot buffer. Vegetation management around the Proposed Residence as well as proposed mitigation measures will offset impacts to the ESHA buffer and shall follow the guidance of a habitat restoration plan.</p>

Should you have any questions or comments, please do not hesitate to contact me. Again, WRA, Inc. will amend the Coastal Compliance Act Report upon receipt of all County, Commission, or other interested party comments.



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Matt Richmond  
Senior Associate  
[richmond@wra-ca.com](mailto:richmond@wra-ca.com)  
WRA, Inc.  
2169-G East Francisco Blvd.  
San Rafael, California 94901

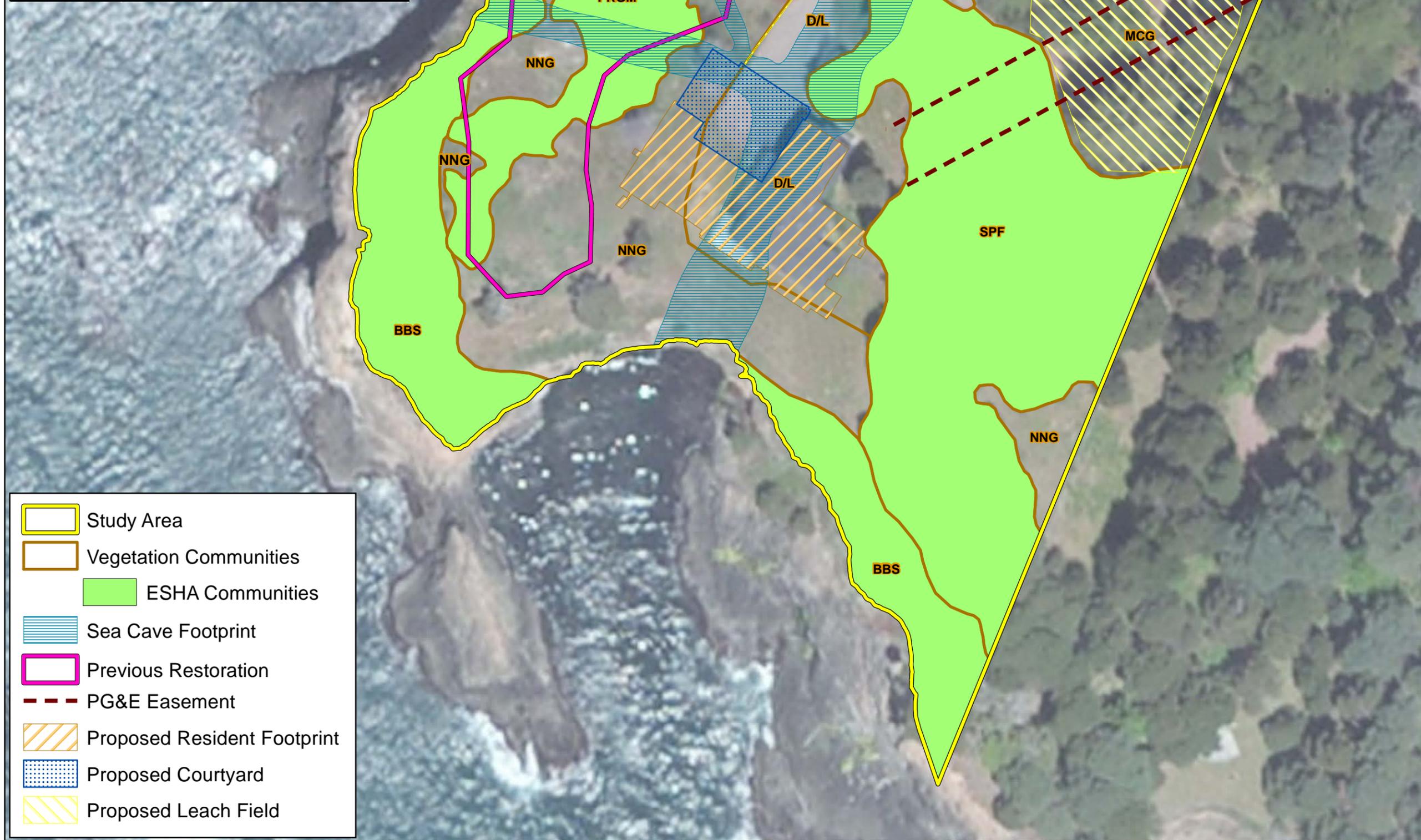
Attachments:

- Figure 1. Proposed Residence, 1-story and 2-story
- Figure 2. Alternative A
- Figure 3. Alternative B
- Figure 4. Alternative C

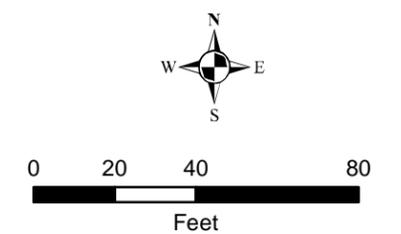
Mendocino County,  
California

Figure 1.  
Proposed Residence

Label	Vegetation Community
BBS	Blue Bossom Scrub
D/L	Developed and Landscaped
MCG	Monterey Cypress Grove
NNG	Non-native Grassland
PRGM	Pacific Reed Grass Meadow
SPF	Shore Pine Forest



	Study Area
	Vegetation Communities
	ESHA Communities
	Sea Cave Footprint
	Previous Restoration
	PG&E Easement
	Proposed Resident Footprint
	Proposed Courtyard
	Proposed Leach Field

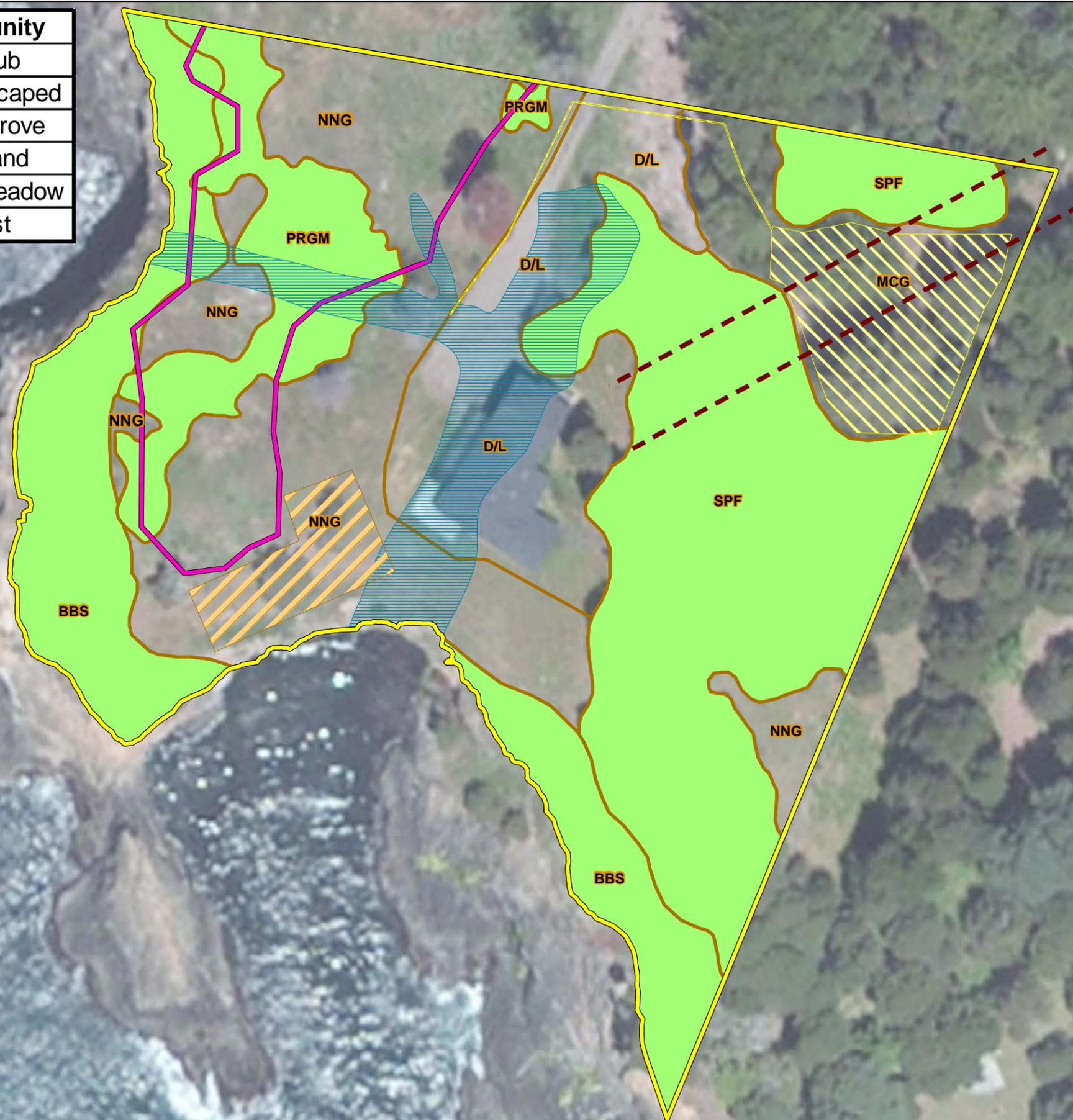


Map Date: February 2015  
Map By: Michael Rochelle  
Base Source: ESRI Streaming Imagery,  
2010 Microsoft Aerial

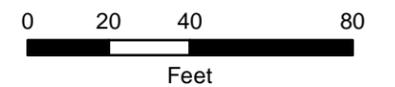
Mendocino County,  
California

Figure 2.  
Alternative A  
Footprint

Label	Vegetation Community
BBS	Blue Bossom Scrub
D/L	Developed and Landscaped
MCG	Monterey Cypress Grove
NNG	Non-native Grassland
PRGM	Pacific Reed Grass Meadow
SPF	Shore Pine Forest



	Study Area
	Vegetation Communities
	ESHA Communities
	Sea Cave Footprint
	Previous Restoration
	PG&E Easement
	Alternative A Footprint
	Proposed Leach Field



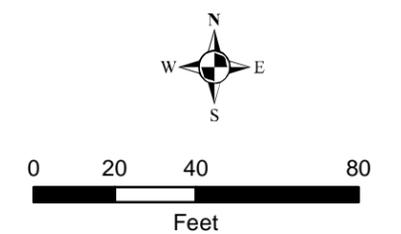
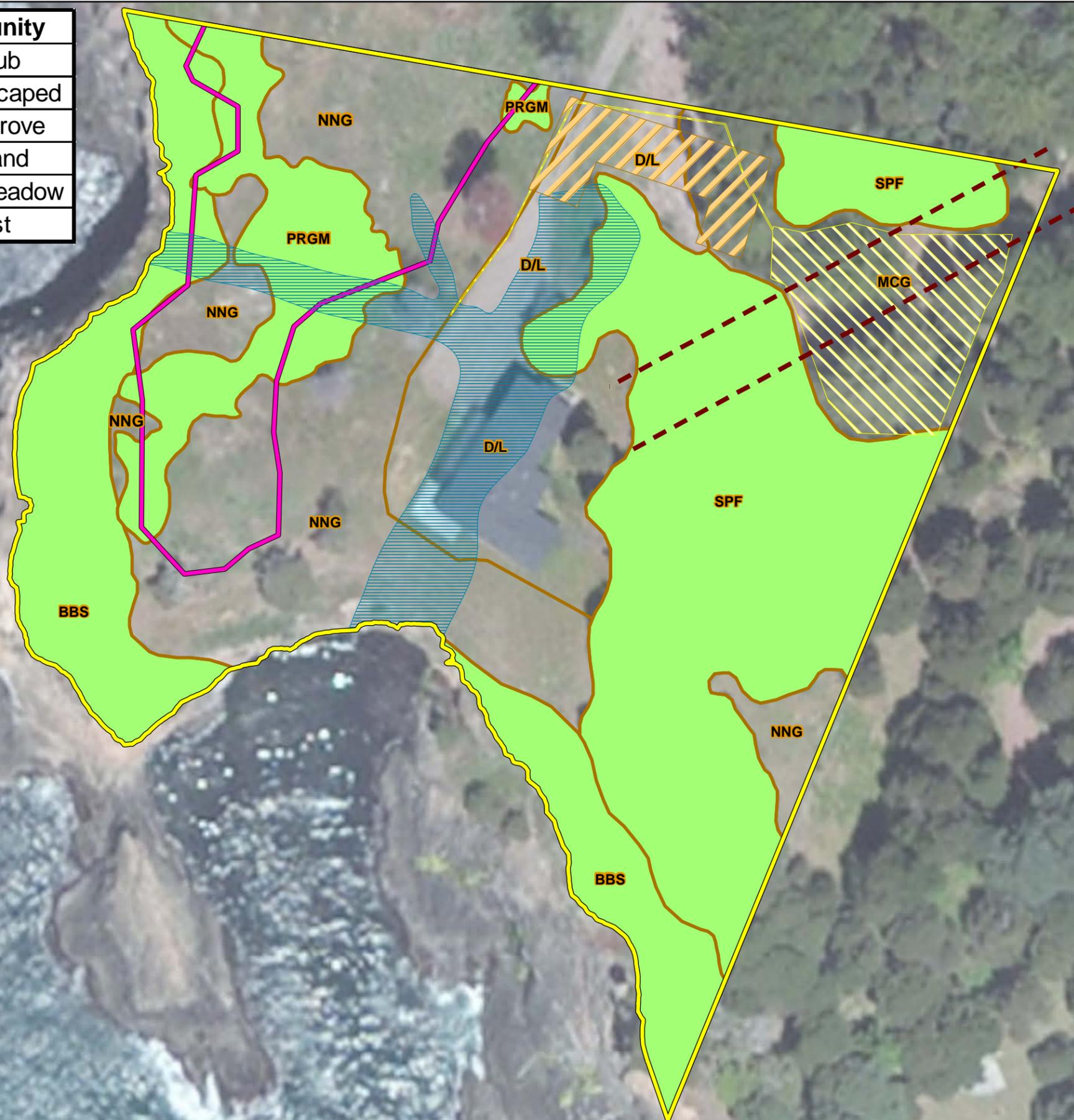
Map Date: February 2015  
Map By: Michael Rochelle  
Base Source: ESRI Streaming Imagery,  
2010 Microsoft Aerial

Mendocino County,  
California

Figure 3.  
Alternative B  
Footprint

Label	Vegetation Community
BBS	Blue Bossom Scrub
D/L	Developed and Landscaped
MCG	Monterey Cypress Grove
NNG	Non-native Grassland
PRGM	Pacific Reed Grass Meadow
SPF	Shore Pine Forest

	Study Area
	Vegetation Communities
	ESHA Communities
	Sea Cave Footprint
	Previous Restoration
	PG&E Easement
	Alternative B Footprint
	Proposed Leach Field

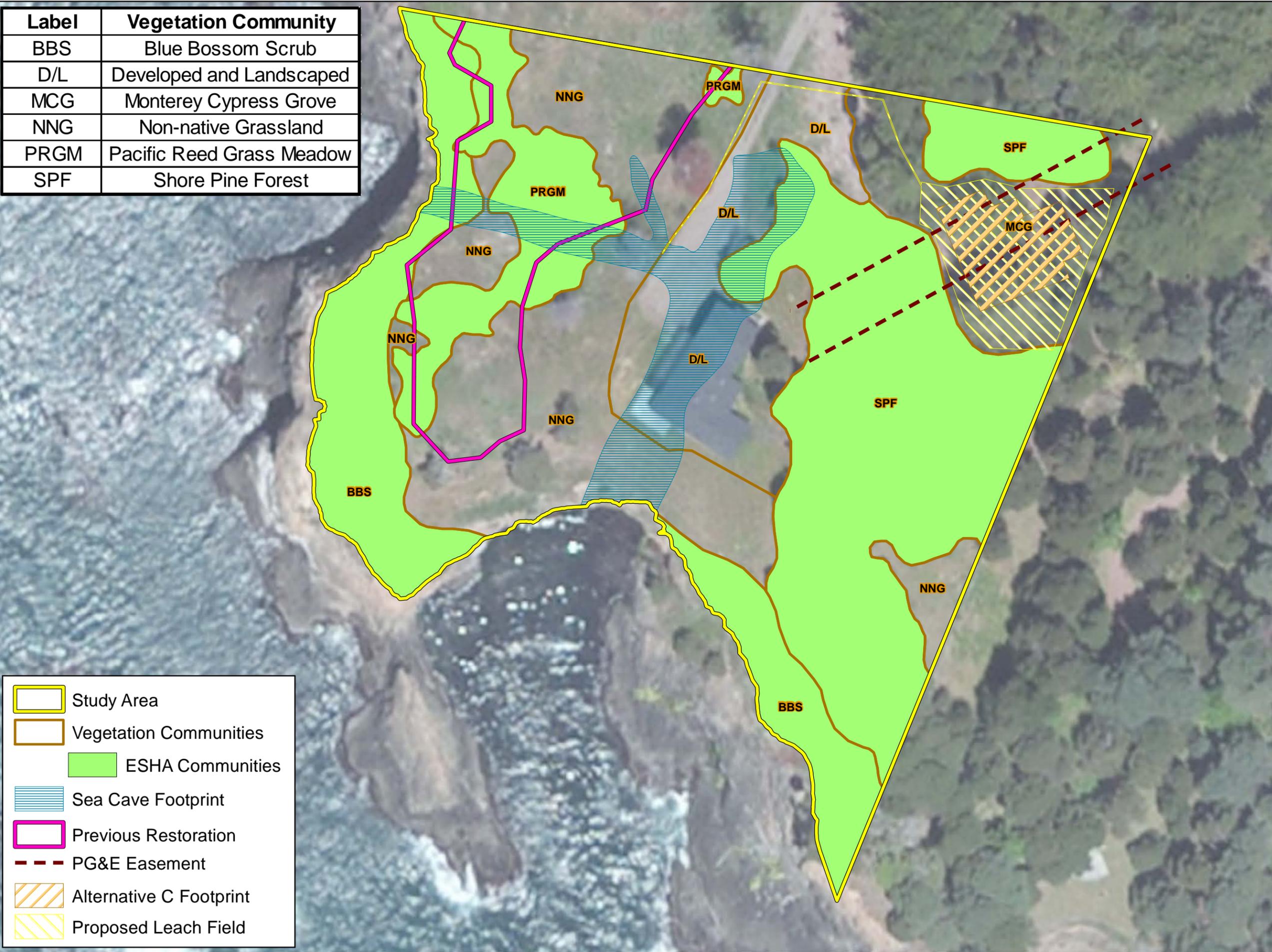


Map Date: February 2015  
Map By: Michael Rochelle  
Base Source: ESRI Streaming Imagery,  
2010 Microsoft Aerial

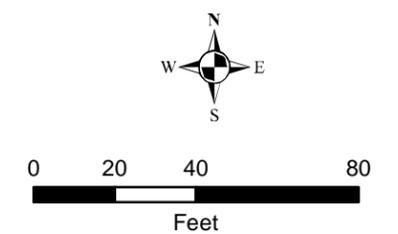
Mendocino County,  
California

Figure 4.  
Alternative C  
Footprint

Label	Vegetation Community
BBS	Blue Bossom Scrub
D/L	Developed and Landscaped
MCG	Monterey Cypress Grove
NNG	Non-native Grassland
PRGM	Pacific Reed Grass Meadow
SPF	Shore Pine Forest



	Study Area
	Vegetation Communities
	ESHA Communities
	Sea Cave Footprint
	Previous Restoration
	PG&E Easement
	Alternative C Footprint
	Proposed Leach Field



Map Date: February 2015  
Map By: Michael Rochelle  
Base Source: ESRI Streaming Imagery,  
2010 Microsoft Aerial



February 23, 2015

12416.02

Mr. Bret Taber  
P. O. Box 1477  
Martinez, CA 94553

**RE: Alternative Analyses, Proposed Taber Residence, 5720 North Highway 1, Little River, Mendocino County, California, CDP 24-2014**

Dear Mr. Taber:

This letter is in response to County of Mendocino's comments on your permit application, CDP 24-2014 in their letter dated January 27, 2015. Brunsing Associates, Inc. (BAI) previously prepared a geotechnical investigation report dated June 11, 2014. The report provided setbacks from the ocean bluff and sea cave walls and stated that building a bridge over the sea cave to support a house was feasible.

Three alternative locations (A, B and C) have been marked by others on the attached Figure X, Proposed Footprint, Restoration, and Enhancement Areas, prepared by WRA Environmental Consultants. In addition, other alternatives, such as a two-story structure on the bridge at the proposed location and no project (using the house in its present location), are to be considered.

Alternative A

This location does not comply with BIA's recommended bluff and cave setback criteria. Therefore, this site is not feasible.

Alternative B

The westerly portion of this outlined site projects over the sea cave, which would require the construction of a bridge to support that portion of the house. The bridge would be founded on deep, drilled piers extending well into bedrock. The rest of the house would need a similar type of foundation to avoid a differential settlement condition. There may be grade changes which would require cut/fills and retaining walls. A new geotechnical investigation, including sampled test borings, laboratory testing, geologic and engineering analyses, would be needed to define the subsurface soil and rock conditions in order to provide house and bridge foundation recommendations.

Alternative C

BAI has no surface or subsurface information at this site. BAI does not know how much site grading and/or retaining walls would be necessary to create a level building pad at this site. A new geotechnical investigation, including sampled test borings, laboratory testing, geologic and

engineering analyses, would be needed to define the subsurface soil and rock conditions in order to provide house foundation recommendations.

### Two-Story House at Proposed Bridge Location

The present single-story house straddles most of the bridge structure, spreading out the house loads. A two-story house would still require approximately the same size bridge, but would be more of a point load on that bridge. This “point load” may require more-substantial bridge support members. A two-story structure does not appear to have any advantage, from a geotechnical standpoint, over a single-story structure.

If a second story (living space) was constructed over the existing garage, the planned bridge would have to be expanded, or a new, separate bridge constructed to support the garage. To comply with the cave wall setbacks, this new bridge foundation would need to be constructed into the hillside behind the existing garage. The resulting excavation would require retaining walls against the hillside.

### No Project

Keeping the house at its present location is unsafe; the house straddles a portion of the sea cave that could collapse over the next 75 years. The present location does not appear to be a reasonable alternative, from a geotechnical standpoint.

Respectfully submitted,



*Erik E. Olsborg*  
Erik E. Olsborg  
Engineering Geologist – 1072



*Keith A. Colorado*  
Keith A. Colorado  
Geotechnical Engineer – 2894

EEO/KAC/mjc

