Attachment 4

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Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: January 17, 2017

To: Daniel Fahey, Assistant Deputy Secretary, California Department of Veterans Affairs

From: Josh Harwayne, Senior Environmental Scientist, Denise Duffy & Associates, Inc.

cc: Jonathan Brinkmann, Principal Planner, Fort Ord Reuse Authority
Mary Israel, Associate Planner, Fort Ord Reuse Authority

Subject: CDVA Off-Site Mitigation Options

Per your request and under contract with the Fort Ord Reuse Authority (FORA), this memorandum reports the results of an analysis of potential off-site coast live oak tree replacement (i.e., restoration) options prepared for the California Department of Veterans Affairs (CDVA). The CDVA needs to identify a replacement site in order to implement the requirements of Mitigation Measures Bio-5 and Bio-6 from the *Final California Central Coast Veterans Cemetery Project Phase-1 Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment and Finding of No Significant Impact (EA/FONSI)* dated August, 2014. The mitigation measures require an off-site area, predominantly of the Oceano soil series, of at least 2.22 acres to be planted with a minimum of 398 coast live oak trees (less than one gallon or acorns). This memo identifies a number of off-site options (**Figure 1**) and discusses the relevant pros and cons of each option.

Off-Site Options

Option #1: Eucalyptus Road

The Eucalyptus Road site is located north of Eucalyptus Road (**Figure 2**). Access is from Eucalyptus Road and consists of the dirt shoulder. The site is impacted by historic and on-going use as a staging and storage area. Historical photographs as far back as 1998 show very little change of the site. Currently, there is a very large pile of tree and shrub stumps and slash covering a portion of the site. The remainder of the site is dominated by invasive weeds, including ice plant and non-native grasses. There does not appear to be any asphalt or concrete. The site lies within mapped oak woodland habitat and is surrounded coast live oak woodlands on the east, west, and north sides, and by Eucalyptus Road to the south. The soils on the site consist of Baywood soils.

Option #2: Tanks

The Tanks site is located adjacent to the Marina Coast Water District Tank complex (Tanks D and E) and accessed via a dirt road from Eucalyptus Road (**Figure 3**). The site is impacted by historic use. Historical photographs as far back as 1998 show very little change of the site. The site consists of a slopped area with one wood retaining wall associated with a historically graded road or staging area. There does not appear to be any asphalt or concrete. The site has been mapped within oak woodlands and is surrounded by coast live oak woodlands. It is very likely that the site was historically vegetated by oak

woodlands, but currently is unvegetated or dominated by invasive weeds including ice plant and non-native grasses. There are a small number of native shrubs and a few small coast live oak trees present. The soils on the site consist of Oceano soils.

Option #3: Trail

The Trail site is located adjacent to the Jerry Smith Access Corridor trail between Inter-Garrison and Watkins Gate Roads. Access is obtained from either road onto the existing public trail (**Figure 4**). Historical photographs as far back as 1998 show very little change of the site. Only a small portion of the site is significantly impacted by historical use, which consists of a small paved parking or staging area. The remainder of the site is only superficially impacted by a number of intersecting foot paths. The site has not been mapped within oak woodlands; however, it is surrounded by coast live oak woodlands. It is not likely that any significant portion of the site was historically vegetated by oak woodlands. Currently, all but the edges of the site consist of a non-wooded depression dominated by non-native grass species. In addition, there are a small number of native shrubs and a few small coast live oak trees throughout the site. The soils on the site consist of Oceano soils.

Option #4: East Garrison #2

The East Garrison #2 site is located adjacent to Barloy Canyon Road (**Figure 6**). Access is obtained from a paved driveway. Historical photographs as far back as 1998 show very little change of the site. A small portion of the site is a paved turn-around. The site has been mapped within oak woodlands and is surrounded by coast live oak woodlands. It would appear that the site was graded to a flat pad sometime in the past to facilitate the installation and maintenance of underground water infrastructure. There are two small structures and a number of marked infrastructure access boxes. It is unknown what the exact use of the area or associate infrastructure was or if it is still operational. Currently, the site is dominated by a mix of non-native grasses and native scrub species. In addition, there are a small number of small coast live oak trees throughout the site. The soils on the site consist of Arnold soils.

Option #5: East Garrison #1

The East Garrison #1 site is located directly adjacent to, and can be accessed from, Watkins Gate Road within the residential subdivision (**Figure 5**). Historical photographs as far back as 1998 show very little change of the site. The site has been significantly impacted by historic disturbance. The site was graded and portions of it were paved to facilitate its use as a shooting range. A number of dilapidated structures remain on the site adjacent to the proposed restoration area. The site supported oak woodland prior to disturbance and is surrounded by coast live oak woodlands. Currently, the site is dominated by non-native grass, including Pampas. Some native shrubs and small oak trees are breaking though the degraded pavement in places. The soils on the site consist of Oceano soils.

Comparison of Off-Site Options

Table 1 below identifies the key factors in comparing the identified off-site options.

Table 1. Comparison of Off-Site Options

OPTION	LAND USE DESIGNATION	ACCESS	FILL	SOILS COMPACTION	LEVEL OF DISTURBANCE	MAPPED OAK WOODLAND	SIZE	OCEANO SOILS
#1	Development	Excellent	No	Low	Moderate	Yes	2.52 Ac	No
#2	Development	Excellent	No	Low	Moderate	Yes	1.0 Ac	Yes
#3	Development	Moderate	Yes	High	Low	No	2.37 Ac	Yes
#4	Development	Excellent	No	Moderate	Moderate	Yes	1.0 Ac	No
#5	Development	Excellent	Yes	High	High	Yes	2.79 Ac	Yes

Land Use Designation

Whichever off-site option is selected, it will need to be placed in conservation subsequent to the planting. The Trail and East Garrison #1 and #2 sites are owned by the County of Monterey (County) and identified for development. However, recent planning documents identify these three sites as future conservation areas. The Eucalyptus and Tank sites are owned by the City of Seaside (City) and designated for development. As such, coordination with the City and County would be required to ensure that a restoration site would not conflict with future plans for these areas. Generally, conservation is a more compatible land use for restoration than development.

Access

All of the sites have access; however, the Trials site would require using a public trail for vehicular access and staging.

Fill

Soil condition is often a key factor in restoration success or failure. Non-native fill within the soil can drastically reduce the target vegetation's ability to thrive. If there are large amounts of fill, it will need to be removed from any site prior to restoration. There is surface fill in the form of degraded pavement on a very small portion of the Trail site and the entire East Garrison #1 site. No subsurface investigation was conducted as part of this analysis; the depth of surface fill is unknown as is whether any subsurface fill exists at any of the sites. It is likely, however, no subsurface fill exists at either the Trail or East Garrison #1 sites.

Soil Compaction

Like fill, soil compaction is a critical factor in restoration success. If the soil is overly compacted, it can make the establishment of vegetation exceedingly difficult without pretreatment such as ripping.[1] The soil is significantly compacted over the East Garrison #1 site and a small portion of the Trail site. The remaining sites have all been graded to some extent in the past, but the soils do not appear significantly compacted.

Disturbance

Understanding the level and history of disturbance is important because, if a site is only superficially disturbed (i.e., foot and bike traffic), and no oaks are currently growing there, it is an indication that there may be other environmental or ecological factors that preclude oaks from establishing at that location (i.e., topography, hydrology, soils etc.). This, in combination with knowing if the site was previously mapped as oak woodland, provide insight into the potential a site has to support restored oak woodlands.

Mapped Oak Woodland

A site that did not support oak woodland habitat prior to disturbance may not be a good candidate for oak woodland restoration because it may be difficult to establish and sustain a habitat type change.

Size

Size is an important consideration in that the restoration is required to be no less than 2.22 acres. Three of the five sites evaluated meet this criterion: Eucalyptus, Trail, and East Garrison #1. The other two sites are approximately one acre each. This means that even if they were combined the size criteria would not be met.

Soil

The mitigation requires that the soils be predominantly Oceano soils. Eucalyptus Road and East Garrison #2 do not have the required soil type.

Conclusion

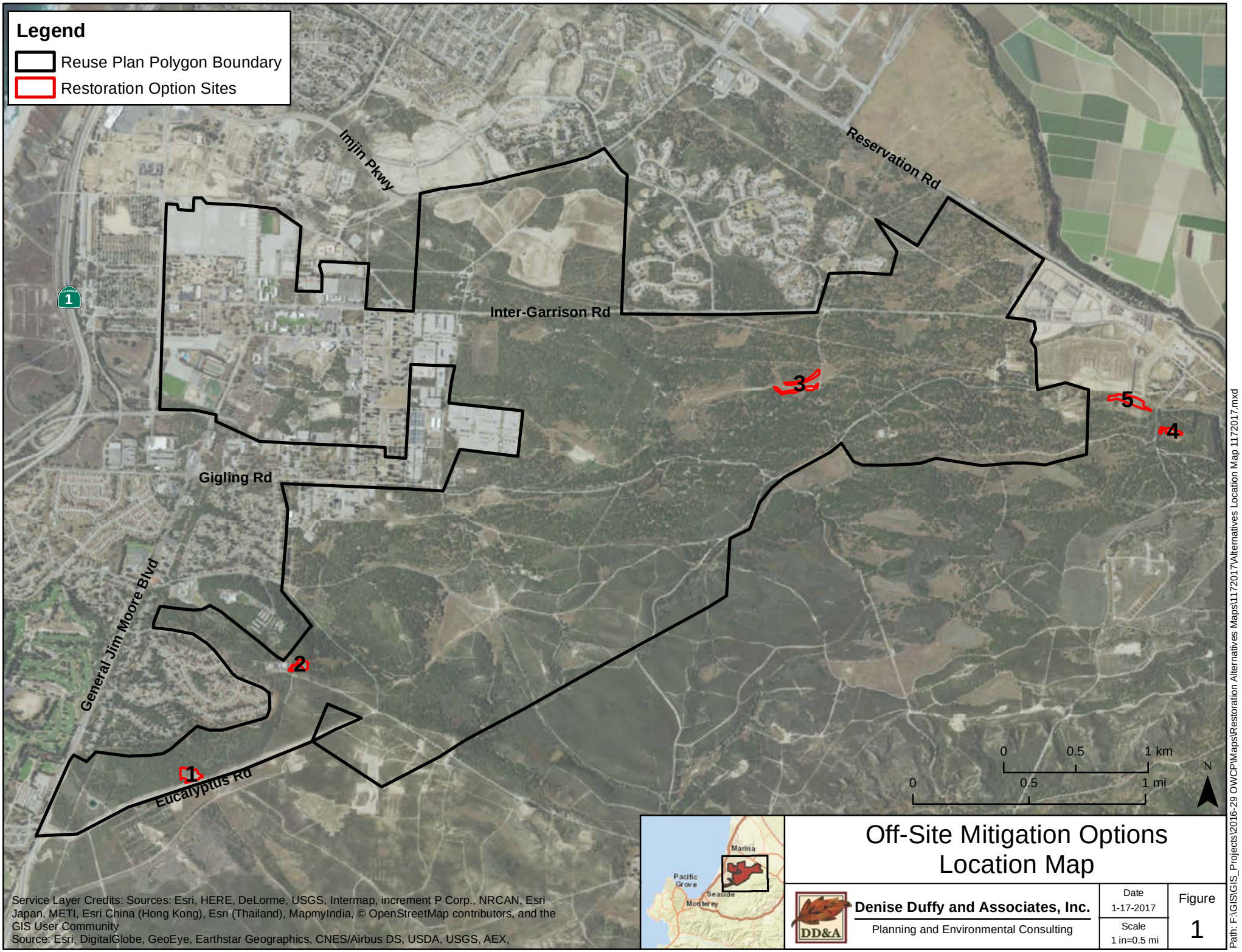
As identified above, the Tanks and East Garrison #2 sites should be eliminated because they are two small to meet the size requirement. In addition, Eucalyptus Road should also be eliminated because it does not possess the required soil type. Of the two remaining, the Trail site has not historically supported oak woodland habitat. As a result, the potential to successfully implement a self-sustaining oak woodland habitat may be limited. The East Garrison #1 site very likely supported dense coast live oak woodland prior to being graded and converted to a shooting range. While the site has been significantly disturbed, is covered by thin, degraded pavement, and the soils are significantly compacted, the site meets the size and soils requirements, is planned for future conservation, has excellent access, and is located within

[1] Ripping refers to using heavy equipment to turn the soil over.

historic oak woodland habitat. As a result, the East Garrison #1 site is recommended as the preferred restoration site. The restoration would have a significant potential for success if the proper soil preparation was done prior to planting. In addition, the site is located adjacent to a residential development and restoration would bring significant aesthetic benefit by screening the shooting range.

Additional analysis would need to be conducted to determine costs for the options.

If you have any questions concerning the information above, please do not hesitate to contact me.



Off-Site Mitigation Options Location Map

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Date: 1-17-2017
Scale: 1 in=0.5 mi
Figure: 1

Path: F:\GIS\GIS_Projects\2016-29 OWCP\Maps\Restoration Alternatives Maps\1172017\Alternatives Location Map 1172017.mxd

Off-Site Mitigation Option 1

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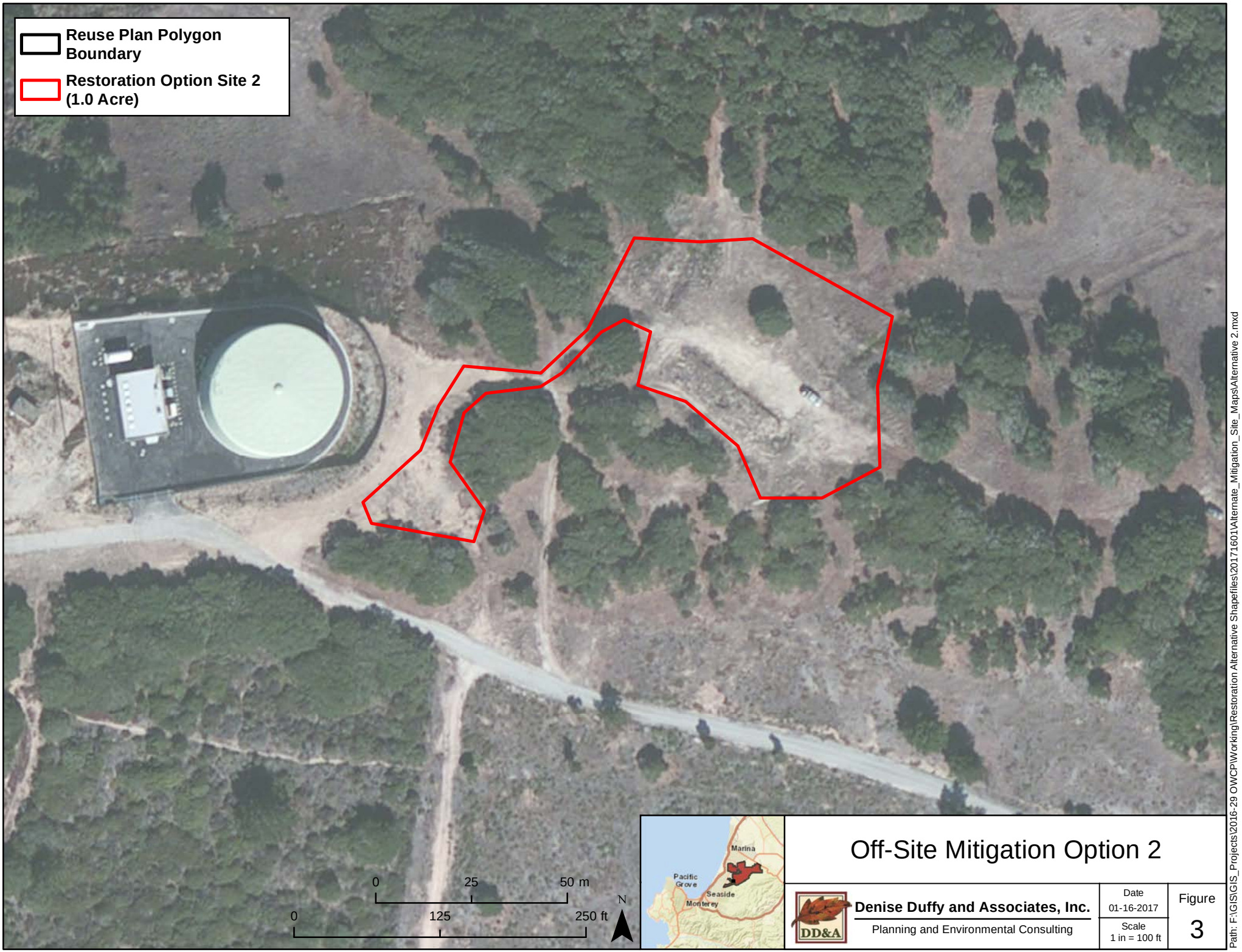
Date
01-16-2017

Scale
1 in = 100 ft

Figure
2

Path: C:\GIS\GIS_Projects\2016-29 OWCP\Maps\Restoration Alternatives Maps\Alternative 1.mxd



Off-Site Mitigation Option 2

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Date
01-16-2017

Scale
1 in = 100 ft

Figure
3

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Off-Site Mitigation Option 3

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Date
01-16-2017

Scale
1 in = 100 ft

Figure
4

Path: F:\GIS\GIS_Projects\2016-29 OWCP\Working\Restoration Alternative Shapefiles\20171601\Alternate_Mitigation_Site_Maps\Alternative 3.mxd

Off-Site Mitigation Option 4

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Date
01-16-2017

Scale
1 in = 100 ft

Figure
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Off-Site Mitigation Option 5

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Date
01-16-2017

Scale
1 in = 100 ft

Figure
6

Path: F:\GIS\GIS_Projects\2016-29 OWCP\Working\Restoration Alternative Shapefiles\20171601\Alternate_Mitigation_Site_Maps\Alternative 5.mxd

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