

Appendix C:

Biological Reports and Related Documents

February 4, 2015

Steve Abbs
Vice President, Site Development
Davidon Homes
1600 South Main Street, Suite 150
Walnut Creek, CA 94596-5394

**Subject: Updated Biological Assessment Report for the Earthquake Mitigation Alternative
Napa Oaks Project, City of Napa, Napa County, California**

Dear Mr. Abbs:

The Napa Oaks Project (Project) development site plan has been modified due to new information related to an earthquake fault line within the Project boundary. HBG has updated specific sections of the Napa Oaks Project Biological Assessment, originally prepared by HBG on July 11, 2011, to address changes to biological impacts and mitigation measures associated with the revised site plan for the Earthquake Mitigation Alternative (EMA Project) prepared by d/k Consulting Engineers and dated January 5, 2015. The sections requiring updates are Section 5.3.1 (Plant Communities and Vegetation), Section 5.3.2 (Wetlands and Waters of the US), Section 5.3.3 (Oak Woodlands), and Section 5.3.6 (Special Status Animal Species). A recalculation of number of trees required for removal was based on our review of the February 3, 2015 letter report prepared by HortScience, Inc. (Enclosure 1). The special status species section was updated specifically related to the discussion of the western pond turtle. All updates are shown as "tracked changes."

Since publication of the 2011 Biological Assessment, the San Francisco District of the Corps of Engineers verified the wetland delineation on April 24, 2012. The verified delineation slightly increased the acreage of wetlands and waters of the U.S. on the site from 1.21 acres to 1.25 acres. Several figures from the July 2011 Biological Assessment (Figures 9, 10, 11 and 12) have been updated to reflect the updated impact assessment related to the EMA Project, and these figures also reflect the verified wetland delineation as necessary.

In summary, the EMA Project development site plan did not result in a significant increase in impacts to vegetation communities or wetlands, and did not result in additional impacts to special status species. The EMA development site plan did result in a significant decrease in impacts to Coast live oak woodland habitat.

5.3.1 Plant Communities and Vegetation

Impacts to biological resources will result from vegetation removal due to the conversion of upland areas composed of annual grassland, and valley foothill hardwood habitat, and due to the filling of wetland areas to accommodate the proposed development. The acreage of each of the vegetation communities found on the property, and impacts resulting from site development as planned are shown in Table A. Figure 9 (updated) shows the plant communities present at the site, and Figure 11 (updated) shows the development footprint as an overlay of the vegetation communities found on the project site. The grading footprint for the proposed project would total approximately ~~37.53~~41.05 acres (~~50.746~~50.746% of the site). At some proposed residential units, grading for building pads and ancillary facilities would not require grading over the entire lot. ~~Ungraded areas within proposed residential lots totals 3.85 acres.~~ In these ungraded areas it was assumed that trees would not be removed, but that impacts to biological resources would result as these areas would serve as rear yards for residents and could be converted to landscaping or other uses. The impact acreage in Table 1 reflects the total area of impact including graded footprint and the impacted area extending to the edge of each residential lot.

TABLE A. IMPACTS TO VEGETATION COMMUNITIES

Habitat Type	Existing Acreage in Overall Study Area (acres)	Impacted Acreage (acres)
California Annual Grassland	49.65 <u>49.63</u>	25.93 <u>28.69</u>
Coast live oak woodland	27.31 <u>27.29</u>	12.52 <u>9.36</u>
Freshwater marsh	1.21 <u>1.25</u>	0.36 <u>0.43</u>
Urban	2.77	2.57
TOTAL	80.94 <u>80.94</u>	41.38 <u>41.05</u>

5.3.2 Wetlands and Waters of the U.S.

Wetlands and waters of the U.S. are regulated by state and federal agencies and would be considered sensitive natural communities as defined by CEQA. Impacts to waters of the U.S. would be potentially significant if appropriate mitigation was not implemented for all regulated wetlands as required by state and federal regulations.

The ecological constraints to development at the site include approximately ~~1.25~~1.24 acres of wetlands and waters of the U.S. ~~potentially~~ subject to Corps jurisdiction pursuant to Section 404 of the Federal Clean Water Act as determined in a wetland delineation verified by the San Francisco District of the Corps of Engineers on April 24, 2012 and as shown in Figure 10 (updated). As the palustrine emergent wetlands are scattered throughout the project area, complete avoidance of seasonal wetlands would not be possible. Impacts to wetlands and

waters of the U.S. ~~potentially~~ subject to Corps jurisdiction are shown in Figure 12 (updated). The development plan for the site would permanently impact ~~0.430-36~~ acres of palustrine emergent wetlands located on the site that are ~~potentially~~ under the jurisdiction of the Corps under Clean Water Act Section 404. Installation of a stormwater pipeline within ~~0.006~~ acres of jurisdictional wetlands would be considered a temporary impact; the pipeline would be installed in a trench that would be backfilled to original grade allowing wetlands to reform in that area. Approximately ~~3034~~% of the wetlands on the property would be impacted by the proposed project, with the remaining ~~7066~~% of the wetlands not subject to impacts and preserved within an open space area of approximately ~~46-39.85~~ acres managed by the Homeowner's Association. Without mitigation, project impacts to wetlands or waters of the U.S. would be significant.

Impact 1: Direct (fill) impacts to ~~0-360.43~~ acres of waters of the U.S. would result from implementation of the proposed site plan.

Mitigation Measure 1-1: The developer will submit applications for a Nationwide permit from the Corps of Engineers (see Section 4.5, Permit Requirements), and Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB), required for the Corps permit to be valid. Appropriate wetland mitigation would be required by the Corps and RWQCB for impacts to the ~~0.430-36~~ acres of seasonal wetlands located at the site, and a wetland mitigation plan to mitigate impacts to jurisdictional areas would need to be developed as part of the Corps and RWQCB permit process. Corps jurisdictional areas must be replaced at a minimum 1:1 ratio through wetland creation (preferably on-site) to ensure that no net loss of acreage or functions and values to these areas occurs. The required ratio of replacement acreage to impacted acreage will be decided by regulatory agencies on a site-specific basis based on the functions and values present on the project site, but requirement for a mitigation ratio of 2:1 would be likely. Mitigation wetlands totaling approximately ~~0.860-72~~ acres would be created within the onsite open space preserve. Wetland mitigation sites would be consolidated along the southern boundary of the project site. The portion of the site along the southern boundary includes a proposed soil stockpile area that would be used to balance cuts and fills as grading for the project is accomplished. This area will not be developed with housing or ancillary uses and will be incorporated into the onsite open space preserve. A portion of the required wetland mitigation acreage would be constructed on flat topography on top of the stockpiled soils. A detailed mitigation plan would need to be prepared that includes monitoring and reporting requirements, responsibilities, performance success criteria, reporting procedures, and contingency requirements.

Approximately ~~0-85-0.82~~ acres of wetlands would be preserved within an onsite open space preserve along with an additional acreage of created onsite mitigation wetlands. The proposed open space area would consist of approximately ~~46-39.85~~ acres of grasslands, Coast live oak woodlands and wetlands. During construction of the project, use of development setbacks, construction fencing and other barriers may be necessary to prevent unintended impacts to

preserved sensitive habitats within the open space area. In the long term, these preserved sensitive habitats could experience indirect impacts from disturbances associated with residential projects such as from residents, vehicles and pets, or from introductions of invasive vegetation. Over the long term, fencing or signage may be required to restrict access to preserved sensitive areas, and means to lessen intrusion of pets (e.g., enforcement of leash laws) may be necessary. Vegetation management to control invasive vegetation may necessary as well. Long term management of the open space area by the Homeowner's Association will need to occur pursuant to a management plan with identified goals and a monitoring plan with management inspections and maintenance actions.

5.3.3 Oak Woodlands

Project construction would result in the loss of approximately ~~9.36~~~~12.52~~ acres (~~344~~% of the valley foothill hardwood or Coast live oak woodland) habitat on the site (see updated Figure 10). Tree removal and impact to oak woodland habitat was assumed within the graded footprint of the project. Ungraded portions of yards within each residential lot were included within the calculated acreage of impact to oak woodland habitat.

HortScience (see Attachment 4 from the July 2011 Biological Assessment and Enclosure 1 herein) calculated that the project would require the removal of ~~571~~~~620~~ trees, including ~~200~~ ~~173~~ Native Protected trees. A total of ~~392~~~~320~~ trees would be impacted by lot grading, ~~158~~~~156~~ by road grading, ~~60~~~~58~~ by slope and swale grading, 26 by construction of the detention pond, 8 by construction of new entry onto Old Sonoma Road, and ~~4~~~~3~~ by installation of retaining walls. Implementation of the proposed project would allow for preservation of ~~804~~~~755~~ trees, including ~~422~~~~449~~ Native Protected trees.

Oaks woodlands provide significant wildlife habitat value. Oak woodlands are protected by the California Department of Fish and ~~Game~~Wildlife, State of California regulations including Public Resources Code Section 21083.4, policies of the City of Napa. Although ~~14.79~~~~17.89~~ acres of oak woodland would be protected within an open space preserve managed by the Homeowner's Association, the loss of ~~just over 12.52~~~~9.36~~ acres of oak woodland as a result of the project is significant. Public Resources Code Section 21083.4 directs Counties to mitigate significant effects of oak woodland conversion, and would not apply to a project reviewed by the City of Napa as a CEQA Lead Agency. However, the impact evaluation and development of mitigation measures recommended herein are intended to be consistent with the Public Resource Code as if this were a project proposed in an unincorporated area.

Indirect project impacts on oak trees not directly affected could occur unless appropriate precautions are taken. The impacts could result from increased soil compaction in the root zone of the trees, summer watering within the root zone, and excessive pruning to allow development of structures and open up views. Death of oak trees could result from oak root fungus (*Armillaria mellea*) resulting from operation of landscape irrigation systems in developed areas up slope from the native oak trees. Movement of heavy construction vehicles and equipment could cause impacts such as broken branches, compaction of soils within root zones, etc. which could result in a weakening and eventual death of the tree. The response of

individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken and the construction methods. A tree protection plan will be developed to mitigate these indirect impacts, and will include recommendations prepared by the arborist as part of the tree survey (see Attachment 4, [July 2011 Biological Assessment](#)). All landscape plans will be reviewed by the arborist as well.

Impact 4: The project would require construction within [12.529.36](#) acres of valley foothill hardwood (Coast live oak woodland) habitat, the direct removal of a large number of mature trees, and could result in indirect project impacts on trees not directly affected, unless appropriate precautions are taken.

Mitigation Measure 4-1: The applicant should establish oak woodland preserves totaling [37.5628.08](#) acres to mitigate the loss of oak woodlands due to construction of the project at a mitigation ratio of 3:1. Approximately [14.7917.89](#) acres of oak woodlands could be preserved within the onsite open space preserve subject to deed restriction and managed by the HOA (see mitigation measure 3-1), with the remainder ([22.7710.19](#) acres) preserved in an offsite preserve protected by conservation easement.

Mitigation Measure 4-2: Removal of oak trees will require the implementation of a tree replacement plan, and work in the vicinity of oak woodlands will require preparation of a tree protection plan. An Oak Woodland Mitigation Plan would contain tree replacement and protection activities as follows:

- The applicant should prepare and implement a Tree Replacement Plan including: (i) replacement of trees at ratios prescribed by the City of Napa; (ii) the specific location of the tree planting, (including a map and planting plan); (iii) schedules and methodologies for maintaining and monitoring the success of the Plan; and (iv) performance standards.
- The applicant must follow Tree Preservation Guidelines that include construction guidelines and measures to maintain long-term tree health (Tree Preservation Guidelines are detailed on pages 19 and 20 in the Tree Survey report by HortScience; see Attachment 4 [from the July 2011 Biological Assessment](#)). These guidelines include design recommendations, preconstruction treatments and recommendations, and recommendations for tree protection during construction. Included in the guidelines is the establishment of Tree Protection Zones around each preserved tree. Tree Protection Zones will be marked with fencing and within these zones no grading, excavation (including for underground services such as utilities or sub-drains), or storage of materials or dumping of materials can occur without consultations with the project arborist.
- The City of Napa should review final project grading and construction plans to minimize encroachment within the drip line of any trees not eliminated as part

of site grading. This review should include assurances that the design of roads, utilities, slope stabilization work, subdrains, and other types of infrastructure avoid the area within the dripline of native trees where possible; and that all grading is designed to drain water away from the base of trees so as not to create areas of ponding within the dripline.

5.3.6 Special Status Animal Species

A review of habitat requirements of sensitive animal species documented by the CNDDDB as occurring in the project vicinity, and sensitive animal species known to occur in the general vicinity, was conducted by HBG and Rana Resources biologists. Animal species of special concern are present or possible as described below.

Breeding habitat for California red-legged frog (CRLF) and California tiger salamander (CTS) does not occur on the Napa Oaks project site. However, artificial ponds located in the vicinity of the site display the inundation characteristics necessary for them to serve as breeding sites for either species if they were to occur in the area. If breeding by either species were to occur in these ponds, the project site could serve as refugial habitat for these species. Results of the Habitat Assessment for CTS (Attachment 6, [July 2011 Biological Assessment](#)) showed that the site is outside the known native range of the species. Results of the Habitat Assessment for CRLF (Attachment 7, [July 2011 Biological Assessment](#)) showed that although the site lies within the native range for this species, high summer and fall air temperatures make the local aquatic habitats optimal for bullfrog reproduction and growth, which has presumably resulted in the localized extinction of CRLF in the vicinity of Napa. Although there are a number of adjacent vineyard irrigation ponds in the vicinity of the site, none of these water bodies appear to harbor CTS or CRLF due to the presence of dense populations of introduced bullfrogs and introduced predatory fishes. As neither CTS nor CRLF would be expected to occur at or near the site, impacts to these species are not anticipated due to construction of the proposed project.

Although the project site is unsuitable for western pond turtle nesting and estivation, the species was observed in irrigation ponds in the project vicinity by Rana Resources (see technical report related to this species in Attachment 8, [July 2011 Biological Assessment](#)). As one of these irrigation ponds harboring the species occurs along the southern boundary of the site, it is possible that a western pond turtle could move across a small part of the property and be impacted during construction operations (e.g., could be crushed by construction vehicles). To avoid any potential negative effects to western pond turtle, mitigation measures are recommended below.

Impact 8: Construction operations could impact western pond turtles that have been observed in the adjacent irrigation pond and that could possibly move across the southern portion of the property.

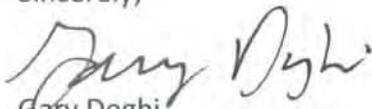
Mitigation Measure 8-1: Establish a setback of at least 200-feet between residential land uses between the southern grading limits of the project and the high water edge of the irrigation pond; The portion of the project site adjacent to the irrigation pond will be used for stockpiling of soils and creation of wetland mitigation and will be incorporated into the

open space preserve and available as habitat for use by western pond turtle after construction of the project.

Mitigation Measure 8-2: Install silt fencing at the southern edge of the development area during all construction operations to prevent western pond turtle from potentially entering the construction area. The fence could be examined by a qualified biologist on a regular basis during the construction period to make sure that it is functioning properly.

If you have any questions or need additional information, please feel to contact me at 650-208-8711 / gdeghi@h-bgroup.com or Robert Perrera at 415. 385.4106 / Rperrera@h-bgroup.com

Sincerely,



Gary Deghi

Vice President/Senior Environmental Scientist

Enclosure 1: HortScience, Inc. Arborist Report dated February 3, 2015

Enclosure 2: Updated Figures 9, 10, 11, and 12

Enclosure 1

**HortScience, Inc. Arborist Report dated
February 3, 2015**



February 3, 2015

Steve Abbs
Davidon Homes
1600 S. Main Street
Walnut Creek CA 94596-5394

Subject: **Earthquake Mitigation Alternative Impacts Review**
Napa Oaks Property, Napa

Dear Mr. Abbs:

Davidon Homes is planning to develop the subject property in Napa. HortScience, Inc. prepared an **Arborist Report** for the project (dated July, 2011). Following additional seismic investigations Davidon Homes requested that HortScience, Inc. evaluate the impacts to trees from a modified Grading Plan. This letter responds to that request.

Summary of changes

In order to assess impacts to trees from the proposed changes, I reviewed the Earthquake Mitigation Alternative, prepared by d/k Consulting Engineers (dated January 5, 2015). The majority of the changes were to Parcel A, between Lot 21/Street A and Lots 16-18.

Following is a summary of the changes based on the Alternative plan. Tables 1 and 2 (following pages) provide a list of the additional trees identified for preservation and removal.

- I reviewed the disposition for 61 trees, including 60 on Parcel A and tree #1172 on Parcel B. The disposition for 55 of these trees changed.
- The Alternative plan allows for the preservation of 52 additional trees, including 29 *Protected Native* trees.
- The Alternative plan requires the removal of three (3) additional trees, including two (2) *Protected Native* trees.
- All three (3) of the additional trees recommended for removal were of poor or moderate suitability for preservation (2 moderate and 1 poor).

Preservation of trees is predicated on adhering to the ***Tree Preservation Guidelines*** provided in the January 2011 **Arborist Report**.

**Table 1: Additional trees recommended for preservation
Napa Oaks site, Napa**

Tree No.	Species	Trunk Diameter (in.)	Protected Native Tree?	Impact
614	Coast live oak	9,6	No	10' from grading
623	Coast live oak	31	Yes	22' from grading
643	Coast live oak	15	Yes	Outside impacts
648	Coast live oak	9,6,4	No	Outside impacts
649	Coast live oak	13	Yes	Outside impacts
650	Coast live oak	6,4	No	Outside impacts
651	Coast live oak	17	Yes	Outside impacts
652	Coast live oak	13,9	Yes	10' from grading
658	Coast live oak	12,11,10	Yes	Outside impacts
755	Coast live oak	11,9,9,8	No	10' from grading
756	Coast live oak	12,9	Yes	10' from grading
757	Coast live oak	19	Yes	Outside impacts
758	Coast live oak	17	Yes	Outside impacts
759	Coast live oak	9	No	Outside impacts
760	Coast live oak	15	Yes	Outside impacts
761	Coast live oak	11,10,9,8,5	No	Outside impacts
762	Valley oak	6	No	Outside impacts
763	Coast live oak	18	Yes	Outside impacts
764	Coast live oak	12,12	Yes	Outside impacts
765	Coast live oak	8,8,7,4	No	Outside impacts
766	Coast live oak	9,9,7,4	No	Outside impacts
767	Coast live oak	10	No	Outside impacts
768	Coast live oak	15,13,6	Yes	Outside impacts
769	Coast live oak	8	No	Outside impacts
770	Coast live oak	9,8,7	No	Outside impacts
771	Coast live oak	8,6	No	Outside impacts
772	Coast live oak	10	No	Outside impacts
773	Coast live oak	11,7	No	Outside impacts
774	Coast live oak	13,8,7	Yes	Outside impacts
775	Coast live oak	13,12,12,12,10,10	Yes	Outside impacts
776	Coast live oak	7	No	Outside impacts
777	Coast live oak	9	No	Outside impacts
778	Coast live oak	12,11	Yes	Outside impacts
818	Coast live oak	15,14,13,12,9	Yes	Outside impacts
819	Coast live oak	19,11	Yes	Outside impacts
820	Coast live oak	14	Yes	Outside impacts
840	Coast live oak	8	No	Outside impacts
841	Coast live oak	21	Yes	Outside impacts
842	Madrone	12,11	No	Outside impacts
843	Coast live oak	10,9,9,9,8,7	No	Outside impacts
844	Coast live oak	23	Yes	Outside impacts
845	Coast live oak	17	Yes	Outside impacts
846	Coast live oak	11	No	Outside impacts
847	Coast live oak	14	Yes	Outside impacts
848	Coast live oak	12,8	Yes	Outside impacts
849	Coast live oak	14,13	Yes	Outside impacts
867	Coast live oak	16	Yes	Outside impacts

(Continued, following page)

**Table 1: Additional trees recommended for preservation, continued
Napa Oaks site, Napa**

Tree No.	Species	Trunk Diameter (in.)	Protected Native Tree?	Impact
868	Coast live oak	6	No	Outside impacts
869	Coast live oak	15,10	Yes	Outside impacts
870	Coast live oak	18,13	Yes	Outside impacts
871	Coast live oak	8,6	No	Outside impacts
877	Coast live oak	13,5,3	Yes	Outside impacts

**Table 2: Additional trees recommended for removal
Napa Oaks site, Napa**

Tree No.	Species	Trunk Diameter (in.)	Protected Native Tree?	Reason for removal
559	Coast live oak	31	Yes	Impacted by grading
662	Coast live oak	8,7	No	Impacted by grading
804	Coast live oak	31	Yes	Impacted by grading

Please contact me if there are any questions regarding my observations or recommendations.

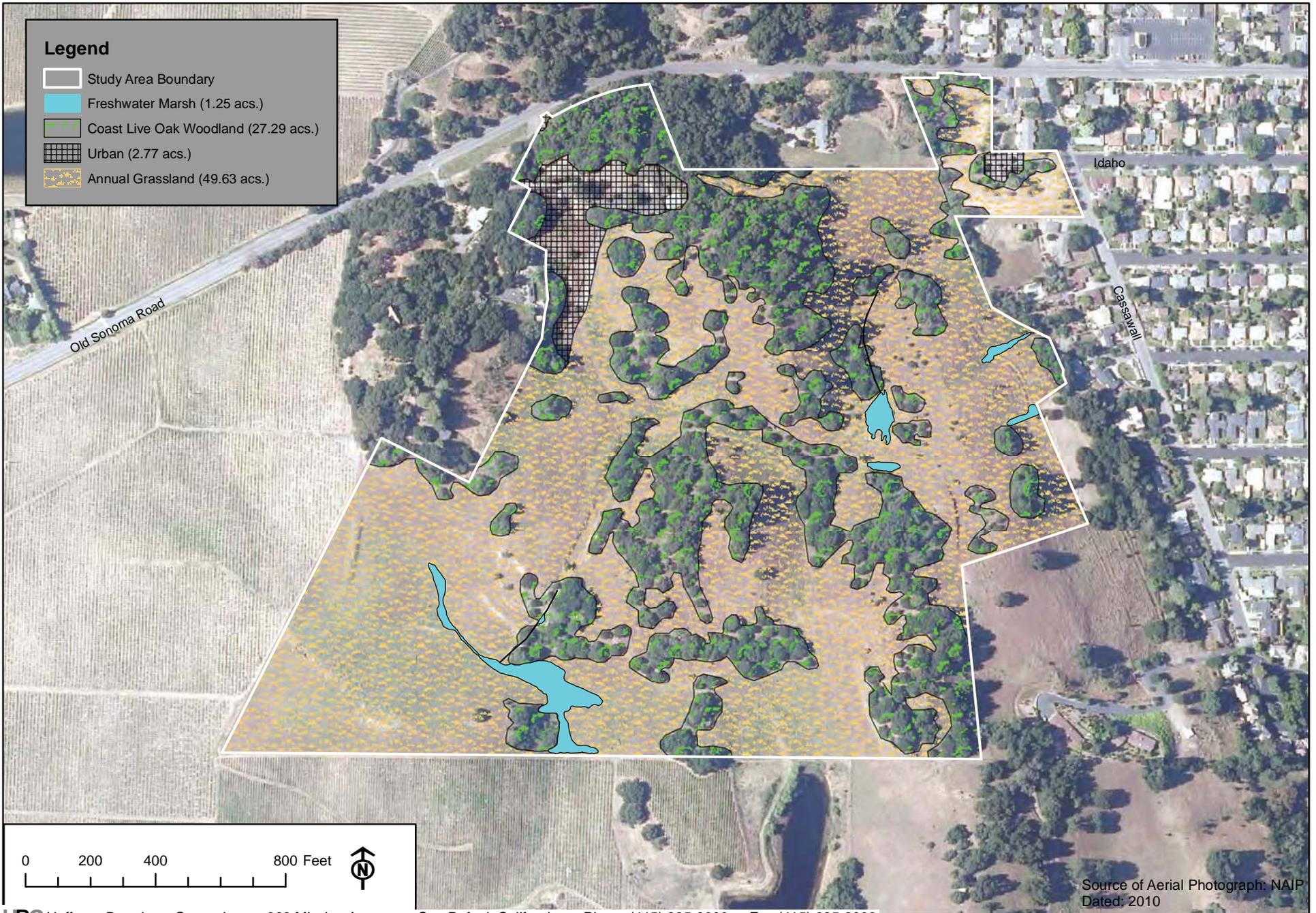
Sincerely,



John Leffingwell
Board Certified Master Arborist #WE-3966B
Registered Consulting Arborist #442

Enclosure 2

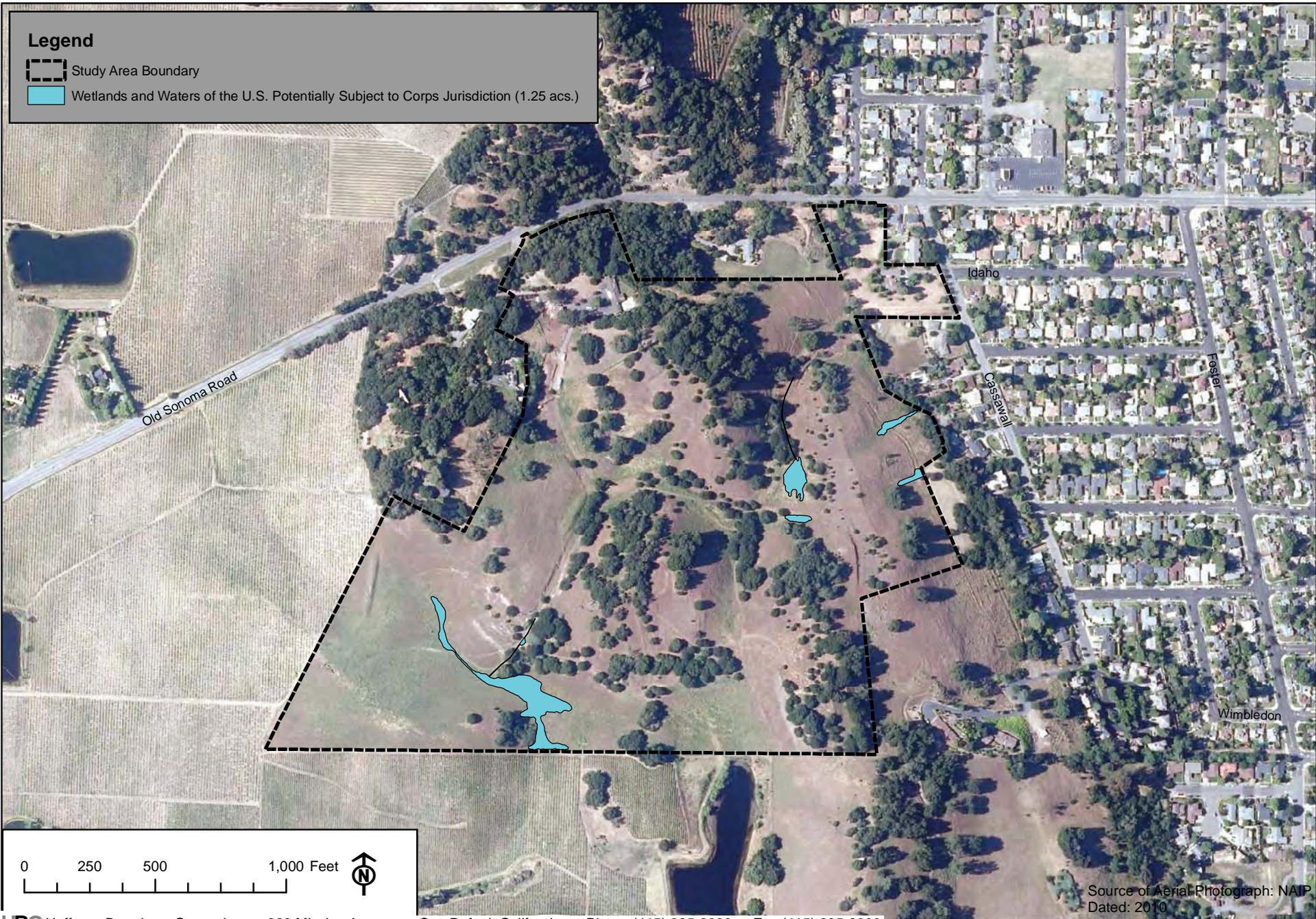
Updated Figures 9, 10, 11, and 12



HBG Huffman-Broadway Group, Inc. · 828 Mission Avenue · San Rafael, California · Phone (415) 925-2000 · Fax (415) 925-2006

Figure 9 (updated). Map of Plant Communities at the Project Site

Napa Oaks Project
City of Napa, Napa County, California

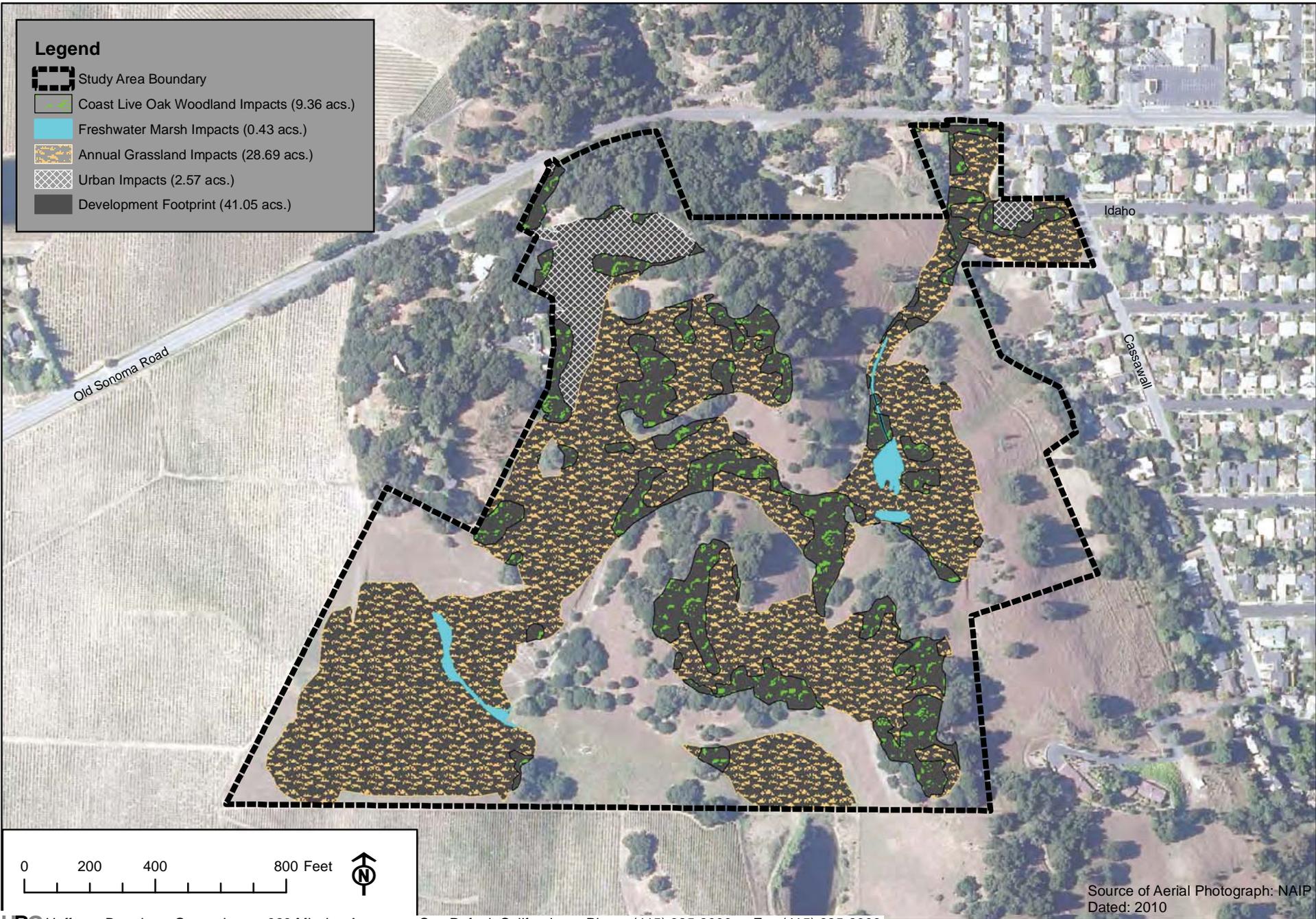


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Figure 10 (updated). Wetlands and Waters of the U.S. Potentially Subject to Corps Jurisdiction

Napa Oaks Project

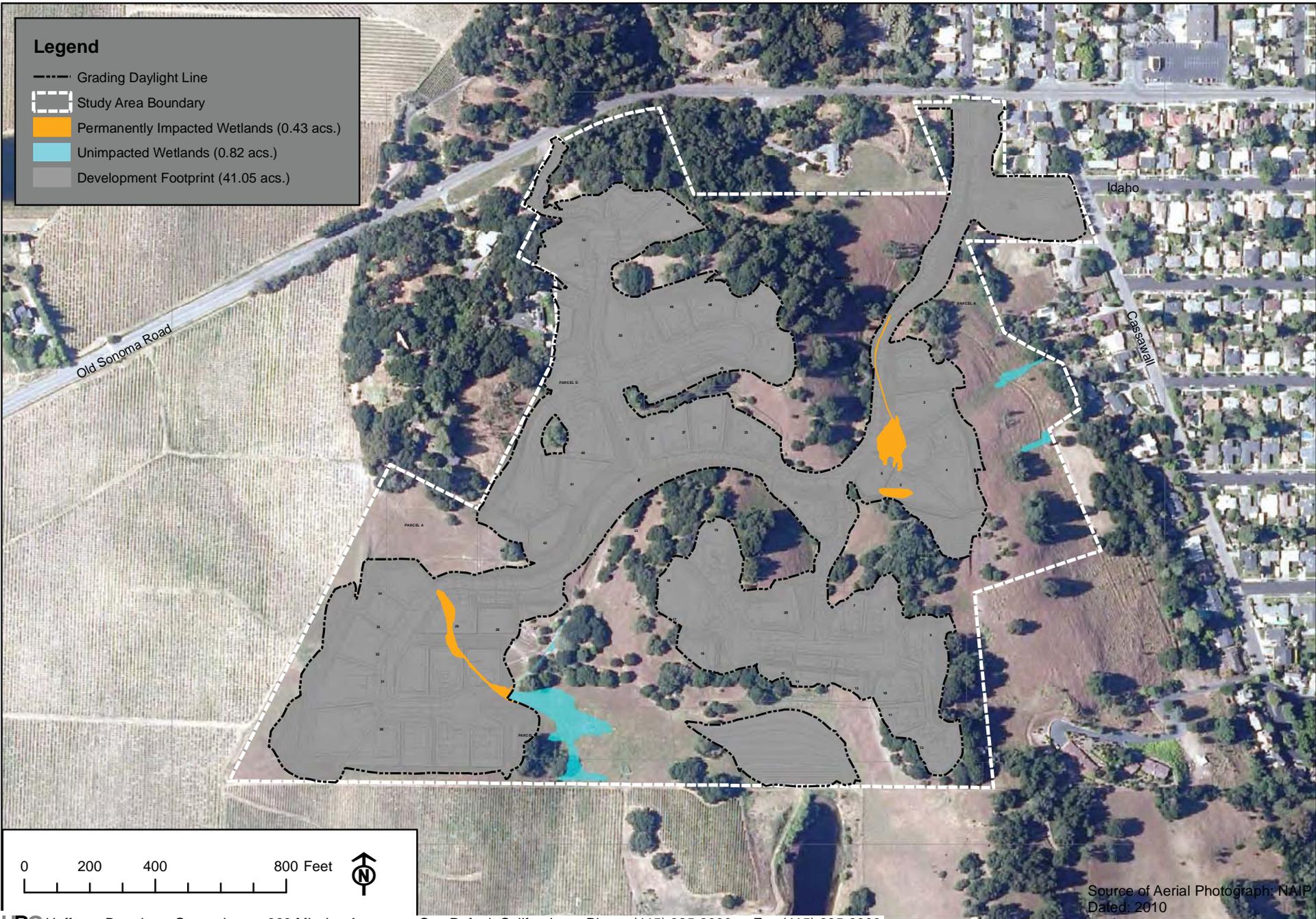
City of Napa, Napa County, California



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Figure 11 (updated). Impacts to Vegetation Communities Occuring on the Project Site

Napa Oaks Project
City of Napa, Napa County, California



HBG Huffman-Broadway Group, Inc. • 828 Mission Avenue • San Rafael, California • Phone (415) 925-2000 • Fax (415) 925-2006

Figure 12 (updated). Impacts to Wetlands and Waters of the U.S. Potentially Subject to Corps Jurisdiction

Napa Oaks Project
City of Napa, Napa County, California



February 3, 2015

Steve Abbs
Davidon Homes
1600 S. Main Street
Walnut Creek CA 94596-5394

Subject: **Correction letter**
 Napa Oaks Property, Napa

Dear Mr. Abbs:

Davidon Homes is planning to develop the subject property in Napa. HortScience, Inc. prepared an **Arborist Report** for the project (dated July, 2011).

In review of the July, 2011 **Arborist Report**, I recognized that there was an error in the number of trees identified for preservation. I had listed 765 trees identified for preservation, when in fact there were 755 trees identified for preservation and 620 trees identified for removal (for a total of 1,375 trees on the site).

Please contact me if there are any questions regarding my observations or recommendations.

Sincerely,

A handwritten signature in black ink that reads "John Leffingwell". The signature is written in a cursive style with a large, sweeping flourish at the end.

John Leffingwell
Board Certified Master Arborist #WE-3966B
Registered Consulting Arborist #442



February 3, 2015

Steve Abbs
Davidon Homes
1600 S. Main Street
Walnut Creek CA 94596-5394

Subject: **Earthquake Mitigation Alternative Impacts Review**
Napa Oaks Property, Napa

Dear Mr. Abbs:

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Summary of changes

In order to assess impacts to trees from the proposed changes, I reviewed the Earthquake Mitigation Alternative, prepared by d/k Consulting Engineers (dated January 5, 2015). The majority of the changes were to Parcel A, between Lot 21/Street A and Lots 16-18.

Following is a summary of the changes based on the Alternative plan. Tables 1 and 2 (following pages) provide a list of the additional trees identified for preservation and removal.

- I reviewed the disposition for 61 trees, including 60 on Parcel A and tree #1172 on Parcel B. The disposition for 55 of these trees changed.
- The Alternative plan allows for the preservation of 52 additional trees, including 29 *Protected Native* trees.
- The Alternative plan requires the removal of three (3) additional trees, including two (2) *Protected Native* trees.
- All three (3) of the additional trees recommended for removal were of poor or moderate suitability for preservation (2 moderate and 1 poor).

Preservation of trees is predicated on adhering to the ***Tree Preservation Guidelines*** provided in the January 2011 **Arborist Report**.

**Table 1: Additional trees recommended for preservation
Napa Oaks site, Napa**

Tree No.	Species	Trunk Diameter (in.)	Protected Native Tree?	Impact
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623	Coast live oak	31	Yes	22' from grading
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840	Coast live oak	8	No	Outside impacts
841	Coast live oak	21	Yes	Outside impacts
842	Madrone	12,11	No	Outside impacts
843	Coast live oak	10,9,9,9,8,7	No	Outside impacts
844	Coast live oak	23	Yes	Outside impacts
845	Coast live oak	17	Yes	Outside impacts
846	Coast live oak	11	No	Outside impacts
847	Coast live oak	14	Yes	Outside impacts
848	Coast live oak	12,8	Yes	Outside impacts
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(Continued, following page)

**Table 1: Additional trees recommended for preservation, continued
Napa Oaks site, Napa**

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**Table 2: Additional trees recommended for removal
Napa Oaks site, Napa**

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559	Coast live oak	31	Yes	Impacted by grading
662	Coast live oak	8,7	No	Impacted by grading
804	Coast live oak	31	Yes	Impacted by grading

Please contact me if there are any questions regarding my observations or recommendations.

Sincerely,



John Leffingwell
Board Certified Master Arborist #WE-3966B
Registered Consulting Arborist #442

August 22, 2013

Rebecca Gorton
Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94606

**Biological Resource Analysis Peer Review
Napa Oaks Project
Napa, California**

Dear Rebecca:

Zander Associates has completed a peer review of existing biological resource information pertaining to the Napa Oaks Project in Napa, California. The purpose of our review is to assist Lamphier-Gregory with its evaluation of the project pursuant to the California Environmental Quality Act (CEQA) for the City of Napa. This letter describes the information reviewed and our evaluation of its thoroughness in addressing biological resource issues for the project.

The Napa Oaks project site is located within the City of Napa, on Old Sonoma Road just east of the intersection with Congress Valley Road. The property is bordered by residential development on the east and rural residential and agricultural (vineyard) uses to the north south and west. In 2011, Huffman-Broadway Group, Inc. (HBG) prepared a Biological Assessment for the Napa Oaks Project for Davidon Homes. That analysis described existing conditions, including the results of a wetland delineation and several directed surveys/habitat assessments for special status species that were conducted on the project site. The Biological Assessment also evaluated the proposed project; identifying potential impacts and recommending mitigation measures to avoid/minimize those impacts. A detailed wetland delineation report entitled *Investigation of the Presence of Wetlands and Other Waters of the United States and Jurisdictional Determination for the Napa Oaks Project* was prepared by HBG in February 2012. In July, 2013, HBG provided a letter to Jeffrey Thayer of Davidon Homes confirming the feasibility of creating additional wetlands onsite to compensate for losses anticipated by the proposed development. Attached to that letter was the preliminary jurisdictional determination issued by the U.S. Army Corps of Engineers (Corps) for the property (April 24, 2012, File No. 2012-00116N). A subsequent email correspondence was provided by HBG to clarify wetland impacts based on the Corps preliminary jurisdictional determination (email from Robert Perrera to Leslie Zander August 21, 2013). Zander Associates reviewed all of the aforementioned documents/information for this evaluation. We did not conduct a site reconnaissance but are familiar with the property as we surveyed it in 1998 for a previous project.

The description of existing biological resources on the Napa Oaks project site provided in the HBG Biological Assessment was based on: surveys conducted by HBG biologists between January and June 2011; appropriately-timed protocol rare plant surveys conducted by Virginia Dains between March and July 2011; habitat assessments for the California red-legged frog and California tiger salamander prepared by Mark Jennings, Ph.D. of Rana Resources; a detailed wetland delineation conducted by HBG beginning in January 2011; a Tree Report prepared by HortScience. A list of special status species considered for their potential to occur on the property was developed through accessing California Natural Diversity Database (CNDDDB) records, consulting with the U.S. Fish and Wildlife Service regarding listed species in the general vicinity, and reviewing the list of special status plant species found within a nine-quad-area surrounding the property obtained from the California Native Plant Society (CNPS).

The identification, delineation and description of habitat types provided in the HBG Biological Assessment is very thorough and was developed following accepted industry standards. Similarly, the evaluation of special status species habitat or occurrences on the project site was conducted following accepted protocol. The detailed wetland delineation was conducted in accordance with the Corps' 1987 *Wetlands Delineation Manual* and 2006 *Interim Regional Supplement; Arid West* and was evaluated by Corps staff. It is therefore our opinion that the description of existing habitats and assessment of special status species occurrences provided in the HBG Biological Assessment is suitable for use in the CEQA review document. However, it should be noted that in the Corps preliminary jurisdictional determination (April 24, 2012), two additional linear wetland features were added to the map bringing the total extent of wetland habitat on the project site to 1.25 acres; slightly up from the 1.21 acres described in the HBG Biological Assessment.

The HBG Biological Assessment includes an evaluation of impacts based on the site plan dated July 25, 2011 and shown on Figure 4 in the report. It appears that this site plan is the same as the one dated September 1, 2011 that you are evaluating for the CEQA document. Consequently, we are assuming that the biological resource impacts identified by HBG would be the same for the project being evaluated for the EIR. The one difference is the extent of wetland impact due to the slight increase in wetland area determined by the Corps in its preliminary jurisdictional determination (see above). A summary of habitat impacts derived from the HBG Biological Assessment and subsequent Corps evaluation is provided in the table below.

Table 1: Summary of Habitat Impacts

Habitat Type	Total Area on Project Site (acres)	Impacted Area (acres)
Annual Grassland	49.61	25.90
Coast Live Oak Woodland	27.31	12.52
Freshwater Marsh	1.25	0.39
Urban	<u>2.77</u>	<u>2.57</u>
Total	80.94	41.38

No special status plants or animals were observed on the project site during surveys conducted by HBG's biologists or subconsultants. However, one species was found on adjacent properties (western pond turtle) and suitable habitat was determined present for other species that could at some point occupy the area (nesting raptors, including burrowing owl, and bats). Therefore, HBG identified the potential for these species to be impacted primarily during construction of the project.

HBG recommends mitigation measures for impacts to wetlands, oak woodlands, nesting avian species, western pond turtle and bats. Additionally, there are measures recommended to reduce the potential for the spread of invasive species into the open space areas and control release of sediment into downstream riparian habitat during construction. HBG has confirmed that wetland mitigation can be provided onsite within the open space preserve area at a 2:1 replacement ratio through creation of new and expansion of existing wetland habitat (July 19, 2013 letter to Jeffrey Thayer and subsequent email from Robert Perrera to Leslie Zander August 21, 2013). The establishment of oak woodland preserves totaling approximately 37 acres is recommended to mitigate removal of oak woodlands for the project and tree replacement and protection activities are proposed for impacts to individual trees. Pre-construction surveys for birds are proposed if construction is initiated within the nesting season. Setbacks from the offsite pond and installation of exclusion fencing are recommended to keep western pond turtles from migrating into the work area during construction. Avoidance measures including pre-construction surveys, avoidance of active nests/burrows, establishment of appropriate buffers, use of exclusion devices are recommended to minimize effects on burrowing owl, other nesting raptors, and bats. Planting of native species in temporarily disturbed areas, removal of non-native invasive plants in open space areas and use of construction equipment and materials known to be weed-free are recommended to minimize the introduction of non-native invasive vegetation on the project site. Best management practices are required to reduce the potential for erosion and the release of sediment into downstream riparian habitat. It is our opinion that all of the mitigation measures recommended by HBG are appropriate and no additional measures are necessary to further reduce potential project impacts on biological resources.

In conclusion, we believe the description of existing habitats, identification of potential special status species and/or habitat, assessment of project effects and mitigation recommendations provided in the HBG documents is of sufficient detail and meets the technical industry standard for biological resources work on a project of this scope. Consequently, it is appropriate to utilize the information provided in these documents for the Napa Oaks project CEQA review. Should you have any questions regarding our review or require further assistance with this project, please don't hesitate to call me.

Sincerely,



Leslie Zander
Principal Biologist

Huffman-Broadway Group, Inc.

Environmental Regulatory Consultants
828 Mission Avenue, San Rafael, California 94901, USA • (415) 925-2000 • Fax (415) 925-2006
Sender's e-mail: rperrera@h-bgroup.com

February 16, 2012

Ms. Laurie Monarres
Regulatory Division
U.S. Army Corps of Engineers
1455 Market Street, Floor 16
San Francisco, California 94103-1398

**Subject: Request for a Preliminary Jurisdictional Determination, Napa Oaks Project,
Napa, Napa County, California**

Dear Ms. Chan:

On behalf of Davidon Homes, Huffman-Broadway Group, Inc. (HBG) has prepared the enclosed *Investigation of the Presence of Wetlands and Other Waters of the United States for the Napa Oaks Project*, dated January 2011, for U.S. Army Corps of Engineers (USACE) verification of the extent and location of waters of the U.S. The City of Napa is in the process of preparing an Environmental Impact Report for the Napa Oaks Project. The jurisdictional map will be incorporated into the EIR once verified by the USACE.

The Study Area is an 80.93-acre property located in the City of Napa, Napa County California. The Study Area is bordered by Old Sonoma Road to the north, Cassawall Street borders the east and farm land borders the west and south. The Study Area lies within the USGS San Pablo Bay watershed (USGS HUC 12# 18050002) on land mapped within the Napa 7.5 minute USGS quadrangle. The center of the Study Area is at latitude 38° 17' 05.36"N and longitude 122° 18' 50.20"W within the Mount Diablo Meridian, Section 16, Township 5 North, and Range 4 West. Elevations range from 71-356 feet above mean sea level and slopes range from 0 to 50+ percent. The Study Area comprises four Napa County Assessor's parcels; 043-040-008, 010, 013, and 025. A total of 1.21 acres of palustrine emergent wetlands potentially subject to the U.S. Army Corps of Engineers Section 404 Clean Water Act jurisdiction were found on the Study Area.

Please call me to schedule a site visit at your earliest convenience or if you have any questions.

Sincerely,



Robert Perrera
Wetland Regulatory Scientist

Enclosure

Investigation of the Presence of Wetlands and Other Waters of the United States for the Napa Oaks Project, dated February 2012

Investigation of the Presence of Wetlands and Other Waters of the United States and Jurisdictional Determination for the Napa Oaks Project



Prepared For	Prepared By
Mr. Jeffrey R. Thayer Davidon Homes 1600 South Main Street, Suite 150 Walnut Creek, CA 94596-5394	Huffman-Broadway Group, Inc. 828 Mission Avenue San Rafael, CA 94901 Contact: Mr. Robert Perrera (415) 925-6992 FAX (415) 925-2006

February 2012

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Attachment 1	Wetland Determination Data Forms, Arid West Region

This report should be cited as: Huffman-Broadway Group, Inc. 2012. *Investigation of the Presence of Wetlands and Other Waters of the United States for the Napa Oaks Project*, Napa, Napa County, California. February. San Rafael, California. 18 pp. plus figures and attachment.

1 INTRODUCTION

1.1 Purpose and Scope of Work

At the request of Davidon Homes, Huffman-Broadway Group, Inc. (HBG) investigated the potential presence of wetlands and other waters of the United States subject to Corps of Engineers regulation under Section 404 of the Clean Water Act on the 80-acre Napa Oaks Project area (Study Area) located in Napa, Napa County, California (Figures 1 – 2). HBG conducted the wetland delineation in accordance with Code of Federal Regulations (CFR) definitions of jurisdictional waters, the Corps’ 1987 Wetlands Delineation Manual, and the Corps’ 2008 Regional Supplement to Corps of Engineers Wetland Delineation Manual: Arid West, and supporting guidance documents. Areas potentially subject to Corps jurisdiction within the 80.93-acre Study Area total 1.21 acres of wetlands and are shown on Figure 4. Wetland determination data forms (Arid West Region) are provided in Attachment 1. The purpose of this report is to obtain a “Preliminary Jurisdictional Determination” from the Corps.

1.2 Study Area Location and Background Information

The Study Area is an 80.93-acre property located in the City of Napa, Napa County, California. Old Sonoma Road and large residential parcels borders the Study Area to the north, Casswall Street borders the east and agricultural land planted in vineyard borders the west and south. The Study Area lies within the USGS San Pablo Bay watershed (USGS HUC 12# 18050002) on land mapped within the Napa 7.5 minute USGS quadrangle. The center of the Study Area is at latitude 38° 17’ 05.36”N and longitude 122° 18’ 50.20”W within the Mount Diablo Meridian, Section 16, Township 5 North, and Range 4 West. Elevations range from 71-356 feet above mean sea level and slopes range from 0 to 50+ percent. The Study Area comprises four Napa County Assessor’s parcels; 043-040-008, 010, 013, and 025.

1.3 Directions to the Site

Directions to the Study Area from the San Francisco District Corps of Engineers office are presented below.

From the San Francisco Corps Office:

Routing	Mileage
Start at 1455 Market St (Northeast)	
Turn RIGHT (southeast) onto 10th St	0.6
Turn LEFT (northeast) onto Bryant St	0.2
Take Ramp (LEFT) onto I-80 toward Oakland/Bay Bridge	6.3
Merge onto I-80East Toward Berkeley/Sacramento	32.4
Merge onto CA-37 W via Exit 33 toward Napa	2.1
Take Exit 19 Toward Napa and Merge Right onto CA-29 North	5.6
Continue on CA-12 West	3.9
Continue on CA-121 North	1.4

Take ramp Toward Imola Avenue and go West on Imola Avenue	0.6
Turn Right on Foster Road	0.4
Turn Left on Idaho Street end at Casswall Street	0.2

1.4 Interstate/Foreign Commerce Connection

Wetlands #1 and #2 flow east discharging off the Study Area onto private property toward Casswall Street. Wetland #3 flows south directly into a drop structure located on a vineyard outside of the Study Area. Wetlands #4 and #5 flow topographically to the northeast corner of the Study Area onto private property toward Casswall Street/Old Sonoma Road. The Napa River is relatively permanent water (RPW) and a tributary to San Pablo Bay. The Napa River¹ is considered traditional navigable water (TNW) per the definition of “navigable water” described in 33 CFR Section Part 328 and is considered a TNW up to First Street in Napa. The lower portions of the Napa River are subject to the ebb and flow of the tide and susceptible to use in shipping interstate commerce to and from California.

¹ U.S. Army Corps of Engineers. 1971. *Navigable Waters of Rivers, Bays, Creeks, Canals, Intercoastal Waterways*. Corps of Engineers, San Francisco District. August 2, 1971

2 Biological Setting

2.1 Soils

A review of the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service, SCS) Soil Survey maps for Napa County (USDA 1977) shows that four soil types occur within the Study Area. Soils within the southwest portion of the property are Bressa-Dibble complex, 30 to 50 percent slopes. Soils within a small area traversing the middle of the property are Forward gravelly loam, 9 to 30 percent slopes. Soils within the northeastern corner are Perkins gravelly loam, 5-9 percent slopes. The soils on the majority of the site are Forward-Kidd complex, 50 to 75 percent slopes. A soil map of the project site is shown on Figure 3. Field investigations on the project site confirmed that the NRCS soils mapping is reasonably accurate throughout the project area.

2.2 Surface Water

No perennial, seasonal or ephemeral creeks occur within the Study Area. Palustrine emergent wetlands occur on slide areas where subsurface water has been exposed (wetland #1 and #2), occur within a topographic swale (wetland #3) and occur in depressional areas (wetlands #4 and #5). The wetlands in the southwestern portion of the property drain in the direction of Raynes Creek which is located south of the property. The National Wetland Inventory Map for the Study Area is shown on Figure 5.

2.3 Vegetation

HBG biologists conducted field reconnaissance of the project site in January 2011.

The project site contains four habitat types according to the California Wildlife Habitat Relationships System: annual grassland and valley foothill hardwood, fresh emergent marsh and Urban. According to nomenclature from the *List of Natural Communities Recognized by the Natural Diversity Database* (1997) the three natural habitats would be classified as California Annual Grassland, Coast Live Oak Woodland and Valley Freshwater Marsh. Wetland habitats on-site were further classified using the U.S. Fish and Wildlife Service's "Classification System for Wetland and Deepwater Habitats" (Cowardin et al. 1979); the wetlands at the property are defined as palustrine emergent wetlands according to the Cowardin et al criteria.

Annual Grassland

Annual grassland is the predominant habitat type on site, comprising approximately 90% of the land area. The annual grassland found on the Napa Oaks property is comprised largely of non-native grasses and herbs such as soft chess (*Bromus mollis*), Italian rye grass (*Lolium perenne*), ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*) and long beak filaree (*Erodium botrys*). This community is grazed by cattle and the effects of this use are evident in the community structure and composition. Level and gently sloping areas of the grassland are more accessible to livestock and are more heavily used. The colonization of the grassland by unpalatable plants such as star thistle (*Centaurea solstitialis*) and bull thistle (*Cirsium vulgare*) is a result of the long

term use as winter pasture.

Coast Live Oak Woodland

Coastal live oak (*Quercus agrifolia*) is the woodland dominant of the valley and foothill hardwood woodland present on the property. Other tree species found as isolated individuals in the woodland at the site include California buckeye (*Aesculus californicus*) and Pacific madrone (*Arbutus menziesii*). Additional tree species such as valley oak (*Quercus lobata*) and black oak (*Quercus kelloggii*) are present, particularly along the eastern edge of the property. One small area of coyote brush (*Baccharis pilularis*) was noted.

Fresh Emergent Marsh

Several small wetland areas (total of 1.21 acre) within the grassland support fresh emergent marsh vegetation such as species of rush (*Juncus* sp.), pennyroyal (*Mentha pulegium*), and curly dock (*Rumex crispus*) among others. The wetlands in the southwestern portion of the property drain in the direction of Raynes Creek which is located south of the property.

2.4 Precipitation and Growing Season

The San Francisco Bay Area has a Mediterranean climate with distinct wet and dry seasons. This climate is characterized by cool, wet winters and hot, dry summers. About 80 percent of the total annual precipitation occurs from November through March. Average annual rainfall conditions based on the statistical mean of yearly rainfall totals show a wide range of values that correlate to global weather patterns such as the El Nino Southern Oscillation and prolonged periods of drought. The growing season at the Study Area is year round.

The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) WETS station nearest the Study Area is the *Napa State Hospital*, California 6074. USDA/NRCS climate data from WETS Station "Napa State Hospital" from 1971 to 2000 for October-December recorded an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. The nearest active station recording current precipitation data is the California Irrigation Management Information System (CIMIS) *Petaluma East Station #144*. Total precipitation for this station from October 1, 2010 - December 31, 2010 was 13.32 inches. Based on WETS data and data collected from CIMIS station it is likely the project site had an above average rainfall from Oct-Dec 2010. Thirteen days prior to the January 10, 2011 site visit, the CIMIS *Petaluma East Station #144* recorded 1.48 inches of rainfall. Table 1 below uses the NRCS 30-day rolling total method for comparing actual precipitation with monthly ranges of normal.

Table 1. Rainfall Data							
Month/Year	30% ² Chance <	30% ³ Chance >	Rainfall ⁴	Condition Dry, Wet, Normal	Condition Value ⁵	Month Weight Value	Total from Previous 2 Columns
October 2010	0.59	1.79	2.72	W	3	3	9
November 2010	1.41	4.49	2.58	W	3	2	6
December 2010	1.99	4.83	8.02	W	3	1	3
SUM⁶							18
Conclusion							Wetter than Normal

2.5 Current Land Use

Current land use consists of cattle grazing across the majority of the property and one residential dwelling.

2 Data collected from WETS Table *Napa State Hospital*

3 Data from WETS Table *Napa State Hospital*

4 Data Collected from CIMIS *Petaluma East Station #144*

5 Dry=1; Normal=2, Wet=3

6 If SUM is : 6-9 drier than normal; 10-14 period has been normal; 15-18 period has been wetter than normal

3 REGULATORY FRAMEWORK

3.1 Definition of Wetlands and Other Waters of the U.S.

Section 404 of the Federal Clean Water Act authorizes the Corps to regulate activities that discharge dredged or fill material to wetlands and other waters of the United States. As described by EPA's and the Corps' regulations (40 CFR § 230.3(s) and 33 CFR § 328.3(a), respectively), the term "waters of the United States" encompasses the following resources:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in above paragraphs (1)-(4);
6. The territorial seas; and
7. Wetlands adjacent to waters identified in above paragraphs (1-6) except waters that are themselves wetlands.

EPA and the Corps define wetlands as: "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA regulations at 40 CFR § 230.3(t); Corps regulations at 33 CFR § 328.3(b)).

3.2 Limits of Jurisdiction

The following provides the regulatory definitions and criteria followed in determining the geographic extent of potential EPA/Corps jurisdiction.

As described at 33 CFR Part 328, the geographic limits of relevant federal jurisdiction are defined in the following manner:

1. Non-Tidal Waters of the United States: "The limits of jurisdiction in non-tidal

waters: (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or (2) when adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands. (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.” (33 CFR 328.4(c)).

The term “adjacent” means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are “adjacent wetlands.” (33 CFR 328.3(c))

The term “ordinary high water mark” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. (33 CFR 328(e))

2. Wetlands: Implicit in the definition is the need for a site to meet certain water, soil, and vegetation criteria to qualify as a jurisdictional wetland. These criteria and the methods used to determine whether they are met are described in the Corps’ 1987 *Wetlands Delineation Manual*.

3.3 Wetlands Delineation Criteria

The Corps’ 1987 *Wetlands Delineation Manual* identifies the key diagnostic criteria for determining the presence of wetlands. These include:

1. Wetland Hydrology: Inundation or saturation to the surface during the growing season.
2. Hydric Soils: Soils classified as hydric or that possess characteristics associated with reducing soil conditions.
3. Predominance of Wetland Vegetation: Vegetation classified as facultative, facultative wet, or obligate according to its tolerance of saturated (i.e., anaerobic) soil conditions.

Specific criteria used to determine the presence or absence of wetland hydrology, soil, and vegetation conditions are described in the sections below.

3.3.1 Wetland Hydrology

The 1987 Corps *Manual* states that wetland hydrology conditions occur when a “site is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.”

Whether a site meets either of these criteria is determined by the presence of diagnostic indicators of wetland hydrology, which include the following:

3.0 REGULATORY FRAMEWORK

Table 2. Wetland Hydrology Indicators (1987 <i>Wetlands Delineation Manual</i>)	
Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Drift Lines	Water-Stained Leaves
Water-Borne Sediment Deposits	FAC-Neutral Test
Drainage Patterns Within Wetlands	Local Soil Survey Data

A March 8, 1992, Corps memorandum entitled *Clarification and Interpretation of the 1987 Manual* provides further clarification:

Areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas wet between 5 percent and 12.5 percent of the growing season in most years may or may not be wetlands. Sites saturated to the surface for less than 5 percent of the growing season are non-wetlands.

Wetland hydrology indicators have also been further defined and described in the Corps 2006 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. These indicators are similar to the indicators listed above from the 1987 *Corps Manual* and are presented in the following table.

Table 3. Wetland Hydrology Indicators (<i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region</i>)		
Primary Indicators (any one indicator is sufficient to make a determination that wetland hydrology is present)		Secondary Indicators (two or more indicators are required to make a determination that wetland hydrology is present)
Surface Water (A1)*	Water-Stained Leaves (B9)	Water marks (B1) (Riverine)
High Water Table (A2)	Salt Crust (B11)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Biotic Crust (B12)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (non Riverine)	Aquatic Invertebrates (B13)	Drainage Patterns (B10)
Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3)	Thin Muck Surface (C7)
Surface Soil Cracks (B6)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Inundation Visible on Aerial Imagery (B7)		Recent Iron Reduction in Plowed Soils (C6)
	Shallow Aquitard (D3)	
	FAC-Neutral Test (D5)	
* Denotes number of wetland hydrology indicator described in detail in the <i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region</i> .		

3.3.2 Hydric Soils

The 1987 Corps *Manual* states that the diagnostic environmental characteristics indicative of wetland soil conditions are met where "soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions." According to the Manual, indicators of soils developed under reducing conditions may include:

1. Organic soils (Histosols);
2. Histic epipedons;
3. Sulfidic material;
4. Aquic or peraquic moisture regime;
5. Reducing soil conditions;
6. Soil colors (chroma of 2 or less);
7. Soil appearing on hydric soils list; and
8. Iron and manganese concretions.

A February 20, 1992, Corps memorandum entitled *Regional Interpretation of the 1987 Manual* states that the most recent version of National Technical Committee for Hydric Soils (NTCHS) hydric soil criteria will be used (to make hydric soil determinations). These soil criteria specify at least 15 consecutive days of saturation or 7 days of inundation (flooding or ponding) during the growing season in most years.

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are hydric if the soil, in an unaltered state, was hydric. Some series, designated as hydric, have phases that are not hydric depending on water table, flooding, and ponding characteristics. As indicated above, like the NRCS, Corps of Engineers has typically accepted guidance for the identification of hydric soils developed by the National Technical Committee for Hydric Soils (NTCHS). The NTCHS, a working group organized by NRCS, has developed criteria for identifying and mapping hydric soils throughout the United States and defines a hydric soil as "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part [of the soil profile]" (<http://soils.usda.gov/use/hydric/intro.html>). The most recent (2000) version of the NTCHS hydric soils criteria identifies those soils that are likely to meet this definition. These criteria, which are accepted by most state and federal agencies, are as follows (<http://soils.usda.gov/use/hydric/criteria.html>):

1. All Histels except Folistels and Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Andic, Vitrandic, and Pachic subgroups, or Cumulic subgroups that are:
 - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or

- b. poorly drained or very poorly drained and have either:
 - (i). water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in),

or for other soils
 - (ii). water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in,

or
 - (iii). water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
- 3. Soils that are frequently ponded for long duration or very long duration (7 to 30 days) during the growing season, or
- 4. Soils that are frequently flooded for long duration or very long duration (7 to 30 days) during the growing season.

On the basis of computer database searches for soils meeting the second criterion, NRCS has developed hydric soils lists for many parts of the country. Although they are useful for determining whether a particular soil series *has the potential to support current hydric soil conditions*, caution should be used when using these lists for site-specific hydric soil determinations. Many soils on the lists have ranges in water table depths and other characteristics that allow them to be either hydric or nonhydric depending on landscape position and other site-specific factors (e.g., soil clay content, depth to bedrock). Accordingly, hydric soils lists are good ancillary tools to facilitate wetland determinations, but are not a substitute for onsite investigations.

Field indicators of hydric soils are morphological properties known to be associated with soils that meet the definition of a hydric soil. Presence of one or more field indicator suggests that the processes associated with hydric soil formation have taken place on the site being observed. The field indicators are essential for hydric soil identification because once formed, they persist in the soil during both wet and dry seasonal periods. However, few hydric soil indicators identify soils at a site as being currently hydric in accordance with the NTCHS hydric soils criteria described above. Field indicators of hydric soil conditions include the following:

3.0 REGULATORY FRAMEWORK

Table 4. Field Indicators of Hydric Soil Conditions Based on 1987 Corps Manual and Corps Guidance Documents	
1. Indicators of Historical Hydric Soil Conditions:	2. Indicators of Current Hydric Soil Conditions:
<ul style="list-style-type: none"> a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list 	<ul style="list-style-type: none"> a. Aquic or peraquic moisture regime (inundation and/or soil saturation for ≥ 7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for ≥ 7 continuous days) c. Sulfidic material (rotten egg smell)

The presence of one or more of the field indicators in “1 a, b c, and/or d” above suggests that historical processes associated with hydric soil development have taken place at a given site. These indicators are useful in determining if soils at a site were historically formed under hydric soil conditions because they persist in soils during both wet and dry periods and may remain for decades and even centuries after changes in site conditions occur that inhibit subsequent wetland development, such as the elimination of wetland hydrology (NRCS 1995). However, only the presence of field indicators “2 a, b, and/or c” confirms that hydric soils occur at a site during the period of observation.

Hydric soil indicators have also been further defined and described in the Corps 2006 publication *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. These indicators are similar to the indicators listed above from the 1987 Corps Manual and are presented in the following table.

Table 5. Hydric Soil Indicators (Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region)		
Hydric Soil Indicators		Indicators for Problematic Hydric Soils **
Histosol (A1) *	Sandy Redox (S5)	1 cm Muck (A9)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent material (TF2)
Stratified Layers (A5)	Depleted Matrix (F3)	** Indicators of hydrophytic vegetation and wetland hydrology must be present.
1 CM Muck (A9)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Material (S1)	Vernal Pools (F9)	
Sandy Gleyed material (S4)		

* Denotes number of hydric soil indicator described in detail in *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*.

3.3.3 Prevalence of Wetland Vegetation

The Corps' 1987 *Manual* states that the wetland vegetation conditions are met when the prevalent vegetation (i.e., more than 50 percent of vegetation cover or tree basal area) consists of macrophytes that are typically adapted to sites having wetland hydrologic and soil conditions (e.g., periodic or continuous inundation or soil saturation). Hydrophytic vegetation is defined as "plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Cowardin *et al.* 1979). Hydrophytic vegetative species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Positive indicators of the presence of hydrophytic vegetation include:

1. More than 50 percent of the dominant species are rated as Obligate ("OBL"), Facultative Wet ("FACW"), or Facultative ("FAC") on lists of plant species that occur in wetlands (see Reed 1988 for California);
2. Visual observations of plant species growing in sites of prolonged inundation or soil saturation; and
3. Reports in the technical literature indicating the prevalent vegetation is commonly found in saturated soils.

Hydrophytic vegetation indicators have been further defined and described in the Corps 2006 publication *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. These indicators include:

1. Percent of dominant species that are OBL, FACW and FAC >50 percent
2. Prevalence Index is ≤ 3.0 with indicators of hydric soils and wetland hydrology being present; and
3. Morphological adaptations

Species classifications (e.g., tolerance of anaerobic soil conditions) are determined by consulting the *National List of Plant Species that Occur in Wetlands* (Reed 1988) and the relevant regional lists, which are published by FWS' National Wetlands Inventory (NWI). Regional Interagency Review Panels develop the lists by determining species' estimated probability of occurrence in wetlands vs. non-wetlands. Classifications are made by unanimous agreement of the Panel. If the Panel is unable to reach a unanimous decision on the status of a species, "no agreement" (NA) is recorded. If insufficient information exists to determine the status of a species, "no indicator" (NI) is recorded. Species that are not included in the NWI list are assigned a "not listed" (NL) designation in this report.

The resulting NWI lists include plants that grow in a range of soil conditions from permanently wet to dry. Species are divided into the following "indicator categories":

1. **“Obligate wetland” (OBL)** species, which, under natural conditions, occur almost always in wetlands (estimated probability >99 percent);
2. **“Facultative wetland” (FACW)** species, which usually occur in wetlands (estimated probability 67 – 99 percent), but are occasionally found in non-wetlands;
3. **“Facultative” (FAC)** species, which are equally likely to occur in wetlands or non-wetlands (estimated probability 34 – 66 percent);
4. **“Facultative upland” (FACU)** species, which sometimes occur in wetlands (estimated probability 1 – 33 percent), but more often occur in non-wetlands; and
5. **“Obligate upland” (UPL)** species, which occur in wetlands in other regions, but, under natural conditions, occur almost always in non-wetlands in the region specified (estimated probability >99 percent).

Species that have an indicator status of OBL, FACW, and FAC are typically considered to be adapted for life in anaerobic soil conditions (Corps 1987) and are used as evidence of hydrophytic vegetation when they dominate plant community composition or cover. Despite widespread use of the lists for wetland delineations, it is important to note that wetland indicator species assignments are not based on the results of a statistical analysis of species occurrence. The indicator assignments are approximations of wetland affinity based on a synthesis of submitted review comments, published botanical literature, and the field experience of the members of the Interagency Review Panel. For this reason and because many plants have properties that enable them to occur in a range of microhabitats (i.e., wetlands and non-wetlands), the presence of wetland indicator species is not unequivocal evidence of the presence of wetland hydrology and hydric soils. A positive indicator or indicators of wetlands should be emphasized, such as an assemblage of plants that can only be considered “hydrophytes” when they are growing in water or partly drained hydric soils (not effectively drained hydric soils) (Corps 1987). From the FWS perspective, all species on the NWI plant lists are hydrophytes at one time or another and the wetland indicator status (OBL, FACW, FAC, or FACU) reflects the likelihood that a given individual of a species is a hydrophyte or a certain population of these plants is hydrophytic. While OBL and FACW species are the most reliable plant indicators of wetlands, FAC and FACU species also contain populations of hydrophytes (Tiner 2006).

For the reasons stated above, the 1987 Corps *Manual* does not solely rely on the presence of hydrophytic vegetation to make wetland determinations.

4 DELINEATION METHOD

4.1 Overview of Sampling Methodology

The focus of HBG's investigation was to identify and map areas meeting the definition of wetlands and other waters of the United States under the Clean Water Act.

Prior to initiating detailed field survey work, existing land forms onsite that would likely contain potential waters of the United States, including wetlands, were identified by reviewing: (1) USGS topographic mapping, (2) a 2010 orthorectified digital aerial photograph⁷, and (3) NRCS soils mapping.

Detailed field studies were conducted on January 10, 2011 to (1) determine the presence or absence of vegetation, hydric soil, and hydrology indicators of wetland conditions as defined by the Corps Methodology, and (2) within any drainage found, determine if indicators of an ordinary high water mark (OHWM) are present. Fifteen (15) soil pits were excavated within representative land form areas. Soil pit locations were selected based on site topography and landscape and drainage features. The pits were dug by shovel to a depth up to 20 inches.

4.2 Mapping

Soil pit locations were memorialized as point features using hand-held Trimble XT global positioning system (GPS) unit with sub-meter accuracy after geoprocessing.

GPS data were incorporated into a Geographic Information System (GIS) and georeferenced in overlay fashion onto a digital USGS topographic base map and a 2010 digital National Agricultural Imagery Program color aerial photograph. These overlays were used to assist in the analysis, identification, and digitization of the location and geographic extent of areas that could potentially qualify as waters of the United States.

On the basis of the field data, technical analysis, and best professional judgment, the geographic extent of waters of the United States was delineated according to the criteria described in Section 3.0.

⁷ Source of aerial photograph from National Agricultural Imagery Program (NIAP)
G:\Napa Oaks\Corps JD\Final JD Report 2-2012.doc

5 TECHNICAL FINDINGS

The following sections discuss wetland hydrology, hydric soil, and hydrophytic vegetation conditions observed at the Study Area during field investigations.

Normal circumstances were present and soil, hydrology, and vegetation were not significantly disturbed. Conditions were not naturally problematic for soils or hydrology. However, conditions for vegetation identification were naturally problematic due to the time of the growing season the study was conducted. Forensic identification of dried herbaceous vegetation from the previous year was used to make assumption on plant species and percent cover of vegetation.

5.1 Field Indicators of Hydric Soils

Soil conditions were not significantly disturbed, conditions were not problematic, and normal circumstances were present.

Fifteen soil pits were excavated within representative land form areas onsite to a depth of 20 inches. Soils found with hydric field indicators were typically mineral soils with dark surfaces with brownish redox concentrations along the pore lining and ped face. Soil texture throughout the site was a sandy clay loam with gravel and pebbles and in many areas large rocks within 6-10 inches of the soil surface. Soil color was typically 10YR3/2.

5.2 Field Indicators of Wetland Hydrology Conditions

Hydrology conditions were considered wetter than normal (refer to Table 1) during the site visit. Prior to the January 10th, 2011 site visit, approximately 13.32 inches of precipitation occurred from October 1, 2010 through December 31, 2010 which is approximately 2.2 inches higher than the high end of the normal range according to NRCS WETS table for *Napa State Hospital*. Thirteen days prior to the site visit approximately 1.48 inches of precipitation occurred.

Primary hydrology indicators identified included surface ponding, saturated soils, and surface sedimentation.

5.3 Vegetation Field Indicators of Wetland Conditions

Vegetation conditions were not significantly disturbed; however, conditions were naturally problematic. Due to the site visit occurring during the winter, grasses and flowering plants were difficult to clearly identify. New growth and forensic identification of dried herbaceous vegetation from the previous year was used to make assumption on plant species and percent cover of vegetation.

Several small wetland areas within the grassland support growth of hydrophytic vegetation such as species of rush (*Juncus* sp.), Mediterranean barley (*Hordeum hystrix*), pennyroyal (*Mentha pulegium*), curly dock (*Rumex crispus*) and Italian rye grass (*Lolium perenne*).

6 AREAS POTENTIALLY REGULATED BY THE CORPS and USEPA

This section presents the findings of this delineation with respect to the identification and geographic extent of habitat areas found that could potentially be regulated by the Corps and the USEPA as (1) Navigable Waters under Section 10 of the Rivers and Harbors Act (RHA), and/or (2) wetlands and other waters of the United States under Section 404 of the Clean Water Act.

6.1 Traditional Navigable Waters

No traditional navigable waters regulated by Section 10 of the RHA occur on the Study Area.

6.2 Wetlands and Other Waters of the U.S.

No perennial, seasonal, or ephemeral creeks occur within the Study Area.

A total of 1.21 acres of palustrine emergent wetlands potentially subject to Corps Section 404 CWA jurisdiction were found on the Study Area (Figure 4). This finding is based on the collective presence of hydric soil, wetland hydrology, and wetland vegetation indicators for this type of waters of the U.S. as required by the Corps' 1987 *Manual*, the *Arid West Regional Supplement*, guidance documents, and regulations. The palustrine emergent wetlands occur on slide areas where subsurface water has been exposed (wetland #1 and #2), occur within a topographic swale (wetland #3), and occur in depressional areas (wetlands #4 and #5).

Table 6. Total Wetlands Within Study Area	
Wetlands (W)	Acreage
W-1	0.07
W-2	0.05
W-3	0.84
W-4	0.20
W-5	0.05
Total	1.21

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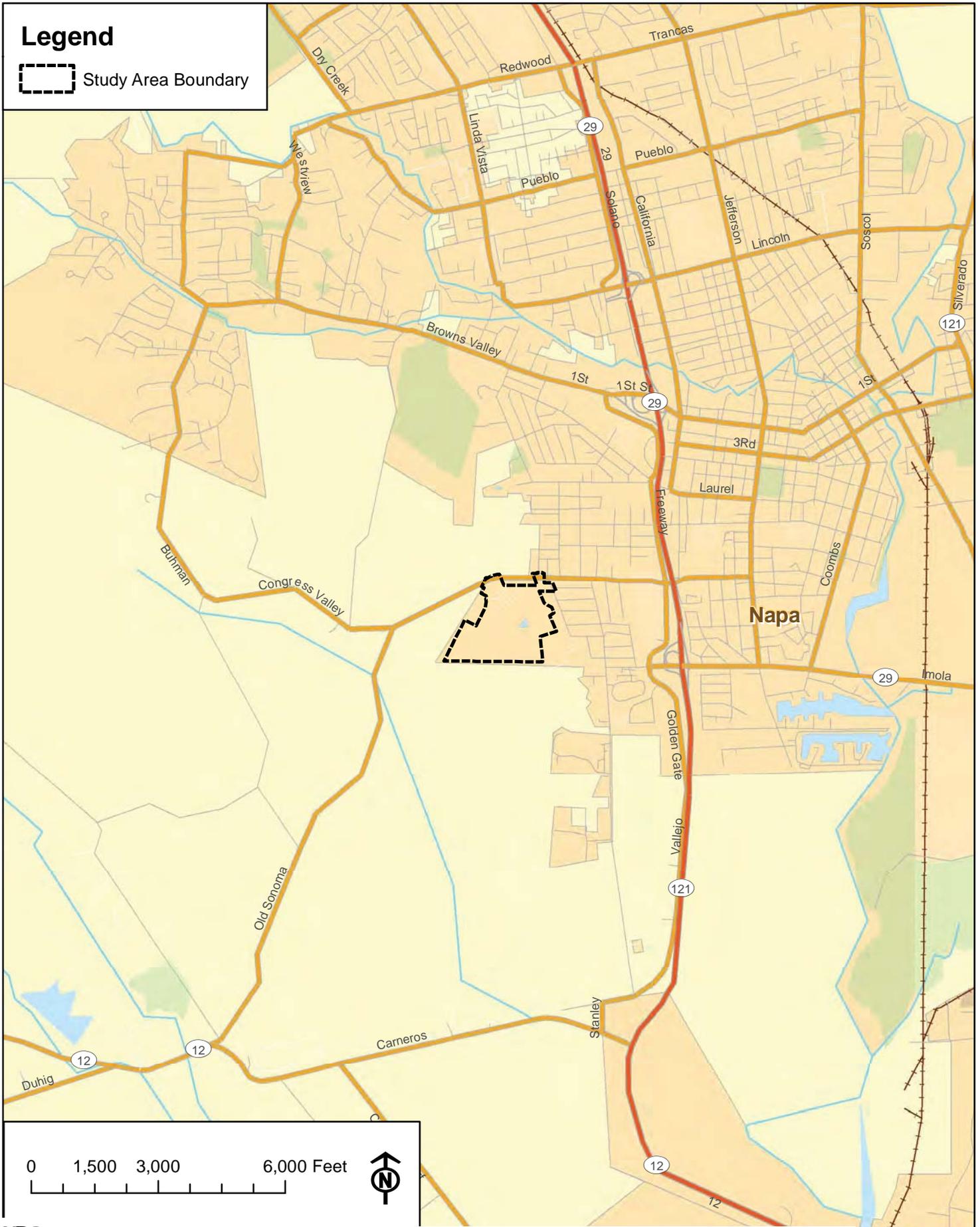
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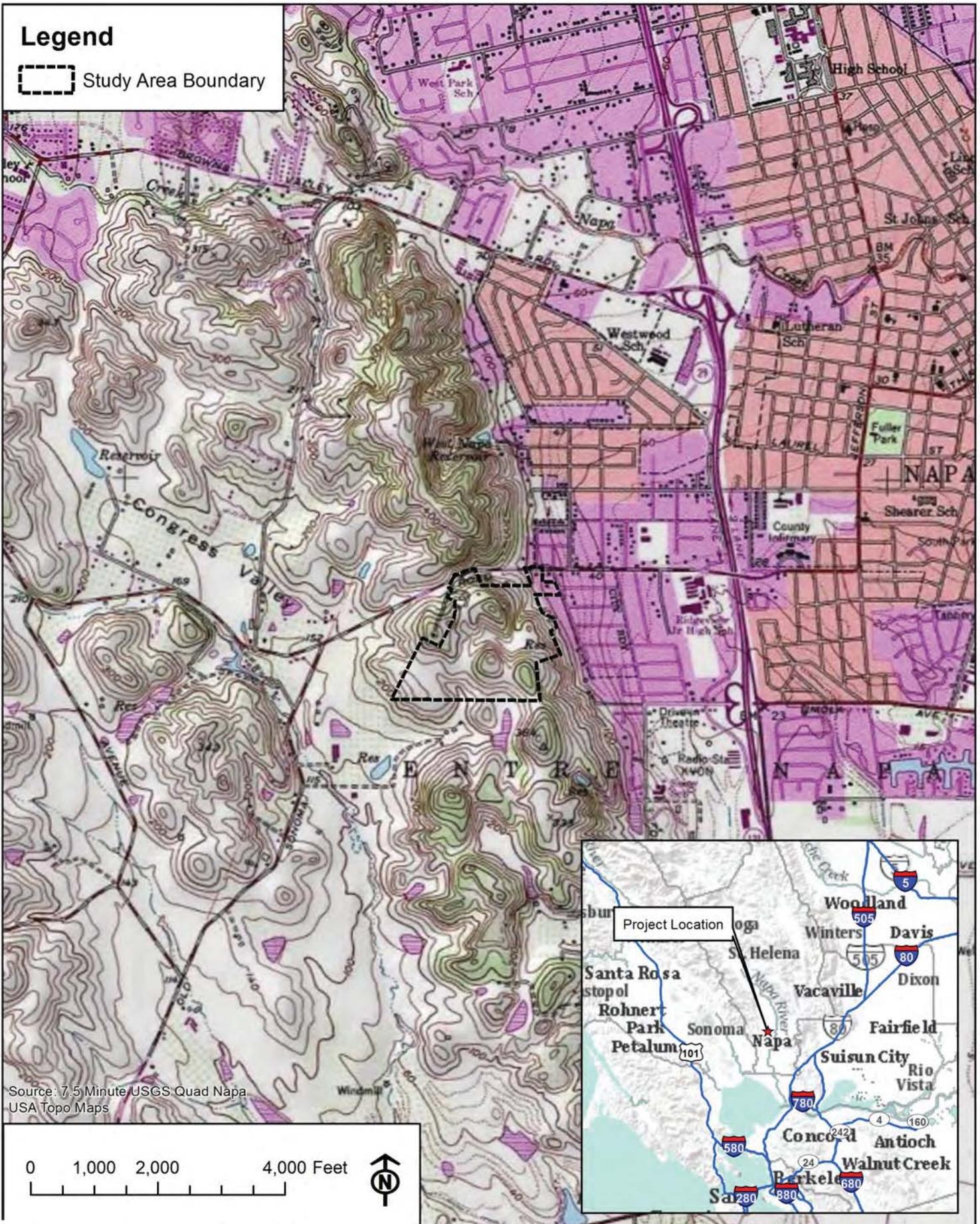
Figure 1	Project Area Location Map
Figure 2	USGS Topographic Map Showing Project Site
Figure 3	Soils Map
Figure 4	Wetlands Subject to Section 404 of CWA
Figure 5	National Wetland Inventory Map



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Figure 1. Project Area Location Map

Napa Oaks Project
 City of Napa, Napa County, California



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Figure 2. USGS Topographic Map Showing Project Site
 Napa Oaks Project
 City of Napa, Napa County, California



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Figure 3. Soils Map

Napa Oaks Project
 City of Napa, Napa County, California



Old Sonoma Road

Idaho Street

Casewall Street

10b

7b

12b

11a

14b

13a

15b

8a

9b

6b

5b

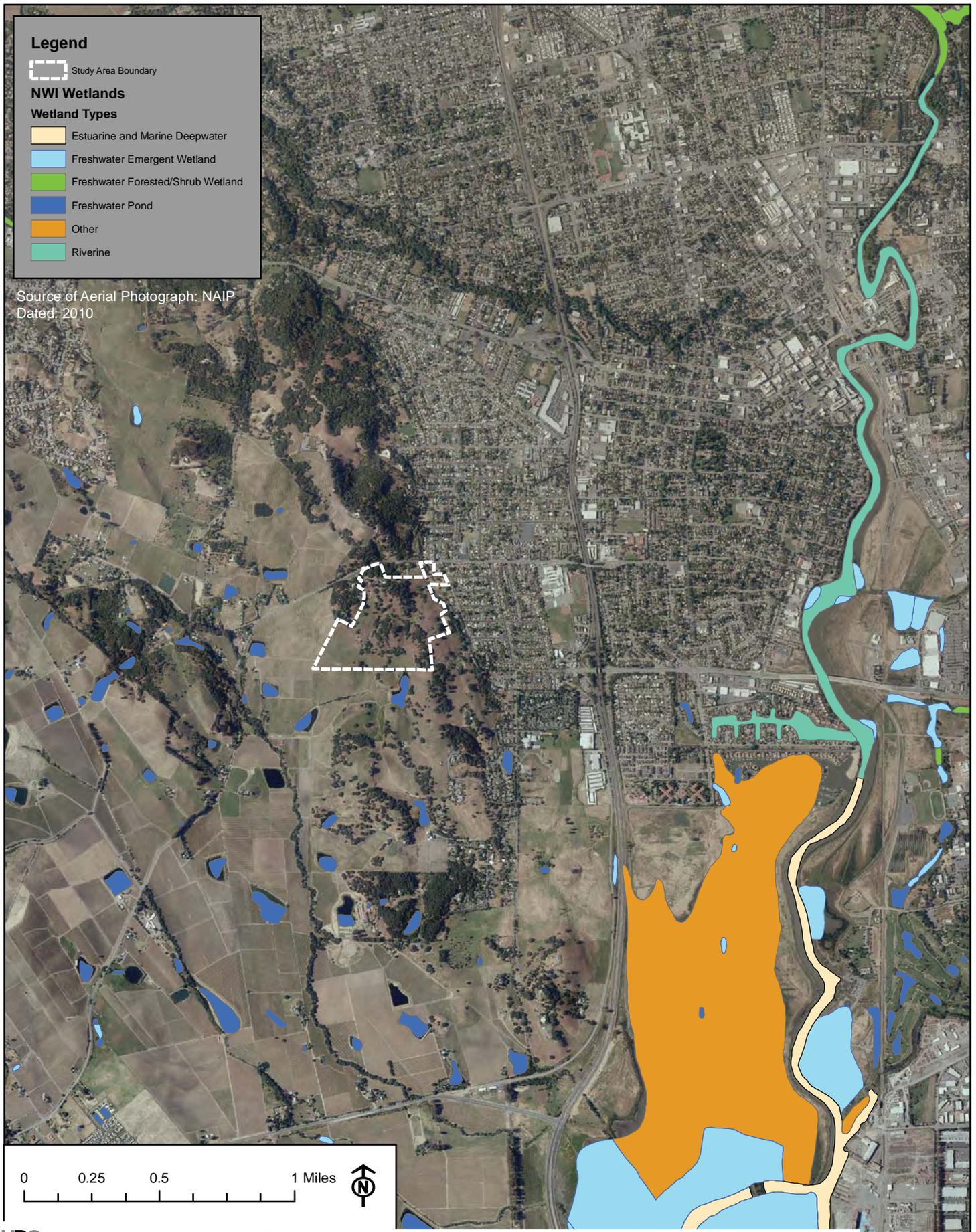
2b

1a

3b

4b





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Figure 5. National Wetland Inventory Map

Napa Oaks Project
City of Napa, Napa County, California

Attachment 1

Wetland Determination Data Forms Arid West Region

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffinan-Broadway, Inc. State: CA Sampling Point: 1A
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5-10
 Subregion (LRR): C - Mediterranean California Lat: 38° 16' 62.00"N Long: 122° 18' 58.04"W Datum: NAD83
 Soil Map Unit Name: #114, Bressa-Dibble Complex, 30-50% Slope NWI classification: Not Listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>35</u> x 1 = <u>35</u>
3. _____				FACW species <u>20</u> x 2 = <u>40</u>
4. _____				FAC species <u>45</u> x 3 = <u>135</u>
5. _____				FACU species _____ x 4 = <u>0</u>
Total Cover: _____ %				UPL species _____ x 5 = <u>0</u>
Herb Stratum				Column Totals: <u>100</u> (A) <u>210</u> (B)
1. <u>Mentha pulegium</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	Prevalence Index = B/A = <u>2.10</u>
2. <u>Rumex crispus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Rumex pulcher</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
4. <u>Hordeum hystrix</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
5. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
6. <u>Juncus xiphioides</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				Hydrophytic Vegetation Indicators:
1. _____				<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
Total Cover: _____ %				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum <u>0</u> % % Cover of Biotic Crust _____ %				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks: _____

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 2B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5-10
 Subregion (LRR): C - Mediterranean California Lat: 38° 16' 57.87"N Long: 122° 18' 57.98"W Datum: NAD83
 Soil Map Unit Name: #114, Bressa-Dibble Complex, 30-50% Slope NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on % cover.	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>5</u> x 1 = <u>5</u>
3. _____				FACW species _____ x 2 = <u>0</u>
4. _____				FAC species <u>45</u> x 3 = <u>135</u>
5. _____				FACU species <u>10</u> x 4 = <u>40</u>
Total Cover: _____ %				UPL species <u>25</u> x 5 = <u>125</u>
				Column Totals: <u>85</u> (A) <u>305</u> (B)
				Prevalence Index = B/A = <u>3.59</u>
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Centaurea spp</u>	<u>5</u>	<u>No</u>	<u>Not Listed</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Hordeum Hystrix</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Bromus mollis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>Erodium botrys</u>	<u>10</u>	<u>No</u>	<u>Not Listed</u>	
6. <u>Juncus xiphioides</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
7. <u>Juncus spp</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
8. <u>Geranium spp</u>	<u>10</u>	<u>No</u>	<u>Not Listed</u>	
Total Cover: <u>85</u> %				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %		

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 3B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): flatens at toe of slope Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 55.31"N Long: 122° 18' 49.14"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover..</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u>	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u>	(A/B)
4. _____					
Total Cover: _____ %					
Sapling/Shrub Stratum				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species	x 1 = <u>0</u>
3. _____				FACW species	<u>10</u> x 2 = <u>20</u>
4. _____				FAC species	<u>55</u> x 3 = <u>165</u>
5. _____				FACU species	x 4 = <u>0</u>
Total Cover: _____ %				UPL species	<u>15</u> x 5 = <u>75</u>
				Column Totals:	<u>80</u> (A) <u>260</u> (B)
				Prevalence Index = B/A = <u>3.25</u>	
Herb Stratum				Hydrophytic Vegetation Indicators:	
1. <u>Centaurea spp</u>	<u>10</u>	No	Not Listed	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Silybum marianum</u>	<u>10</u>	No	FACW*	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹	
3. <u>Brassica nigra</u>	<u>5</u>	No	Not Listed	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Rumex pulcher</u>	<u>5</u>	No	FAC	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. <u>Lolium perenne</u>	<u>40</u>	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must be present.	
6. <u>Hordeum Hystrix</u>	<u>10</u>	No	FAC		
7. _____					
8. _____					
Total Cover: <u>80 %</u>					
Woody Vine Stratum				Hydrophytic Vegetation Present?	
1. _____				Yes <input checked="" type="radio"/>	No <input type="radio"/>
2. _____					
Total Cover: _____ %					
% Bare Ground in Herb Stratum <u>0 %</u>		% Cover of Biotic Crust _____ %			
Remarks:					

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 4B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 55.01"N Long: 122° 18' 48.30"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover..</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.0</u> % (A/B)
4. _____					
Total Cover: _____ %				Prevalence Index worksheet:	
Sapling/Shrub Stratum				Total % Cover of: _____ Multiply by:	
1. _____				OBL species	x 1 = <u>0</u>
2. _____				FACW species	<u>10</u> x 2 = <u>20</u>
3. _____				FAC species	<u>55</u> x 3 = <u>165</u>
4. _____				FACU species	x 4 = <u>0</u>
5. _____				UPL species	<u>15</u> x 5 = <u>75</u>
Total Cover: _____ %				Column Totals:	<u>80</u> (A) <u>260</u> (B)
Herb Stratum				Prevalence Index = B/A = <u>3.25</u>	
1. <u>Centaurea spp</u>	<u>10</u>	<u>No</u>	<u>Not Listed</u>	Hydrophytic Vegetation Indicators:	
2. <u>Silybum marianum</u>	<u>10</u>	<u>No</u>	<u>FACW*</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
3. <u>Brassica nigra</u>	<u>5</u>	<u>No</u>	<u>Not Listed</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹	
4. <u>Rumex pulcher</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6. <u>Hordeum Hystrix</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present.	
7. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
8. _____					
Total Cover: <u>80</u> %					
Woody Vine Stratum					
1. _____					
2. _____					
Total Cover: _____ %					
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %			
Remarks:					

SOIL

Sampling Point: 4B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features					Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture ³	
0-20	10YR 3/3	100	10YR3/6	1	C	PL	Sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils⁴:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa Oaks Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 5B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 59.50"N Long: 122° 18' 46.07"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by:
2. _____				OBL species <u> </u> x 1 = <u>0</u>
3. _____				FACW species <u> </u> x 2 = <u>0</u>
4. _____				FAC species <u>40</u> x 3 = <u>120</u>
5. _____				FACU species <u>40</u> x 4 = <u>160</u>
Total Cover: _____ %				UPL species <u>20</u> x 5 = <u>100</u>
				Column Totals: <u>100</u> (A) <u>380</u> (B)
				Prevalence Index = B/A = <u>3.80</u>
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <u>Bromus mollis</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Hordeum hystrix</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Cynosurus echinatus</u>	<u>20</u>	<u>Yes</u>	<u>Not Listed</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				Hydrophytic Vegetation Present?
1. _____				Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %		
Remarks:				

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 6B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace/slight slope Local relief (concave, convex, none): none Slope (%): 15
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 00.68"N Long: 122° 18' 52.23"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on % cover.</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = <u>0</u>
3. _____				FACW species _____ x 2 = <u>0</u>
4. _____				FAC species <u>50</u> x 3 = <u>150</u>
5. _____				FACU species <u>25</u> x 4 = <u>100</u>
Total Cover: _____ %				UPL species <u>25</u> x 5 = <u>125</u>
				Column Totals: <u>100</u> (A) <u>375</u> (B)
				Prevalence Index = B/A = <u>3.75</u>
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <u>Lolium perenne</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Hordeum hystrix</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Bromus mollis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Cynosurus echinatus</u>	<u>25</u>	<u>Yes</u>	<u>Not Listed</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____				
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum _____ %		% Cover of Biotic Crust _____ %		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: _____				

SOIL

Sampling Point: 6B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/4	50					loamy sand	w/gravel/pebbles
0-10	10YR 5/2	50					loamy sand	gray color from sand/gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: May have been fill material placed at this location. Soil is a mixture of different rock some of which is gray in color. The 10YR5/2 does not represent depleted soils it is the color of the parent material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 7B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace/slight slope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 07.95"N Long: 122° 18' 50.34"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on % cover.</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species x 1 = <u>0</u>
3. _____				FACW species x 2 = <u>0</u>
4. _____				FAC species <u>50</u> x 3 = <u>150</u>
5. _____				FACU species <u>25</u> x 4 = <u>100</u>
Total Cover: _____ %				UPL species <u>25</u> x 5 = <u>125</u>
Herb Stratum				Column Totals: <u>100</u> (A) <u>375</u> (B)
1. <u>Lolium perenne</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.75</u>
2. <u>Hordeum hystrix</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Bromus mollis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
4. <u>Cynosurus echinatus</u>	<u>25</u>	<u>Yes</u>	<u>Not Listed</u>	
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				Hydrophytic Vegetation Indicators:
1. _____				<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
% Bare Ground in Herb Stratum _____ % % Cover of Biotic Crust _____ %				
Remarks:				

SOIL

Sampling Point: 7B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/4	100					loamy sand	w/gravel/pebbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):	Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Type: _____ Depth (inches): _____	

Remarks: resistance @ 8 inches due to rock

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)	
Primary Indicators (any one indicator is sufficient)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	_____	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	_____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa Oaks Project Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 8A
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 05.36"N Long: 122° 18' 50.20"W Datum: _____
 Soil Map Unit Name: #139, Forward-Gravelly Loam, 9-30% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>20</u> x 1 = <u>20</u>
3. _____				FACW species <u>40</u> x 2 = <u>80</u>
4. _____				FAC species <u>20</u> x 3 = <u>60</u>
5. _____				FACU species _____ x 4 = <u>0</u>
Total Cover: _____ %				UPL species _____ x 5 = <u>0</u>
Herb Stratum				Column Totals: <u>80</u> (A) <u>160</u> (B)
1. <u>Rubus discolor</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index = B/A = <u>2.00</u>
2. <u>Lolium perenne</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Rumex crispus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Mentha pulegium</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>80</u> %				
Woody Vine Stratum				
1. _____				
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %		
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 9B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 05.17"N Long: 122° 18' 45.13"W Datum: NAD83
 Soil Map Unit Name: #139, Forward-Gravelly Loam, 9-30% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: Multiply by:
2. _____				OBL species x 1 = <u>0</u>
3. _____				FACW species x 2 = <u>0</u>
4. _____				FAC species <u>100</u> x 3 = <u>300</u>
5. _____				FACU species x 4 = <u>0</u>
Total Cover: _____ %				UPL species x 5 = <u>0</u>
Herb Stratum				Column Totals: <u>100</u> (A) <u>300</u> (B)
1. <u>Lolium perenne</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.00</u>
2. <u>Hordeum hystrix</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				Hydrophytic Vegetation Indicators:
1. _____				<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
Total Cover: _____ %				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
% Bare Ground in Herb Stratum <u>0</u> %	% Cover of Biotic Crust _____ %			Hydrophytic Vegetation Present?
				Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:				

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffinan-Broadway, Inc. State: CA Sampling Point: 10B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): gully/headcut Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 05.36"N Long: 122° 18' 50.20"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Remarks: <u>Gully/headcut. No surface or subsurface water flowing through it and no ordinary high water mark. Was completely dry. No sedimentation or drift indicating flow recently.</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>0</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> % (A/B)
4. _____					
Total Cover: _____ %				Prevalence Index worksheet:	
Sapling/Shrub Stratum				Total % Cover of: _____ Multiply by:	
1. _____				OBL species	x 1 = <u>0</u>
2. _____				FACW species	x 2 = <u>0</u>
3. _____				FAC species	x 3 = <u>0</u>
4. _____				FACU species	x 4 = <u>0</u>
5. _____				UPL species	x 5 = <u>0</u>
Total Cover: _____ %				Column Totals:	(A) <u>0</u> (B)
Herb Stratum				Prevalence Index = B/A = _____	
1. _____				Hydrophytic Vegetation Indicators:	
2. _____				<input checked="" type="checkbox"/> Dominance Test is >50%	
3. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹	
4. _____				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6. _____				¹ Indicators of hydric soil and wetland hydrology must be present.	
7. _____					
8. _____					
Total Cover: _____ %				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Woody Vine Stratum					
1. _____					
2. _____					
Total Cover: _____ %					
% Bare Ground in Herb Stratum _____ %		% Cover of Biotic Crust _____ %			

Remarks: NA

SOIL

Sampling Point: 10B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
--	---

Remarks: NA

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	
Saturation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 11A
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 30+
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 07.13"N Long: 122° 18' 41.11"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species x 1 = <u>0</u>
3. _____				FACW species x 2 = <u>0</u>
4. _____				FAC species <u>100</u> x 3 = <u>300</u>
5. _____				FACU species x 4 = <u>0</u>
Total Cover: _____ %				UPL species x 5 = <u>0</u>
Herb Stratum				Column Totals: <u>100</u> (A) <u>300</u> (B)
1. <u>Rumex pulcher</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.00</u>
2. <u>Hordeum hystrix</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Lolium perenne</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				
1. _____				
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %		
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

SOIL

Sampling Point: 11A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100	10YR3/6	5	C	PL	sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)		Indicators for Problematic Hydric Soils⁴: <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	⁴ Indicators of hydrophytic vegetation and wetland hydrology must be present.	
Restrictive Layer (if present): Type: _____ Depth (inches): _____		Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: _____		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (2 or more required) <input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): @ surface		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: California Irrigation Management Information System (CIMIS) Petaluma East Station #144		
Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.		

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 12B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 30+
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 07.21"N Long: 122° 18' 41.18"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: <u>Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.</u>					

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
2. _____				Total Number of Dominant Species Across All Strata:	4	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)
4. _____				Prevalence Index worksheet:		
Total Cover: _____ %				Total % Cover of:		
Sapling/Shrub Stratum				Multiply by:		
1. _____				OBL species	x 1 =	0
2. _____				FACW species	x 2 =	0
3. _____				FAC species	x 3 =	150
4. _____				FACU species	x 4 =	100
5. _____				UPL species	x 5 =	125
Total Cover: _____ %				Column Totals:		375 (B)
Herb Stratum				Prevalence Index = B/A = 3.75		
1. <i>Bromus mollis</i>	25	Yes	FACU	Hydrophytic Vegetation Indicators:		
2. <i>Hordeum hystrix</i>	25	Yes	FAC	<input checked="" type="checkbox"/> Dominance Test is >50%		
3. <i>Lolium perenne</i>	25	Yes	FAC	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹		
4. <i>Avena spp</i>	25	Yes	Not Listed	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)		
6. _____				¹ Indicators of hydric soil and wetland hydrology must be present.		
7. _____						
8. _____				Hydrophytic Vegetation Present?		
Total Cover: 100%				Yes <input type="radio"/> No <input checked="" type="radio"/>		
Woody Vine Stratum						
1. _____						
2. _____						
Total Cover: _____ %						
% Bare Ground in Herb Stratum	0 %	% Cover of Biotic Crust	%			

Remarks:

SOIL

Sampling Point: 12B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100	10YR3/6	2	C	PL	sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils:⁴
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 13A
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 30+
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 05.61"N Long: 122° 18' 39.91"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.					

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2.				Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u> (A/B)
4.					
Total Cover: <u> </u> %				Prevalence Index worksheet:	
Sapling/Shrub Stratum				Total % Cover of: <u> </u> Multiply by:	
1.				OBL species	x 1 = <u>0</u>
2.				FACW species	x 2 = <u>0</u>
3.				FAC species	<u>100</u> x 3 = <u>300</u>
4.				FACU species	x 4 = <u>0</u>
5.				UPL species	x 5 = <u>0</u>
Total Cover: <u> </u> %				Column Totals:	<u>100</u> (A) <u>300</u> (B)
Herb Stratum				Prevalence Index = B/A = <u>3.00</u>	
1. <i>Rumex pulcher</i>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2. <i>Hordeum hystrix</i>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
3. <i>Lolium perenne</i>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹	
4.				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6.				¹ Indicators of hydric soil and wetland hydrology must be present.	
7.					
8.					
Total Cover: <u>100%</u>				Hydrophytic Vegetation Present?	
Woody Vine Stratum				Yes <input checked="" type="radio"/> No <input type="radio"/>	
1.					
2.					
Total Cover: <u> </u> %					
% Bare Ground in Herb Stratum <u>0 %</u>		% Cover of Biotic Crust <u> </u> %			

Remarks:

SOIL

Sampling Point: 13A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100	10YR3/6	5	C	PL	sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils:
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pools (F9)	
		<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
		<input type="checkbox"/> Reduced Vertic (F18)
		<input type="checkbox"/> Red Parent Material (TF2)
		<input type="checkbox"/> Other (Explain in Remarks)

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<u>0.5</u>	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	<u>@ surface</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa County Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 14B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 30+
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 05.71"N Long: 122° 18' 39.79"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0 %</u> (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species x 1 = <u>0</u>
3. _____				FACW species x 2 = <u>0</u>
4. _____				FAC species <u>50</u> x 3 = <u>150</u>
5. _____				FACU species <u>25</u> x 4 = <u>100</u>
Total Cover: _____ %				UPL species <u>25</u> x 5 = <u>125</u>
				Column Totals: <u>100</u> (A) <u>375</u> (B)
				Prevalence Index = B/A = <u>3.75</u>
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <i>Bromus mollis</i>	<u>25</u>	Yes	FACU	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <i>Hordeum hystrix</i>	<u>25</u>	Yes	FAC	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <i>Lolium perenne</i>	<u>25</u>	Yes	FAC	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <i>Avena spp</i>	<u>25</u>	Yes	Not Listed	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>100%</u>				
Woody Vine Stratum				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____				
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0 %</u>		% Cover of Biotic Crust _____ %		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Napa Oaks Project City/County: Napa/Napa Oaks Sampling Date: 1-10-2011
 Applicant/Owner: Huffman-Broadway, Inc. State: CA Sampling Point: 15B
 Investigator(s): RP & GD Section, Township, Range: 16, 5N, 4W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): C - Mediterranean California Lat: 38° 17' 04.11"N Long: 122° 18' 42.86"W Datum: NAD83
 Soil Map Unit Name: #141, Forward-Kidd Complex, 50-75% Slopes NWI classification: Not listed on NWI

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Vegetation was not flowering due to winter season therefore difficult to clearly identify grasses. I was able to identify dried grasses and flowers from previous year and made assumption on %cover.	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0</u> % (A/B)
4. _____				
Total Cover: _____ %				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species x 1 = <u>0</u>
3. _____				FACW species x 2 = <u>0</u>
4. _____				FAC species x 3 = <u>0</u>
5. _____				FACU species <u>25</u> x 4 = <u>100</u>
Total Cover: _____ %				UPL species <u>65</u> x 5 = <u>325</u>
				Column Totals: <u>90</u> (A) <u>425</u> (B)
				Prevalence Index = B/A = <u>4.72</u>
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <i>Bromus mollis</i>	25	Yes	FACU	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <i>Geranium spp</i>	20	Yes	Not Listed	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <i>Vicia sativa</i>	20	Yes	Not Listed	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <i>Cynosurus echinatus</i>	25	Yes	Not Listed	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. <i>Foeniculum vulgare</i>	10	No		
6. _____				
7. _____				
8. _____				
Total Cover: <u>100</u> %				
Woody Vine Stratum				Hydrophytic Vegetation Present?
1. _____				Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____				
Total Cover: _____ %				
% Bare Ground in Herb Stratum <u>0</u> %		% Cover of Biotic Crust _____ %		

Remarks:

SOIL

Sampling Point: 15B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture ³	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/4	100					loamy sand	gravel/pebbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
³Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils⁴:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

⁴Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: resistance @ 6 inches due to rock. Red parent rock possibly fill material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 California Irrigation Management Information System (CIMIS) Petaluma East Station #144

Remarks: 13 days have elapsed since the California Irrigation Management Information System (CIMIS) Petaluma East Station #144 received 1.48 inches of rainfall. Total for October 1, 2010 - December 31, 2010 is 13.32 inches. USDA/NRCS climate data from WETS Station "Napa State Hospital" starting 1971 ending 2000 for October-December has an average of 9.03 inches with a 30% chance of having less than 3.99 inches or more than 11.11 inches. Based WETS data and CIMIS station it is likely the project site had above average rainfall from Oct-Dec 2010.

BIOLOGICAL ASSESSMENT

NAPA OAKS PROJECT

NAPA, CALIFORNIA

Prepared for:

DAVIDON HOMES
1600 South Main Street, Suite 150
Walnut Creek, CA 94596

Prepared by:

HUFFMAN-BROADWAY GROUP, INC.
828 Mission Avenue
San Rafael, CA 94901
Contact: Gary Deghi
Telephone: (415) 925-2000 ▪ Fax: (415) 925-2006

July 2011

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- Figure 1. Location of the Project Site
- Figure 2. U.S.G.S Map of the Project Site
- Figure 3. Aerial Photograph of the Project Site
- Figure 4. Napa Oaks Project Conceptual Plan
- Figure 5. Watershed Map of the Project Area
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- Figure 10. Wetlands and Waters of the U.S. Potentially Subject to Corps Jurisdiction
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ATTACHMENT 2. Tables

- Table 1. Status, Distribution, and Habitat of Special-Status Plants with Potential to Occur in the Vicinity of the Napa Oaks Project Plan Area, Napa, California
- Table 2. Vascular Plant Species Observed at the Napa Oaks Project Plan Area, Napa, California
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- Table 4. Special Status Animal Species that Have Been Reported in the Vicinity of the Napa Oaks Project Plan Area, Napa, California

ATTACHMENT 3. 2011 Botanical Survey, Napa Oaks Project, Napa, California. Prepared by Virginia Dains. July 2011.

ATTACHMENT 4. Revised Tree Report, Napa Oaks, Napa, California. Prepared by HortScience, Inc. July 2011.

ATTACHMENT 5. U.S. Fish and Wildlife Service, California Natural Diversity Data Base and California Native Plant Society Special Status Species Lists for the Project Area

ATTACHMENT 6. Habitat Assessment for the California Tiger Salamander on the

Napa Oaks Project Site, Napa County, California. Prepared by Mark Jennings of Rana Resources, February 10, 2011.

ATTACHMENT 7. Habitat Assessment for the California Red-legged Frog on the Napa Oaks Project Site, Napa County, California. Prepared by Mark Jennings of Rana Resources, February 11, 2011.

ATTACHMENT 8. Letter Report on Western Pond Turtle, Napa Oaks Project Site, Napa County, California. Prepared by Mark Jennings of Rana Resources, February 12, 2011.

This report should be cited as: *Biological Assessment for the Napa Oaks Project, Napa, California*. July 2011. San Rafael, California. 45 pp. plus attachments. Prepared for Davidon Homes, California.

1.0 INTRODUCTION

On behalf of our client, Davidon Homes, Huffman-Broadway Group, Inc. (HBG) has prepared a biological assessment of proposed development of an 80.64-acre site in Napa, California. The project site covers four assessor's parcels (#043-040-008, 043-040-010, 043-040-13 and 043-040-025). The proposed project includes development plans for 54 single family residential units. With the inclusion of a 0.3 acre area to accommodate an access easement from Old Sonoma Road, the site area totals 80.94 acres.

It is expected that this Biological Assessment report will be incorporated into an environmental document prepared by the City of Napa to satisfy requirements of the California Environmental Quality Act (CEQA). This report describes biological resources present on the property and ecological constraints to development of the site, including the presence of sensitive habitats and an evaluation of the potential for rare, threatened, or endangered species of flora and/or fauna to occur on site or in the project vicinity. It also evaluates environmental effects of the proposed project and provides mitigation recommendations.

Our analysis included a review of pertinent literature on habitat characteristics of the site, species of plants and animals expected to utilize the site, a review of planning documents referencing ecological aspects of the site, and field site surveys. HBG also has conducted a detailed delineation of wetlands and waters of the United States at the property according to criteria of the U.S. Army Corps of Engineers. The results of the wetland delineation are summarized herein. The California Natural Diversity Data Base (CNDDB) was consulted to determine if any populations of endangered, threatened, or rare species have occurred historically or currently are known to exist in the project vicinity.

The approximately 81-acre study site was surveyed by HBG biologists between January and June of 2011. Protocol rare plant surveys were conducted during the flowering period of target plants by Virginia Dains between March and July of 2011. Mark Jennings of Rana Resources conducted habitat assessments of the property for the federally-listed threatened California red-legged frog and California tiger salamander, and provided technical information related to other special status species. A separate Tree Report was prepared by HortScience and results are incorporated herein. These relevant technical reports are attached to this Biological Assessment report.

The discussion in the Biological Assessment is based in part on the above-mentioned surveys and analyses. Biological studies were also conducted on the site by Zander Associates in 1998. Field surveys were conducted between January and April of 1998, and included California tiger salamander surveys, a general floristic survey and wetland delineation. Results of these evaluations are summarized in this report. **These previous biological studies were to be incorporated into an Environmental Impact Report (EIR) at that time, but a formal Draft EIR was never prepared or circulated for review.**

2.0 PROJECT DESCRIPTION

2.1 Location of Project Site

The 80.64 acre project site is bounded on the east by residential uses along Casswall Street, on the north by Old Sonoma Road and large residential parcels, and on the west and south by agricultural land planted in vineyard. Figure 1 shows the project site location. Figure 2 shows the property on a U.S.G.S. topographic map, and Figure 3 shows an aerial photograph of the project area. The project site covers four assessor's parcels (#043-040-008, 043-040-010, 043-040-13 and 043-040-025). Most of the property is oak woodland and grassland, but the northwestern portion of the property is developed with a house and several ranch structures including a corral and a couple of out-buildings.

2.2 Project Description

The conceptual development plan for the project is shown in Figure 4. The proposed project includes development plans for 54 single family residential units. Of the 80.64 acres at the site, residential uses are proposed for 27.1 acres (34% of the land area of the site). Residential units are to be maintained by individual homeowners. A private roadway maintained by a Homeowner's Association will encompass 7.3 acres (9% of the site). Four separate parcels (Parcels A-D) totaling 46.2 acres (57% of the site) will be dedicated as open space managed by the Homeowner's Association. The site is currently zoned AR (Agricultural Resource) and RS-10 and the proposed zoning is PD-Planned Development. Water will be provided by the City of Napa Water Division and sewer will be provided by the Napa Sanitation District. For purposes of biological review the overall project site includes an additional 0.3-acre area in the northwest corner of the property to accommodate an access easement onto the property from Old Sonoma Road.

3.0 EXISTING SETTING

3.1 Site Description

Vegetation within the approximately 81-acre site consists of primarily non-native annual grassland and oak woodland with scattered wetlands. The site is within the Napa River Browns Valley Watershed as shown in Figure 5. No perennial, seasonal or ephemeral streams are present on the project site; the nearest named stream is Raynes Creek located about 0.25 miles from the southwest portion of the site. The site is currently used for cattle grazing. Elevations within the Napa Oaks property range from about 180 feet msl at the northeast corner to approximately 309 feet along the ridgeline at the southwest corner of the site. Slopes within the property range from flat topography at the tops of hills and along ridgelines and within lower valleys, to fairly steep slopes over much of the area. The project site is not subject to inundation by floodwaters and does not lie within the 100-year floodplain as shown in Figure 6. Figure 7 shows the location of historic marsh margin in the vicinity of Napa, and shows that the project site is not located within the historic margins of baylands.

A review of the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service, SCS) Soil Survey maps for Napa County (USDA 1977) and shows that four soil types occur in within the project site. Soils within the southwest portion of the property are Bressa-Dibble complex, 30 to 50 percent slopes. Soils within a small area traversing the middle of the property are Forward gravelly loam, 9 to 30 percent slopes. Soils in the northeast corner of the property are Perkins gravelly loam, 5 to 9 percent slopes. The soils on the majority of the site are Forward-Kidd complex, 50 to 75 percent slopes. A soil map of the project site is shown in Figure 8. Field investigations on the project site confirmed that the NRCS soils mapping is reasonably accurate throughout the project area. Some earthwork has occurred on the property resulting in some areas of fill rather than natural soils.

3.2 Biological Setting

3.2.1 Plant Communities

HBG biologists conducted field reconnaissance of the project site between January and June of 2011. All habitats on the project site were surveyed on foot and assessed for similarity to sites known to support special status species within the area. Qualitative information on the composition and distribution of plant species on the site was obtained during the site visits. Plant communities were identified on aerial photographs of the site. Botanical surveys were conducted by Virginia Dains and her botanical report related to the property is included in Attachment 3.

Vegetation communities are assemblages of plant species growing in an area of similar biological and environmental factors. Terrestrial vegetation community types discussed in this report are generally based on the classification described by Sawyer and Keeler-

Wolf (1995). According to this classification, the habitat types on site consist of annual grassland and Coast live oak woodland. The California Wildlife Habitat Relationships (WHR) System for habitat classifications (Mayer and Laudenslayer 1988) defines aquatic as well as terrestrial habitats, and is one of the few systems that include urban areas. The project site contains four habitat types according to the California Wildlife Habitat Relationships System: annual grassland (49.65 acres), valley foothill hardwood (Coast live oak woodland, 27.31 acres), fresh emergent marsh (1.21 acres) and Urban (2.77 acres). According to nomenclature from the *List of Natural Communities Recognized by the Natural Diversity Database* (1997) the three natural habitats would be classified as California Annual Grassland, Coast Live Oak Woodland and Valley Freshwater Marsh. Wetland habitats on-site were further classified using the U.S. Fish and Wildlife's Service's "Classification System for Wetland and Deepwater Habitats" (Cowardin et al. 1979); the wetlands at the property are defined as palustrine emergent wetlands according to the Cowardin et al criteria. Figure 9 shows the extent and distribution of vegetation types on the property using the WHR nomenclature to include wetland habitats and developed areas. A list of plant species identified on the property during surveys conducted by Virginia Dains is included in Attachment 2, Table 1.

Annual Grassland

Annual grassland is the predominant habitat type on site, comprising 49.65 acres, or approximately 61% of the land area. The annual grassland found on the Napa Oaks property is comprised largely of non-native grasses and forage species such as soft chess (*Bromus hordeaceus*), subterranean clover (*Trifolium subterraneum*), rose clover (*T. hirtum*), ripgut brome (*B. diandrus*), wild oats (*Avena fatua*) and filaree (*Erodium botrys*). This community is grazed by cattle and the effects of this use are evident in the community structure and composition. Level and gently sloping areas of the grassland are more accessible to livestock and are more heavily used. Later in the spring, patches of unpalatable exotics such as yellow bartsia (*Parentucellia viscosa*) and purple star thistle (*Centaurea calycitrapa*) are present.

Despite this history of grazing, some portions of the annual grassland have assemblages of native species such as native perennial needlegrass (*Nasella pulchra*) and wildflowers including sun-cups (*Camissonia ovata*), purple owl's clover (*Castilleja exserta* ssp. *exserta*), orange-flowered Menzies' fiddleneck (*Amsinckia mesziesii* var. *intermedia*), California poppy (*Eschscholzia californica*) and blue-eyed grass (*Sisyrinchium bellum*).

Coast Live Oak Woodland

The Coast live oak woodland is found on 27.31 acres, or 34% of the land area. Coastal live oak (*Quercus agrifolia*) is the woodland dominant of the valley and foothill hardwood woodland present on the property. Other tree species found as isolated individuals in the woodland at the site include California buckeye (*Aesculus californicus*) and Pacific madrone (*Arbutus menziesii*). Additional tree species such as valley oak (*Q. lobata*) and black oak (*Q. kelloggii*) are present, particularly along the eastern edge of the property. The understory of the onsite woodland is highly disturbed, consisting mostly

of non-native grassland species with few shrubs and saplings of young oaks. Where present, the herbaceous understory contains species such as poison oak (*Toxicodendron diversilobum*) and the noxious and invasive Italian thistle (*Carduus pycnocephalus*) and milk thistle (*Silybum marianum*). In disturbed areas, a dense canopy of young oak trees provides protected sites for chaparral shrubs such as coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), and horticultural escapes such as plum (*Prunus cerasifera*) and viburnum (*Viburnum tinus*). Open dry areas in the oak woodlands are covered with dogtail (*Cynosurus echinatus*).

A tree survey conducted on the site by HortScience (see Attachment 4) found 1,375 trees of 33 species (8 native species) present on the property. Native species constituted 94% of the trees and of these, 50% were young trees with diameters of less than 12 inches. The tree survey found Coast live oak as by far the most common tree on the property (86% of the trees); these trees were considered healthy with only 6% found to be in poor condition. **Certain native species with at least one trunk of 12 inches or greater in diameter are regulated as Protected Native trees by ordinance of the City of Napa. By this definition, 622 trees (45% of the total number of trees) are considered Protected Native trees, including 102 with trunk diameters of 30 inches or greater.** Detailed information regarding all trees on the property is included in the Tree Report (HortScience 2011, see Attachment 4), including information on species, size, condition, suitability for preservation and whether the tree is considered Native Protected by ordinance of the City of Napa.

The California Oak Woodlands Conservation Program recognizes oak woodlands as a vital statewide resource providing benefits including wildlife habitat, monetary and ecological value, and an ability to reduce soil erosion, enhance water quality and moderate temperatures.

Fresh Emergent Marsh

Several small wetland areas (total of 1.21 acre) within the grassland support seasonally-saturated soils and growth of fresh emergent marsh vegetation such as species of rush (*Juncus* sp.), pennyroyal (*Mentha pulegium*), and curly dock (*Rumex crispus*), among others. The vegetation in the wetland areas has also been affected by the grazing by cattle. The wetlands in the southwestern portion of the property drain in the direction of Raynes Creek which is located south of the property.

3.2.2 Animal Populations

The species discussed in this study are based on review of available literature from the CNDDDB and habitat observations made during qualitative surveys on January 10 and May 9, 2011 conducted by HBG wildlife biologists. Species specific site assessments of the site have been conducted by Rana Resources for the federally-listed threatened California red-legged frog and California tiger salamander, and the results are included in Attachments 5 and 6, respectively.

A list of wildlife species observed on-site or expected to utilize the site was obtained through habitat reconnaissance, field observation, and literature sources. Supplemental information was obtained from the literature, particularly for wildlife taxa not observed during the surveys. A complete listing of the references from which information was compiled on the flora and fauna inhabiting the region is contained in the References section. Attachment 2, Table 2 provides species lists based on these reconnaissance level observations for reptiles, amphibians, birds and mammals. The table lists wildlife species observed or expected to occur on the project site. The table includes the scientific names of all species mentioned in the text.

The disturbed annual grassland, valley foothill hardwood and wetland habitats onsite support a variety of wildlife species. The complex of habitats includes the presence of standing water, on a seasonal basis, which can accommodate wildlife adapted to aquatic areas, and trees and shrubs which provide nesting and roosting sites for birds, in addition to foraging areas for species of mammals, reptiles, amphibians and birds.

A number of wildlife species were observed on the site during the winter season field review conducted by Gary Deghi of HBG on January 10, 2011. All species that were observed are common to abundant in the region and would be expected in the combination of disturbed grassland and woodland habitats present at the site. Raptors observed in the project area during this winter survey included turkey vulture, red-tailed hawk, Cooper's hawk and American kestrel. A sharp-shinned hawk was observed by Mark Jennings of Rana Resources on February 1, 2011. Additional birds documented within on-site grasslands during the winter survey by HBG included killdeer, mourning dove, black phoebe, Say's phoebe, American crow, Western bluebird, yellow-rumped warbler, lark sparrow, savannah sparrow, Western meadowlark, Brewer's blackbird, American goldfinch and lesser goldfinch. Birds observed primarily in oak woodlands included wild turkey (a flock of over 40 in the northeastern portion of the site), California quail, Northern flicker, acorn woodpecker, Nuttall's woodpecker, downy woodpecker, hairy woodpecker, Western scrub-jay, Stellar's jay, common raven, American robin, European starling, Northern mockingbird, oak titmouse, bushtit, white-breasted nuthatch, ruby-crowned kinglet, Hutton's vireo, orange-crowned warbler, California towhee, spotted towhee, white-crowned sparrow, golden-crowned sparrow, dark-eyed junco and house finch. A white-throated swift observed flying high over the ridge was unseasonal but not totally unexpected. The winter of 2010-2011 saw an incursion of evening grosbeaks into many residential areas in the Coast Range, including some within the City of Napa; so three seen flying over the ridge during the site survey were also not completely unexpected.

Mammals documented at the site included western gray squirrel, California ground squirrel (presence of dens), Botta's pocket gopher (burrows) and coyote (scats). Despite attempts at searching under boards and rocks, no reptiles or amphibians were observed during the January surveys.

While some of the bird species observed during the winter reconnaissance of the property by HBG would be expected only during the winter months (e.g., Say's phoebe, ruby-crowned kinglet, yellow-rumped warbler, golden crowned sparrow), most of the bird species observed are resident species that could be expected to nest in suitable grassland and oak woodland habitats at the site. Resident bird species expected in the winter that were observed at the site during a spring survey conducted on May 9, 2011 included red-tailed hawk, red-shouldered hawk, turkey vulture, killdeer, wild turkey (heard calling from adjacent property to the south), Anna's hummingbird, mourning dove, band-tailed pigeon, California quail, Northern flicker, acorn woodpecker, Nuttall's woodpecker, black phoebe, American crow, common raven, Western scrub-jay, Stellar's jay, American robin, European starling, Northern mockingbird, oak titmouse, bushtit, white-breasted nuthatch, Western bluebird, Hutton's vireo, California towhee, spotted towhee, song sparrow, dark-eyed junco, Brewer's blackbird, red-winged blackbird, lesser goldfinch and house finch. Additional neo-tropical migrants, some of which may nest at the site, that were observed during the spring survey included tree swallow, barn swallow, violet-green swallow, western kingbird, ash-throated flycatcher and Bullock's oriole. A red-tailed hawk nest was observed in a tree near the pond on the adjacent property to the south. The nest site is approximately 500 feet south of the Napa Oaks property boundary.

Mammals observed during the spring surveys of the site included California ground squirrel, western gray squirrel and black-tailed jackrabbit. Additional mammals that would be expected to occur at the site include deer mouse, Virginia opossum, raccoon, striped skunk, bobcat and mule deer. Western fence lizards were the only reptile observed during the May field review, and the only amphibian observed was an arboreal salamander found under a rotting log. Other expected amphibians and reptiles would include Pacific treefrog, California toad, Northern alligator lizard, gopher snake and western terrestrial garter snake.

3.2.3 Wetland Delineation

Definitions of Wetlands and Other Waters of the U.S.

The Department of the Army, acting through the U.S. Army Corps of Engineers (Corps), has the authority to permit the discharge of dredge or fill material in waters of the U.S. under Section 404 of the Clean Water Act (CWA), and permit work and placement of structures in navigable waters of the U.S. under Section 10 of the Rivers and Harbors Act of 1899 (RHA). As described in the Corps/EPA Clean Water Act regulations (33 CFR § 328.3(a)), the term "waters of the United States" is defined as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce (excluding commerce associated with migratory birds), including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in above paragraphs (1)-(4);
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in above paragraphs (1-6).

The Corps defines wetlands as: “sites that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [(33 CFR § 328.3(b)]. Implicit in the definition is the need for a site to meet certain water, soil, and vegetation criteria to qualify as a jurisdictional wetland. These criteria and the methods used to determine whether they are met are described in the Corps’ 1987 wetland delineation manual.

Under Section 10 of the Rivers and Harbors Act of 1899, the Corps also regulates the construction of structures in, over, or under; excavation of material from; or deposition of material into navigable waters. Consistent with above paragraph (1), the Corps defines “navigable waters of the United States” as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 CFR § 329.4). A determination of navigability, once made by the Corps, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which impeded or destroy navigable capacity. Based on this provision, the Corps also has the discretion to regulate activities in historically navigable waters. Historically navigable waters are areas that were navigable in the past, but are no longer navigable as a result of artificial modifications, such as levees, dikes, and dams.

Detailed Wetland Delineation-Methodology

HBG conducted a detailed wetland delineation in accordance with Code of Federal Regulations (CFR) definitions of jurisdictional waters, the Corps’ 1987 *Wetlands Delineation Manual* (1987 Manual), the Corps’ 2006 *Interim Regional Supplement to Corps of Engineers Wetland Delineation Manual: Arid West* (Arid West Regional

Supplement) and supporting guidance documents.. The 1987 Manual provides technical guidance and procedures, from a national perspective, for indentifying and delineation wetlands that may be subject to Section 404 of the CWA. Pursuant to the 1987 Manual, key criteria for determining the presence of wetlands are: (a) the presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by groundwater or surface water; and (b) a prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation). Explicit in the definition is the consideration of three environmental parameters: hydrology, soil, and vegetation. The Arid West Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. The combined use of the 1987 Manual and Arid West Regional Supplement enhances the technical accuracy, consistency, and credibility of wetland determinations.

HBG conducted onsite evaluations of the geographic extent of wetlands and other waters of the U.S. potentially subject to Corps jurisdiction commencing in January 2011. Existing land forms, vegetation, hydrology, and soil conditions were studied to identify areas that would likely contain wetland and aquatic habitats. These areas were classified using the U.S. Fish and Wildlife Service's "Classification System for Wetland and Deepwater Habitats" (Cowardin *et al.* 1979). The landward extent or boundary of these areas was further defined using the methodology currently in use by the Corps, published Corps regulatory guidance letters, and San Francisco District regulatory policy.

A 2010 digital orthophoto National Agricultural Imagery Program color aerial photograph was obtained. The digital orthophoto was brought into GIS software and CAD contour data were overlaid on the aerial photo. A hand-held Trimble global positioning system (GPS) unit and a topographic survey map were used to locate the extent of potential waters of the U.S. subject to Corps jurisdiction. Representative sites were selected for detailed analysis of wetland indicators using a transect-based sampling approach. Site selection was based on an examination of sites that would likely pond, flood, or saturate based on their geographic position, soil permeability, and drainage characteristics in relationship to well-drained upland sites (as determined by NRCS soils data). Once field data collection was completed, HBG mapped the potential wetland locations on the aerial photograph as shown in Figure 10.

Detailed Wetland Delineation-Results

Based on data obtained in the investigations, the geographic extent of wetlands and waters of the U.S. potentially subject to Corps jurisdiction under Clean Water Act Section 404 were delineated. **Areas potentially subject to Corps jurisdiction on the project site are shown in Figure 10 and total 1.21 acres. The 1.21 acres consists of vegetated wetlands potentially subject to Corps jurisdiction. The 1.21 acres of potential wetlands are palustrine emergent seasonal wetlands according to Cowardin et al. (1979) criteria (equivalent to the area of fresh emergent marsh shown in Figure 9).** The identified palustrine wetlands contained low chroma soils, evidence of wetland hydrology and vegetation adapted for life in saturated soil conditions. The 1.21 acres of wetlands

and waters serve the functions of flood flow alteration, groundwater recharge, sediment stabilization, sediment/toxicant retention, nutrient removal/ transformation, production export, and wildlife habitat.

Aquatic resources within the Study Area and adjacent to the Study Area were examined with respect to the SWANNC exclusion from Clean Water Act regulation. No areas were found that could either potentially be exempted or excluded from regulation in accordance with SWANNC. A review of the wetlands with respect to the *Rapanos v. United States* and *Carabell v. United States* significant nexus evaluation by HBG is ongoing as of this writing. Results of this evaluation will be contained within a detailed wetland delineation report to be submitted to the San Francisco District U.S. Army Corps of Engineers.

3.2.4 Special Status Species

Rare, endangered, or threatened species as well as species that are proposed for listing or candidates for listing are afforded various levels of protection under the federal Endangered Species Act of 1973 (16 USC § 1531 *et seq.* and rules there under, i.e., 50 CFR § 17.11 and 17.12), the California Native Plant Protection Act of 1977 (California Fish & Game (CFG) Code § 1900 *et seq.*), and the California Endangered Species Act of 1970 (CFG Code § 2050 *et seq.* and rules there under, i.e., Title 14, California Code of Regulations (CCR) Sections 670.2 and 670.51). The California Environmental Quality Act (CEQA) (January 1984) requires that the California Department of Fish and Game (CDFG) be consulted during the CEQA review process as to the impact of proposed projects on endangered and threatened species, and regulations provide additional protection for unlisted species that meet the “rare” or “endangered” criteria.

The CDFG maintains records for the distribution and known occurrences of sensitive species and habitats in the California Natural Diversity Database (CNDDDB). Sensitive species include those species listed by the federal and state governments as endangered, threatened, or rare or candidate species for these lists. The CNDDDB also included species that are included within the U.S. Fish and Wildlife Service (USFWS) category of “species of special concern.” This is an informal term that refers to those species which the USFWS believes might be declining or in need of concentrated conservation actions to prevent decline. These species receive no legal protection under the federal Endangered Species Act. The CNDDDB also includes state species of special concern designated by the CDFG because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as “species of special concern” is to halt or reverse their decline by calling attention to their plight and address the issues of concern early enough to secure their long term viability. Not all “species of special concern” have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a “Threatened” or “Endangered” species under the state and/or federal Endangered Species Acts, but are not listed.

The CNDDDB is organized into map areas based on 7.5 minute topographic maps produced by the U.S. Geological Survey. All known occurrences of sensitive species and important natural communities are mapped onto the quadrangle map. The database gives further detailed information on each occurrence, including specific location of the individual, population, or habitat (if possible) and the presumed current state of the population or habitat. The project site is located on the Napa 7.5-minute quadrangle; the relevant adjacent quads are the Rutherford, Yountville, Capell Valley, Mt. George, Cordelia, Cuttings Wharf, Sears Point and Sonoma quadrangles. A search of the CNDDDB records of occurrence for special status animals and plants and natural communities within these quadrangles indicated that none of the special status species or natural communities is known to occur on the project site itself. However, even the absence of a special animal, plant, or natural community from the report does not necessarily mean they are absent from the area in question, but only that no occurrence data have been entered for that species or natural community in the CNDDDB inventory. The occurrence of special status plant and animal species in the vicinity of the project area may be an indication that they also could occur in the project area. Therefore, occurrences of special status species throughout the quadrangles mentioned above were noted in considering the potential presence of these species on the project site.

The U.S. Fish and Wildlife Service was consulted for their list of species listed as endangered or threatened under the Endangered Species Act within an area encompassing nine USGS quadrangles around the project area, and this list is included in Attachment 5. In addition, a list of special status plant species found within the nine-quad area in habitats similar to those found on the project site was obtained from the California Native Plant Society (CNPS), and this list is also included in Attachment 5.

Table 1 presents a list of special status plant species that have been reported in the vicinity of the project site. The special status plant species listed in Table 1 include all species mentioned in the CNDDDB and occurring within 10 miles of the project site. Table 4 presents a list of special status animals that have been reported in the project vicinity. The special status animal species listed in Table 4 include those noted in the CNDDDB as occurring within 10 miles of the site, the federally listed species from a nine-quad area highlighted by the USFWS in their list in Attachment 5, and those that are known to occur in the general vicinity based on the knowledge of HBG biologists.

3.2.4.1 Special Status Plant Species

Special-status plant species include species listed as Threatened or Endangered under provisions of the federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et. seq., as amended) (U.S. Fish and Wildlife Service [USFWS] 2007a); and species listed as Rare, Threatened, or Endangered by the state of California under provisions of the 1984 California Endangered Species Act (CESA) and the 1977 Native Plant Protection Act (NPPA) (California Department of Fish and Game [CDFG] 2007). Plant species formally proposed for federal listing by the U.S. Fish and Wildlife Service (taxa for which a proposed rule has been published in the Federal Register; USFWS 2007b) are

afforded limited legal protection under ESA, and federal Candidate species (USFWS 2007c) are also considered special-status species, although they are not specifically protected under the ESA. The Wildlife Branch of CDFG administers the state rare species program and maintains the list of designated Endangered, Threatened, and Rare species.

Other special-status plant species are those on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Tibor 2001; CNPS 2007). These species are subject to state regulatory authority under the California Environmental Quality Act (CEQA) Guidelines. Also considered as special-status plant species are those included on List 3 (Plants About Which We Need More Information—A Review List) and List 4 (Plants of Limited Distribution—A Watch List) of the CNPS *Inventory*. These plant species are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are generally not required for species in these categories.

A target list of special status plants found within 10 miles of the site (Table 1), and additional species mentioned in the CNPS inventory search for the nine quad area (Attachment 5) were used to schedule survey dates during flowering periods of target species. The surveys are summarized in the Botanical Survey report included in Attachment 4. **The property does not represent high quality habitat for special status plants.** Cattle grazing over a long period of time has altered habitats and made them less likely to support rare species. The impact of grazing and shading of cattle under the oak canopy has left an understory largely dominated by the noxious and invasive Italian thistle or milk thistle. Wooded areas with dense canopy cover on shaded north slopes are largely unvegetated but with soil churned by cattle. Also, earthwork and loss of natural soils have also affected the habitat suitability for special status plants and left a soil surface of broken rocky substrates.

Most of the plant species mentioned in Table 1 require habitat conditions that are not found at the site (see Table 1 for scientific names of all species mentioned). For instance, many of the species are found only in salt marsh or brackish marsh conditions that do not occur at the project site. Such plants include Pappose tarplant, soft bird's-beak, Suisun marsh aster, Delta tule pea and Mason's lilaepsis. Others found strictly in vernal pool wetlands such as Sonoma sunshine, Sebastopol meadowfoam, dwarf downingia, Contra Costa goldfields, saline clover, and few-flowered navarretia would not be likely due to the lack of vernal pool wetland habitats at the project site. Others found only in alkaline soils such as San Joaquin spearscale would also not be found. Special status plants found only in chaparral such as holly-leaved ceanothus, Sonoma ceanothus, Greene's narrow-leaved daisy and Marin checkerbloom would also not find suitable conditions at the site. Other plants such as Tiburon Indian paintbrush are strictly limited to serpentine soils and

would, therefore, not be expected. Some target species are restricted to riparian situations, like California black walnut, and would not be present. Narrow-anthered California brodiaea, which is limited to broadleafed upland forest, chaparral or lower montane coniferous forest, would also not find suitable conditions. Field surveys conducted by Zander Associates in 1998 for Sebastopol meadowfoam, Sonoma sunshine, Contra Costa goldfields and dwarf downingia were negative.

Although some of the remaining plants are sometimes found in serpentine, they are not strictly limited to serpentine soils, and their habitat requirements could be satisfied by conditions found at the project site. These plants, along with their flowering periods (Munz and Keck 1973) include: Franciscan onion (March to June), Napa false indigo (May to July), Clara Hunt's milk-vetch (April to May), big-scale balsamroot (March to June), seaside tarplant (May to October), Cobb Mountain lupine (April to May), Napa bluecurls (June to October), showy Indian clover (April to June), and oval-leaved viburnum (May to June).

Systematic protocol surveys were scheduled to coincide with the flowering periods of these species. Field surveys of the Napa Oaks property were conducted by Virginia Dains on March 29, April 28, and June 15, 2011. Special status plants were sought in all habitats but special attention was given to those few areas such as protected rocky outcrops, thin soils or steeper slopes, or areas supporting groups of native plants where grazing pressure was reduced or special habitats existed. The entire site was surveyed by walking meandering transects through individual patches of habitat.

No special status plant species were observed at the property during floristic surveys conducted from March to June of 2011 (See botanical report in Attachment 3).

3.2.4.2 Special Status Animal Species

The special status animal species evaluated in Table 4 include those noted in the CNDDDB as occurring within 10 miles of the site, the federally listed species from a nine-quad area highlighted by the USFWS in their list in Attachment 5, and those that are known to occur in the general vicinity based on the knowledge of HBG biologists. Key species are either known to occur in the vicinity of the property or with a potential to occur at the site, or that require specific study to determine presence/absence, are discussed below.

Steelhead Trout

Central California populations of steelhead trout (*Oncorhynchus mykiss*) were federally listed as threatened in August 1997. Steelhead have been divided into ESUs, all of which were listed as threatened under the Federal Endangered Species Act in August 1997. Steelhead in the Central Coast ESU occur from the Russian River south to Soquel Creek and to, but not including, the Pajaro River, and including San Francisco and San Pablo Bays. Steelhead require well-oxygenated streams with riffles and loose, silt-free gravel substrate for spawning.

Juvenile steelhead require a period of residency in a stream before migrating downstream to the ocean. The length of freshwater residency may vary from one to three years or more depending on the living conditions in the stream. The major downstream migration of juvenile steelhead occurs during the period from February through June, depending on the water year and pattern of winter-spring runoff. Fish habitat is physically reduced to a minimum during the low-flow period of July through October. In the Napa River and its tributaries, adult steelhead begin their upstream migration during the first heavy rains of November and December and continue their upstream migration into March and April. Salmonid smolts migrate downstream to the Napa River and the Pacific Ocean during the winter and spring with fish movements tapering off in the middle of May.

Steelhead are known to occur in the Napa River and some tributaries; the sightings documented in the CNDDDB nearest to the project site are from Highway 121 crossing of Huichica Creek, about four miles southwest of Napa. Steelhead would not be expected to occur within the Napa Oaks project site due to the lack of perennial streams traversing the site. Steelhead in the Napa River or its tributaries could only be affected by downstream changes in water quality. Water quality controls as described in Section 4.4 will prevent impacts to aquatic resources and populations of fish.

California Tiger Salamander

Distinct population segments of the California tiger salamander (*Ambystoma californiense*) in Sonoma and Santa Barbara Counties were listed as federally endangered on July 22, 2002. On August 4, 2004 the California tiger salamander was listed as a threatened species throughout its range, at which time the Sonoma and Santa Barbara County populations were also downgraded to threatened status. On August 19, 2005, a U.S. District Court reinstated the Service's listing of the Sonoma and Santa Barbara populations, and these populations are currently federally-listed as endangered. This species is also a California species of special concern.

California tiger salamander (CTS) occurs in central California from the central Sacramento Valley to the central San Joaquin Valley and surrounding foothills of both the Coast Range and the Sierra Nevada. The species also has been recorded in the San Francisco Bay area, the Monterey Bay area, and valleys and foothills in San Luis Obispo and Santa Barbara Counties. The actual occurrence of the species within this range is restricted to locations where breeding ponds are surrounded by suitable upland habitat. Adult CTS inhabit grassland, savanna, or deciduous oak woodland habitats that contain natural ponds, vernal pools, intermittent streams, or stock ponds. They usually are not found unless there is this combination of ponded water for breeding and surrounding upland, with a predominant ground cover of grazed or ungrazed grassland. They spend the majority of their time below ground, in rodent burrows, or other natural crevices. The major threat to the CTS is the loss of breeding pools and ponds and the conversion of upland habitat for agriculture and urban development.

California tiger salamanders spend most of the year underground in the burrows of

California ground squirrels and pocket gophers, feeding on insects (Loredo, *et al.* 1996). Following heavy winter rains (normally December-March) adults emerge briefly to lay their eggs in ponds. California tiger salamanders are known to travel large distances from breeding ponds or pools into upland habitats. Upland terrestrial habitat for Ambystomids is usually within 300 meters (984 feet) of aquatic breeding sites, but movements have been reported as far away as 800 meters (2,246 feet) (Trenham 2001). California tiger salamanders in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds (Sweet, *in litt.* 1998). Breeding habitat is considered suitable if water is present at a minimum of 12 inches for a minimum period of 4 months. Terrestrial habitat is considered suitable if small mammals are present and the site has not been disturbed from previous activities, such as road construction or other ground disturbing activities, such as grading or excavation.

According to the CNDDDB, no documented sightings of CTS are known within 10 miles of the Napa Oaks project site. The closest known historic populations are located approximately 18 miles to the southeast of the site in the vicinity of Fairfield (near Travis Air Force Base) in Solano County, and 19 miles to the northwest at the southern edge of the Santa Rosa Plain (near Cotati and Rohnert Park) in Sonoma County. Spotlight surveys for CTS were conducted by Zander Associates on two rainy nights during the winter of 1998. Although these surveys do not comply with current protocol, results were negative

Wetlands found at the proposed site do not have inundation characteristics that would enable breeding by CTS. However, stock ponds that could provide breeding habitat for the species are located to the south and west of the Napa Oaks property at a distance that is within the migration distance for CTS, and ground squirrel burrows found in several locations at the site provide suitable refugial habitats. Because of the above factors, a Phase 1 Habitat Assessment for California tiger salamander was prepared by Dr. Mark Jennings of Rana Resources.

Results of the Habitat Assessment showed that the site is outside of the known native range for CTS, it is not within any of the USFWS critical habitat areas designated for the species, and it lacks suitable breeding habitat for CTS. Although the numerous irrigation ponds within the vineyards adjacent to the site are potentially suitable for CTS breeding, CTS would not be found there due to the presence of introduced western mosquitofish (*Gambusia affinis*), which was observed in the pond closest to the property, and introduced bullfrogs (*Rana catesbeiana*) that are known to be abundant in aquatic habitats within the Napa area. These negative factors, coupled with the lack of CNDDDB records for CTS within any part of Napa County suggest that CTS do not inhabit the area. In-between the project site and the closest known populations are extensive areas of natural waterways (including rivers), mountain ranges, urbanization, freeways, and agricultural areas that would prevent movement of CTS to the project area.

The habitat assessment report for the California tiger salamander is included as

Attachment 6.

California Red-legged Frog

The California red-legged frog (CRLF, *Rana draytonii*) is a federally-listed threatened species and California species of special concern. The historical range of the California red-legged frog extended from the vicinity of Point Reyes National Seashore in Marin County southward to northwestern Baja California, Mexico and inland to approximately Redding in Shasta County (61 Federal Register 25813). The frog has sustained a 70 percent reduction in its geographic range. The project area is not part of the critical habitat designated under the Endangered Species Act for the CRLF.

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats, including marshes, streams, lakes, reservoirs, ponds and other permanent, or near permanent, sources of water. Although they occur in ephemeral streams or ponds, CRLF are expected to thrive in permanent deep-water pools with dense stands of overhanging willows (*Salix* spp.) and emergent vegetation. However, they have been observed in a variety of aquatic environments, including stock ponds and artificial pools with little to no vegetation. California red-legged frogs usually are observed near water, but can move long distances over land between water sources during the rainy season.

The nearest location to the project site where CRLF is known to occur is approximately 8 miles to the south-southeast of the site in the hills in the vicinity of Napa Junction, Napa County. In addition, there are two historic 1912 museum records for two miles southwest of the City. Wetlands found at the proposed site do not have inundation characteristics that would enable breeding by CRLF. However, stock ponds that could provide breeding habitat for the species are located to the south and west of the Napa Oaks property at a distance that is within the migration distance for CRLF. Uplands and wetlands immediately adjacent to an offsite stock pond along the southern border of the property and ground squirrel burrows at more distant locations at the site could provide suitable refugial habitat. Because of the above factors, a Phase 1 Habitat Assessment for the CRLF was conducted by Dr. Mark Jennings of Rana Resources.

Results of the Habitat Assessment showed that although the site lies is within the native range for this species, it is currently not within any of the USFWS critical habitat areas designated for CRLF, and it lacks any suitable breeding habitat for CRLF. Although there are a number of adjacent vineyard irrigation ponds in the vicinity of the site, none of these water bodies appear to harbor CRLF due to the presence of dense populations of introduced bullfrogs and introduced predatory fishes. The high summer and fall air temperatures of the vicinity make the local aquatic habitats optimal for bullfrog reproduction and growth, which has presumably resulted in the localized extinction of CRLF in the vicinity of Napa. In-between the project site and the closest known population 8 miles away are extensive areas of natural waterways (including the Napa River), urbanization, freeways, and agricultural areas that, along with the climatic factors, would prevent movement of CRLF to the project site.

The habitat assessment report for the California red-legged frog is included as Attachment 7.

Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is both a federal and state species of special concern. It occupies ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. The western pond turtle is associated with permanent or nearly permanent water in a wide variety of habitat types. Individuals normally are associated with permanent ponds, lakes, streams, irrigation ditches or permanent pools along intermittent streams. They rely on suitable upland areas of scrub and woodlands for estival refugia. The species currently is known to occur broadly throughout the state.

The nearest location for western pond turtle noted in the CNDDDB is at a duck pond at the south end of the City of Napa about 2 miles southeast of the project site. Suitable habitat for breeding by western pond turtle does not occur at the project site due to the lack of aquatic areas of sufficient inundation to support the species. However, Mark Jennings of Rana Resources surveyed the site on February 1, 2011, and observed (with binoculars) basking or swimming adult western pond turtles in every irrigation pond adjacent to the property within a distance of about a quarter of a mile. Although the project site is totally unsuitable for western pond turtle nesting and estivation due to the rocky nature of the soil, the very close proximity of one of these irrigation ponds to the southern boundary of the site makes it likely that western pond turtle could move across a small part of the property near its southern boundary.

A technical letter report related to potential presence of the western pond turtle at the site is included in Attachment 8.

Western Burrowing Owl

Western Burrowing Owl (*Athene cunicularia*) is a BLM sensitive species, US Fish and Wildlife Service bird of conservation concern, and a California species of special concern. Burrowing owls are small terrestrial owls commonly found in open grassland topography ranging from western Canada to portions of South America. Burrowing Owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). In California, burrowing owls most commonly inhabit ground squirrel burrows (Thomsen 1971), but they also may use manmade structures, such as concrete culverts; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement. Burrowing Owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). Burrowing Owls may use a site for breeding, wintering, foraging, and/or migration stopovers during migration. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance.

The California Department of Fish and Game has adopted survey protocol and mitigation guidelines as described in an October 17, 1995, Staff Report (CDFG 1995). The guidelines adopted by CDFG provide information on the conduct of burrowing owl surveys. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. The CDFG guidelines assume that a site is occupied if at least one Burrowing Owl has been observed occupying a burrow there within the last 3 years. CDFG states that the following should be considered impacts to the species: (1) disturbance within 50 meters (approximately 160 feet) which may result in harassment of owls at occupied burrows; (2) destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and (3) destruction and/or degradation of foraging habitat adjacent (within 100 meters) of an occupied burrow(s). Mitigation measures, if necessary, are intended to “avoid and minimize impacts to burrowing owls at a project site and preserve habitat that will support viable owl populations.” The guidelines stipulate that “mitigation actions should be carried out from September 1 to January 31 which is prior to the nesting season.”

The nearest documented occurrence of burrowing owl in the CNDDDB is on Skaggs Island, over 8 miles from the project site. The presence of California ground squirrel burrows at the project site and grasslands suitable as foraging habitat for the species makes the project site suitable to support nesting or wintering individuals of this species.

No burrowing owls were observed at the site during winter surveys conducted in January of 2011 or spring surveys conducted in May of 2011. A definitive determination of the presence or absence of burrowing owl at the site would require that protocol wintering and nesting surveys be conducted. Preconstruction surveys to ensure that burrowing owl is not present at the site during construction are warranted. Any owls found to occur in construction areas would need to be relocated out of harm’s way.

California Horned Lark

The California horned lark (*Eremophila alpestris actia*) is a California species of special concern. California horned lark is a common to abundant resident in open, level or rolling short-grass prairies, plains, and meadows. Grasslands and open habitat with low, sparse vegetation and surface irregularities, such as rocks, litter, and clods of soil, which provide cover, are preferred habitat for the California Horned Lark. Suitable foraging and nesting habitat for this species occurs in the grasslands on the project site.

Individuals of this species were not observed during surveys conducted in January or May of 2011.

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is a state species of special concern.

Loggerhead shrikes are resident and winter visitors in lowlands and foothills throughout California, and are rare along the coast in winter north to Mendocino County. Preferred habitat includes open areas such as desert, grasslands, and savannah. Loggerhead shrikes

nest in thickly foliated trees or tall shrubs, and forage in open habitats which contain trees, fence posts, utility poles, and other perches. Loggerhead shrikes are usually solitary birds. They feed on insects, reptiles, and small mammals, which they frequently impale on thorns and barbed wire after capturing. Suitable foraging habitat for loggerhead shrike occurs in the grassland habitats of the project site, and suitable habitat for nesting is present in woodlands. Individuals of this species were not observed during surveys conducted in January or May of 2011.

Pallid Bat

Seven species of bats that are California species of special concern, or are recognized as having conservation priority by the Western Bat Working Group, the Bureau of Land Management, or the U.S. Forest Service have potential to occur within the project boundaries. These include pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), Western red bat (*Lasiurus blossevillii*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), Yuma myotis (*Myotis yumanensis*), and Western mastiff bat (*Eumops peroti*). These seven species have potential to occur in Napa County (Pierson et al. 2006, Western Bat Working Group Website 2007). The study site provides potential foraging habitat for all seven bat species. Roosting habitat, a more critical resource for California bat species, includes bridges, large trees, and buildings. The residential structures and outbuildings in the project area may provide summer or winter (hibernacula) roosting sites. Six of the seven bat species sometimes roost in buildings. Construction in or demolition of barns or stables may result in destruction of maternity roosts, hibernacula, day roosts, and/or night roosts of bats. During an HBG site visit in January 2011, no obvious signs of bat usage (staining, guano) were observed but bats may still have been present.

A roost site supporting three species of bat was present at a site along Shreveland Lane in Napa as recently as 2004. This historic site contained thousands of Brazilian free-tailed bats and Yuma myotis and approximately 150 pallid bat females (a California Species of Special Concern) and their young. The bats were using a barn that was removed to accommodate development of a housing project in 2004, and all bats roosting there were extirpated. This rural residential site was vegetated by grazed non-native grassland with oaks, bay laurel, and some non-native trees which provided excellent foraging habitat for the bats. After development the site contained residential structures and non-native plantings. The site was known to researchers for many years and studied prior to development.

The historic bat roost on Sheveland Lane was located less than one mile from the Napa Oaks project site. Although the barn providing the roosting habitat for the bats was destroyed, the bats would have survived and have undoubtedly taken up residence in abandoned buildings in the vicinity. An unoccupied house and several ranch buildings in the northern portion of the project site nearest to Old Sonoma Road could serve as suitable bat roosts and very likely could support some of the bats extirpated from the historic roost site on Sheveland Lane. The habitat conditions at the project site are

similar to those at the above referenced site; surrounding oak woodlands and grasslands provide suitable foraging habitats for bats. It is possible that there could be roosting bats, including species of special concern (pallid bats), and Yuma myotis, Brazilian free-tailed bats, or even other bat species, in structures located at the northern end of the site. These structures will be demolished prior to development of the site for residential uses. Bat surveys would be necessary to determine if bats are present in these structures prior to their demolition.

4.0 REGULATORY AGENCIES AND POLICIES

The following is a description of federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process.

FEDERAL

Clean Water Act-Section 404

The U.S. Army Corps of Engineers regulates discharges of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act (CWA). “Discharge of fill material” is defined as the addition of fill material into Waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2(f)). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency are responsible for implementing the Section 404 program. Section 404(a) authorizes the Corps to issue permits, after notice and opportunity for comment, for discharges of dredged or fill material into waters of United States. Section 404(b) requires that the Corps issue permits in compliance with EPA guidelines, which are known as the Section 404(b)(1) Guidelines. Specifically, the Section 404(b) (1) guidelines require that the Corps only authorize the “least environmentally damaging practicable alternative” (LEDPA) and include all practicable measures to avoid and minimize impacts to the aquatic ecosystem. The guidelines also prohibit discharges that would cause significant degradation of the aquatic environment or violate state water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 C.F.R. §328.3(b)).

Furthermore, Jurisdictional Waters of the U.S. can be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the Corps as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris,

or other appropriate means that consider the characteristics of the surrounding areas” (33 C.F.R. §328.3(e)).

Tidal waters are also under the jurisdiction of the Corps. The landward limits of jurisdiction in tidal waters extend to the high tide line . . . “or, when adjacent non-tidal waters of the United States are present, to the limits of jurisdiction for such non-tidal waters” (33 C.F.R. §328.4(b)) High tide is further defined to include the line reached by spring high tides and other high tides that occur with periodic frequency (33 C.F.R. §328.3(d)).

All wetlands in the area of study were reviewed to determine if they could be disclaimed from Corps jurisdiction as isolated wetlands following two recent US Supreme Court decisions. In *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC)*, No. 99-1178 (2001), some isolated wetlands may be excluded from the Corps’ Section 404 jurisdiction because they are (1) non-tidal, (2) non-navigable, (3) not hydrologically connected to navigable waters or adjacent to such waters, and (4) not subject to foreign or interstate commerce.

Subsequent to SWANCC, the U.S. Supreme Court decided on *Rapanos v. United States* and *Carabell v. United States*, 126 U.S. 2208 (2006) (herein referred to as Rapanos). In 2007, guidance was given to EPA regions and Corps districts to implement the Supreme Court’s decision which addresses the jurisdiction over waters of the U.S. under the Clean Water Act. The Rapanos guidance requires the Corps to conduct detailed analysis of the functions and values of wetlands and other waters of the U.S. potentially onsite and in some cases offsite, determine if there is a nexus to traditional navigable waters and the significance of the nexus to the traditional navigable water. Neither the Court nor the recently-issued guidance draw a clear line with regard to the geographic reach of jurisdiction, particularly in drainages where flows are ephemeral and where wetlands are adjacent to but not directly abutting relatively permanent water, such as the wetlands delineated on the study site.

The guidance includes requirements for additional documentation, particularly with regard to whether or not there is a “significant nexus” to a traditionally-navigable water (TNW). For water bodies that are traditionally navigable (and their adjacent wetlands), and for tributaries that are “relatively permanent waters” (RPW’s: streams that are not perennial but that flow for 3 months or more annually, and their adjacent wetlands that directly abut the RPW’s), the Corps and EPA will assert jurisdiction under the Clean Water Act, without the need for any exhaustive documentation of “significant nexus.” There is no dispute that Clean Water Act jurisdiction encompasses traditionally-navigable waters and their perennial and relatively-permanent tributaries. Activities that result in discharges of pollutants into these waters can adversely affect the physical, chemical, and biological integrity of navigable waters.

For wetlands adjacent to but not directly abutting a RPW, jurisdiction may be asserted under the Clean Water Act if there is a “significant nexus” and for tributaries that typically do not flow more 3 months or more annually, and if there adjacent wetlands associated with these non-relatively permanent waters (non-RPW’s), jurisdiction may be asserted under the Clean Water Act if there is a “significant nexus.” A significant nexus analysis, using the Corps’ approved jurisdictional determination form, “will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW.” These factors include (a) the capacity to carry pollutants or flood water into a TNW; (b) the capacity to provide habitat for species that are present in the downstream TNW; (c) the capacity of transferring nutrients and organic carbon to a TNW; or (d) other “relationships to the physical, chemical, or biological integrity of the TNW.

Clean Water Act-NPDES Requirements

In 1972, the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollution Discharge Elimination System (NPDES) permit. The 1987 amendments established a framework for regulating municipal, industrial, and construction-related storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water from construction projects that encompass one or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. The California State Water Resource Control Board has developed a general construction storm water permit to implement this requirement.

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The FESA establishes an official listing process for plants and animals considered to be in danger of extinction; requires development of specific plans of action for the recovery of listed species; and restricts activities perceived to harm or kill listed species or affect critical habitat (16 USC 1532, 1536).

The FESA prohibits the “take” of endangered or threatened wildlife species. “Take” is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3) Taking can result in civil or criminal penalties. Federal regulation 50 CFR 17.3 further defines the term harm in the take definition to mean any act that actually kills or injures a

federally listed species, including significant habitat modification or degradation. Additionally, FESA prohibits the destruction or adverse modification of designated critical habitat. In the Service's regulations at 50 CFR 402.2, destruction or adverse modification is defined as a "direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.

The ESA also requires federal agencies to ensure that their actions do not jeopardize the continued existence of listed species or adversely modify critical habitat (16 USC 1536). Therefore, the ESA is invoked when the property contains a federally listed threatened or endangered species that may be affected by a permit decision. In the event that listed species are involved and a Corps permit is required for impacts to jurisdictional waters, the Corps must initiate consultation with USFWS (or the National Marine Fisheries Service, NMFS) pursuant to Section 7 of the ESA (16 USC 1536; 40 CFR § 402). If formal consultation is required, USFWS or NMFS will issue a biological opinion stating whether the permit action is likely to jeopardize the continued existence of the listed species, recommending reasonable and prudent measures to ensure the continued existence of the species, establishing terms and conditions under which the project may proceed, and authorizing incidental take of the species.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act is administered by the USFWS. The Act provides that it is unlawful to: pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product unless permitted by regulations. Most bird species within California fall under the provisions of the Act. Excluded species include nonnative species such as house sparrow, starling, and ring-necked pheasant and native game species such as quail.

Fish and Wildlife Coordination Act

The USFWS also has responsibility for project review under the Fish and Wildlife Coordination Act. This statute requires that all federal agencies consult with USFWS, NMFS, and the state's wildlife agency (California Department of Fish and Game, CDFG) for activities that affect, control, or modify streams and other water bodies. Under the authority of the Fish and Wildlife Coordination Act, USFWS, NMFS, and CDFG review applications for permits issued under Section 404 and provide comments to the Corps about potential environmental impacts.

STATE

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing California Environmental Quality Act (CEQA)

documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that “overriding considerations” exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFG may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFG requires preparation of mitigation plans in accordance with published guidelines.

Section 401 of the Federal Clean Water Act/Porter Cologne Water Quality Act

Pursuant to section 401 of the Federal Clean Water Act, projects that require a Corps permit for the discharge of dredge or fill material must obtain water quality certification that confirms a project complies with state water quality standards before the Corps permit is valid. State water quality is regulated/administered by the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCB). The state also maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act.

The California State Water Resource Control Board has developed a general construction storm water permit to implement the requirements for the federal National Pollution Discharge Elimination System (NPDES) permit. The permit requires submittal of a Notice of Intent to comply, fees, and the implementation of a Storm Water Pollution Prevention Plan.

CDFG Species of Special Concern

CDFG tracks species in California whose numbers, reproductive success, or habitat may be threatened. Even though not formally listed under FESA or CESA, such plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of “Species of Special Concern” developed by the CDFG. CDFG has also designated special-status natural communities which are considered rare in the region, support special status species or otherwise receive some form of regulatory protection. Documentation pertaining to these communities, as well as special status species (including species of special concern), is kept by CDFG as part of the California Natural Diversity Data Base (CNDDB).

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning Act (NCCP) program, which began in 1991 under the California Natural Community Conservation Planning Act, is broader in its orientation and objectives than CESA and ESA; these laws are designed to identify and protect individual species that are already listed as threatened or endangered and their habitats. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use (CDFG 2003).

California Department of Fish and Game-Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires any person, governmental agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposing to use any material from a streambed, to first notify CDFG of such proposed activity. CDFG may propose reasonable modifications, based on the information contained in the notification form and a possible field inspection, CDFG may propose reasonable modifications in the proposed construction as would allow for the protection of fish and wildlife resources. Upon request, the parties may meet to discuss the modifications. If the parties cannot agree and execute a Lake and Streambed Alteration Agreement, then the matter may be referred to arbitration.

California Department of Fish and Game Fish and Game Code 3503 and 3503.5

Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 makes it unlawful to take or possess birds of prey (hawks, eagles, vultures, owls) or destroy their nests or eggs.

California Department of Fish and Game Fully Protected Species

Species classified as Fully Protected Species by the California Department of Fish and Game may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Public Resources Code Section 21084.4 for Oak Woodlands Conservation

As of January 2005, Public Resources Code Section 21083.4 requires California Counties acting as Lead Agencies under CEQA to determine whether a project “may result in a conversion of oak woodlands that will have a significant effect on the environment.” If individual or cumulative impacts to oak woodlands are identified, the law requires that the impacts be mitigated. Acceptable mitigation measures include, but are not limited to, conservation of other oak woodlands through the use of conservation easements, planting replacement trees which must be maintained for seven years, contribution to the Oak Woodland Conservation Fund established under Section 1363(a) of the Fish and Game Code, or other measures.

LOCAL

Napa County General Plan

In addition to federal and state regulations, the development of the property must be accomplished consistent with the land use designations and natural resource and other policies of the Napa County General Plan.

OTHER STATUTES, CODES, AND POLICIES AFFORDING LIMITED PROTECTION

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (Tibor2001). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- List 1A: Plants believed extinct.
- List 1B: Plants rare, threatened, or endangered in California and elsewhere.
- List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3: Plants about which we need more information – a review list.
- List 4: Plants of limited distribution – a watch list.

5.0 IMPACTS AND MITIGATION MEASURES

5.1 Standards of Significance

The project would be considered to have a significant impact on biological resources if it would:

- (a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.
- (c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- (d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- (f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.2 Relevant Project Characteristics

The proposed project includes development plans for 54 single family residential units. Of the 80.94 acres at the site, residential uses are proposed for 27.1 acres (34% of the land area of the site). Residential units are to be maintained by individual homeowners. A private roadway maintained by a Homeowner's Association will encompass 7.3 acres (9% of the site). Four separate parcels (Parcels A-D) totaling 46.2 acres (57% of the site) will be dedicated as open space managed by the Homeowner's Association.

5.3 Impacts and Mitigation Measures

5.3.1 Plant Communities and Vegetation

Impacts to biological resources will result from vegetation removal due to the conversion

of upland areas composed of annual grassland, and valley foothill hardwood habitat, and due to the filling of wetland areas to accommodate the proposed development. The acreage of each of the vegetation communities found on the property, and impacts resulting from site development as planned are shown in Table A. Figure 11 shows the development footprint as an overlay of the vegetation communities found on the project site. The grading footprint for the proposed project would total approximately 37.53 acres (46% of the site). At some proposed residential units, grading for building pads and ancillary facilities would not require grading over the entire lot. Ungraded areas within proposed residential lots totals 3.85 acres. In these ungraded areas it was assumed that trees would not be removed, but that impacts to biological resources would result as these areas would serve as rear yards for residents and could be converted to landscaping or other uses. The impact acreage in Table 1 reflects the total area of impact including graded footprint and the impacted area extending to the edge of each residential lot.

TABLE A. IMPACTS TO VEGETATION COMMUNITIES

Habitat Type	Existing Acreage in Overall Study Area (acres)	Impacted Acreage (acres)
California Annual Grassland	49.65	25.93
Coast live oak woodland	27.31	12.52
Freshwater marsh	1.21	0.36
Urban	2.77	2.57
TOTAL	80.94	41.38

5.3.2 Wetlands and Waters of the U.S.

Wetlands and waters of the U.S. are regulated by state and federal agencies and would be considered sensitive natural communities as defined by CEQA. Impacts to waters of the U.S. would be potentially significant if appropriate mitigation was not implemented for all regulated wetlands as required by state and federal regulations.

The ecological constraints to development at the site include approximately 1.21 acres of wetlands and waters of the U.S. potentially subject to Corps jurisdiction pursuant to Section 404 of the Federal Clean Water Act as shown in Figure 10. As the palustrine emergent wetlands are scattered throughout the project area, complete avoidance of seasonal wetlands would not be possible. Impacts to wetlands and waters of the U.S. potentially subject to Corps jurisdiction are shown in Figure 12. The development plan for the site would permanently impact 0.36 acres of palustrine emergent wetlands located on the site that are potentially under the jurisdiction of the Corps under Clean Water Act Section 404. Installation of a stormwater pipeline within 0.006 acres of jurisdictional wetlands would be considered a temporary impact; the pipeline would be installed in a trench that would be backfilled to original grade allowing wetlands to reform in that area. Approximately 30% of the wetlands on the property would be impacted by the proposed

project, with the remaining 70% of the wetlands not subject to impacts and preserved within an open space area of approximately 46 acres managed by the Homeowner's Association. Without mitigation, project impacts to wetlands or waters of the U.S. would be significant.

Impact 1: Direct (fill) impacts to 0.36 acres of waters of the U.S. would result from implementation of the proposed site plan.

Mitigation Measure 1-1: The developer will submit applications for a Nationwide permit from the Corps of Engineers (see Section 4.5, Permit Requirements), and Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB), required for the Corps permit to be valid. Appropriate wetland mitigation would be required by the Corps and RWQCB for impacts to the 0.36 acres of seasonal wetlands located at the site, and a wetland mitigation plan to mitigate impacts to jurisdictional areas would need to be developed as part of the Corps and RWQCB permit process. Corps jurisdictional areas must be replaced at a minimum 1:1 ratio through wetland creation (preferably on-site) to ensure that no net loss of acreage or functions and values to these areas occurs. The required ratio of replacement acreage to impacted acreage will be decided by regulatory agencies on a site-specific basis based on the functions and values present on the project site, but requirement for a mitigation ratio of 2:1 would be likely. Mitigation wetlands totaling approximately 0.72 acres would be created within the onsite open space preserve. A detailed mitigation plan would need to be prepared that includes monitoring and reporting requirements, responsibilities, performance success criteria, reporting procedures, and contingency requirements.

Approximately 0.85 acres of wetlands would be preserved within an onsite open space preserve along with an additional acreage of created onsite mitigation wetlands. The proposed open space area would consist of approximately 46 acres of grasslands, Coast live oak woodlands and wetlands. During construction of the project, use of development setbacks, construction fencing and other barriers may be necessary to prevent unintended impacts to preserved sensitive habitats within the open space area. In the long term, these preserved sensitive habitats could experience indirect impacts from disturbances associated with residential projects such as from residents, vehicles and pets, or from introductions of invasive vegetation. Over the long term, fencing or signage may be required to restrict access to preserved sensitive areas, and means to lessen intrusion of pets (e.g., enforcement of leash laws) may be necessary. Vegetation management to control invasive vegetation may necessary as well. Long term management of the open space area by the Homeowner's Association will need to occur pursuant to a management plan with identified goals and a monitoring plan with management inspections and maintenance actions.

Impact 2: Preserved wetlands within the proposed open space preserve could be subject to indirect impacts during construction if not protected.

Mitigation Measure 2-1: During construction and prior to any clearing, grading, or construction activities, temporary barriers should be placed around all wetlands that are to be avoided by the development plan. These barricades should create at least a 20-foot buffer area around these areas. No clearing, operation of heavy equipment, or storage of construction materials should be permitted within this area.

Impact 3: Without long term management, preserved sensitive habitats, including mitigation wetlands, could experience indirect impacts from disturbances associated with residential projects such as from residents, vehicles, and domestic pets, introduction of invasive species, or other factors.

Mitigation Measure 3-1: Prior to construction, the applicant should prepare a management plan for the onsite open space preserve with habitat goals and objectives and a monitoring plan that provides for management inspections and maintenance actions. The monitoring plan must include monitoring and reporting requirements, responsibilities, performance success criteria, reporting procedures and contingency requirements. A long-term protection plan for the open space should be included in the management plan through use of a deed restriction and management of the preserve area into perpetuity by the Homeowner's Association. The management plan should include measures such as fencing or signage to restrict access to preserved sensitive areas, and means to lessen intrusion of pets (e.g., enforcement of leash laws). Vegetation management practices should also be included in the management plan (see Mitigation Measure 5-1).

5.3.3 Oak Woodlands

Project construction would result in the loss of approximately 12.52 acres (46% of the valley foothill hardwood or Coast live oak woodland) habitat on the site (see Figure 10). Tree removal and impact to oak woodland habitat was assumed within the graded footprint of the project. Ungraded portions of yards within each residential lot were included within the calculated acreage of impact to oak woodland habitat.

HortScience (see Attachment 4) calculated that the project would require the removal of 620 trees, including 200 Native Protected trees. A total of 392 trees would be impacted by lot grading, 158 by road grading, 60 by slope and swale grading, 26 by construction of the detention pond, 8 by construction of new entry onto Old Sonoma Road, and 4 by installation of retaining walls. Implementation of the proposed project would allow for preservation of 755 trees, including 422 Native Protected trees.

Oaks woodlands provide significant wildlife habitat value. Oak woodlands are protected by the California Department of Fish and Game, State of California regulations including Public Resources Code Section 21083.4, policies of the City of Napa. Although 14.79

acres of oak woodland would be protected within an open space preserve managed by the Homeowner's Association, the loss of just over 12.52 acres of oak woodland as a result of the project is significant. Public Resources Code Section 21083.4 directs Counties to mitigate significant effects of oak woodland conversion, and would not apply to a project reviewed by the City of Napa as a CEQA Lead Agency. However, the impact evaluation and development of mitigation measures recommended herein are intended to be consistent with the Public Resource Code as if this were a project proposed in an unincorporated area.

Indirect project impacts on oak trees not directly affected could occur unless appropriate precautions are taken. The impacts could result from increased soil compaction in the root zone of the trees, summer watering within the root zone, and excessive pruning to allow development of structures and open up views. Death of oak trees could result from oak root fungus (*Armillaria mellea*) resulting from operation of landscape irrigation systems in developed areas up slope from the native oak trees. Movement of heavy construction vehicles and equipment could cause impacts such as broken branches, compaction of soils within root zones, etc. which could result in a weakening and eventual death of the tree. The response of individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken and the construction methods. A tree protection plan will be developed to mitigate these indirect impacts, and will include recommendations prepared by the arborist as part of the tree survey (see Attachment 4). All landscape plans will be reviewed by the arborist as well.

Impact 4: The project would require construction within 12.52 acres of valley foothill hardwood (Coast live oak woodland) habitat, the direct removal of a large number of mature trees, and could result in indirect project impacts on trees not directly affected, unless appropriate precautions are taken.

Mitigation Measure 4-1: The applicant should establish oak woodland preserves totaling 37.56 acres to mitigate the loss of oak woodlands due to construction of the project at a mitigation ratio of 3:1. Approximately 14.79 acres of oak woodlands could be preserved within the onsite open space preserve subject to deed restriction and managed by the HOA (see mitigation measure 3-1), with the remainder (22.77 acres) preserved in an offsite preserve protected by conservation easement.

Mitigation Measure 4-2: Removal of oak trees will require the implementation of a tree replacement plan, and work in the vicinity of oak woodlands will require preparation of a tree protection plan. An Oak Woodland Mitigation Plan would contain tree replacement and protection activities as follows:

- The applicant should prepare and implement a Tree Replacement Plan including: (i) replacement of trees at ratios prescribed by the City of Napa; (ii) the specific location of the tree planting, (including a map and planting

plan); (iii) schedules and methodologies for maintaining and monitoring the success of the Plan; and (iv) performance standards.

- The applicant must follow Tree Preservation Guidelines that include construction guidelines and measures to maintain long-term tree health (Tree Preservation Guidelines are detailed on pages 19 and 20 in the Tree Survey report by HortScience; see Attachment 4). These guidelines include design recommendations, preconstruction treatments and recommendations, and recommendations for tree protection during construction. Included in the guidelines is the establishment of Tree Protection Zones around each preserved tree. Tree Protection Zones will be marked with fencing and within these zones no grading, excavation (including for underground services such as utilities or sub-drains), or storage of materials or dumping of materials can occur without consultations with the project arborist.
- The City of Napa should review final project grading and construction plans to minimize encroachment within the drip line of any trees not eliminated as part of site grading. This review should include assurances that the design of roads, utilities, slope stabilization work, subdrains, and other types of infrastructure avoid the area within the dripline of native trees where possible; and that all grading is designed to drain water away from the base of trees so as not to create areas of ponding within the dripline.

5.3.4 Landscaping/Invasive Species

Invasive, exotic weeds compete with native vegetation and can degrade the quality of wildlife habitats. Project landscaping and construction activity has the potential to introduce invasive, exotic, non-native vegetation, some of which may not now exist in the area. Also, highways and various construction projects provide a pathway for dispersal of invasive plants. Invasive plant species include those designated as noxious weeds by the U.S. Department of Agriculture, problem species listed by the California Department of Food and Agriculture, and other invasive plants designated by the California Invasive Plant Council. Where appropriate, vegetation removed as a result of project activities should be replaced with native species which are of value to local wildlife. Native plants generally are more valuable as wildlife food sources and require less irrigation, fertilizers, and pesticides than exotic species.

Impact 5: Project landscaping is expected to introduce exotic, non-native vegetation, some of which may not exist in the area.

Mitigation Measure 5-1: Landscaping should be designed to enhance the wildlife value and aesthetic quality of undeveloped portions of the project site. Where appropriate, vegetation removed as a result of project activities should be

replaced with native species which are of value to local wildlife, and native vegetation should be retained. Weed management practices may be warranted, including identification and removal of infestations of noxious weeds prior to construction, use of construction equipment and materials such as fill and erosion control devices that are known to be weed-free, and removal of invasive species from areas within the project boundary set aside for conservation purposes as part of project mitigation.

5.3.5 Animal Species

Loss of vegetation associated with the habitats on site will disrupt and displace existing wildlife. Some bird roosting, nesting, and foraging areas will be eliminated. Reptiles, amphibians, and small mammals that utilize these areas will be displaced to remaining undisturbed areas. Open space areas near the project area should be capable of accommodating these species. Animal species that have adapted to living in close association with human disturbance can be expected to increase after the proposed project. These species include mammals such as raccoon, California ground squirrel, deer mouse, and house mouse, and birds such as rock dove, mourning dove, American robin, European starling, house sparrow, Brewer's blackbird and brown-headed cowbird.

Grading, placement of fill material and other ground-disturbing activities could promote erosion and allow elevated levels of sediment to wash into downstream creeks, where potential impacts to fish and wildlife species would be possible. In the absence of water quality controls, indirect impacts to animal populations in wetlands and other aquatic habitats could result from the proposed project due to elevated contaminants in stormwater runoff. However, the requirement for the implementation of a Stormwater Pollution Prevention Plan (SWPPP), with identification of proper construction techniques and Best Management Practices (BMPs) will minimize adverse effects associated with these activities. Furthermore, standard techniques to control contaminants in stormwater such as oil and grease traps will be employed to mitigate water quality concerns.

Nesting bird species protected by the federal Migratory Bird Treaty Act that could be impacted during project construction. The removal of trees and shrubs during the February 1 to August 1 breeding season could result in mortality of nesting avian species if they are present. Many species of raptors (birds of prey) are sensitive to human incursion and construction activities, and it is necessary to ensure that nesting raptor species are not present in the vicinity of construction sites. During the spring survey of the Napa Oaks property, a red-tailed hawk nest was observed on adjacent property over 500 feet away from the property boundary for the project site. If this nest were active during construction of the Napa Oaks project, the nest would be sufficient distance from construction operations that disruptions to nesting birds would not occur. The presence of both red-tailed hawks and red-shouldered hawks on the project site in May of 2011, indicates that these species may nest somewhere on the property as well. Therefore, mitigation measures are recommended below.

Impact 6: The removal of trees and shrubs during the February 1 to August 1 breeding season could result in mortality of nesting avian species if they are present.

Mitigation Measure 6-1: If feasible, construction work should take place outside of the February 1 to August 1 breeding window for nesting birds. If construction is to be conducted during the breeding season, a qualified biologist should conduct a pre-construction breeding bird survey in areas of suitable habitat within 30 days prior to the onset of construction activity. If bird nests are found, appropriate buffer zones should be established around all active nests to protect nesting adults and their young from construction disturbance. Size of buffer zones should be determined in consultation with wildlife agency staff based on site conditions and species involved.

Mitigation Measure 6-2: Pre-construction surveys should include surveys for nesting by raptors generally expected to nest in the region including tree nesting species such as red-tailed, red-shouldered, Cooper's and Sharp-shinned hawk, white-tailed kite, great horned owl and American kestrel, and ground nesting species such as burrowing owl, short-eared owl and Northern harrier. If nesting raptors are found during pre-construction surveys, construction activity in the vicinity of the nest should be delayed until after young have fledged (usually by August), or buffer zones around nest sites of at least 200 feet should be established when construction equipment is present.

Impact 7: Placement of fill and other ground disturbing activities could prompt erosion and allow elevated levels of sediment to wash into downstream riparian areas.

Mitigation Measure 7-1: During construction, vegetation should only be cleared from the permitted construction footprint. Areas cleared of vegetation, pavement, or other substrates should be stabilized as quickly as possible to prevent erosion and runoff. Best Management Practices and all requirements as detailed in the Stormwater Pollution Prevention Plan shall be implemented to control erosion and migration of sediments offsite.

5.3.6 Special Status Animal Species

A review of habitat requirements of sensitive animal species documented by the CNDDDB as occurring in the project vicinity, and sensitive animal species known to occur in the general vicinity, was conducted by HBG and Rana Resources biologists. Animal species of special concern are present or possible as described below.

Breeding habitat for California red-legged frog (CRLF) and California tiger salamander (CTS) does not occur on the Napa Oaks project site. However, artificial ponds located in the vicinity of the site display the inundation characteristics necessary for them to serve as breeding sites for either species if they were to occur in the area. If breeding by either species were to occur in these ponds, the project site could serve as refugial habitat for

these species. Results of the Habitat Assessment for CTS (Attachment 6) showed that the site is outside the known native range of the species. Results of the Habitat Assessment for CRLF (Attachment 7) showed that although the site lies within the native range for this species, high summer and fall air temperatures make the local aquatic habitats optimal for bullfrog reproduction and growth, which has presumably resulted in the localized extinction of CRLF in the vicinity of Napa. Although there are a number of adjacent vineyard irrigation ponds in the vicinity of the site, none of these water bodies appear to harbor CTS or CRLF due to the presence of dense populations of introduced bullfrogs and introduced predatory fishes. As neither CTS nor CRLF would be expected to occur at or near the site, impacts to these species are not anticipated due to construction of the proposed project.

Although the project site is unsuitable for western pond turtle nesting and estivation, the species was observed in irrigation ponds in the project vicinity by Rana Resources (see technical report related to this species in Attachment 8). As one of these irrigation ponds harboring the species occurs along the southern boundary of the site, it is possible that a western pond turtle could move across a small part of the property and be impacted during construction operations (e.g., could be crushed by construction vehicles). To avoid any potential negative effects to western pond turtle, mitigation measures are recommended below.

Impact 8: Construction operations could impact western pond turtles that have been observed in the adjacent irrigation pond and that could possibly move across the southern portion of the property.

Mitigation Measure 8-1: Establish a setback of at least 200-feet between the southern grading limits of the project and the high water edge of the irrigation pond;

Mitigation Measure 8-2: Install silt fencing at the southern edge of the development area during all construction operations to prevent western pond turtle from potentially entering the construction area. The fence could be examined by a qualified biologist on a regular basis during the construction period to make sure that it is functioning properly.

The State of California designates several raptor species with a potential to occur on the site as species of special concern based on the presence of nesting habitat. These species include burrowing owl (species of federal and state concern), white-tailed kite and Cooper's hawk. Preconstruction surveys for tree-nesting species (e.g., white-tailed kite, Cooper's hawk) will be necessary if tree removal occurs during the February 1 to August 1 nesting season. If an active raptor nest is identified, appropriate mitigation measures shall be developed and implemented in consultation with CDFG. Mitigation would include development of a construction plan that establishes of buffer zones around active nests during construction activity and/or until young have fledged.

Impact 9: Construction during the nesting season could impact any of three raptor species of special concern, Cooper's hawk, white-tailed kite or burrowing owl.

Mitigation Measure 9-1: Preconstruction surveys for tree-nesting species (e.g., white-tailed kite, Cooper's hawk) will be necessary if tree removal occurs during the February 1 to August 1 nesting season. If an active raptor nest is identified, appropriate mitigation measures shall be developed and implemented in consultation with CDFG. Mitigation would include development of a construction plan that establishes buffer zones around active nests during construction activity and/or until young have fledged.

Mitigation Measure 9-2: A preconstruction survey for burrowing owl should be conducted to ensure impacts to burrowing owls, if present in the construction area, do not occur to nesting or wintering burrowing owls. Preconstruction surveys should be conducted within 30 days of initiation of construction activity. If any burrowing owls are detected during the preconstruction surveys, all appropriate mitigation recommended by the Burrowing Owl Consortium and CDFG will be adopted.

Four raptor species that could occur are designated as state species of special concern based on presence of wintering habitat (ferruginous hawk, golden eagle, sharp-shinned hawk, and merlin). One of these species (sharp-shinned hawk) was identified at the site during winter surveys conducted in 2011. These species are wide-ranging species often wintering over a broad area, and incidental use of the site by any these species in winter is certainly possible. The site, however, contains no unique habitat features that would highlight the importance of the site as a wintering location for any of these species.

Two other avian species of special concern are possible on the site: California horned lark (state species of special concern) and loggerhead shrike (a species of both federal and state special concern). As potentially suitable nesting habitat is present for either species, preconstruction surveys should be conducted of the development area to determine if nesting is occurring. If nests of either species are found, a construction plan would need to be developed that would allow successful nesting (fledging of young birds).

Impact 10: Construction during the nesting season could impact California horned lark and/or loggerhead shrike.

Mitigation Measure 10-1: Preconstruction surveys should be conducted of the development area to determine if nesting by either California horned lark or loggerhead shrike is occurring. If nests of either species are found, a construction plan would need to be developed that would allow successful nesting (fledging of young birds).

Seven species of bats that are California species of special concern, or are recognized as having conservation priority by the Western Bat Working Group, the Bureau of Land Management, or the U.S. Forest Service have potential to occur within the project boundaries, including the pallid bat, which is a designated species of special concern and for which roost sites have occurred in the project vicinity. The project area provides potential foraging and roosting habitat for these species. The residential structures and outbuildings in the project area may provide summer or winter (hibernacula) roosting sites. Construction in or demolition of barns or stables may result in destruction of maternity roosts, hibernacula, day roosts, and/or night roosts of bat species, including the pallid bat. Depending on the design of existing structures and the time of year demolition of structures take place, bat surveys and implementation of additional mitigation measures may be warranted.

Impact 11: Construction in or demolition of buildings could result in destruction of maternity roosts, hibernacula, day roosts, and/or night roosts of bat species, including pallid bat.

Mitigation Measure 11-1: Generalized preconstruction bat surveys should be conducted prior to building demolition. Exclusion devices should be employed to prevent impacts to bats if surveys demonstrate presence of bats. The surveys should be conducted no earlier than 45 days and no later than 20 days prior to any activity within 200 feet of the structures. If it is determined that threatened, endangered, or sensitive bat species are present within structures, an appropriate bat exclusion specialist should be consulted. The bat exclusion specialist should be licensed by the State of California. If breeding special status bat species are present, exclusion may only be conducted before May 1 or after August 31 to avoid separating mothers from pups. Exclusion devices can include one-way netting, plastic sheeting, or tubes, and must remain in place for at least 5 to 7 days prior to activity. After that, if demolition is not to occur immediately, exclusion points must be sealed. Ultrasonic devices, chemical repellents, and smoke may not be used for exclusion.

6.0 AGENCY PERMIT REQUIREMENTS

Any potential impacts to jurisdictional wetlands or waters of the U.S. at the site will require authorization from the Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. NWP 39 authorizes “discharges of dredged or fill material into non-tidal waters of the U.S., excluding non-tidal wetlands adjacent to tidal waters, for the construction or expansion of residential, commercial, and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures” provided the activities meet the following criteria:

- The discharge does not cause the loss of greater than 0.5-acre of non-tidal waters of the U.S.;
- The discharge does not cause the loss of greater than 300 linear feet of a stream bed (unless the criterion is waived by the District Engineer);
- The discharge is part of a single and complete project;
- The permittee avoids and minimizes discharges into waters of the U.S. to the maximum extent practicable;
- The discharge does not cause more than minimal degradation of water quality or more than minimal changes to stream flow characteristics; and
- The permittee establishes and maintains vegetated buffers next to open water to the maximum extent practicable.

As the 0.36 acres of seasonal wetlands are scattered throughout the site and avoidance of these wetlands would be problematic with any layout of land uses, a permit from the Corps is a certainty for development at this site. Wetland impacts would not exceed the 0.5 acre limit of Nationwide Permit 39, therefore the Corps would determine that the proposed project would qualify for a Nationwide Permit 39, and an Individual Permit would not be required. A wetland mitigation plan describing procedures to mitigate impacts to jurisdictional areas would need to be developed as part of the Corps permit process. The applicant would need to demonstrate that wetlands have been avoided to the extent possible and provide documentation of how the project has been minimized to reduce onsite impacts.

The requirement for a Clean Water Act Section 404 Nationwide permit means that any development project at this site will also require Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB) for the Corps permit to be valid. Prior to issuance of the water quality certification, RWQCB will require the applicant to demonstrate that requirements of the City of Napa pursuant to the California Environmental Quality Act (CEQA) have been satisfied. Mitigation of wetlands will be required to obtain Corps and RWQCB approval.

If detailed studies to be conducted in 2011 reveal the presence of a federally-listed species, a Section 7 consultation with USFWS may be required.

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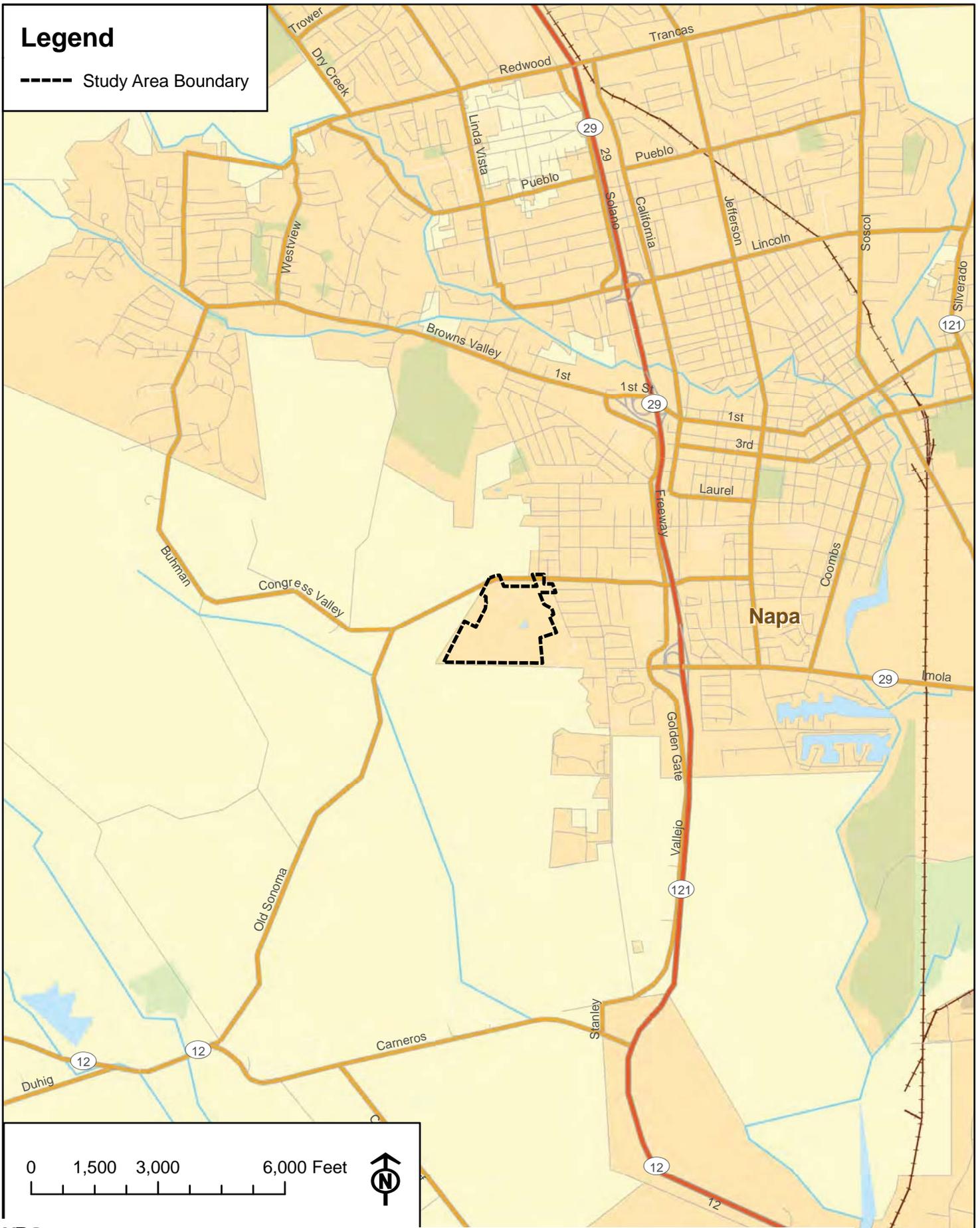
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ATTACHMENT 1.

Figures

- Figure 1. Location of the Project Site
- Figure 2. U.S.G.S Map of the Project Site
- Figure 3. Aerial Photograph of the Project Site
- Figure 4. Napa Oaks Project Conceptual Plan
- Figure 5. Watershed Map of the Project Area
- Figure 6. FEMA Map for the Project Vicinity
- Figure 7. Historic Marsh Margins near Napa
- Figure 8. Soil Map of the Project Area
- Figure 9. Map of Plant Communities at the Project Site
- Figure 10. Wetlands and Waters of the U.S. Potentially Subject to Corps Jurisdiction
- Figure 11. Impacts to Vegetation Communities Occurring on the Project Site
- Figure 12. Impacts to Wetlands and Water of the U.S. Potentially Subject to Corps Jurisdiction



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Figure 1. Location of the Project Site

Napa Oaks Project
 City of Napa, Napa County, California



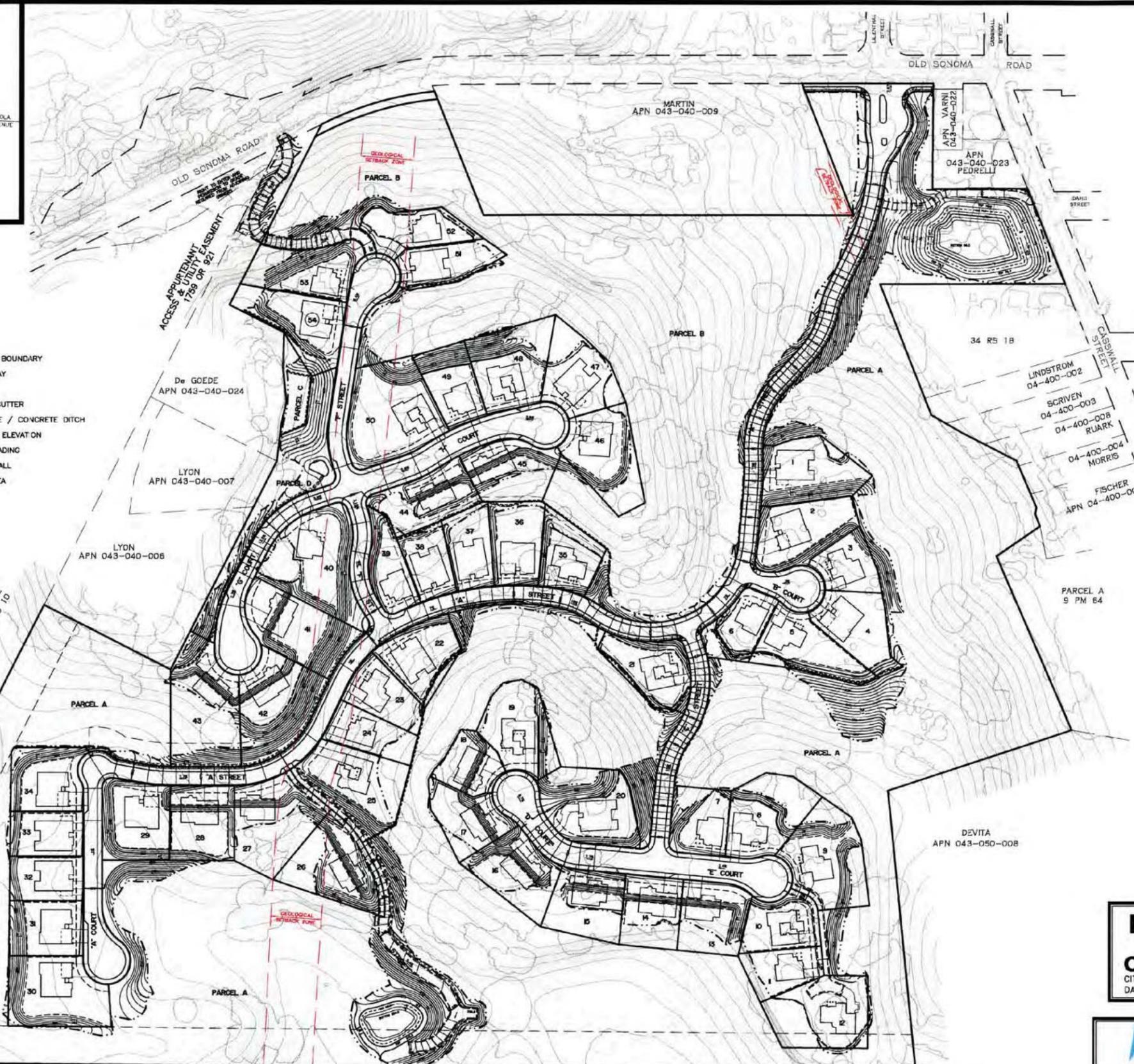
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Figure 3. Aerial Photograph of Project Site

Napa Oaks Project
 City of Napa, Napa County, California



EXISTING	PROPOSED	LEGEND
---	---	SUBDIVISION BOUNDARY
---	---	RIGHT OF WAY
---	---	LOT LINE
---	---	CURB AND GUTTER
---	---	EARTH SWALE / CONCRETE DITCH
---	---	PAD LINE & ELEVATION
---	---	LIMIT OF GRADING
---	---	RETAINING WALL
---	---	PARKING AREA



NOTES

OWNER/APPLICANT:
DAVIDON HOMES
1600 SOUTH MAIN STREET, SUITE 150
WALNUT CREEK, CA 94596
(925) 945-8000
CONTACT - JEFF THAYER

CIVIL ENGINEER/PLANNER:
dk CONSULTING
1440 MARIA LANE, SUITE 200
WALNUT CREEK, CA 94596
(925) 932-8868
CONTACT - ANDREW PALFFY

GEOTECHNICAL ENGINEER:
BERLOGAR GEOTECHNICAL
5587 SUNOL BLVD.
PLEASANTON CA 94588
(925) 484-0220
CONTACT - FRANK BERLOGAR

PARCEL NUMBERS: 043-040-008 & 010
043-040-013 & 043-040-025

EXISTING ZONE: AR - AGRICULTURAL RESOURCE
PROPOSED ZONE: PD-PLANNED DEVELOPMENT

EXISTING USE: CATTLE RANCH/SINGLE FAMILY HOME
PROPOSED USE: SINGLE FAMILY RESIDENTIAL UNITS

NUMBER OF UNITS: 54 LOTS AND 4 PARCELS

SITE ACREAGE: 80.84 ACRES

CONTOUR INTERVAL: EXISTING CONTOURS: 2 FOOT
PROPOSED CONTOURS: 2 FOOT

FLOOD NOTE: PROPERTY IS NOT SUBJECT TO INUNDATION BY FLOOD WATER AND DOES NOT LIE WITHIN THE 100-YEAR FLOOD PLAN.

EASEMENT NOTE: ALL EXISTING EASEMENTS OF RECORD ARE SHOWN ON THE MAP.

DAVIDON HOMES
NAPA OAKS
CONCEPTUAL PLAN
CITY OF NAPA CALIFORNIA
DATE: JULY 25, 2011 SCALE: 1"=100'

CONSULTING
PLANNING · ENGINEERING · CONSTRUCTION
1440 Maria Lane, Suite 200, Walnut Creek, California 94596 (925) 932-8868 Tel. (925) 932-0010 Fax

Figure 4. Napa Oaks Project Conceptual Plan
Napa Oaks Project
City of Napa, Napa County, California

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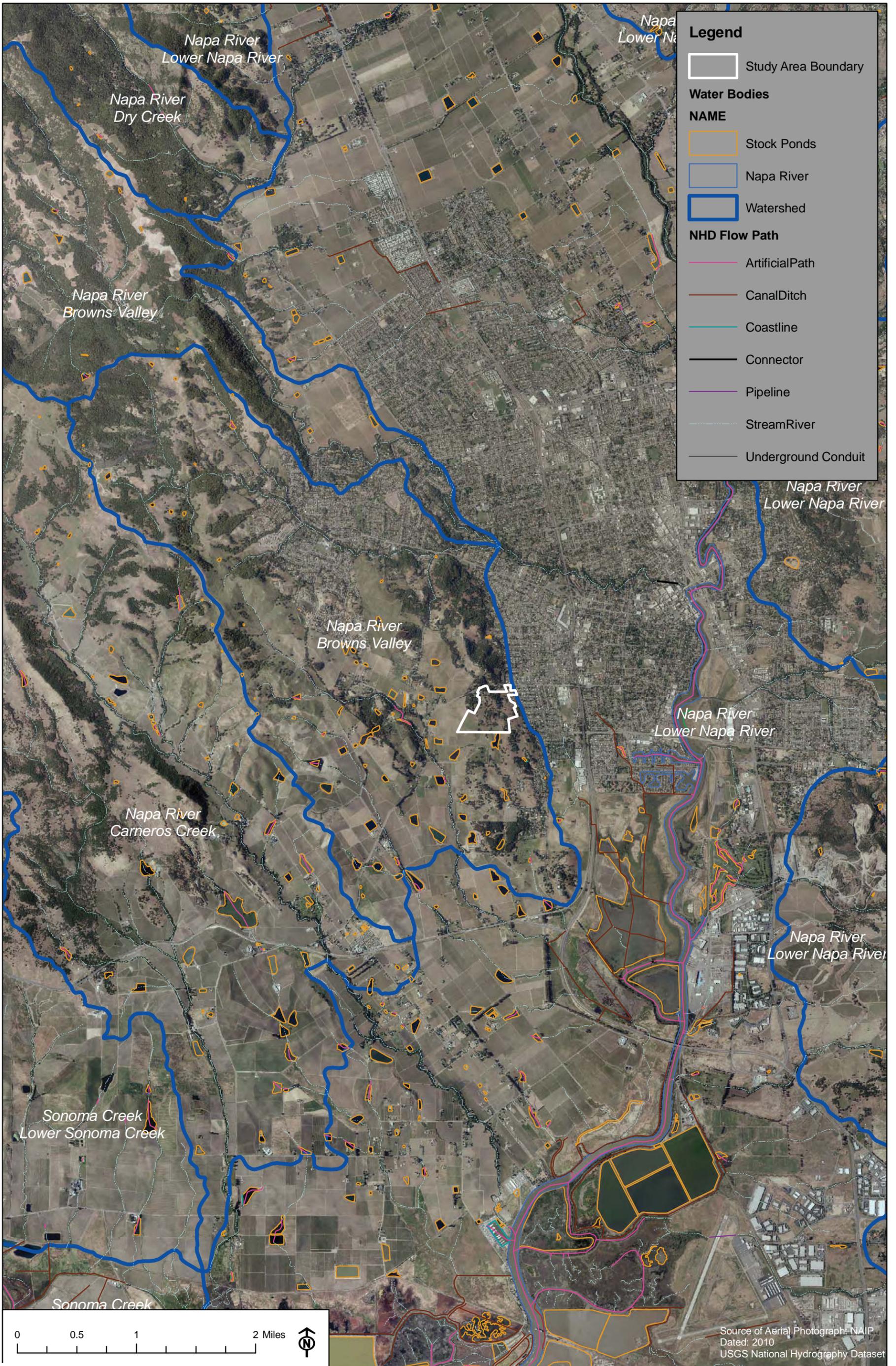
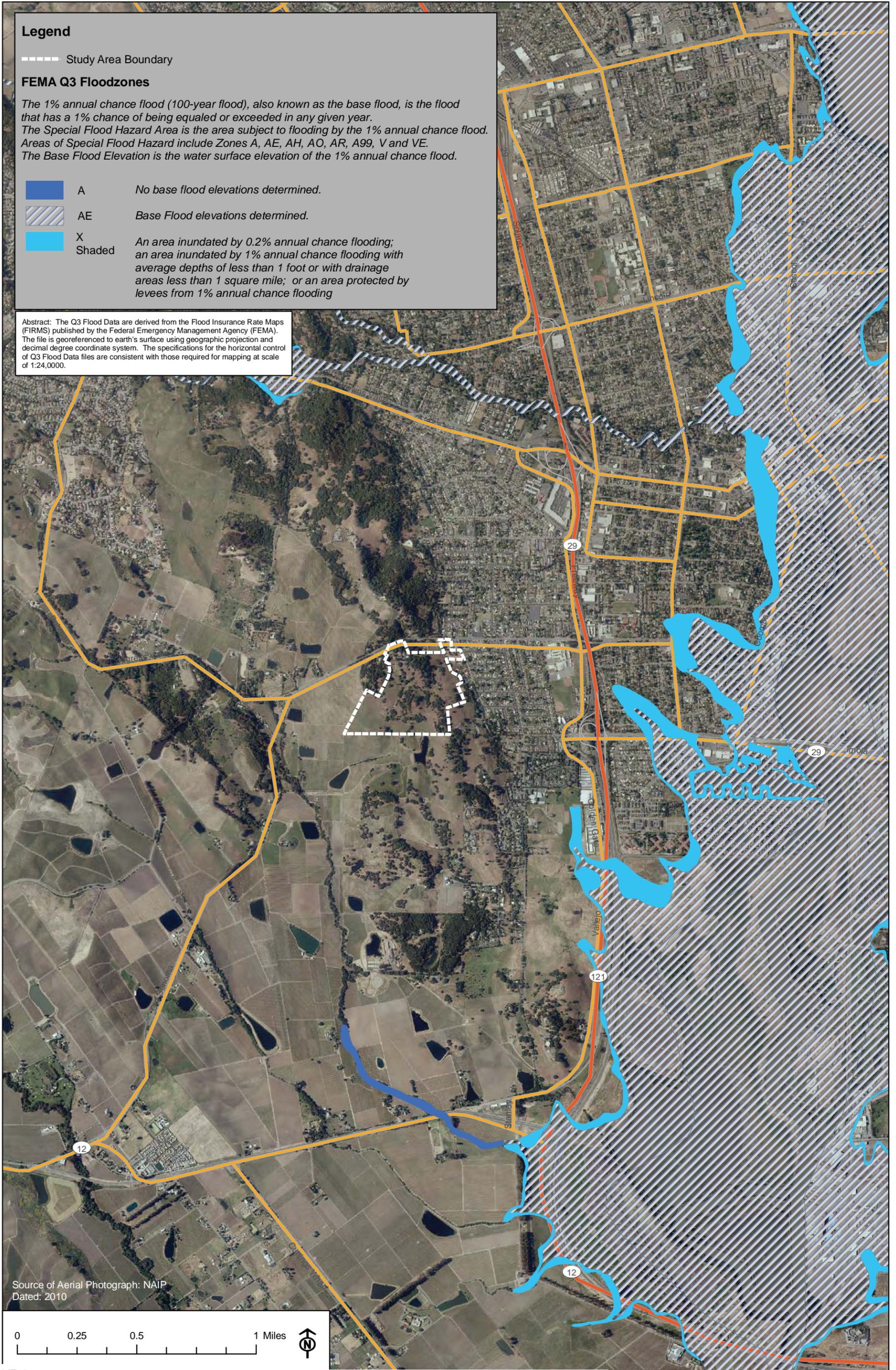


Figure 5. Watershed Map of the Project Area

Napa Oaks Project
City of Napa, Napa County, California



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Figure 6. Fema Map for the Project Vicinity
 Napa Oaks Project
 City of Napa, Napa County, California

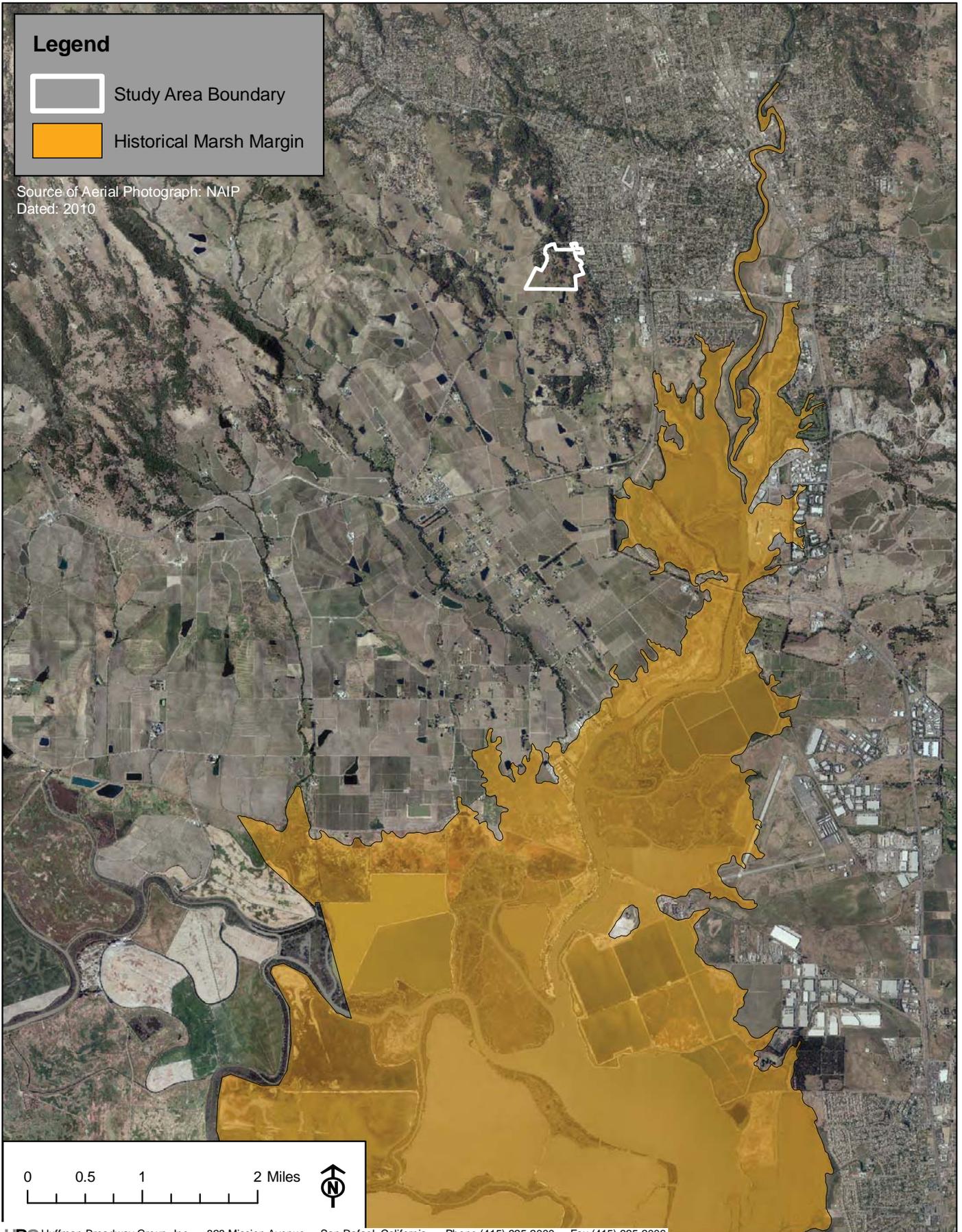


Figure 7. Historic Marsh Margins near Napa
Napa Oaks Project
City of Napa, Napa County, California