2019039021

Mitigated Negative Declaration

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

Publication Date:	March 4, 2019
Public Review Period:	30 Days
State Clearinghouse Number:	
Permit Sonoma File Number:	MNS16-0002
Prepared by:	Derik Michaelson
Phone:	(707) 565-3095

Pursuant to Section 15071 of the State CEQA Guidelines, this proposed Mitigated Negative Declaration and the attached Initial Study with identified mitigation measures and monitoring constitute the environmental review conducted by the County of Sonoma as the lead agency for the proposed project

Project Name:	Larbre Minor Subdivision
Project Applicant:	Adobe Associates
Property Owner:	Raymond J. Larbre, Trustee Joseph C. Larbre
Project Location:	1100 Craig Avenue, Unincorporated Sonoma County / El Verano
Assessor Parcel Number:	052-251-034 and 052-251-031
General Plan Land Use:	RR 5 (Rural Residential), 5 acres per unit density
Zoning Designation:	RR B6 5 (Rural Residential), RC50/25 (Riparian Corridor, 50 foot setback) X (Vacation Rental Exclusion Zone)
Decision Body:	Project Review Advisory Committee
Appeal Body:	Board of Zoning Adjustments
Project Description:	Tentative map proposal to subdivide a 16.28 acre infill property containing a sensitive riparian corridor (Dowdell Creek) into three legal parcels for single-family development.

ENVIRONMENTAL FACTORS

This project potentially affects the following environmental factors as discussed within the attached Initial Study. Those checked under "Yes" involve at least one impact that is either "Potentially Significant" or "Less than Significant with Mitigation". Those checked under "No" involve either "No Impact" or has been determined "Less than Significant".

Table 1. Summary of Environmental Factors

Environmental Factors	Abbreviation	Yes	No
Aesthetics	VIS		X
Agricultural & Forest Resources	AG		X
Air Quality	AIR		X
Biological Resources	BIO	X	
Cultural Resources	CUL	X	
Geology and Soils	GEO		X
Greenhouse Gas Emission	GHG		X
Hazards and Hazardous Materials	HAZ		X

Environmental Factors (Continued)	Abbreviation	Yes	No
Hydrology and Water Quality	HYD	X	
Land Use and Planning	LUP		X
Mineral Resources	MIN		X
Noise	NOI		X
Population and Housing	POP		X
Public Services	PUB		X
Recreation	REC		X
Transportation and Traffic	TRA		X
Utility and Service Systems	UTL		X
Mandatory Findings of Significance			

RESPONSIBLE AND TRUSTEE AGENCIES

The following table lists the other public agencies whose approval may be required to construct and/or operate the project, or who have jurisdiction over resources potentially affected by the project.

Table 2. Responsible Agencies / Other Permits Required

Agency	Activity	Authorization
U. S. Army Corps of Engineers	Dredge or fill potential on US waters / wetlands	Clean Water Act, Section 401
Regional Water Quality Control Board (San Francisco Bay)	Discharge potential into State waters / wetlands	California Clean Water Act (Porter Cologen)
Regional Water Quality Control Board (San Francisco)	Dredge or fill potential on State waters / wetlands	Clean Water Act, Section 404
State Water Resources Control Board	Generating stormwater	National Pollutant Discharge Elimination System (NPDES)
California Department of Fish and Wildlife	Lake or streambed alteration agreement	Fish and Game Code, Section 1600
Bay Area Air Quality Management District (BAAQMD)	Stationary air emissions	
Northern Sonoma County Air Pollution Control District (NSCAPCD)	Stationary air emissions	
Valley of the Moon Water District	Public water connection	

ENVIRONMENTAL FINDING

Based on the evaluation in the attached Expanded Initial Study, I find that the project described above will not have a significant adverse impact on the environment, provided that the mitigation measures identified in the Initial Study are included as conditions of approval for the project and a Mitigated Negative Declaration is proposed. The applicant has agreed in writing to incorporate identified mitigation measure into the project plans.

March 4, 2019

Prepared by:
Derik Michaelson, Project Planner

Date

Initial Study

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

March 4, 2019

I. INTRODUCTION:

Raymond J. Larbre, Trustee for Joseph C. Larbre Irrevocable Trust requests tentative map approval for minor subdivision of 16.21 acres into three residential parcels for single-family development. A referral letter was sent to the appropriate local, state and federal agencies and interest groups who may wish to comment on the project.

This report is the Initial Study required by the California Environment al Quality Act (CEQA). The report was prepared by Derik Michaelson, Project Review Planner with the Sonoma County Permit and Resource Management Department, Project Review Division. Information on the project was provided by Adobe Associates. This initial study provides analysis and conclusions based on technical studies (see Section VII. References) submitted by the applicant as part of the project.

These studies are available for review at the Permit and Resource Management Department (Permit Sonoma) office. To request an electronic version via email, or for general inquiries regarding this project, please contact the Project Planner, Derik Michaelson at (707) 565-3095, or via email at derik.michaelson@sonoma-county.org

PROJECT DESCRIPTION

The project applicant requests approval of a minor subdivision tentative map to create three legal parcels for single-family development on 16.28 acres. The project site is an undeveloped infill parcel with Dowdall Creek running northeast by southwest through its center and developed single-family properties making up its immediate surroundings. County regulations designate the property Rural Residential (RR) with allowable development potential established per the following requirements:

- *Maximum density* - 1 dwelling unit per 5 acres of total site (16.28ac / 5ac = 3.25 units);
- *Minimum lot standards* - 1.5 acre parcel size with 80 foot lot width;
- *Riparian corridor* - 50 foot setback requirement from outer banks of Dowdell Creek;
- *Zoning setbacks* - 20 foot setback from access frontages and rear lot lines, 5 feet from side;
- *Minimum septic size* - 3 bedroom capacity with 200% reserve area.

Tentative Map

The proposed tentative map identifies three separate lot configurations conforming to current County regulations for Rural Residential (RR) development. Development potential resulting from the project will support future construction of three single-family homes and related site improvements on individual parcels of 3.74 acres, 4.96 acres, and 7.58 acres in size. Lots 1 and 2 are located on the northerly side of Dowdell Creek fronting Craig Avenue. Lot 3 is proposed on the opposite southerly side of the creek with access from Elm Avenue. The specific lot sizes and access streets are as follows:

Lot 1:	4.96 acres	Craig Avenue
Lot 2:	3.74 acres	Craig Avenue
Lot 3:	7.58 acres	Elm Avenue

Site Development

Exact building locations will be confirmed in accordance with zoning setback requirements at the time of permitting for each lot. Anticipated site improvements for each home will involve construction of individual driveway configurations, drainage and storm water features, private sewage disposal systems, and possible well or public water connection improvements. Lot-specific improvements will involve construction of a small footbridge and septic line crossing over Dowdell Creek for Parcel 3. The specific

Initial Study

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

February 27, 2019

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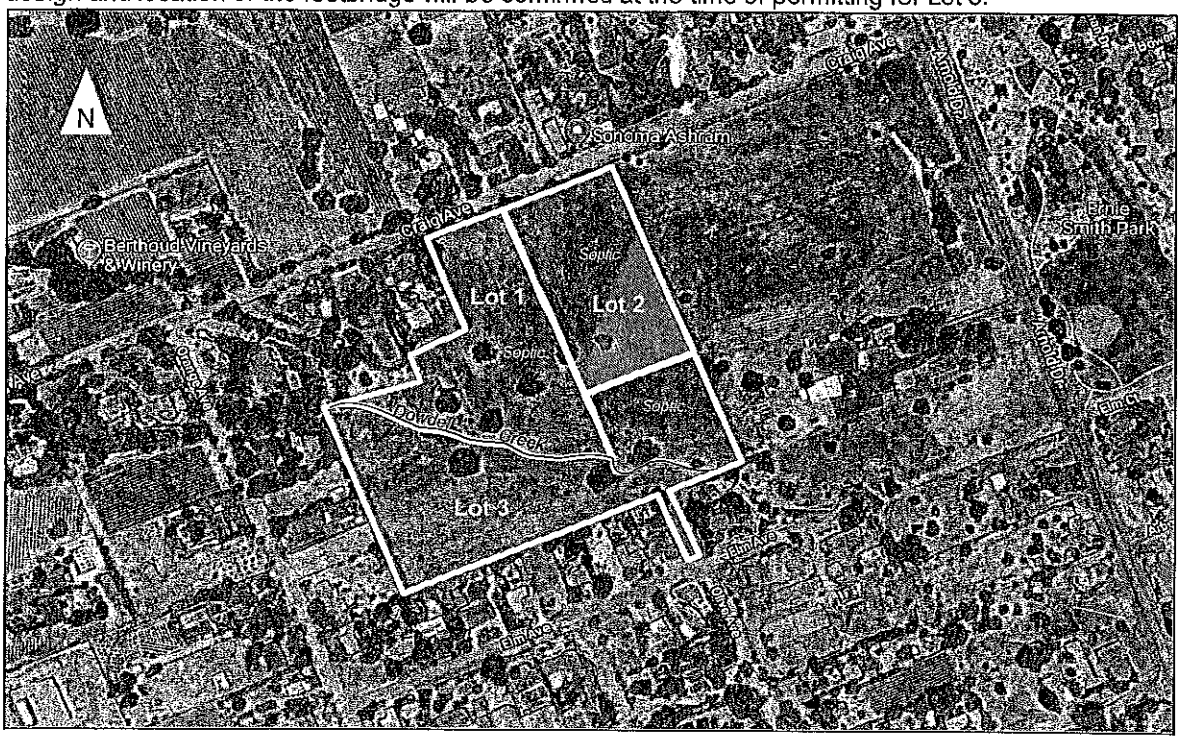
design and location of the footbridge will be confirmed at the time of permitting for Lot 3.



Project Location

Additionally, the tentative map identifies the following features as part of the current proposal:

- 30 foot wide access parcel SERVING Lot 3 off of Elm Avenue
- Preliminary septic system location and reserve area for each parcel;
- Initial driveway configuration and frontage alignment on Elm Avenue for Lot 3;
- 20 foot wide access easement serving Lot 3 septic system from Craig Avenue;
- Dowdell Creek boundary and limits of 50 foot riparian corridor setback from outer banks.

Site Access

The tentative map locates Lots 1 and 2 on the northerly side of Dowdell Creek fronting Craig Avenue. Exact locations of individual driveway alignments on Craig Avenue will be will be confirmed at the time of permitting. Lot 3 is located on the opposite side of the creek with access provided from Elm Avenue by way of a separate 30 foot wide access parcel. The access parcel enters Lot 3 near the southeast corner of site and extends approximately 160 feet to align with Elm Avenue. The preliminary alignment concept and initial driveway configuration for Lot 3 is identified on the tentative map.

The tentative map identifies a private access easement serving the septic system location for Lot 3 from Craig Avenue. The tentative map identifies the septic location on the northerly side of Dowdel Creek adjacent to Lot 2. The proposed easement extends down across the center lot line of Lots 1 and 2 to access the septic location. The applicant also proposes a small footbridge over Dowdell Creek for direct access from Lot 3 to its proposed septic location. The specific design and location of the footbridge will be confirmed at the time of permitting for the parcel

Sewage Disposal

All three proposed parcels have been tested for private sewage disposal systems. The tentative map identifies the proposed septic locations and required reserve area for each parcel. A two acre portion of Lot 3 is located on the opposite northeast side of the creek abutting rear boundary of Lot 2. The northerly segment of Lot 3 supports the proposed mound septic system for the parcel. The septic system on Parcel 3 will be developed with a 4-inch septic line installed within a footbridge crossing of Dowdall Creek. The septic system (mound system) will be developed in the westerly portion of the parcel with

piping established by suspension from a pedestrian footbridge over the creek. The footbridge design and location will be determined at the time of building construction for Parcel 3.

Water Service
The property is within the service boundaries of the Valley of the Moon Water District (Water District), and is in a Class 1 water availability area and the designated priority groundwater basin of Sonoma Valley. The applicant intends to secure public connections to the District for each lot. The Water District confirms sufficient water availability to serve the three parcels subject to meeting service connection fees and requirements. These requirements may include, but are not limited to, the following:

- Fire flow review including letter from system designer
- Irrigation demand review
- Indoor water demand review
- Utility easements etc.

Drainage and Storm Water
The applicant has submitted preliminary stormwater management plan identifying Low impact development criteria for storm water mitigation to be implemented at the time of development permitting for each parcel. The Permit Sonoma has reviewed the plan and has responded with appropriate conditions of approval to ensure proper implementation of best management practices during permitting.

Emergency Services
Fire Services are provided by the Sonoma Valley Fire Protection District with a station at 877 Center Street approximately 0.9 of a mile from the furthest portion of the property. Proposed residences will be fire sprinklered with fire hazardous vegetation maintained clear around all habitable structures.

II. SETTING

Existing Conditions
The project site is located in southwestern Sonoma east of Arnold Drive and is bound by Craig Avenue to the north, Elm Avenue to the south, and single-family residences to the west. Access to the property is from a driveway associated with the Larbre Well and Pump business located at 18715 Arnold Drive. The site covers approximately 16 acres and is bisected by Dowdell Creek, which is shown as a blue-line creek on the Sonoma 7.5 minute U.S.G.S. quadrangle. The majority of the site may be characterized as nonnative grassland with several large heritage oak trees (*Quercus lobata*) on the site. Dowdell Creek measures approximately 1,050 linear feet on the property entering the direction off the site at the southeastern corner. A few large oaks and willow grow along the creek banks although the canopy is mostly non-native grasses, blackberry and poison oak. Historically the site was used for hay production and grazing. There is a slight hill on the southwestern portion of the site on Parcel 3.

General Plan and Zoning
The Sonoma County General Plan map designates the project site as Rural Residential (RR 5) with a density requirement of five acres per dwelling unit. The corresponding zoning district is RR B6 5, with a combining district designation for Riparian Corridor (RC50/25). The RC designation establishes a 50 foot setback requirement from the top of creek bank along both sides of Dowdell Creek. Minimum development requirements under the corresponding zoning designation for Rural Residential include a lot size of 1.5 acres, a lot width of 80 feet, and a lot depth of 150 feet. Property line setback requirements for new buildings include a 20 foot front setback and a 5 foot side setback, with the rear setback standard (20 feet) superseded in this case by the 50 foot riparian setback requirement.

Surrounding Uses
Existing single-family development borders the project site to the west, north and south. The surrounding neighborhood includes a total of 17 residential properties fronting Craig Avenue to the north, Elm Drive to the south, and Orange Avenue to the west. The residential lots range primarily between 0.25 to 2.0 acres in size, each containing an existing single-family home. Two larger parcels border the easterly boundary of the project site. The two parcels front Arnold Drive and are each over seven acres in size. One of the parcels is a former golf driving range. The other is currently developed with two existing

residences and three small commercial buildings. An existing well and pump business occupies two of the commercial structures. An existing restaurant/café building occupies the other.

III. ISSUES RAISED BY THE PUBLIC OR AGENCIES

A referral packet was drafted and circulated to inform and solicit comments from selected relevant local, state and federal agencies; and to special interest groups that were anticipated to take interest in the project. The project has received no public comment and there have been no concerns raised by other agencies.

INITIAL STUDY CHECKLIST

This checklist is taken from Appendix G of the State CEQA Guidelines. For each item, one of four responses is given.

- **No Impact:** The project would not have the impact described. The project may have a beneficial effect, but there is no potential to create or add increment to the impact described.
- **Less than Significant**: The project would have the impact described, but the impact would not be significant. Mitigation is not required, although the project applicant may choose to modify the project to avoid the impacts.
- **Potentially Significant Unless Mitigated:** The project would have the impact described, and the impact could be significant. One or more mitigation measures have been identified that will reduce the impact to a less than significant level.
- **Potentially Significant Impact:** The project would have the impact described, and the impact could be significant. The impact cannot be reduced to less than significant by incorporating mitigation measures. An environmental impact report must be prepared for this project.

Each question on the checklist was answered by evaluating the project as proposed, that is, without considering the effect of any added mitigation measures. The checklist includes a discussion of the impacts and mitigation measures that have been identified

IV. SOURCE DOCUMENTS

In preparation of the Initial Study checklist, the following documents were referenced/developed, and are hereby incorporated as part of the Initial Study. All documents are available in the project file or for reference at the Permit and Resource Management Department.

1. Project Application: Proposal Statement and Tentative Map
2. Agency Referral Comments and Correspondence
3. County Planning Department's Sources
4. Sonoma County General Plan and EIR
5. Sonoma County Zoning Ordinance
6. California Environmental Quality Act (CEQA)
7. Submitted Technical Reports:
    a. Biological Constraints Analysis, Lucy Macmillan Environmental Scientist, October 5, 2017.
    b. Cultural Resources Evaluation, Archaeological Resource Services, September 11, 2017.
    c. Stormwater Control Plan for regulated project, Adobe Associates, Inc, August 28, 2018
8. Other Technical References:
    1. Streamside Conservation Plan and Zoning Permit submittal guide and attachments.
    2. BAAQMD CEQA Guidelines; Bay Area Air Quality Management District; April 1999; California Air Resources Board (CARB) http://www.arb.ca.gov/.
    3. California Environmental Protection Agency http://www.calepa.ca.gov/SiteCleanup/corteseList/default.htm;
    4. California Regional Water Quality Control Board - http://geotracker.swrcb.ca.gov/;
    5. California Dept of Toxic Substances Control http://www.dtsc.ca.gov/database/calsites/cortese list.cfm, and Integrated Waste Management Board - http://www.ciwmb.ca.gov/SWIS/Search.asp.
    6. Alquist-Priolo Special Studies Zones; State of California; 1983.

7. Tree Protection and Replacement Ordinance (Ordinance No. 4014); Sonoma County.
8. Heritage or Landmark Tree Ordinance (Ordinance No. 3651); Sonoma County.
9. Sonoma County Aggregate Resources Management Plan and Program EIR, 1994.
10. North Coast Regional Water Quality Control Board,http://www.waterboards.ca.gov/northcoast/water_issues/programs/non_chapter_15_permitting.shtml.
11. Sustainable Groundwater Management Act (SGMA), September 2014.
12. Santa Rosa Plain Watershed Groundwater Management Plan, Santa Rosa Plain Basin Advisory Panel, 2014
13. Planning staff knowledge and experience evaluation with development review and impact analysis for construction projects

1. AESTHETICS:

Would the project:

a) Have a substantial adverse effect on a scenic vista?

The project is not in an area designated as visually sensitive by the Sonoma County General Plan. It is not located on a scenic hillside, nor would it involve tree removal, construction or grading that would affect a scenic vista.

Impact:
No Impact

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

The parcel is not located on a site visible from a state scenic highway. The project does not include removal of historic trees or redwoods and would not involve removal of unique rock outcroppings and therefore is not expected to result in any significant impacts to scenic resources. The project site is not included in the Historic District (HD) overlay zone. There is an existing single family residence from approximately 1900. The project proposes the house remains.

Impact:
No Impact

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

The subject property contains no zoning designations or other regulatory factors pertaining to the protection of scenic or historic resources. The proposed subdivision allows development potential of three new homes on 16+ acres. Dowdell Creek runs through the center of the site and developed single-family properties of slightly smaller lot sizes than proposed make up the immediate surroundings. The tentative map locates two potential home sites visible from the street frontage along Craig Avenue on the south side of the creek. The third potential home site is located off of Elm Avenue via a separate access parcel on the north side of the creek, not visible to the public.

Based on these conditions, the visual quality and character of the site and its surroundings will not be significantly impacted by the project because development footprints resulting from three homes on 16+ acres leaves a considerable amount of undeveloped land remaining to maintain the rural setting and character of the surroundings.

Impact:
Less than Significant

d) **Create a new source of substantial light or glare which would adversely affect day or nighttime view in the area?**

New structures will introduce new sources of light and glare. However, at the density proposed, additional light sources associated with three new homes over an area of 16 acres surrounded by developed residential properties would be indistinguishable from those already existing within the vicinity of the project site.

Impact:
Less than Significant

2. AGRICULTURE AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

The parcel is not designated as Prime or Unique Farmland or Farmland of Statewide Importance on the Important Farmland maps. It is designated as Urban Lands reflecting the existing use of the site. There are already a considerable number of small parcels and lack of significant agricultural operations in the area.

The project site is in the R1-Low Density zoning district which allows for residential usage, and is not included in a Williamson Act contract.

Impact:
No Impact

b) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)?**

The parcel does not contain any forest land nor is it zoned Timberland Production.

Impact:
No Impact

c) **Result in the loss of forest land or conversion of forest land to non-forest use?**

The parcel contains no forest land.

Impact:
No Impact

d) **Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use?**

The project does not involve other changes in the environment that could result in conversion of farmland to non-agricultural use or forest land to non-forest use.

Impact:
No Impact

3. AIR QUALITY:

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) **Conflict with or obstruct implementation of the applicable air quality plan?**

The project is within the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD does not have an adopted air quality plan. The District has not adopted thresholds of significance, but the Bay Area Air Quality Management District has developed thresholds of significance specifically for local plans. Consistency with the most recently adopted Clean Air Plan (CAP) is referenced within the following responses.

Impact:
No Impact

b) **Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

State and Federal standards have been established for the "criteria pollutants": ozone precursors, carbon monoxide, nitrogen dioxide, sulfur dioxide and particulate matter (PM_{10} and $PM_{2.5}$). The pollutants NOx (nitrogen oxides) and reactive organics form ozone in the atmosphere in the presence of sunlight. The principal source of ozone precursors is vehicle emissions, although stationary internal combustion engines must also be considered a source. Detailed NOx and hydrocarbon air quality analysis is generally not recommended for projects generating less than 2,000 vehicle average daily traffic (adt). Given the low traffic generation of the project (60 adt) relative to the screening criteria, ozone precursor emissions would be less than significant.

Detailed air quality analysis for carbon monoxide is generally not recommended unless a project would generate 10,000 or more vehicle trips a day, or contribute more than 100 vehicles per hour to intersections operating at LOS D, E or F with project traffic. Given the low traffic generation of the project (60 adt) relative to the screening criteria, carbon monoxide emissions would be less than significant.

Wood smoke from fireplaces and wood stoves are sources of fine particulate matter. Wood smoke is a major contributor to reduced visibility and reduced air quality on winter evenings in both urban and rural areas. Sonoma County building regulations restrict fireplaces to natural gas fireplaces, pellet stoves and EPA-Certified wood burning fireplaces or stoves. With the restriction on fireplace design, fine particulate emissions form this project be a Less than Significant.

Impact:
Less than Significant

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality

The project will not have a cumulative effect on ozone because it will not generate substantial traffic which could otherwise result in substantial emissions of ozone precursors (ROG and NOx_x). The project will have no long-term effect on $PM_{2.5}$ and PM_{10}, because all surfaces will be paved gravel, landscaped or otherwise treated to stabilize bare soils, and dust generation will be insignificant. However, construction activities have the potential to generate short-term impacts related to uncontrolled dust emission. Such emissions could be potentially significant at the project level if not properly controlled through use of best management practices. Since Permit Sonoma currently requires and enforces implementation of dust control measures as standard practice during site construction, including requirements for routine spraying of active construction, staging and stockpile areas, containment requirements for transportation of loose material such as sand and soil, and proper maintenance of paved roadway areas near site entrances to minimize accumulation and/or tracking of loose material, any volume of uncontrolled dust emission escaping off-site during permitted construction hours, airborne, waterborne or otherwise, would be considered negligible and any related impact therefore, less than significant.

Although the project will generate some ozone precursors from new vehicle trips, the project will not have a cumulative effect on ozone because its estimated contribution of additional vehicle trips are not substantial enough create significant new emissions of ozone precursors (ROG and NOx), and because the County employs use of best management practices for controlling dust emissions during site construction activities to ensure potential short-term construction related impacts are also less than significant.

Impact:
Less than Significant

d) Expose sensitive receptors to substantial pollutant concentrations?

Construction of individual projects would involve activities that result in air pollutant emissions. Construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. Construction activities within the NSCAPCD portion of the county are regulated by the public nuisance provisions of NSCAPCD Rule 400 (General Limitations), the plume opacity limitations contained in NSCAPCD Rule 410 (Visible Emissions), and the dust suppression provisions of NSCAPCD Rule 430 (Fugitive Dust Emissions). The BAAQMD CEQA Guidelines contain construction dust mitigation measures that are applied to individual development proposals through the environmental review process.

There will be no long term increase in emissions, but during construction there could be significant dust emissions that would affect nearby residents. Dust emissions can be reduced to less than significant by the mitigation measure described in item 3c above.

Sensitive receptors include nearby residential neighborhoods within 1,000 feet of the project site. Individual site development and related construction activities will not cause any significant concentrations of pollutants as supported in the analysis above under Sections 3(b) and (c), nor would the project not become a receptor after construction. Arnold Drive is below the BAAQMD threshold of 20,000 vehicles a day and the project is not anticipated to increase the amount of vehicles to reach this threshold either.

Although there will be no long term increase in emissions, during construction there could be significant short term dust emissions that would affect nearby residents. Standard measures are employed for all construction sites, while enhanced measures are employed at large sites or at sites near sensitive receptors. Highway construction projects are subject to Caltrans's Special Provisions and Standard Specifications that include requirements to minimize or eliminate dust through the application of water or dust palliatives. Since construction activities consistent with the GP 2020 would be subject to the above regulations, this would represent a less-than-significant impact. Permit Sonoma currently requires and enforces implementation of dust control measures as standard

practice during site construction and any potentially uncontrolled volume of dust emissions escaping off-site during construction would be insignificant.

e) **Create objectionable odors affecting a substantial number of people?**
Construction equipment may generate odors during project construction. The impact would be less than significant and it would be a short-term impact that ceases upon completion of the project.

Impact:
Less than Significant

4. BIOLOGICAL RESOURCES:

Biotic Report
A Biological Constraints Analysis has been prepared for the project by Environmental Scientist, Ms. Lucy Macmillan, dated October 5, 2017. The constraints analysis identifies site characteristics indicating existence of riparian habitat associated with Dowdell Creek that may support potential occurrences sensitive wildlife on the subject property. The study also addresses impacts of initial site development activities on riparian habitat and supported wildlife that if not properly mitigated, may be potentially significant. The report concludes with recommended mitigation measures intended to reduce impact potential to less than significant levels.

Dowdell Creek
Dowdell Creek originates in the hills to the west and spans approximately 1,050 linear feet across the project site from the northwestern corner to the southeastern corner of the property. According to the proposed tentative map, the creek varies in width between its southerly and northerly side stream banks from approximately 20 feet to its widest point of approximately 40 feet near the Elm Avenue access parcel at the southeast corner of the site. The channel bottom is mostly small to medium size cobbles and wetland vegetation grows in areas that may pond water in the spring months following the winter rains. Algal mats were present throughout the channel, suggesting water stands for several weeks after the creek stops flowing.

Would the project:

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 Wildlife or U.S. Fish and Wildlife Service.**

Special-Status Plants
Based upon a review of CNDDB (CDFW 2017), there is a potential for the site to provide habitat for special-status plants, primarily those associated with valley and foothill grasslands. Because the site assessment was conducted in September 2017, it is recommended that a qualified botanist conduct seasonally-timed rare plant surveys next spring to survey for special-status plants having a Low to Moderate or Moderate potential to occur on the site, as listed in Table 1 of the submitted biotic report.

Special-Status Wildlife
On September 18, 2017, the applicant's biotic consultant conducted a reconnaissance-level habitat assessment to determine the nature and extent of habitat types within and adjacent to the project site. Based on the field assessment and on information provided by the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB, 2017), it is determined that the site provides potential habitat to support special-status species, including nesting birds, maternity roosting bats, Pacific pond turtle, California giant salamander, and red-bellied newt. Section 4.d below addresses potential project impacts concerning nesting birds.

Special-status Bats

The large oak trees on the project site provide potential roosting habitat for various special-status bat species known to occur in the project region including but not limited to pallid bat (Antrozous pallidus), Pacific western big- eared bat (Corynorhinus townsendii townsendii), and long-eared myotis (Myotis evotis). These bat species are California Species of Special Concern and may roost in mature trees, snags, crevices, cavities, and foliage within this habitat. Maternity roosting for bats is April through November.

Pacific Pond Turtle

Pacific Pond Turtle (Emmys marmorata) is the only native freshwater turtle in California and is identified by CDFW as a species of Special Concern. Pacific Pond Turtle nests from late April through July, and requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within 5 to 100 meters of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to located and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year. Dowdell Creek provides potential habitat for this species. Potential impacts of any development activity occurring on site between late April through July on the successful nesting of this species may be significant if not properly mitigated. The project biologist recommends special fencing prohibiting access to active construction areas for the Pacific Pond Turtle, Giant California Salamander and the red-bellied newt species to reduce potential adverse impacts to less than significant levels.

California Giant Salamander

Dowdell Creek provides potential habitat for California giant salamander (Dicamptodon ensatus), which is listed as a Species of Special Concern by the California Department if Fish and Wildlife. The California giant salamander is know from coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Adults may be found under rocks, logs and other debris adjacent to water sources. Aquatic larvae are found in cold, clear streams, sometimes in lakes or ponds (CNDDB, 2017). The Dowdell Creek is known to provide supporting habitat for this species and impacts of initial site development resulting from the project may have adverse effects on its movement if present. The project biologist recommends special fencing prohibiting access to active construction areas for the Pacific Pond Turtle, Giant California Salamander and the red-bellied newt species to reduce potential impacts to less than significant levels. Appropriate mitigation measures addressing this matter are listed below.

Impact:
Less than significant with Mitigation

Mitigation:

Mitigation BIO-1: The site provides potential habitat for special-status bats. April through November is the maternity roosting season for this species. Prior to any initial site development or related ground disturbances planned between May 1 and August 31, the applicant shall retain a qualified biologist to implement and confirm completion of the following activities:

a. A maternity bat roost assessment of trees shall be conducted within 100 feet of the project site to determine the likelihood of occurrence for maternity roosting bats on site.
b. If potential species occurrence is detected, nighttime emergence surveys shall be
c. be performed for confirmation
d. If species presence is confirmed, the biologist shall establish an appropriate exclusion zone around the maternity roost area.

Mitigation BIO-2: To prevent Pacific Pond Turtle from nesting within proposed development areas, a wildlife exclusion fence should be installed in areas within 300 feet of aquatic habitat

prior to the nesting season (beginning mid-April). This fence also excludes California giant salamander and red-bellied newt from areas of disturbance and should be maintained during all project activities.

a. The exclusion fence should be installed such that the fabric is a minimum of 46 inches above ground and the fabric should be buried 4-6 inches below ground.
b. The exclusion fence posts should be located on the Study area (work side) of the fence with the fabric on the outside of the Study area relative to the stakes.
c. Pre-construction surveys should be performed within 48 hours of initiation of Project activities, including exclusion fence installation and initial ground disturbing activities.
d. No construction activities will occur during rain events, defined as ¼ inch of rain falling within a 24-hour period. Construction activities may resume 24 hours after the end of the rain event.

Monitoring:

Monitoring BIO-1 and -2: Permit Sonoma will not issue permits for ground disturbing activities until after the site has been surveyed by a qualified biologist to ensure proper fencing and buffers are in place prior to issuance.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Riparian Sensitivity
Site development resulting from the proposed subdivision is subject to County regulations for the protection of riparian corridors. The Sonoma County General Plan and Zoning Ordinance provide for the protection of riparian habitat through establishment and implementation of streamside conservation areas for designated Riparian Corridors (RC). The RC designation generally prohibits development encroachment within streamside conservation areas as established from the top of bank by zoning setback requirements for each side of the stream. The project site contains a riparian corridor (RC50) designation for Dowdell Creek which runs through the center of the property. The established setback requirement for Dowdell Creek is 50 feet. Potential impacts of new site development on riparian habitat and supported wildlife occurring within the streamside conservation area may be significant. Encroachment typically requires County approval of a streamside conservation plan specifying new planting of native vegetation and trees alongside the creek bank as mitigation for any area of disturbance.

Site Development
The tentative map identifies the boundary of the 50 foot riparian setback for Dowdell Creek and demonstrates each lot to be of sufficient size and configuration to accommodate prospective building envelopes and septic locations outside the required conservation area. Therefore, general site development potential allowing construction of three homes is not anticipated to result in potential significant impacts on the sensitive riparian areas identified near the creek, nor to the livelihood of sensitive wildlife that may rely on those areas for supporting habitat. However, access and connection to the septic system for Lot 3 requires encroachment into the streamside conservation area that may adversely affect riparian habitat.

Encroachment
Parcel 3 requires installation of a 4-inch septic line crossing to connect the prospective building site location toward the south westerly portion of the lot with the proposed mound system on the opposite side of Dowdell Creek to the northeast. To gain maintenance access to the mound system, the applicant proposes a footbridge across the creek. The septic line would be attached to the footbridge, which would span the creek. No native oaks or shrubs will be removed for construction of the bridge. Potential impacts of proposed bridge construction and related ground disturbances occurring within 50 feet of the creek bank may adversely affect existing riparian habitat and supported wildlife if not properly mitigated. Implementation of a County approved streamside conservation plan specifying the appropriate replanting of native vegetation and trees near the

bridge crossing and along the stream banks of Dowdell Creek will reduce potential impact levels to less than significant. A mitigation measure requiring applicant submittal of a zoning permit for review and approval of a streamside conservation plan on Lot 3 is detailed below.

Additionally, any bridge related disturbances occurring within the streambed of Dowdell Creek falls under jurisdiction of the California Department of Fish and Wildlife (CDFW). Potential impacts resulting from footbridge abutments located within the creek bank shall be addressed through CDFW issuance of a Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code. Appropriate mitigation measures requiring applicant confirmation of actively pursuing required clearances from all responsible agencies having jurisdiction over any potential riparian related impact resulting from project related activities occurring within streambed of Dowdell Creek are specified below.

Impact:
Less than Significant with Mitigation

Mitigation:

Mitigation BIO-2: "NOTE ON MAP: No site development or improvements shall occur within the 50 foot streamside conservation area as established from the upper top of bank along either side of Dowdell Creek, except as allowed by County Code Section 26-65-040 or otherwise permitted as part of an approved streamside conservation plan providing for the appropriate protection of biotic resources, water quality, floodplain management, bank stability, groundwater recharge, and other applicable riparian functions."

Mitigation BIO-3: Applicant/owner for shall implement an approved streamside conservation plan for any new construction or site improvements proposed within the boundaries of the streamside conservation area for Lot 3, or should similar activities may be proposed for Lots 1 and 2, subject to Zoning Permit approval prior to issuance of a grading permit. The conservation plan shall be prepared by a qualified professional and shall specify the planting of appropriate native vegetation and trees meeting the following minimum requirements to help enhance the natural barrier of protection existing along the banks of Dowdell Creek.

a. *Restoration Size*. The minimum size of the restoration area shall be at least double the size of total area of disturbance: (Area of Disturbance) x 2 = (Restoration Area);
b. *Number of Trees*. The minimum number of trees required for planting is one tree per every 1,000 square feet of restoration area: (Restoration Area) x 0.003 = (trees required); and
c. *Number of Plants*. The minimum number of understory plants required for planting is one plant per every 600 square feet of restoration area: (Restoration Area) x 0.006 = (plants required);
d. *Maintenance Agreement*. Landowner shall sign and adhere to a Restoration Area Maintenance and Monitoring Agreement to ensure sufficient plant installation and irrigation for an initial period of five years from the time of initial planting.

NOTE: The Permit Sonoma application guide and exhibit forms for submittal and preparation the required Streamside Conservation Plan and Maintenance and Monitoring Agreement is included as an attachment of this Initial Study:

Mitigation BIO-4: Applicant/owner shall provide sufficient documentation of actively pursuing required clearances from all responsible agencies having jurisdiction over the permitting of any project related activities occurring within the streambed of Dowdell Creek, including, but not limited, to the following agencies:

a. Army Corps of Engineers jurisdiction over Waters of the U.S. under Section 404 of the CWA.
b. Regional Water Quality Control Board (RWQCB) jurisdiction under Section 401 of the CWA and/or the state Porter-Cologne Act;

c. California Department of Fish and Wildlife jurisdiction over aquatic habitat under Section 1600 of the CFGC, including requirement of a streambed Alteration Agreement for work occurring within the bed, bank or channel of the creek.

Monitoring

Monitoring BIO-2: Permit Sonoma will not issue permits for ground disturbing activities until after the site has been surveyed by a qualified biologist to ensure proper fencing and buffers are in place prior to issuance.

Monitoring BIO-3: Permit Sonoma staff shall withhold grading permit issuance for any ground disturbing activities on Lot 3 until receipt of a zoning permit submittal specifying the details of a streamside conservation plan as provided in the mitigation criteria above is confirmed.

Monitoring BIO-3.1: Permit Sonoma staff shall withhold final occupancy on the new residence for Lot 3 until full installation of the streamside conservation plan and the signed maintenance agreement conforming to the mitigation criteria above is confirmed.

Monitoring BIO-4: Permit Sonoma staff shall withhold grading permit issuance for any ground disturbing activities on Lot 3 until appropriate documentation or related correspondence confirming receipt of application for required approvals, or in pursuit thereof, from all responsible agencies having jurisdiction over the project is verified.

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?

Wetlands in the Sonoma Valley or in the southern part of the County may be habitat for the federally listed plants and deeper more pond-like wetlands can provide habitat for the California red-legged frog. Impacts on wetlands that are habitat for those species would be potentially significant, whether or not the species actually are present.

If the wetland does not provide suitable habitat for a State or federally listed species, the project would have a potentially significant impact if it substantially diminished the size or habitat value of the wetland. Whether the impact would "substantially diminish" the wetland should be determined by consulting with staff of the resource agencies or a professional biologist. California has a 'no net loss' policy for wetlands, which considers any loss significant and needing compensation. However, there are wetlands that have such marginal wildlife value (for example, some roadside ditches) that a loss in some cases could be considered as a less than significant impact.

On September 18, 2017, a jurisdictional wetlands delineation was conducted on the project site utilizing the methods and procedures prescribed in the Arid West supplement. The project site was walked to identify and map potential jurisdictional wetland features with the study area. The onsite assessment concludes that Dowdell Creek measuring approximately 1,050 linear feet along the project site is an existing wetland (waters) feature. The identified wetland runs the full length of Parcel 3 and forms the southern property line (700 linear feet) of Parcel 1. The rear boundaries of both Lots 1 and 3 continue to the centerline of the creek. No potential wetland areas were mapped on Parcel 2.

Any project improvements that will resulting the discharge of dredged or fill material into wetlands or creeks on the site would require authorization from the Corps and RWQCB pursuant to Sections 404 and 401 of the Clean Water Act. A Streambed Alteration Agreement would also need to be obtained for work that would substantially alter the bed, bank or channel of the creek.

Impact:
Less than Significant with Mitigation

Mitigation:
Mitigation BIO-5: Applicant shall confirm receipt of application or related correspondence regarding approvals required from all responsible agencies having jurisdiction over the project, including, but not limited to:

d. Army Corps of Engineers jurisdiction over Waters of the U.S. under Section 404 of the CWA.
e. Regional Water Quality Control Board (RWQCB) jurisdiction under Section 401 of the CWA and/or the state Porter-Cologne Act;
f. California Department of Fish and Wildlife jurisdiction over aquatic habitat under Section 1600 of the CFGC, including requirement of a streambed Alteration Agreement for work occurring within the bed, bank or channel of the creek.

Monitoring:
Monitoring BIO-5: PRMD staff will not issue permits for ground disturbing activities until after the site has been surveyed by a qualified biologist to ensure proper fencing and buffers are in place prior to issuance.

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?

Nesting Birds
The grasslands and trees on the project site provide habitat for a variety of nesting birds and raptors. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). Their nest, eggs, and young are also protected under California Fish and Wildlife Code (§3503, §3503.5, and §3800). In addition, raptors such as the white-tailed kite (Elanus leucurus) are "fully protected" under Fish and Wildlife Code (§3511). Fully protected raptors cannot be taken or possessed (that is, kept in captivity) at any time. The site provides habitat for a variety for a variety of nesting birds and raptors. Therefore, if work will occur between February 1st and August 31st a qualified biologist should conduct pre-construction surveys of all potential nesting habitats within approximately 200 feet of project activities.

Impact:
Less than Significant with Mitigation

Mitigation:
Mitigation BIO-6:
a. If initial ground disturbance or vegetation removal occurs during the breed season (March 1 through August 31), a qualified biologist will conduct a breed bird survey no more than 14 days prior to ground disturbance to determine any birds are nesting in trees adjacent to the Study area.
b. If active nests are found close enough to the Study area to affect breed success, the biologist will establish an appropriate exclusion zone around t nest. This exclusion zone may be modified depending upon the species, n location, and existing visual buffers. Once all young have become independent of the nest, vegetation removal and grading may take place in the form exclusion zone.
c. If initial ground disturbance is delayed or there is a break in Project activities greater than 14 days within the bird-nesting season, then a follow-up nest bird survey should be performed to ensure no nests have been established in the interim.

Monitoring:
Monitoring BIO-6: PRMD staff will not issue permits for ground disturbing activities until after the site has been surveyed by a qualified biologist to ensure proper fencing and buffers are in place prior to issuance.

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

The Sonoma County Tree Protection Ordinance (Sonoma County Code of Ordinances, Chapter 26, Article 88, Sec. 26-88-010 (m)) establishes policies for protected tree species in Sonoma County. Protected trees are defined (Chapter 26, Article 02, Sec. 26- 02-140) as the following species: big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii*), madrone (*Arbutus menziesii*), oracle oak (*Quercus morehus*), Oregon oak (*Quercus garryana*), redwood (*Sequoia sempervirens*), valley oak (*Quercus lobata*), California bay (*Umbellularia californla*), and their hybrids. Of these, valley oak occur on the site.

Development potential of the project site does not necessitate removal of any existing trees .

Impact:
No Impact

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?

Habitat Conservation Plans and natural community conservation plans are site-specific plans to address effects on sensitive species of plants and animals. The project site is not located in an area subject to a habitat conservation plan or natural community conservation plan. There are very few Habitat Conservation Plans in Sonoma County-they would only affect certain land in timber production areas in the northwest county (for spotted owl) and in the lower Petaluma River/Sonoma Creek watershed (for saltmarsh harvest mouse/black rail/clapper rail).

Impact:
No Impact

5. CULTURAL RESOURCES:

The applicant has submitted an archaeological resources evaluation of the project site prepared by Samantha Dunham and William Roop of Archaeological Resource Service, dated September 11, 2017. The findings and conclusions submitted in this report form the bases for the responses below.

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

The archaeological consultants for the project have conducted a field investigation of the project site and confirm that no prehistoric features or sites were observed. The consultants note that while archival research indicates the presence of prehistoric and historic sites existing within the vicinity of Craig Avenue, development resulting from the proposed subdivision does not appear to pose any adverse effect to known locations within the general area.

Impact:
Less than Significant

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

An archeological study was performed on site and found no presence of existing historical resources. Additionally, no tribes in the area indicated that the site had any cultural importance. Since no significant cultural resources were identified on the property, no further recommendations are warranted for prehistoric materials at this time. However, if during earth disturbing activities on the property a concentration of artifacts is encountered, all work should be halted in the vicinity of the

find and an archaeologist contacted immediately. Artifacts that are typically found associated with prehistoric sites include humanly modified stone (typically chert, obsidian, or basalt), shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, fire pits, or house or floor depressions whereas typical mortuary features are represented by human skeletal remains. The mitigation measure below will reduce this impact potential to a less than significant level.

Impact:
Less than Significant with Mitigation

Mitigation:
Mitigation CUL-1: NOTE ON MAP:

"All building and/or grading permits shall have the following note printed on plan sheets:

'If paleontological resources or prehistoric, historic or tribal cultural resources are encountered during ground-disturbing work, all work in the immediate vicinity shall be halted and the operator must immediately notify the Permit and Resource Management Department (PRMD) – Project Review staff of the find. The operator shall be responsible for the cost to have a qualified paleontologist, archaeologist or tribal cultural resource specialist under contract to evaluate the find and make recommendations to protect the resource in a report to PRMD. Paleontological resources include fossils of animals, plants or other organisms. Prehistoric resources include humanly modified stone, shell, or bones, hearths, firepits, obsidian and chert flaked-stone tools (e.g., projectile points, knives, choppers), midden (culturally darkened soil containing heat-affected rock, artifacts, animal bone, or shellfish remains), stone milling equipment, such as mortars and pestles, and certain sites features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe. Historic resources include all by-products of human use greater than fifty (50) years of age including, backfilled privies, wells, and refuse pits; concrete, stone, or wood structural elements or foundations; and concentrations of metal, glass, and ceramic refuse.

If human remains are encountered, work in the immediate vicinity shall be halted and the operator shall notify PRMD and the Sonoma County Coroner immediately. At the same time, the operator shall be responsible for the cost to have a qualified archaeologist under contract to evaluate the discovery. If the human remains are determined to be of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification so that a Most Likely Descendant can be designated and the appropriate measures implemented in compliance with the California Government Code and Public Resources Code.'"

Monitoring
Monitoring CUL-1: Building/grading permits shall not be approved for issuance by Project Review staff until the above notes are printed on the building, grading and improvement plans.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The archeological study prepared for the site did not uncover any paleontological resources or sites. No unique geologic features are known to exist on the subject property or within in its near vicinity of

Impact:
No Impact

d) Disturb any human remains, including those interred outside of formal cemeteries?

No burial sites are known in the vicinity of the project, and most of the project site has already been disturbed by past construction. In the event that human remains are unearthed during construction, state law requires that the County Coroner be notified to investigate the nature and circumstances of the discovery. At the time of discovery, work in the immediate vicinity would cease until the Coroner

permitted work to proceed. If the remains were determined to be prehistoric, the find would be treated as an archaeological site and the mitigation measure described in item 5(b) above would apply. As this matter s adequately addressed by a mitigation measure already applied to the project, the impact potential is less than significant and required no further mitigation.

Impact:
Less than significant

6. GEOLOGY AND SOILS:

Would the project:

a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

The project site is not within a fault hazard zone as defined by the Alquist-Priolo fault maps.

Impact:
No Impact

ii. **Strong seismic ground shaking?**

All of Sonoma County is subject to seismic shaking that would result from earthquakes along the San Andreas, Healdsburg-Rodgers Creek, and other faults. Check ABAG map. Predicting seismic events is not possible, nor is providing mitigation that can entirely reduce the potential for injury and damage that can occur during a seismic event. However, using accepted geotechnical evaluation techniques and appropriate engineering practices, potential injury and damage can be diminished, thereby exposing fewer people and less property to the effects of a major damaging earthquake. The design and construction of future dwellings on new parcels are subject to load and strength standards of the California Building Code (CBC), which take seismic shaking into account. Project conditions of approval require that building permits be obtained for all construction and that the project meet all standard seismic and soil test/compaction requirements. The project would therefore not expose people to substantial risk of injury from seismic shaking.

Impact:
Less than Significant

iii. **Seismic-related ground failure, including liquefaction?**

The project site is located within an area subject to liquefaction as shown on the Sonoma County Relative Hazard from Seismic Shaking map. Strong ground shaking during an earthquake can result in ground failure and/or settlement such as that associated with soil liquefaction, and can also cause deformation of slopes, particularly fill slopes. Therefore the property has the potential to experience liquefaction and settlement during a seismic event. All structures will be required to meet building permit requirements, including seismic safety standards and soil test/compaction requirements. Based on standard permitting requirements, the project will have no significant risk of loss, injury or death from seismic ground failure or liquefaction.

Impact:
Less than Significant

iv. Landslides?

"The project site is not located in a landslide prone area as shown on Geology for Planning in Sonoma County Special Report 120 Slope Stability."

Impact:
No Impact

b) Result in substantial soil erosion or the loss of topsoil?

The project includes grading, cuts and fills which require the issuance of a grading permit. Unregulated grading, both during and post construction, has the potential to increase the volume of runoff from a site which could have adverse downstream flooding and further erosional impacts, and increase soil erosion on and off site which could adversely impact downstream water quality.

However, in regard to potential water quantity impacts, County grading ordinance design and adopted best management practices require that storm water facilities be engineered to treat storm events and associated runoff to the 85 percentile storm event. Adopted flow control best management practices must be designed to treat storm events and associated runoff to the channel forming discharge storm event, which is commonly referred to at the two year storm event. Required inspection by County inspectors insures that all work is constructed according to the approved plans. These ordinance requirements and adopted best management practices are specifically designed to maintain potential project water quantity impacts at a less than significant level during and post construction.

In regard to water quality impacts, County grading ordinance design requirements, adopted County grading standards and best management practices (such as silt fencing, straw wattles, construction entrances to control soil discharges, primary and secondary containment areas for petroleum products, paints, lime and other materials of concern, etc.), mandated limitations on work in wet weather, and standard grading inspection requirements, are specifically designed to maintain potential water quality impacts at a less than significant level during project construction.

For post construction water quality impacts, adopted grading permit standards and best management practices require creation of areas that allow storm water to be detained, infiltrated, or retained for later use. Other adopted water quality best management practices include storm water treatment devices based on filtering, settling or removing pollutants. These construction standards are specifically designed to maintain potential water quality grading impacts at a less than significant level post construction.

The County adopted grading ordinances and standards and related conditions of approval which enforce them are specific, and also require compliance with all standards and regulations adopted by the State and Regional Water Quality Control Board, such as the Standard Urban Stormwater Mitigation Plan (SUSMP) requirements, Low Impact Development (LID) and any other adopted best management practices. Therefore, no significant adverse soil erosion or related soil erosion water quality impacts are expected given the mandated conditions and standards that need to be met. See further discussion of related issues (such as maintenance of required post construction water quality facilities) under section 8 Hydrology and Water Quality.

Impact:
Less than Significant

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The project site is subject to seismic shaking as described in item 6.a.ii. above. No further mitigation is required.

Impact:
Less than Significant

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Table 18-1-B of the Uniform Building Code is an index of the relative expansive characteristics of soil as determined through laboratory testing. For the proposed project, soils at the site have not been tested for their expansive characteristics. No substantial risks to life or property would be created from soil expansion at the proposed project, even if it were to be affected by expansive soils.

Impact:
Less than Significant

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project will be served by public sewer for the disposal of wastewater.

Impact:
No Impact

7. GREENHOUSE GAS EMISSIONS:

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The Bay Area Air Quality Management District has adopted a significance threshold of 1,100 metric tons of C02e per year for land use projects. Emissions are caused by natural gas combustion, electricity use, on-road vehicles, water use, wine fermentation, carbon sequestration, and existing emissions. For purposes of the Negative Declaration, the project would only be considered to have a significant impact on greenhouse gases if it would conflict with the state goal of reducing greenhouse gas emissions in California to 1990 levels by 2020, as set forth by the California Global Warming Solutions Act of 2006. There is currently no indication that the project would conflict with the Act's timeline.

The Community Climate Action Plan has provided the following four major categories of solutions that will reduce greenhouse gases if they are implemented: (1) improve efficiency in energy and water use, (2) shift transportation from fossil fuel vehicles to transit, walking, bicycling, etc. (3) invest in local renewable energy sources, and (4) protect forests and farmlands, sequester carbon, and convert waste into energy. As noted below some of these strategies are already required. Additional measures will be conditioned based on voluntary compliance by the applicant. Mandated and voluntary compliance will ensure compliance with federal, state, and, local greenhouse gas reduction targets.

The Sonoma County Permit and Resource Management Department supports the use of the BAAQMD's GHG thresholds to determine the significance of GHG emissions. In addition, the County requires compliance with the General Plan Open Space and Resource Conservation Element Objective OSRC-14.4, which states "reduce GHG emissions by 25 percent below 1990 levels by 2015." Projects can demonstrate compliance with this general plan objective by complying with the BAAQMD GHG threshold and implementing mitigation measures that exceed the green building code.

The proposed project could result in the construction of six single family dwelling units and this would not exceed the GHG thresholds established by BAAQMD.

Impact:
Less than Significant

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project will not conflict with a plan or policy regarding greenhouse gas emissions. See response to 7a. above.

Impact:
Less than Significant

8. HAZARDS AND HAZARDOUS MATERIALS:

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction will require use of fuels and other hazardous materials. Improper storage or handling of these materials could result in spills. The impact can be reduced to less than significant by requiring standard approved construction methods for handling hazardous materials.

Impact:
Less than Significant

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

During construction there could be spills of hazardous materials. Current construction best management practices are in place to ensure proper handling of hazardous materials. These practices are applied and enforced through issuance and inspection of the building permit by Permit Sonoma. The potential for hazardous spills occurring is therefore less than significant.

Impact:
Less than Significant

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

This project is for a residential subdivision. Resulting development potential includes future construction of three new homes. This type and intensity of development is not known to generate hazardous emissions, materials, substances, or waste that would adversely affect sensitive receptors adjacent to or within the vicinity of the project site.

Impact:
No Impact

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The project site was not identified on, or in the vicinity of, any parcels on lists compiled by the California Environmental Protection Agency, Regional Water Quality Control Board, California Department of Toxic Substances, and the California Integrated Waste management Board. (8)

Impact:
No Impact

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

The site is not within an airport land use plan as designated by Sonoma County.

Impact:
No Impact

f) **For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

There are no known private airstrips within the vicinity of the proposed project.

Impact:
No Impact

g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

The project would not impair implementation of, or physically interfere with the County's adopted emergency operations plan. There is no separate emergency evacuation plan for the County. In any case, the project would not change existing circulation patterns significantly, and would have no effect outside the area.
Mitigation:

Impact:
No Impact

h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas of where residences are intermixed with wildlands?**

The project is located in Sonoma County and is subject to significant risk of loss, injury or death involving wildland fires.

Impact:
Less than significant

9. HYDROLOGY AND WATER QUALITY:

Would the project:

a) **Violate any water quality standards or waste discharge requirements?**

The proposed project is a 3 lot subdivision that could result in grading of driveways and building pads that would disturb an estimated 3 acres of soil. The proposed project creates 2.8 amount of new impervious surface, which could affect the quantity and/or quality of storm water run-off.

The applicant will be required to follow a recorded Operation and Maintenance Plan and to accept responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility if formally transferred to a subsequent owner. Some maintenance requirements for the landscape areas and Bioretention facilities will include general cleanup to remove any trash and debris that has collected, prune plants to maintain the design surface elevation, control weeds using manual methods or natural herbicides, add mulch as needed.

The project site is located in an area subject to the San Francisco Bay RWQCB Municipal Separate Storm Sewer Systems (MS4) Permit. The proposed project would involve placement of less than 2,500 square feet of impervious surface area. Therefore, it must meet the requirements of the Sonoma County Storm Water Quality Ordinance.

Low Impact Development (LID):

- A site design strategy of BMPs that mimics the pre-development site hydrology
- In general replaces Standard Urban Storm Water Management Plan (SUSMP) requirements (SUSMP terminology is in current LID Manual)
- Applies to all projects in North Coast and San Francisco Bay RWQCB regulatory areas

Permit Sonoma requires the project applicant to implement Low Impact Development (LID), a site design strategy of BMPs that mimics the pre-development site hydrology through features that promote storm water infiltration, interception, reuse, and evapotranspiration. LID techniques include use of small scale landscape-based BMPs such as vegetated natural filters and bioretention areas (e.g., vegetated swales and raingardens) to treat and filter storm water runoff. LID also requires preservation and protection of sensitive environmental features such as riparian buffers, wetlands, woodlands, steep slopes, native vegetation, valuable trees, flood plains, and permeable soils.

Impact:
Less than significant

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The property is within the service boundaries of the Valley of the Moon Water District (Water District), and is in a Class 1 water availability area and the designated priority groundwater basin of Sonoma Valley. The applicant intends to secure public connections to the District for each lot. The Water District confirms that sufficient water is available to serve the three parcels subject to meeting service connection fees and requirements at such time. The Water District indicates that such requirements may include, but are not limited to, the following:

- Fire flow review including letter from system designer
- Irrigation demand review
- Indoor water demand review
- Utility easements etc.

Based on the confirmed availability of a public water connection to serve each of the three lots, impacts on the local ground water table as a result of the project is anticipated to be less than significant.

Impact:
Less than significant

c) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

The project includes grading, cuts and fills which require the issuance of a grading permit. Unregulated grading during construction has the potential to increase soil erosion from a site which could have adverse downstream flooding and further erosional impacts, and which could adversely impact downstream water quality.

However, in regard to potential soil erosion, County grading ordinance and adopted best management practices require grading applications and issued permits to depict and install adequate erosion prevention and sediment control best management practices. Required inspection by County inspectors insures that all work is constructed according to the approved plans. These ordinance requirements and adopted best management practices are specifically designed to maintain potential project water quantity impacts at a less than significant level during and post construction.

The proposed project has been designed and/or conditioned to prevent and/or minimize the discharge of pollutants or waste from the project site during construction. There are numerous storm water best management practices that can be utilized to accomplish this goal. These include measures such as silt fencing, straw wattles, and construction entrances to control soil discharges. Storm water best management practices also include primary and secondary containment for petroleum products, paints, lime and other materials of concern.

The applicant has submitted a preliminary report and conceptual plan to specify the location, type and approximate size of storm water best management practices necessary for the proposed project. The location of the storm water best management practices are site specific and predicated by the development. The type and approximate size of the selected storm water best management practices shall be in accordance with the adopted Sonoma County Best Management Practice Guide. The Grading & Storm Water Section of Permit Sonoma has reviewed the preliminary report and conceptual plan and has applied standard conditions ensuring successful implementation of storm water best management practices to minimize potential impacts to less than significant levels.

Impact:
Less than Significant

d) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in an a manner which would result in flooding on- or off-site?**

The project creates a minimal amount of new impervious surface, reserved at the initial stage to the area dedicated to road that is to serve the newly created parcels, which could affect the quantity and/or quality of storm water run-off. However, the proposed project has been designed and/or conditioned to prevent and/or minimize the discharge of pollutants and waste after the project is constructed (post-construction). There are numerous post-construction storm water best management practices that can be utilized to accomplish this goal. These range from project designs and/or Low Impact Development (LID) best management practices that minimize new impervious surfaces, disperse development over larger areas, and/or that create areas that allow storm water to be detained, infiltrated, or retained for later use. Other post-construction storm water best management practices include storm water treatment devices based on filtering, settling or removing pollutants.

LID is a site design strategy that seeks to mimic the pre-development site hydrology through infiltration, interception, reuse, and evapotranspiration. LID techniques include the use of small scale landscape-based best management practices such as vegetated natural filters and bioretention areas (e.g. vegetated swales and raingardens) to treat and infiltrate storm water runoff. LID also requires preservation and protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable trees, flood plains, woodlands, native vegetation

and permeable soils.

Storm water treatment best management practices shall be designed to treat storm events and associated runoff to the 85 percentile storm event. Storm water flow control best management practices shall be designed to treat storm events and associated runoff to the channel forming discharge storm event which is commonly referred to at the two year 24 hour storm event. Storm water treatment best management practices and storm water flow control best management practices are subsets of post-construction storm water best management practices. However, there is overlap between the two subsets. Post-construction storm water best management practices should utilize LID techniques as the first priority.

Impact:
Less than Significant

e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

The proposed project has been designed to prevent and/or minimize drainage impacts through the proper design and installation of a storm water drainage system. Drainage impacts typically include storm water intrusion into structures, flooding of local roadways, soil erosion, standing water, and nuisance conditions for property owners and neighbors. Storm water drainage systems may take many forms such as site grading, swales, ditches, small or single run drain pipes, a piping system or network, or a combination of all these. Drainage systems should also integrate storm water treatment and flow control storm water best management practices discussed above.

The County has identified the preliminary location, type and approximate size of drainage improvements. The preliminary design includes an analysis of the existing downstream drainage conditions to determine if downstream or off-site drainage improvements are needed to properly handle anticipated runoff in compliance with the adopted Sonoma County Water Agency Flood Control Design Criteria.

At the time of improvement plan submittal or grading or drainage permit application, the applicant shall submit a final drainage report for the proposed project. A typical drainage report will include a project narrative, on- and off-site hydrology maps, hydrologic calculations, hydraulic calculations, pre- and post-development analysis for all existing and proposed drainage facilities. The drainage report shall abide by and contain all applicable items in the Drainage Report Required Contents (DRN-006) handout to ensure proper implementation of best management practices for minimizing potemtial impacts to kess than significant levels.

Impact:
Less than Significant

f) Otherwise substantially degrade water quality?

The County has adopted setbacks from riparian corridors for grading, structures, and other developments. The distances for these setbacks vary based on several factors including the type of riparian corridor, stream type, stream depth, soil type, natural slope of the site, and the type of wetland.

Setbacks are specified in County Code Chapters 11 and 26, in the Sonoma County General Plan and in the Sonoma County Water Agency Flood Control Design Criteria. The setback with the largest distance or the most stringent setback applies to the project. Each project shall be analyzed to determine which setback is the controlling or most stringent setback.

Dowdell Creek exists on-site. The Sonoma General Plan and Zoning Ordinance designate this creek as a riparian corridor and establish a streamside setback requirement of 50 feet measured from the top of the upper bank on either side of the creek. The Biological constraints analysis for the project confirms the existing riparian vegetation does not extend outside the 50 foot conservation area.

Impact:
Less than significant

g) Place housing within a 100-year hazard area as mapped on a federal Flood hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?

The proposed project has been conditioned to prevent and/or minimize impacts to the project from flood events and has been conditioned to prevent and/or minimize impacts to the floodplain. Floodplains are defined as Special Flood Hazard Areas depicted by FEMA on the most recent edition of their Flood Insurance Rate Maps.

Impact:
Less than significant

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The project site is not located in a flood hazard area.

Impact:
No Impact

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project site is not located in an area subject to flooding as a result of dam failure.

Impact:
No Impact

j) Inundation by seiche, tsunami, or mudflow?

The project is not subject to seiche or tsunami. The project site is not located in an area subject to seiche or tsunami. Seiche is a wave in a lake triggered by an earthquake, and here are no lakes in the vicinity of the project. Mudflow can be triggered by heavy rainfall, earthquakes or volcanic eruption, however the project is not located in an area that is at risk for landslides or mudflow.

Impact:

No Impact

10. LAND USE AND PLANNING:

Would the project:

a) Physically divide an established community?

The proposal does not physically divide any established communities. Existing neighborhoods that may be construed as forming an established community are located on the opposite east side of Arnold Drive from the project site and the physical disposition of the immediate residential properties surrounding the site does not change as result of the proposed subdivision.

Impact:
No Impact

b) **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

The project proposes to subdivide a 16+ acre parcel which has a RR - Low Density Residential zoning and an Rural Residential General Plan land use designation. The General Plan land use designation and the zoning of the parcel call for a density of one residential unit 5 acres. The project as proposed results in parcels which are more consistent with the General Plan land use designation and the zoning of the parcel.

Impact:
No Impact

c) **Conflict with any applicable habitat conservation plan or natural community conservation plan?**

Habitat conservation plans and natural community conservation plans are site-specific plans to address effects on sensitive species of plants and animals. The project site is not located in an area subject to a habitat conservation plan or natural community conservation plan. This topic is also discussed under Section 4.f. above.

Impact:
No Impact

11. MINERAL RESOURCES:

Would the project:

a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

There is no known mineral resource on the project site.

Impact:
No Impact

b) **Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

The project site is not a mineral resource recovery site.

Impact:
No Impact

12. NOISE:

Would the project:

a) **Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

The Noise Element of the Sonoma County General Plan establishes goals, objectives and policies including performance standards to regulate noise affecting residential and other sensitive receptors.

The general plan sets separate standards for transportation noise and for noise from non-transportation land uses. The location of the project is near Highway 101, but there is a large berm in between the proposed parcels and the highway itself. Additionally, there are trees and moderate topography which serves as a sound barrier. The following mitigation measure will ensure that the completed project will not result in excessive noise generation or expose persons to noise levels in excess of County standards.

Impact:
Less than Significant with mitigation

Mitigation:
Mitigation NOI-2: All plans and specifications or construction plans shall include the following notes:

a) All internal combustion engines used during construction of this project will be operated with mufflers that meet the requirements of the State Resources Code, and, where applicable, the Vehicle Code. Equipment shall be properly maintained and turned off when not in use.
b) Except for actions taken to prevent an emergency, or to deal with an existing emergency, all construction activities shall be restricted to the hours of 7:00 am and 5:00 pm on weekdays and 9:00 a.m. and 5:00 pm on weekends and holidays. If work outside the times specified above becomes necessary, the applicant shall notify the Permit Sonoma Project Review Division as soon as practical.
c) There will be no start-up of machines nor equipment prior to 7:00 am, Monday through Friday or 9:00 am on weekends and holidays; no delivery of materials or equipment prior to 7:00 am nor past 5:00 pm Monday through Friday or prior to 9:00 am nor past 5:00 pm on weekends and holidays and no servicing of equipment past 5:00 pm, Monday through Friday, or weekends and holidays. A sign(s) shall be posted on the site regarding the allowable hours of construction, and including the developer- and contractors mobile phone number for public contact 24 hours a day or during the hours outside of the restricted hours.
d) Pile driving activities shall be limited to 8:00 am to 5:00 pm weekdays only.
e) Construction maintenance, storage and staging areas for construction equipment shall avoid proximity to residential areas to the maximum extent practicable. Stationary construction equipment, such as compressors, mixers, etc., shall be placed away from residential areas and/or provided with acoustical shielding. Quiet construction equipment shall be used when possible.
f) The developer shall designate a Project Manager with authority to implement the mitigation prior to issuance of a building/grading permit. The Project Managers 24-hour mobile phone number shall be conspicuously posted at the construction site. The Project Manager shall determine the cause of noise complaints (e.g. starting too early, faulty muffler, etc.) and shall take prompt action to correct the problem.

Monitoring:
Monitoring NOI-2: PRMD Project Review Division staff shall ensure that the measures are listed on all site alteration, grading, building or improvement plans, and prior to issuance of grading or building permits. PRMD staff shall inspect the site prior to construction to assure that the signs are in place and the applicable phone numbers are correct. Any noise complaints will be investigated by PRMD staff. If violations are found, PRMD shall seek voluntary compliance from the permit holder, or may require a noise consultant to evaluate the problem and recommend corrective actions, and thereafter may initiate an enforcement action and/or revocation or modification proceedings, as appropriate. (Ongoing)

b) Exposure of persona to or generation of excessive ground borne vibration or ground borne noise levels?

The project includes construction activities that may generate ground borne vibration and noise. These levels would not be significant because they would be short-term and temporary, and would be limited to daytime hours. There are no other activities or uses associated with the project that would expose persons to or generate excessive ground borne vibration or ground borne noise levels

Impact:
Less than Significant

c) **A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

(See Discussion 12.a)

Impact:
Less than Significant

d) **A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

There will be potentially significant noise impacts from the construction activities. This impact will cease when construction is finished. The construction immediately associated with this project would be in regards to the required infrastructure for the creation of new parcels, such as a private road to provide access and utilities. Further construction is anticipated as the individual parcels are developed. The following mitigation measure will reduce the noise impact from construction activities and hauling to less than significant.

Impact:
Less than Significant

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

The site is not within an airport land use plan as designated by Sonoma County.

Impact:
No Impact

f) **For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

There are no known private airstrips within the project area.

Impact:
No Impact

13. POPULATION AND HOUSING:

Would the project:

a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

The potential maximum build out of the project could result in a total of 6 primary single family residences and 6 accessory dwelling units. This is consistent with the current designated density of the parcel, which this project is not proposing to increase. Any impacts associated with population growth associated with the assigned density of the parcel would have been examined at the time of the designation.

Impact:
Less than Significant

b) Displace substantial numbers of existing housing necessitating the construction of replacement housing elsewhere?

No housing will be displaced by the project.

Impact:
No Impact

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No people will be displaced by the project because the applicant is proposing to retain the existing residential unit and will accommodate its continual occupancy through conservation.

Impact:
No Impact

14. PUBLIC SERVICES:

Would the project:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

i. Fire protection?

The County Fire Marshal reviewed the project description and requires that the expansion comply with Fire Safe Standards, including fire protection methods such as sprinklers in buildings, alarm systems, extinguishers, vegetation management, hazardous materials management and management of flammable or combustible liquids and gases.

Impact:
Less than Significant

ii. Police?

The Sonoma County Sheriff will continue to serve this area. There will be no increased need for police protection resulting from the addition of 6 residential parcels with a potential for 12 total residential units (primary and accessory).

Impact:
Less than Significant

iii. Schools, parks, or other public facilities?

The project is located within the Geyserville Unified School District. The potential growth in enrollment in the local schools as a result of this project would not necessitate additional facilities. Any increase in demand for services associated with schools or parks will be offset as the parcels are developed through development fees, including school and park mitigation fees.

Impact:
Less than Significant

iv. Parks?

The addition of 6 residential parcels with a potential of 12 residential units (6 primary and 6 accessory) does not introduce an increase in population that could impact local parks. Individual building permits include development fees to offset potential impacts to public services, including park mitigation fees.

Impact:
Less than Significant

v. Other public facilities?

The addition of 6 parcels with a potential for a maximum of 12 residential units (6 primary and 6 accessory) would not significantly impact public facilities. The proposal is consistent with the General Plan land use designation for the parcel. Any potential impacts associated with the parcel's assigned density were considered at the time of the designation of said density. Additionally, development fees associated with individual building permits offset potential impacts to public services.

Impact:
Less than Significant

15. RECREATION:

Would the project:

a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

The potential additional number of residents that could result in the maximum build out of this project would not be large enough to significantly cause or accelerate substantial physical deterioration of parks or recreational facilities.

Impact:
Less than Significant

b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

(See discussion 15.a)

Impact:
Less than Significant

16. TRANSPORTATION / TRAFFIC:

Would the project:

a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness**

for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The project does not conflict with any adopted plans, ordinances, or policies in regards to circulation. Geyserville Avenue is a designated Class 1 bikeway. Public Works is requiring the applicant provide street lighting along the frontage of the project on Highway 128/Geyserville Avenue and the installation of a sidewalk with a minimum width of five (5) feet. This will create a safer environment for multi-modal transportation, creating a separation of pedestrians and vehicle traffic and greater visibility.

The line of vision from the proposed access road leading onto Geyserville Avenue/Highway 128 is unencumbered of obstructions. A visual line of at least 45 feet is possible in both directions of Geyserville Avenue/ Highway 128. Neither the Sonoma County Department of Public Works nor Caltrans requested a dedicated turn lane for this project.

There is a Less than Significant on current circulation systems anticipated to be associated with this project.

Impact:
Less than Significant

b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

(See Discussion 16.a)

Impact:
Less than Significant

c) **Result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

The project would have no effect on air traffic patterns.

Impact:
No Impact

d) **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

No design features that could increase hazards or incompatible uses are associated with this project. Access from Highway 128/Geyserville Avenue will be taken by private road. As shown on the tentative map, the access road will have sight lines of at least 45 feet in either direction of Geyserville Avenue/Highway 128. No incompatible uses are expected to be associated with 6 residential parcels.

Impact:
Less than Significant

e) **Result in inadequate emergency access?**

Construction activities may result in traffic delays possibly slowing emergency response vehicles or restricting access to residences or nearby businesses. This is a short-term construction related impact that will cease upon project completion.

Impact:
Less than Significant

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

See the discussion in section 16a. above. The addition of a sidewalk and street lighting will make for a safer multi-modal network than what is currently in place.

Impact:
No Impact

g) Result in inadequate parking capacity?

The project would result in three residential parcels with an average lot size of five acres.. No significant impact is anticipated.

Impact:
Less than Significant

17. UTILITIES AND SERVICE SYSTEMS:

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Upon completion and maximum potential build out, this project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board.

Impact:
Less than Significant

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The project will not contribute to the need for construction of new water or waste water treatment facilities, other than the development of new private septic systems and connection to Valley of the Moon Water District. Standard conditions require the applicant to demonstrate that each lot can support a septic system prior to recordation of the Parcel Map. The project is located within the service boundaries of the Valley of the Moon Water District> The applicant proposes to secure public connections to the District to serve each lot or each lot. The District confirms sufficient capacity to serve the three proposed lots. No additional extension of the District's main water lines are required. Individual connections from each parcel will tie into the existing connection lines in place along Craig Avenue and Elm Avenue. No significant impacts are associated with the development of septic systems. There are currently no constraints on the existing systems, with capacity to accommodate projects larger than this. No additional facilities or expansions of existing facilities will result from this project.

Impact:
Less than Significant

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Both Sonoma County Public Works Department and PRMD's Engineering Division have examined the project. While no specific impacts are foreseen, the applicants must have the overall storm water drainage plan examined and approved by both departments before the subdivision map can be recorded. The storm water drainage plan must be prepared by a registered Civil Engineer and must contain at a minimum a project narrative, on- and off-site hydrology maps, hydrologic calculations, hydraulic calculations, pre- and post-development analysis for all relevant existing and proposed drainage facilities. The drainage report shall abide by and contain all applicable items in the *Drainage Report Required Contents* (DRN-006) handout.

Impact:
Less than Significant

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The applicant has provided PRMD staff with a conditional will serve letter from the California-American Water Company. The only conditions given are in regard to the technical details of the hookup to the water system and the requirement of an approved backflow prevention device. No mention of any constraints to the system's capacity are given, and there are no known current constraints to the public water system proposed to serve the project.

Impact:
Less than Significant

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The parcels will be served by private septic systems and the Permit Sonoma Environmental Health Division of the Project Review Section has forwarded standard conditions of approval to ensure proper installation and maintenance of required systems in accordance with County regulations and current best management practices.

Impact:
Less than Significant

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the entire County. The program can accommodate the permitted collection and disposal of the waste that would result from the proposed project.

Impact:
Less than Significant

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the Geyserville area. The program can accommodate the permitted collection and disposal of the waste that will result from the proposed project.

Impact:
No Impact

18. MANDATORY FINDINGS OF SIGNIFICANCE

a) **Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

Impact
Less than Significant with Mitigation

b) **Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

In accordance with CEQA Guidelines Section 15183, this environmental analysis was conducted to determine if there were any project-specific effects that are peculiar to the project and the project site. Analysis provided within this initial study found no significant project-level impacts unique to the project scope or location that cannot otherwise be reduced to a less-than-significant level through implementation of recommended mitigation measures and best management practices. The project would not be growth-inducing nor cause an increase in population levels or in volumes of traffic and greenhouse gasses beyond those anticipated in the future conditions accounted for and evaluated by the project-specific technical reports and the various long-range County planning documents (see References below) on which these conclusions rely. The proposed project could contribute to environmental effects in the areas of aesthetics, biological resources, cultural resources, noise, and transportation and traffic. However, mitigation measures incorporated herein will effectively reduce any potential contribution made by the project to cumulative impacts associated with these areas to a less-than-significant level. Requirement of appropriate CEQA and/or NEPA environmental documentation for any subsequent cumulative project proposals is also currently enforced by the County and surrounding agencies. Therefore, the proposed project will not result in impacts that may otherwise be considered individually insignificant, but cumulatively significant.

Impact
Less than Significant with Mitigation

c) **Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

As discussed in the various section throughout this CEQA document, the proposed project would not include uses which could result in substantial adverse effects to human beings. No additional mitigation beyond existing noise mitigation and hazardous materials regulations would be required. The project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

Impact
Less than Significant

Biological Constraints Analysis
18715 Arnold Drive
Sonoma County, California

Prepared For:

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OCTOBER 5, 2017

1.0 INTRODUCTION

This report presents the results of a biological constraints analysis conducted for three parcels covering approximately 16 acres located west of 18715 Arnold Drive in Sonoma, California (Figure 1 and Plate 1). The 16-acre property is located south of Craig Avenue and is located on the Sonoma U.S.G.S 7.5 minute quadrangle southwest of the town of Sonoma at latitude 38 degrees 29996 N and longitude 122 degrees 49403 W. Elevations on the site are about 140 feet mean sea level. Parcel 1 covers 4.96 acres on the southwest corner of the project site; Parcel 2 covers 3.74 acres on the northeastern corner of the site; and, Parcel 3 covers 7.58 acres on the southwestern portion of the property.

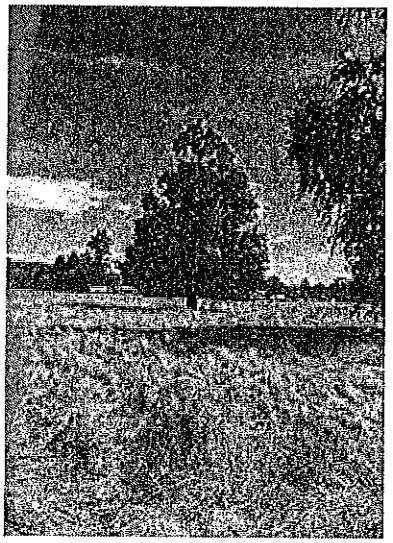
The purpose of the biological constraints analysis is to identify special-status plant and wildlife species and sensitive habitats (including wetlands and creeks) that have the potential to occur on or in the vicinity of the study area and to determine if the proposed development would affect these resources. Based on information and data collected for the analysis, mitigation measures designed to minimize and/or avoid potential biological resource impacts resulting from the project are also provided.

2.0 SITE DESCRIPTION

The project site is located in southwestern Sonoma east of Arnold Drive and is bound by Craig Avenue to the north, Elm Avenue to the south, and single-family residences to the west. Access to the property is from a driveway associated with the Larbre Well and Pump business located at 18715 Arnold Drive. The site covers approximately 16 acres and is bisected by Dowdell Creek, which is shown as a blue-line creek on the Sonoma 7.5 minute U.S.G.S. quadrangle. The majority of the site may be characterized as non-native grassland with several large heritage oak trees (*Quercus lobata*) on the site. Dowdell Creek measures approximately 1,050 linear feet on the property entering the site in the northwest corner east of Orange Street and drains in a southeasterly direction off the site at the southeastern corner. A few large oaks and willow grow along the creek banks although the canopy is mostly non-native grasses, blackberry and poison oak. Historically the site was used for hay production and grazing. There is a slight hill on the southwestern portion of the site on Parcel 3.

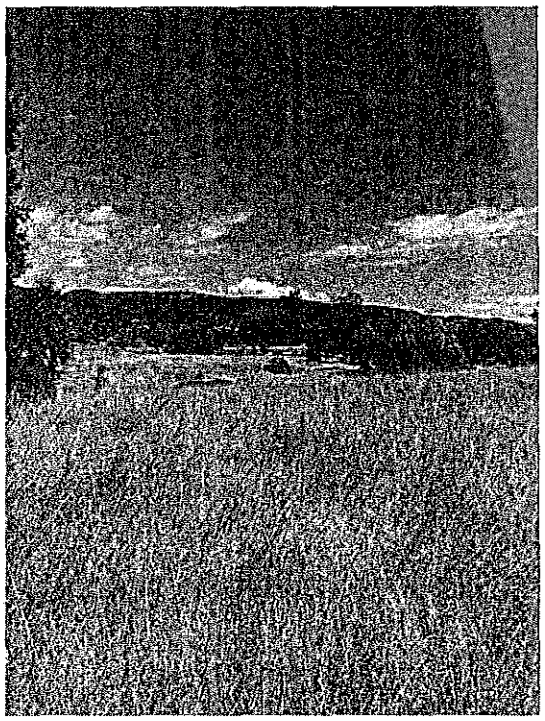
The methods and results of the analysis follow.

Figure 1 - Site Location



On Parcel 3 in the middle portion of site looking east towards Arnold Drive

Parcel 2 looking to the northeast towards Craig Avenue



View from hill on Parcel 3 looking northeast

OWNER/SUBDIVIDER:

Raymond J. Larbre, Trustee Joseph C. Larbre
Irrevocable Trust
18715 Arnold Drive
Sonoma, CA. 95476
tel. 707-996-1619
larbresonoma@aol.com

SURVEYOR/ENGINEER:

ADOBE ASSOCIATES, INC. 1220 N.
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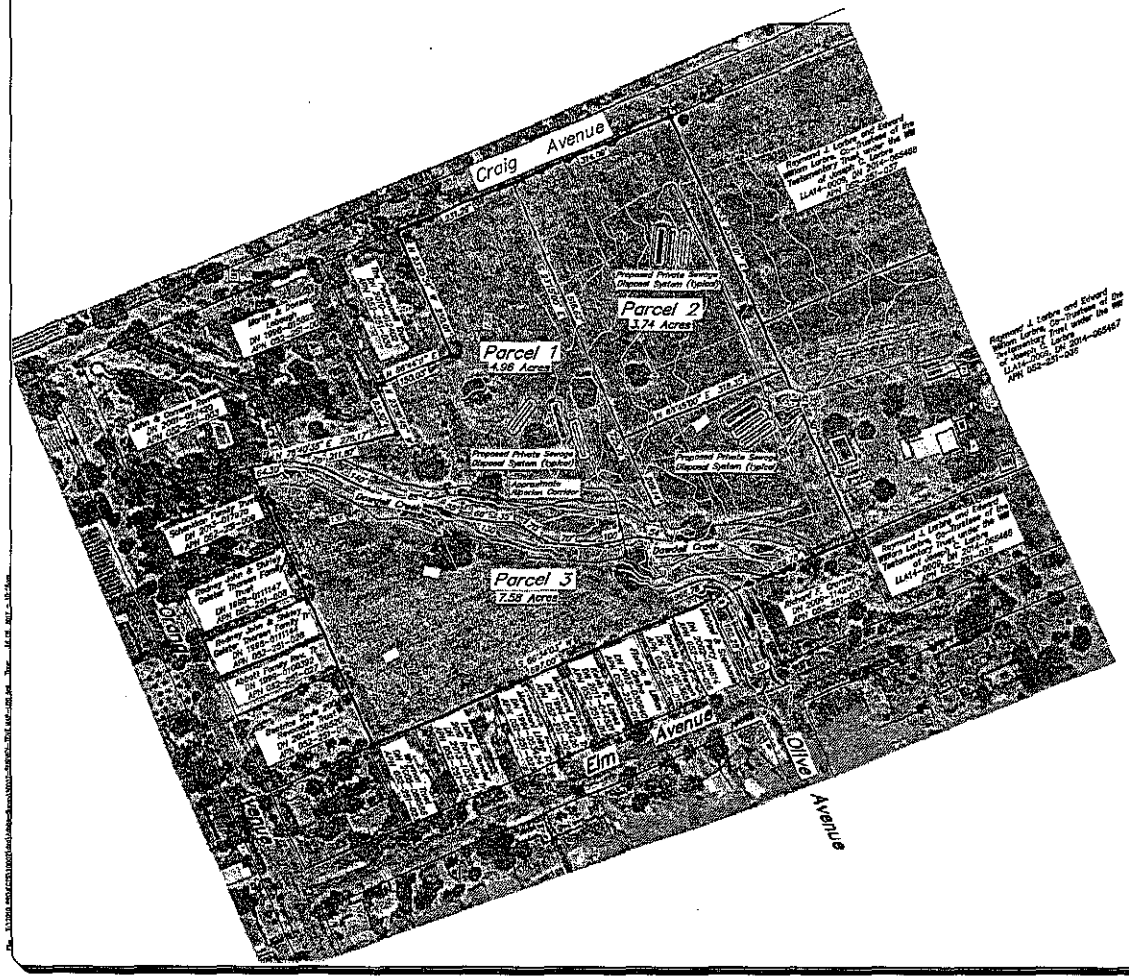
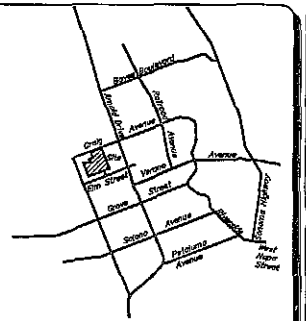
(707)541-2301 fax





Location Map
not to scale

General Notes

Property lines shown hereon are based upon found monumentation and record information shown on "Record of Survey" recorded January 12, 2013 in Book 749 of Maps, Page 8, Sonoma County Records.

Features shown hereon are existing as of the date of the field survey performed by Adobe Associates, Inc.

Utilities shown hereon are based upon physical features observed at the time of this survey, such as paint markings, overhead wiring, utility poles, and utility boxes. For the location of under ground utilities, a subsurface utility locating company should be contacted.

Contours shown hereon are a 1' (one foot) vertical interval and are shown based upon a field survey performed by Adobe Associates, Inc., on April, 2010 & 2017.

Elevations are on an assumed datum.

PROJECT INFORMATION:

Site Address: 1100 Craig Avenue, Sonoma
Assessor's Parcel Number: 052-251-034

Site Area: 16.28 Acres, more or less

Property Ownership: Raymond J. Larbre, Trustee of the Joseph C. Larbre Irrevocable Trust
Official Records Document Number 2011-081449;
Conditional Certificate of Compliance in Official Records Document Number 2011-111512,
& Judgement Official Records Document Number 2017-041702, Sonoma County Records

Existing Zoning: RR B6 5 RC50/25

Sanitary Sewer: Private Sewage Disposal Systems

Water Service: Private Wells and/or Public Water from Valley of the Moon Water District

Fire Protection: Sonoma Valley Fire Protection District at 877 Center Street, Sonoma

DIVIDE ONE 16.28 ACRE PARCEL, APN 052-251-034, INTO THREE PARCELS:

PARCEL 1	4.96 ACRES
PARCEL 2	3.74 ACRES
PARCEL 3	7.58 ACRES

Paul M. Brown, PLS 5087
my license expires 6/30/17

Tentative Parcel Map

Joseph C. Larbre Irrevocable Trust
1100 Craig Avenue, Sonoma
APN 052-251-034

Scale: 1" = 100'
Date: July 2017
Design by:
Drawn by:
Checked by:

Sheet 1 of 1 sheet
Job No. 10007

Adobe Associates, Inc. — Civil Engineering, Land Surveying, Land Development Services
1220 N. Dutton Ave. Santa Rosa, CA 95401 Ph: 707 541 2300 Fax: 707 541 2301

No.	Date	Revisions Description	Key Sheet

3.0 WETLANDS ASSESSMENT

3.1 Corps of Engineers Jurisdictional Criteria Review

Unless exempt from regulation, all proposed discharges of dredged or fill material into waters of the United States require U.S. Army Corps of Engineers (Corps) authorization under Section 404 of the Clean Water Act (33 U.S.C. 1344) and Clean Water Act Section 401 authorization from the Regional Water Quality Control Board (RWQCB). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), wetlands (excluding isolated wetlands for the Corps), and farmed wetlands.

The Corps identifies wetlands using a "multi-parameter approach" which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. The *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West*, which was released in early 2007 and revised in 2008 (version 2.0), is utilized when conducting jurisdictional wetland determinations in areas identified within the boundaries of the Arid West (U.S. Army Corps of Engineers, 2008). The project site falls within the Arid West region and so wetlands identified on the site were delineated using that guidance.

3.1.1 Potential Wetlands

Section 328.3 of the Federal Code of Regulations defines wetlands as:

"Those 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. Wetlands generally include swamps, marshes, bogs, and similar areas."

EPA, 40 CFR 230.3 and CE, 33 CFR 328.3 (b)

The three parameters used to delineate wetlands are the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

"....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Vegetation

Plant species identified are assigned a wetland status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL	Always found in wetlands	>99% frequency
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetland or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
UPL/NL	Upland/Not listed (upland)	<1%

The Corps Manual and Supplements require that a three-step process be conducted to determine if hydrophytic vegetation is present. The first step is the Dominance Test (Indicator 1); the second is the Prevalence Index (Indicator 2); the third is Morphological Adaptations (Indicator 3). The Dominance Test requires the delineator to apply the "50/20 rule". The dominant species are chosen independently from each stratum of the community. In general, dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are defined as the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails the 50/20 rule and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1, but hydric soils and wetland hydrology are both present, the delineator must apply the Indicator 2, Prevalence Index. The Indicator 3, Morphological Adaptations, is rarely used in this region.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation or oxidized root channels, or secondary indicators such as the FAC-neutral test or the presence of a shallow aquitard. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

"A hydric soil is 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." Federal Register July 13, 1994, U.S. Department of Agriculture, NRCS

Soils formed over long periods under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. The supplement provides a list of the hydric soil indicators that are known to occur in region. Soil samples were collected and described according to the methods provided in the supplements. Soil chroma and values were determined using a Munsell soil color chart (Kollmorgen 1975). If any of the soil samples met one or more of the hydric soil indicators described in the supplement hydric soils were determined to be present.

3.1.2 Waters of the U.S. (Other Waters)

"Other waters" or "Waters of the United States" (WUS) other than wetlands are also potentially subject to Corps jurisdiction. WUS subject to Corps jurisdiction include ponds, lakes, rivers, streams (including ephemeral and intermittent streams), and all areas below the High Tide Line (HTL) subject to tidal influence. Jurisdiction in non-tidal areas extends to the ordinary high water mark (OHWM) defined as:

"...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics 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."

Federal Register Vol. 51, No. 219, Part 328.3 (e). November 13, 1986

3.2 San Francisco Bay Regional Water Quality Control Board

The Regional Water Quality Control Board regulates waters of the State pursuant to Sections 13260(a)(1) and 13050(e) of the State Water Code, and the Porter Cologne Act. In addition, anyone proposing to conduct a project that requires a federal permit or involves dredge or fill activities that may result in a discharge to U.S. surface waters and/or "Waters of the State" are required to obtain a Clean Water Act (CWA) Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the Regional Water Quality Control Board, verifying that the project activities will comply with state water quality standards. The most common federal permit for dredge and fill activities is a CWA Section 404 permit issued by the Corps of

Engineers (North Coast Regional Water Quality Control Board, 2007). In general, the RWQCB employs similar wetland delineation techniques for identifying wetland areas potentially subject to its regulation.

Section 401 of the CWA grants each state the right to ensure that the State's interests are protected on any federally permitted activity occurring in or adjacent to Waters of the State. In California, the Regional Water Quality Control Boards (Regional Board) are the agency mandated to ensure protection of the State's waters. So if a proposed project requires a U.S. Army Corps of Engineers CWA Section 404 permit, falls under other federal jurisdiction, and has the potential to impact Waters of the State, the Regional Water Quality Control Board will regulate the project and associated activities through a Water Quality Certification determination (Section 401) (North Coast Regional Water Quality Control Board, 2007).

However, if a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a fill discharge to "Waters of the State", the Regional Board has the option to regulate the project under it's state authority (Porter-Cologne) in the form of Waste Discharge Requirements or Waiver of Waste Discharge Requirements (North Coast Regional Water Quality Control Board, 2007). Waters of the State include isolated wetlands, which are not regulated by the Corps.

3.3 California Department of Fish and Wildlife

Activities that result in the substantial modification of the bed, bank or channel of a stream or lake may require a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600-1607 of the California Fish and Game Code. On streams, creeks and rivers, the extent of CDFW jurisdiction extends from the top of bank to top of bank or the outer limits of the riparian canopy, whichever is wider.

3.4 Background review

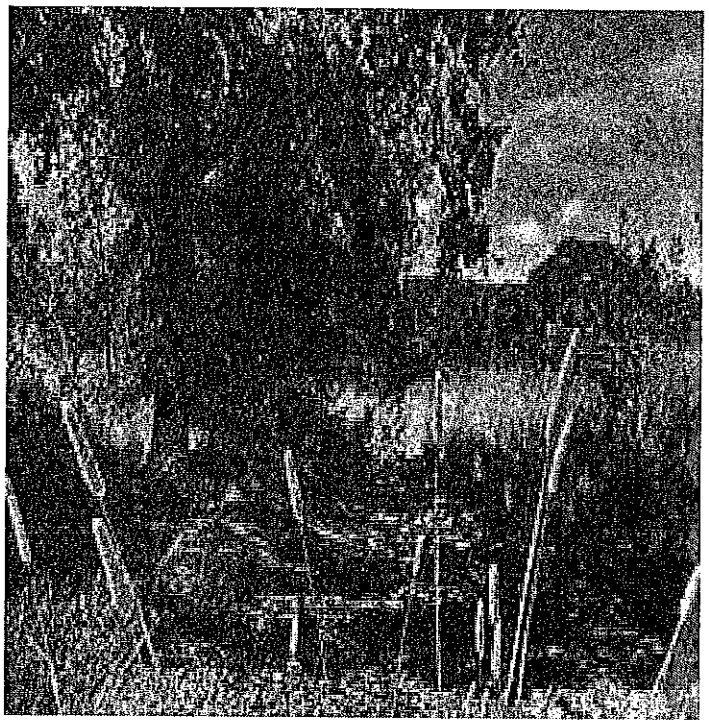
Prior to conducting the on-site wetlands assessment within the study area, various background materials relating to the site were reviewed. These include aerials from Google earth and the Sonoma USGS 7.5 minute quadrangle. Dowdell Creek was visible on the aerial and the USGS map. Dowdell Creek drains to Sonoma Creek and ultimately to San Pablo Bay.

Additionally, the Soil Survey of Sonoma County (web soil survey) was reviewed to determine if any of the soils on the project site are mapped as hydric soils. The presence of a hydric soil-mapping unit on a project site suggests the presence of potential wetland habitats and therefore is another tool used in wetland identification.

The soil units mapped on the project site is listed as Los Robles gravelly clay loam, 0 to 5 percent slopes on the majority of the site, with less than 5 percent mapped as Spreckles loam 2 to 9 percent slopes on the eastern property boundary. Neither of these soils is listed as hydric on the National or County list. Spreckles loam is listed as having hydric inclusions in the form of upland seeps.

3.5 Wetland Assessment and Results

On September 18, 2017, a jurisdictional wetlands delineation was conducted on the project site utilizing the methods and procedures prescribed in the Arid West supplement. The project site was walked to identify and map potential jurisdictional wetland features with the study area. Dowdell Creek was the only wetland (waters) feature identified on the project site and is shown on Plate 1 of the Tentative Map.



Dowdell Creek looking upstream

Dowdell Creek looking downstream

Dowdell Creek originates in the hills to the west and crosses the valley floor where it meanders across the site from the northwestern corner to the southeastern corner of the property. The creek varies in widths from approximately 20 feet at the ordinary high water mark at its widest to approximately 8 feet wide at the ordinary high water mark where it exits the project site. The channel bottom is mostly small to medium size cobbles and wetland vegetation grows in areas that may pond water in the spring months following the winter rains. Algal mats were present throughout the channel, suggesting water stands for several weeks after the creek stops flowing.

No potential wetland areas were mapped on Parcel 2.

Dowdell Creek runs the full length of Parcel 3 (1,050 linear feet) with the property boundary running down the centerline of the creek.

Dowdell Creek forms the southern property line of Parcel 1 for a distance of approximately 700 linear feet with the property line going to the centerline of the creek.

3.6 Sonoma County Riparian Buffer Setback

Dowdell Creek has a riparian setback requirement from the Sonoma County Permit and Resource Management Department. The development setback for this creek on the property is 50 feet from the edge of the riparian corridor.

4.0 SPECIAL-STATUS SPECIES

The California Department of Fish and Wildlife's Natural Diversity Database (CNDDB) was reviewed (Sonoma and surrounding quadrangles) to identify special-status species potentially occurring on or in the vicinity of the project site. Discussion of the regulatory definition of special-status species and results of the CNDDB review and habitat assessments are provided below.

4.1 Regulatory framework

Special-status plants and animals are legally protected under the State and Federal Endangered Species Acts or other regulations, and species that are considered rare by the scientific community. Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special status invertebrates are all considered special status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal.

Sources consulted for up-to-date information on conservation status included the U.S. Fish and Wildlife Service (USFWS) (2017a, b, c) for federally listed species (including Proposed and Candidate species) and California Department of Fish and Wildlife (CDFW) (2017) for State of California listed species. Special-status species also include species with California Rare Plant Rank (CRPR) 1A (Plants Presumed Extinct in California), CRPR 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere), or CRPR 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere), as indicated by the CNPS *Inventory* (CNPS 2017). Impacts to these species must be reviewed under the provisions of the California Environmental Quality Act (CEQA) Guidelines.

Also considered special-status are those species with CRPR 3 (Plants About Which We Need More Information—A Review List) and CRPR 4 (Plants of Limited Distribution—A Watch List) of the CNPS Inventory. CRPR4 are considered to be of lower sensitivity, and generally do not fall under specific state or federal regulatory authority.

4.2 Animal Species

Prior to the fieldwork, a list of special-status animal species with the potential to occur in the study area on the site was prepared based on information provided by the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB, 2017).

On September 18, 2017 Lucy Macmillan conducted a reconnaissance-level habitat assessment on the project site. The purpose of the assessment was to characterize the nature and extent of habitat types within and adjacent to the study area and to determine if these habitats have the potential to support special-status species. The project site was walked and field observations noted. Based on the site assessment, it was determined that the site provides potential habitat for the nesting birds, maternity roosting bats, Pacific pond turtle, California giant salamander, and red-bellied newt. A description of these species and their habitat preferences are provided below.

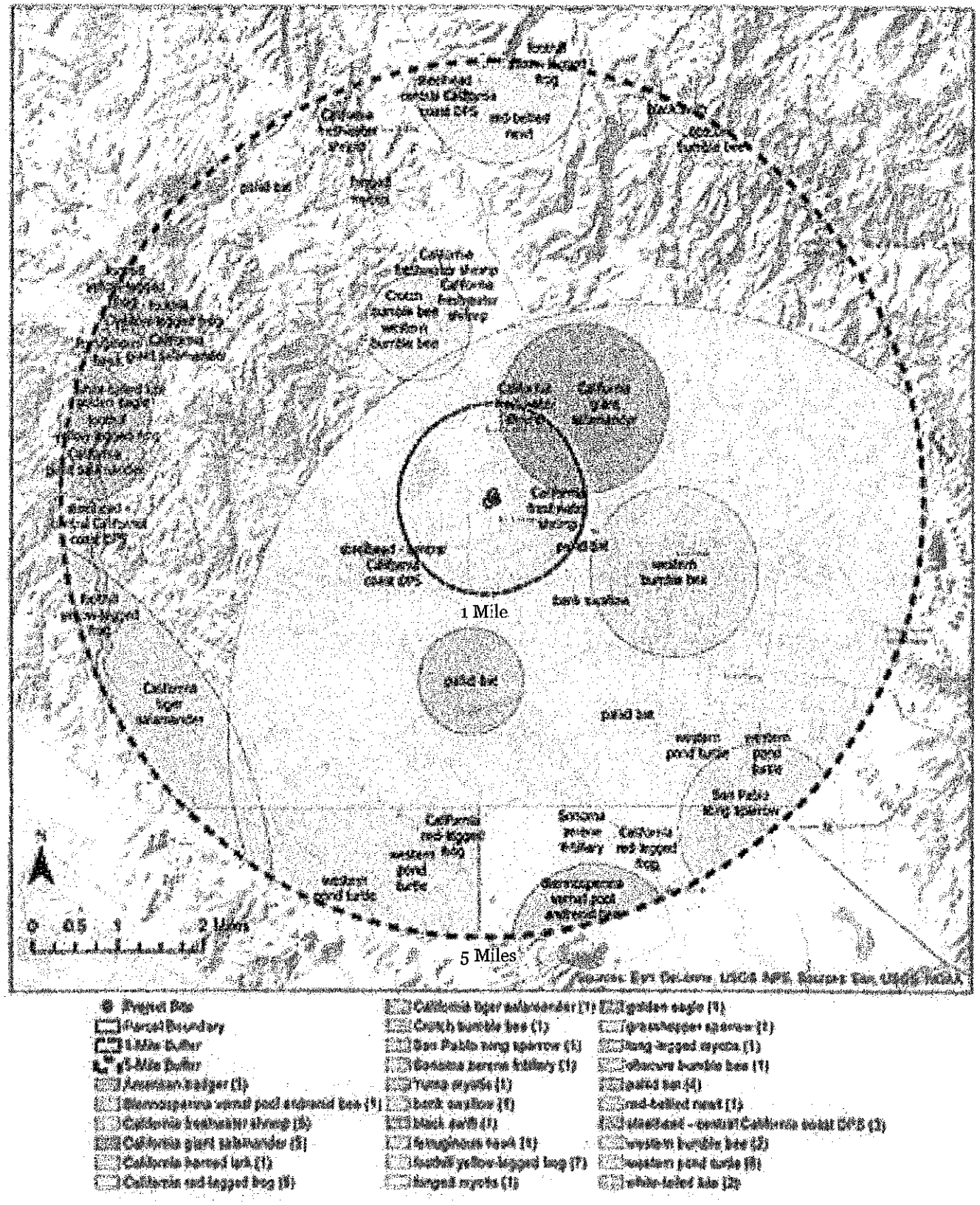
4.2.1 Nesting Birds

The grasslands and trees on the project site provide habitat for a variety of nesting birds and raptors. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). Their nest, eggs, and young are also protected under California Fish and Wildlife Code (§3503, §3503.5, and §3800). In addition, raptors such as the white-tailed kite (*Elanus leucurus*) are "fully protected" under Fish and Wildlife Code (§3511). Fully protected raptors cannot be taken or possessed (that is, kept in captivity) at any time.

4.2.2 Special-status Bats

The large oak trees on the project site provide potential roosting habitat for various special-status bat species known to occur in the project region including but not limited to pallid bat (*Antrozous pallidus*), Pacific western big- eared bat (*Corynorhinus townsendii townsendii*), and long-eared myotis (*Myotis evotis*). These bat species are California Species of Special Concern and may roost in mature trees, snags, crevices, cavities, and foliage within this habitat. Maternity roosting for bats is April through November.

Figure 2: Special Status Animal Species within 1 Mile and 5 Miles of the Project Site
18715 Arnold Drive, Sonoma, CA



Date: 9-1-2017
Data: Sol Ecology, CA DFW Sonoma Co.
Base: ESRI
GIS: AJG

Sol Ecology, Inc.
SolEcology.com

4.2.3 Pacific Pond Turtle (*Emmys marmorata*)

Pacific Pond Turtle (PPT) is the only native freshwater turtle in California and is a CDFW Species of Special Concern. This turtle inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. PPT also occupies man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. PPT requires suitable aquatic habitat for most of the year; however, PPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, PPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuge and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

PPT nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within 5 to 100 meters of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to located and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year.

Dowdell Creek provides potential habitat for this species.

4.2.4 California giant salamander (*Dicamptodon ensatus*)

Dowdell Creek provides potential habitat for California giant salamander, is listed as a Species of Special Concern by CDFW. The California giant salamander is know from coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Adults may be found under rocks, logs and other debris adjacent to water sources. Aquatic larvae are found in cold, clear streams, sometimes in lakes or ponds (CNDDB, 2017).

4.2.5 Red-bellied Newt (*Taricha rivularis*)

Dowdell Creek provides potential habitat for red-bellied newt, which is listed as a Species of Special Concern by CDFW. This species is found in coastal drainages from Humboldt County to Sonoma County and inland to Lake County and lives in terrestrial habitats and typically breeds in streams with moderate flow and clean rocky substrate.

Table 1. Special-Status Animal Species Potentially Occurring on or Near 18715 Arnold Drive in Sonoma, CA

Animal*	Status	Habitat	Potential for Occurrence on of In Vicinity of Site
Amphibians and Reptiles			
California tiger salamander (*Ambystoma californiense*)	FE[1], FT	Needs underground refuges especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	No recorded occurrences on Sonoma quadrangle. Outside of known range.
Pacific pond turtle (*Emys marmorata*)	CSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites, nest sites may be found up to 0.5 km from water.	Potential for occurrence in Dowdell Creek primarily during rainy season when creek flows.
California red-legged frog (*Rana aurora draytonii*)	FT, CSC	Lowlands and foothills in or near permanent sources of deepwater with dense, shrubby or emergent riparian vegetation.	No suitable habitat. Potential for occurrence low.
Foothill yellow-legged frog (*Rana boylii*)	CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	No suitable habitat. Potential for occurrence low.

Animal*	Status	Habitat	Potential for Occurrence on or in Vicinity of Site
Fish			
Steelhead-Central California Coast ESU (*Oncorhynchus mykiss irideus*)	FT	Anadromous. Adults and fry recorded in upstream portions of creeks north of San Pablo Bay. Juveniles may rear in lower reaches of larger river systems and Bay before moving out to sea.	Potential for occurrence low. According to property owner, ever since the bridge at Arnold Drive was constructed downstream about 30 years ago, he no longer observes fish in the creek.
Birds**			
Tricolored blackbird (*Agelaius tricolor*)	CSC	Colonial nester. Most numerous in the Central Valley & Vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	No suitable habitat on site.
Burrowing owl (*Athene cunicularia*)	CSC	Open, dry annual or perennial grasslands; deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent on burrowing animals, most notably the California ground squirrel.	No ground squirrel burrows evident at time of September 2017 survey. Grass thatch and dense. Potential for occurrence low.
Swainson's hawk (*Buteo swainsoni*)	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain field supporting rodent populations.	Potential for occurrence low.

Animal*	Status	Habitat	Potential for Occurrence on or in Vicinity of Site
Western yellow billed cuckoo (*Coccyzus americanus occidentalis*)	FC, SE	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with low story of blackberry, nettles or wild grape.	Less than marginal habitat on site.
White-tailed kite (*Elanus leucurus*)	SFP	(Nesting) rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	Trees on site provide potential nesting habitat and grasslands potential foraging habitat.
Bald eagle *(Haliaeetus leucocephalus)*	SE	Ocean shore, lake margins, and rivers both for nesting and wintering within one mile of water. Nests in large, old growth or dominant live tree with open branches, especially Ponderosa pine.	Potential for occurrence low.
Bank swallow (*Riparia riparia*)	ST	(Nesting) Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks or cliffs with fine-textured/sandy soils near streams, river, lakes, and ocean to dig nest hole.	No suitable habitat on site.
Mammals			
Pallid bat (*Antrozous pallidus*)	CSC	Deserts, grasslands, woodlands and forests. Most common in open dry habitats with rocky areas for roosting. Very sensitive to disturbance of roosting sites.	Potential for occurrence in various trees on site.

Animal*	Status	Habitat	Potential for Occurrence on or in Vicinity of Site
Townsend's big-eared bat (*Corynorhinus townsendii*)	SCT, CSC	Throughout California in a variety of habitats. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Potential for occurrence in outbuildings associated with house and various trees on site.
American badger (*Taxidea taxus*)	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Potential for occurrence low. No burrows observed during September 2017 survey.
Invertebrates			
California freshwater shrimp (*Syncaris pacifica*)	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low gradient streams where riparian cover is moderate to heavy.	Creek lacks dense riparian cover. Creek runs dry in the summer. Low potential.

*Note: FSC = U.S. Fish and Wildlife Service Species of Concern; FE = federally listed as endangered; FT = federally listed as threatened; SE = state listed as endangered; ST = state listed as threatened; SCT = State candidate threatened. SFP = State fully protected (may not be taken or possessed without a permit from the Fish and Wildlife Commission and/or CDFW). CSC = California species of special concern; CDFS = considered sensitive by the California Department of Forestry.

**All migratory birds are protected by the Migratory Bird Treaty Act (50 CFR 10), which makes it unlawful to take, possess, buy, sell, purchase or barter any migratory bird, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). In addition, Section 2080 of the California Fish and Wildlife Code prohibits the killing of a listed species, and Sections 3503, 3503.5, and 3800 of the Fish and Wildlife Code prohibit the take, possession, or destruction of birds, their nests, or eggs.

Based on review of the CNDDB September 2017.

4.3 Special-status Plants

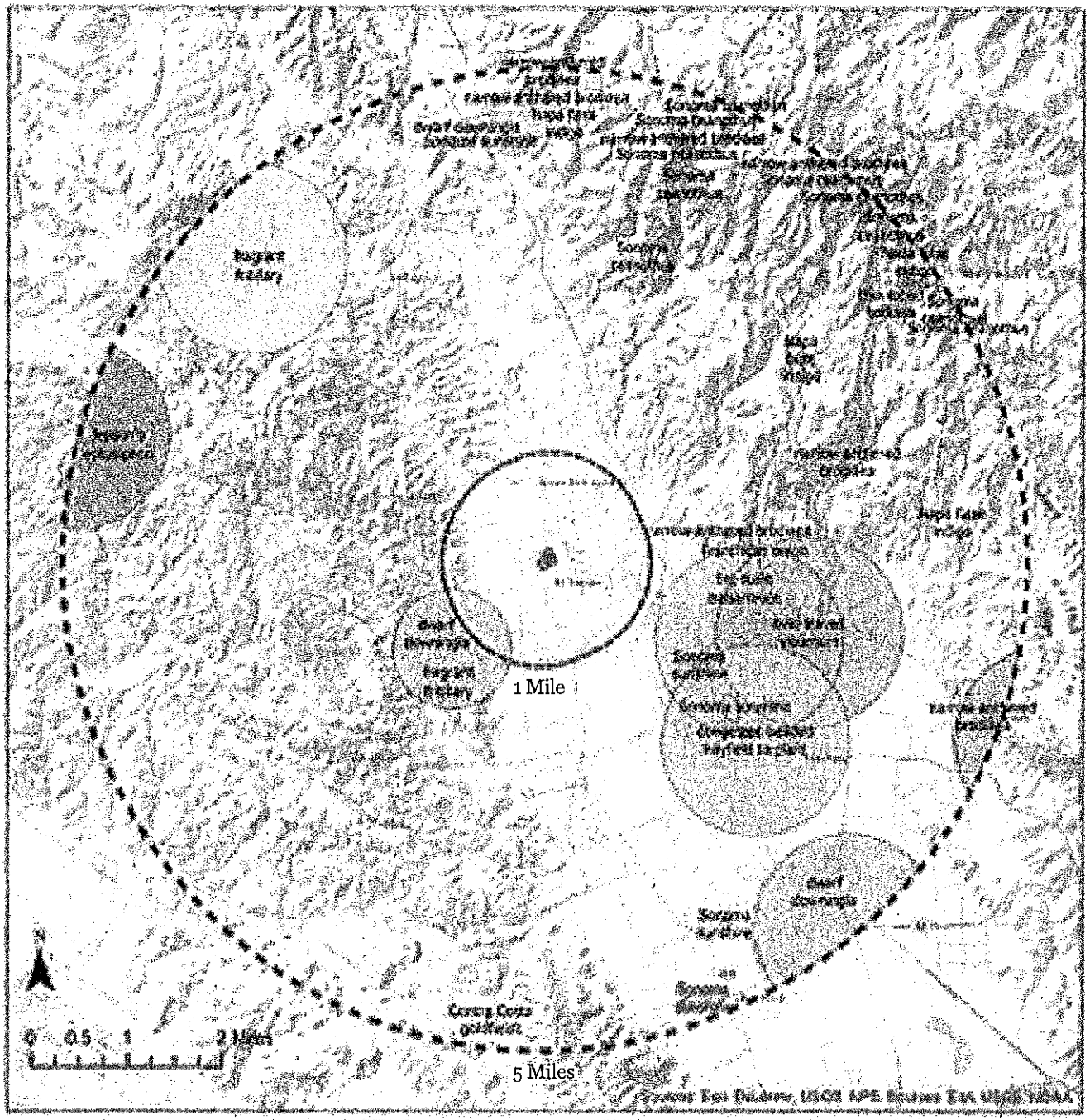
The dominant vegetation community on the project site is non-native grassland, which covers the majority of the site. The grasslands are dense with a variety of non-native grasses including the highly invasive Medusa head (*Taeniatherum caput-medusae)*, oat (*Avena* sp.), and rip-gut brome (*Bromus diandrus*). Several large native oaks (*Quercus lobata*) grow in the interior part of the property and along Dodwell Creek although the riparian canopy along the creek is not dense. Wetland vegetation grows in isolated pockets within the creek bed and includes flat nut sedge (*Cyperus eragrostis*), penny royal (*Mentha pugelium*), and toad rush (*Juncus bufonius*). A list of plant species observed during the September site assessment is provided in Table 1.

Based upon a review of CNDDB (CDFW 2017), there is a potential for the site to provide habitat for special-status plants, primarily those associated with valley and foothill grasslands. Because the site assessment was conducted in September 2017, it is recommended that a qualified botanist conduct seasonally-timed rare plant surveys next spring to survey for special-status plants listed in Table 1 as having a Low to Moderate or Moderate potential to occur on the site.

4.4 Sonoma County Tree Ordinance

The Sonoma County Tree Protection Ordinance (Sonoma County Code of Ordinances, Chapter 26, Article 88, Sec. 26-88-010 (m)) establishes policies for protected tree species in Sonoma County. Protected trees are defined (Chapter 26, Article 02, Sec. 26-02-140) as the following species: big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii*), madrone (*Arbutus menziesii*), oracle oak (*Quercus morehus*), Oregon oak (*Quercus garryana*), redwood (*Sequoia sempervirens*), valley oak (*Quercus lobata*), California bay (*Umbellularia californica*), and their hybrids. Of these, valley oak occur on the site.

Figure 3: Special Status Plant Species within 1 Mile and 5 Miles of the Project Site
18715 Arnold Drive, Sonoma, CA



Date: 9-1-2017
Data: Sol Ecology, CA DFW Sonoma Co.
Base: ESRI
GIS: AJG

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Table 2. Special-status plant species with potential to occur in the vicinity of 18715 Arnold Drive, Sonoma County, California

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Clay soil, volcanic or serpentine substrate; cismontane woodland, valley and foothill grassland.	(April) May-June	Substrate, soil type probably not suitable. **Low Potential**
Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*)	FE, CRPR 1B.1	Wet places; freshwater marshes and swamps, riparian scrub, streamsides in valley and foothill grassland.	May-July	Small amount of marginally suitable habitat may occur adjacent to stream. **Low Potential**
Napa false indigo (*Amorpha californica* var. *napensis*)	CRPR 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, North Coast coniferous forest.	April-July	No suitable habitat occurs on site. **Low Potential**
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland, openings in broadleaved upland forest.	March-June	Suitable habitat occurs in survey area. **Moderate Potential**
Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*)	SR, CRPR 1B.1	Often serpentine substrate; broadleafed upland forest, chaparral.	February-April	No suitable habitat occurs in survey area. **No Potential**
Rincon manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*)	CRPR 1B.1	Red rhyolitic substrate; chaparral, cismontane woodland.	February-April (May)	No suitable habitat occurs in survey area. **No Potential**
Clara Hunt's milk-vetch (*Astragalus claranus*)	FE, ST, CRPR 1B.1	Rocky open, generally exposed places, clay soil, serpentine or volcanic substrate; cismontane woodland, valley and foothill grassland, openings in chaparral.	March-May	Marginal habitat may occur on site. **Low to Moderate Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CRPR 1B.2	Alkaline, often adobe clay soil; playas, vernal pools, alkali flats within valley and foothill grassland, coastal salt marsh.	March-June	Marginal habitat may occur on site. **Low to Moderate Potential**
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CRPR 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, sometimes serpentine substrate.	March-July	Marginal habitat may occur on site. **Low to Moderate Potential**
Sonoma sunshine (*Blennosperma bakeri*)	FE, SE, CRPR 1B.1	Vernally moist to inundated places; vernal pools, valley and foothill grassland.	February-May	No suitable habitat on project site. **Low Potential**
Narrow-anthered brodiaea (*Brodiaea leptandra* [*B. californica* var. *leptandra*])	CRPR 1B,2	Gravelly soil (?), volcanic substrate (?); broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland.	May-July	At least marginally suitable occurs in survey area. **Low to Moderate Potential**
Round-leaved filaree (*California macrophylla* [= *Erodium macrophyllum*])	CRPR 1B.2	Clay soil; cismontane woodland, valley and foothill grassland.	March-May	Marginal habitat may occur on site. **Low to Moderate Potential**
Small-flowered calycadenia (*Calycadenia micrantha*)	CRPR 1B.2	Rocky, sparsely vegetated areas, sometimes talus or scree, occasionally roadsides; chaparral, meadows, valley and foothill grassland, lower montane coniferous forest.	June-September	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Lyngbye's sedge (*Carex lyngbyei*)	CRPR 2B.2	Brackish or freshwater marshes.	(March) May-August	No suitable habitat occurs in survey area. **No Potential**
Mead's owl's-clover (*Castilleja ambigua* var. *meadii*)	CRPR 1B.1	Gravelly clay soil, volcanic substrate; meadows and seeps, vernal pools.	April-May	Marginally suitable habitat may occur in survey area. **Low Potential**
Rincon Ridge ceanothus (*Ceanothus confusus*)	CRPR 1B.1	Dry sites, volcanic or serpentine substrate; closed-cone coniferous forest, chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. **No Potential**
Calistoga ceanothus (*Ceanothus divergens*)	CRPR 1B.2	Rocky places, serpentine or volcanic substrate; chaparral, cismontane woodland.	February-April	No suitable habitat occurs in survey area. **No Potential**
Mason's ceanothus (*Ceanothus masonii*)	SR, CRPR 1B.2	Rocky places, serpentine substrate; openings in chaparral.	March-May	No suitable habitat occurs in survey area. **No Potential**
Holly-leaved ceanothus (*Ceanothus purpureus*)	CRPR 1B.2	Rocky soil, volcanic substrate; chaparral, cismontane woodland.	February-June	No suitable habitat occurs in survey area. **No Potential**
Sonoma ceanothus (*Ceanothus sonomensis*)	CRPR 1B.2	Sandy soil, serpentine or volcanic substrate; chaparral.	February-April	No suitable habitat occurs in survey area. **No Potential**
Pappose tarplant (*Centromadia* [*Hemizonia*] *parryi* ssp. *parryi*)	CRPR 1B.2	Vernally moist sites, often alkaline soil; chaparral, coastal prairie, meadows, coastal salt marshes, valley and foothill grassland.	May-November	Marginally suitable habitat may occur in survey area. **Low Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Soft bird's beak (*Chloropyron molle* ssp. *molle*)	FE, SR, CRPR 1B.2	Coastal salt marshes.	July-November	No suitable habitat occurs in survey area. **No Potential**
Sonoma spineflower (*Chorizanthe valida*)	FE, SE, CRPR 1B.1	Sandy soil, coastal prairie.	June-August	Suitable habitat probably does not occur in survey area. Known only from closer to the coast **No Potential**
Baker's larkspur (*Delphinium bakeri*)	FE, SE, CRPR 1B.1	Decomposed shale substrate; broadleafed upland forest, coastal scrub, valley and foothill grassland, possibly sometimes disturbed areas (e.g. fencelines).	March-May	Suitable substrate does not occur in survey area. **Low Potential**
Golden larkspur (*Delphinium luteum*)	FE, SR, CRPR 1B.1	± moist places, rocky soil, generally north-facing slopes; chaparral, coastal prairie, coastal scrub.	March-May	No suitable habitat occurs in survey area. **No Potential**
Dwarf downingia (*Downingia pusilla*)	CRPR 2B.2	Vernal pools, vernally moist places in valley and foothill grassland, sometimes ditches.	March-May	Marginally suitable habitat may occur adjacent to creek. **Low to Moderate Potential**
Streamside daisy (*Erigeron biolettii*)	CRPR 3	Rocky soil, sometimes ledges along rivers; broadleafed upland forest, cismontane woodland, North Coast coniferous forest.	June-October	Suitable habitat potentially occurs in Dowdell Creek. **Moderate Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Greene's narrow-leaved daisy (*Erigeron greenei*)	CRPR 1B.2	Generally serpentine substrate, sometimes volcanic substrate or rocky alluvium, generally among shrubs; chaparral, cismontane woodland, North Coast coniferous forest (?), lower montane coniferous forest (?).	May-September	No suitable habitat occurs in survey area. **No Potential**
Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*)	CRPR 1B.2	Sandy or gravelly soil, serpentine substrate; chaparral, coastal prairie, valley and foothill grassland, cismontane woodland.	May-September	Suitable substrate does not occur in survey area. **No Potential**
San Joaquin spearscale (*Extriplex [Atriplex] joaquinana*)	CRPR 1B.2	Seasonally wet areas, alkaline soil; chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools (?).	April-October	Suitable soil type does not occur in survey area. **Low Potential**
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2	Generally heavy clay soil, often serpentine substrate; cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland.	February-April	Suitable soil type probably not present in survey area. **Low Potential**
White seaside tarplant (*Hemizonia congesta* ssp. *congesta*)	CRPR 1B.2	Grassy places, often disturbed areas, fallow fields, other ruderal areas; valley and foothill grassland, coastal scrub.	April-November	Suitable habitat occurs in survey area. **Moderate Potential**
Two-carpellate western flax (*Hesperolinon bicarpellatum*)	CRPR 1B.2	Sparsely vegetated areas, serpentine substrate; chaparral (generally margins).	May-July	No suitable substrate or habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Marin western flax (*Hesperolinon congestum*)	FT, ST, CRPR 1B.1	Sometimes barrens, serpentine substrate; valley and foothill grassland, chaparral.	April-August	Suitable substrate does not occur in survey area. **No Potential**
Sharsmith's western flax (*Hesperolinon sharsmithiae*)	CRPR 1B.2	Serpentine substrate; chaparral.	May-July	No suitable substrate or habitat occurs in survey area. **No Potential**
Thin-lobed horkelia (*Horkelia tenuiloba*)	CRPR 1B.2	Moist places, open areas, sandy soil; broadleafed upland forest, chaparral, coastal scrub, valley and foothill grassland.	May-July (August)	Marginally suitable habitat may occur in survey area, but soil type may not be suitable. **Low Potential**
Northern California black walnut (*Juglans hindsii*)	CRPR 1B.1	Deep alluvial soil; riparian forest and woodland. Most occurrences naturalized.	April-May	Present in survey area, but presumed naturalized. Doubtfully native in Sonoma County.
Burke's goldfields (*Lasthenia burkei*)	FE, SE, CRPR 1B.1	Wet or moist (at least vernally) places; generally vernal pools and swales, sometimes meadows.	April-June	No suitable habitat on project site. **No Potential**
Contra Costa goldfields (*Lasthenia conjugens*)	FE, CRPR 1B.1	Vernally moist, open, low-lying places, sometimes alkaline soil; vernal pools, wet meadows, valley and foothill grassland, cismontane woodland, alkaline playas.	March-June	No suitable habitat on project site. **No Potential**
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*)	CRPR 1B.2	Brackish or freshwater marshes, usually marsh or slough edges.	April-August (September)	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Colusa layia (*Layia septentrionalis*)	CRPR 1B.2	Sandy or serpentine soil; chaparral, cismontane woodland, valley and foothill grassland.	April-June	Marginally suitable habitat may occur in survey area, but soil type may not be suitable. **Low Potential**
Legenere (*Legenere limosa*)	CRPR 1B.1	Vernal pools and swales.	April-June	No suitable habitat on project site. **No Potential**
Jepson's leptosiphon (*Leptosiphon [Linanthus] jepsonii*)	CRPR 1B.2	Usually volcanic soil (sometimes periphery of serpentine), chaparral, cismontane woodland.	March-May	No suitable habitat occurs in survey area. **No Potential**
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay or serpentine soil, broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland.	June-October	Marginally suitable habitat may occur in survey area, but soil type may not be suitable. **Low Potential**
Mason's lilaeopsis (*Lilaeopsis masonii*)	SR, CRPR 1B.1	Tidal zones; freshwater and brackish marshes, riparian scrub.	April-November	No suitable habitat occurs in survey area. **No Potential**
Pitkin marsh lily (*Lilium pardalinum* ssp *pitkinense*)	FE, SE, CRPR 1B.1	Saturated places, sandy soil; cismontane woodland, meadows and seeps, freshwater marshes.	June-July	No suitable habitat occurs in survey area. **No Potential**
Sebastopol meadowfoam (*Limnanthes vinculans*)	FE, SE, CRPR 1B.1	Seasonally wet places, poorly drained, clay or sandy soil; meadows, valley and foothill grassland, vernal pools.	April-May	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Cobb Mountain lupine (*Lupinus sericatus*)	CRPR 1B.2	Open wooded areas, gravelly soil; broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest.	March-June	No suitable habitat occurs in survey area. **No Potential**
Mt. Diablo cottonweed (*Micropus amphibolus*)	CRPR 3.2	Sparsely vegetated places, rocky soil; broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland, coastal prairie.	March-June	No suitable habitat occurs in survey area. **No Potential**
Marsh microseris (*Microseris paludosa*)	CRPR 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland.	April-June (July)	Marginally suitable habitat occurs in survey area. **Low Potential**
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	CRPR 1B.1	Seasonally moist places, cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	April-July	Marginally suitable habitat occurs in survey area. **Low Potential**
Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*)	FE, ST, CRPR 1B.1	Volcanic ash flow vernal pools.	May-June	No suitable habitat occurs in survey area. **No Potential**
Many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*)	FE, SE, CRPR 1B.2	Volcanic ash flow vernal pools.	May-June	No suitable habitat occurs in survey area. **No Potential**
Small pincushion navarretia (*Navarretia myersii* ssp. *deminuta*)	CRPR 1B.1	Clay loam soil, sometimes roadside depressions; vernal pools.	April-May	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*)	CRPR 1B.3	Rocky places, generally rock outcrops or talus; chaparral.	April-August	No suitable habitat occurs in survey area. **No Potential**
Petaluma popcorn-flower (*Plagiobothrys mollis* var. *vestitus*)	CRPR 1A	Wet places; valley and foothill grassland, coastal salt marshes (?).	May-July	Marginally suitable habitat may occur in survey area. **Low Potential**
North Coast semaphore grass (*Pleuropogon hooverianus*)	ST, CRPR 1B.1	Moist to wet, open or partly shaded places; broadleafed upland forest, meadows and seeps, North Coast coniferous forest, freshwater marsh.	March-June	Marginally suitable habitat occurs in survey area. **Low Potential**
Marin knotweed (*Polygonum marinense*)	CRPR 3.1	Coastal salt or brackish marshes.	(April) May-August (October)	No suitable habitat occurs in survey area. **No Potential**
Round-headed beaked-rush (*Rhynchospora globularis*)	CRPR 2B.1	Freshwater marsh.	July-August	No suitable habitat occurs in survey area. **No Potential**
Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*)	CRPR 1B.2	Freshwater marsh.	April-September	No suitable habitat occurs in survey area. **No Potential**
Kenwood Marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)	FE, SE, CRPR 1B.1	Freshwater marsh, especially edges.	June-September	No suitable habitat occurs in survey area. **No Potential**

Plant Species	Status	Habitat	Flowering Period	Potential for Occurrence on Project Site
Green jewel-flower (*Streptanthus hesperidis*)	CRPR 1B.2	Rocky places, often barrens, serpentine substrate; cismontane woodland, chaparral openings, valley and foothill grassland, closed-cone coniferous forest (?).	May-July	No suitable habitat occurs in survey area. **No Potential**
Suisun Marsh aster (*Symphyotrichum lentum*)	CRPR 1B.2	Brackish and freshwater marshes and swamps.	May-November	No suitable habitat occurs in survey area. **No Potential**
Napa bluecurls (*Trichostema ruygtii*)	CRPR 1B.2	Open, seasonally wet (?) areas, clay soil (?); chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, vernal pools.	June-October	Marginally suitable habitat may occur in survey area. **Low Potential**
Two-fork clover (*Trifolium amoenum*)	FE, CRPR 1B.1	Moist open sites, heavy soil, sometimes serpentine substrate, sometimes roadsides or eroded areas; coastal bluff scrub, valley and foothill grassland.	April-June	Suitable habitat may occur in survey area, but soil type may not be suitable. **Low Potential**
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Moist or seasonally moist sites, alkaline or saline soil; marshes and swamps (including coastal salt marshes?), valley and foothill grassland, vernal pools.	April-June	Suitable soil type does not occur in survey area. **No Potential**
Oval-leaved viburnum (*Viburnum ellipticum*)	CRPR 2B.3	Often north-facing slopes; chaparral, cismontane woodland, lower montane coniferous forest.	May-June (August)	No suitable habitat occurs in survey area. **No Potential**

[1]Plant listing status:

Federal (USFWS 2016a): FE – endangered; FT – threatened

State of California (CDFW 2016): SE– endangered; ST – threatened; SR – rare

California Rare Plant Rank (CRPR) (CNPS 2016): CRPR 1A: Presumed extinct. CRPR 1B: Rare, Threatened, or Endangered in California and elsewhere. CRPR 2B: Rare, Threatened, or Endangered in California, more common elsewhere. CRPR 3: Plants about which more information is needed.
CRPR Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.

[2]In habitat descriptions, "?" indicates a discrepancy in habitat information between standard references (CNDDB; Baldwin et al. 2012; CNPS 2016)

5.0 Conclusions and Recommended Mitigation Measures

Waters

Dowdell Creek measuring approximately 1,050 linear feet along the project site is the only potential waters[2] feature identified during the preliminary wetlands assessment conducted on September 18, 2017.

Any project improvements that will resulting the discharge of dredged or fill material into wetlands or creeks on the site would require authorization from the Corps and RWQCB pursuant to Sections 404 and 401 of the Clean Water Act. A Streambed Alteration Agreement would also need to be obtained for work that would substantial alter the bed, bank or channel of the creek.

Nesting Birds

The site provides habitat for a variety for a variety of nesting birds and raptors. Therefore, if work will occur between February 1st and August 31st a qualified biologist should conduct pre-construction surveys of all potential nesting habitats within approximately 200 feet of project activities.

- If initial ground disturbance or vegetation removal occurs during the breed season (March 1 through August 31), a qualified biologist will conduct a breed bird survey no more than 14 days prior to ground disturbance to determine any birds are nesting in trees adjacent to the Study area.
- If active nests are found close enough to the Study area to affect breed success, the biologist will establish an appropriate exclusion zone around t nest. This exclusion zone may be modified depending upon the species, n location, and existing visual buffers. Once all young have become independe of the nest, vegetation removal and grading may take place in the form exclusion zone.
- If initial ground disturbance is delayed or there is a break in Project activities greater than 14 days within the bird-nesting season, then a follow-up nesti bird survey should be performed to ensure no nests have been established in t interim.

Maternity Roosting Bats

[2] Please note only the Corps of Engineers can officially determine the nature and extent of waters subject to its jurisdiction.

The site provides potential habitat for special-status bats. Maternity roosting for bats is April through November.

- If initial ground disturbance occurs during the bat maternity roosting season (May 1 through August 31), a qualified biologist will conduct a bat roost assessment of trees within 100 feet of the Study area.
- If the biologist determines there is potential for maternity roosting bats to be present within 100 feet of the Study area, nighttime emergence surveys should be performed to determine if maternity roosting bats are present.
- If bat maternity roosts are present, the biologist will establish an appropriate exclusion zone around the maternity roost.

Pacific Pond Turtle, California giant salamander, and Red-bellied newt

Dowdell Creek and the surrounding grasslands on the site provides potential habitat for the Pacific pond turtle, California giant salamander and red-bellied newt.

- All aquatic habitats should be avoided with a setback of 50 feet.
- To prevent PPT from nesting within proposed development areas, a wildlife exclusion fence should be installed in areas within 300 feet of aquatic habitat prior to the PPT nesting season (beginning mid-April). This fence should be maintained during Project activities. The exclusion fence should be installed such that the fabric is a minimum of 46 inches above ground and the fabric should be buried 4-6 inches below ground. The exclusion fence posts should be located on the Study area (work side) of the fence with the fabric on the outside of the Study area relative to the stakes. This fencing will also exclude California giant salamander and red-bellied newt from areas to be disturbed.
- Pre-construction surveys should be performed within 48 hours of initiation of Project activities, including exclusion fence installation and initial ground disturbing activities.
- No construction activities will occur during rain events, defined as ¼ inch of rain falling within a 24-hour period. Construction activities may resume 24 hours after the end of the rain event.

Special-status Plants

The project site may provide potential habitat for special-status plants listed in Table 1 as having a Low to Moderate or Moderate potential to occur on the site. Therefore, it is recommended that a qualified botanist conduct seasonally-timed rare plant surveys next spring.

Table 3 - Plant species observed on September 18, 2017

Scientific Name	Common Name
Plants	
Avena sp.	oat
Briza minor	little quakinggrass
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess
Convolvulus arvensis	field bindweed
Cyperus eragrostis	tall flatsedge
Dipsacus sativus	Fuller's teasel
Elymus caput-medusae	Medusa head
Elymus glaucus ssp. glaucus	blue wildrye
Equisetum arvense	field horsetail
Festuca perennis	Italian rye grass
Foeniculum vulgare	fennel
Helminthotheca echioides	bristly ox-tongue
Phalaris aquatica	harding grass
Plantago lanceolata	English plantain
Polypogon monspeliensis	rabbit's-foot grass
Quercus lobata	valley oak
Rubus armeniacus	Himalayan blackberry
Rumex acetosella	common sheep sorrel
Salix lasiolepis	arroyo willow
Toxicodendron diversilobum	poison oak

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Stormwater Control Plan for Regulated Project

For

1100 Craig Avenue

1100 Craig Avenue
Sonoma, CA
APN 052-251-034

JN 10007
August 28, 2018

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Table of Contents

Appendices

Stormwater Control Plan for Regulated Project For
1100 Craig Avenue, Sonoma, California

I. Project Data Form

Project Name	1100 Craig Avenue
Application Submittal Date	August 28, 2018
Project Location	1100 Craig Avenue, Sonoma, CA
Project Phase No.	N/A
Project Type and Description	Detached Single Family Residence
Total Project Site Area	704,652 SF (16.18 acres)
Total New and Replaced Impervious Area	15,317 SF*
Total Pre-Project Impervious Surface Area	0 SF
Total Post-Project Impervious Surface Area	15,317 SF*

* No impervious surface is proposed at this time. This area reflects an assumed building size and assumed driveway extents.

II. Project Setting

A. Nature and Purpose of the Project

The project is located at 1100 Craig Avenue in Sonoma, California. This subdivision projects consists of 3 parcels and will be used for residential purposes. The areas for each parcel are approximately 4.96 acres for Parcel 1, 3.74 acres for Parcel 2 and 7.48 acres for Parcel 3, resulting at an overall area of the site of approximately 16.18 acres. No improvements are proposed at this time. Building footprints of 2,500 SF have been shown along with assumed driveway layouts for the purpose of the analysis.

B. Existing Site Features and Conditions

There are no existing buildings on site. The site is relatively level with slopes ranging between 1% and 5% falling west to east. The soil type belongs to Hydrologic Soil Group C in the areas that are being disturbed. Runoff from this portion of the site currently sheetflows from the western portion of the site to the east, ultimately into the existing Dowell Creek that runs west to east across the 3 parcels.

C. Opportunities and Constraints for Stormwater Control

Pursuant to the BASMAA Post – Construction Manual, the future development of this subdivision would be classified as regulated projects. This type of project is required to direct runoff from impervious surfaces areas to permanent Best Management Practices (BMPs). The bioretention facilities will be required to be sized at 4% of the tributary areas.

Proposed Drainage Management Areas (DMAs) and BMPs are shown in the **Stormwater Control Plan Exhibit**.

III. Low Impact Development Design Strategies

A. Optimization of Site Layout

Future developments should be located with landscaped areas throughout and preserve existing vegetation to the maximum extent possible.

IV. Documentation of Drainage Design

A. Description of Drainage Management Areas

DMA-1 totaling 3,676 SF drains to bioretention facility BR-1. DMA-1 is comprised of the entire potential future paved driveway and building footprint.

DMA-2 totaling 3,676 SF drains to bioretention facility BR-2. DMA-2 is comprised of the entire potential future paved driveway and building footprint.

DMA-3 totaling 7,624 SF drains to bioretention facility BR-3. DMA-3 is comprised of the entire potential future paved driveway (50' inside radius on curves) and building footprint.

B. Areas Draining to Bioretention Facilities

DMA Name	Area (SF)	Post-Project Surface	DMA Runoff Factor	Product (Area x Runoff Factor)	Facility Name		
					BR-1		
DMA-1	3,676	Impervious	1	3,676	Sizing Factor	Min. Facility Size	Proposed Facility Size
Total>				3,676	0.04	147.04	148

DMA Name	Area (SF)	Post-Project Surface	DMA Runoff Factor	Product (Area x Runoff Factor)	Facility Name		
					BR-2		
DMA-2	3,676	Impervious	1	3,676	Sizing Factor	Min. Facility Size	Proposed Facility Size
Total>				3,676	0.04	147.04	148

DMA Name	Area (SF)	Post-Project Surface	DMA Runoff Factor	Product (Area x Runoff Factor)	Facility Name		
					BR-3		
DMA-3	7,624	Impervious	1	7,624	Sizing Factor	Min. Facility Size	Proposed Facility Size
Total>				7,624	0.04	304.96	305

V. Source Control Measures

Potential Source of Runoff Pollutants	Structural Source Controls	Operational Source Control BMPs
Landscape/Outdoor Pesticide use	*See statement below*	Maintain landscaping using minimum or no pesticides See applicable operation BMPs in Fact Sheet SC-41 "Building and Grounds Maintenance" in the CASQA Stormwater Quality Handbook

For landscaped areas existing trees and vegetation will be maintained to the maximum extent practicable. Landscaped areas will be designed such that the use of pesticides will not be required. Refer to the Integrated Pest Management information for proper use of pesticides before use.

VI. Stormwater Facility Maintenance

The applicant will be required to follow a recorded Operation and Maintenance Plan and to accept responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility if formally transferred to a subsequent owner.

Some maintenance requirements for the landscape areas and Bioretention facilities will include general cleanup to remove any trash and debris that has collected, prune plants to maintain the design surface elevation, control weeds using manual methods or natural herbicides, add mulch as needed.

VII. Construction Checklist

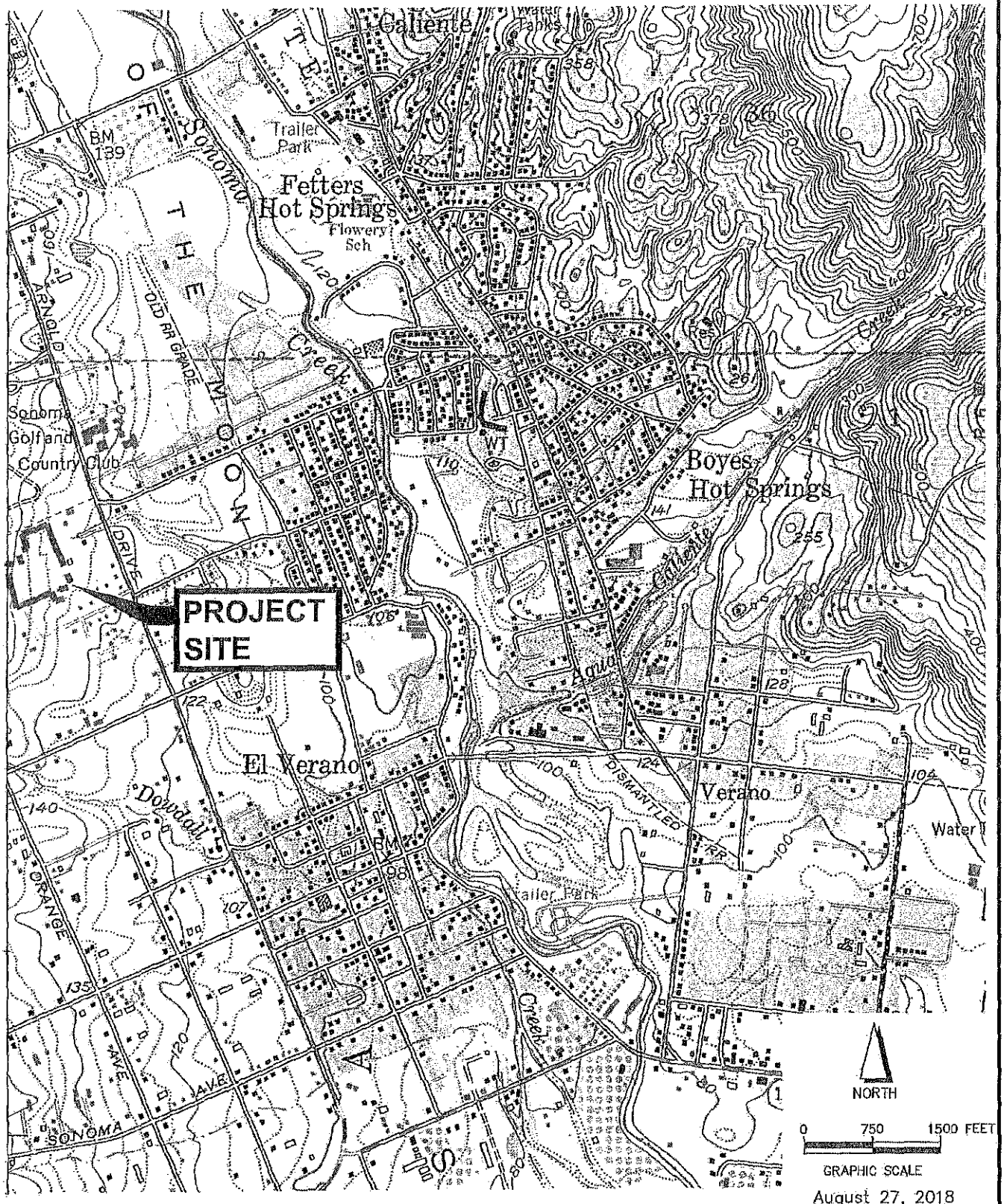
No improvements are proposed to be constructed at this time.

VIII. Certifications

The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA Post-Construction Manual.

APPENDIX A

Vicinity Map



August 27, 2018

VICINITY MAP

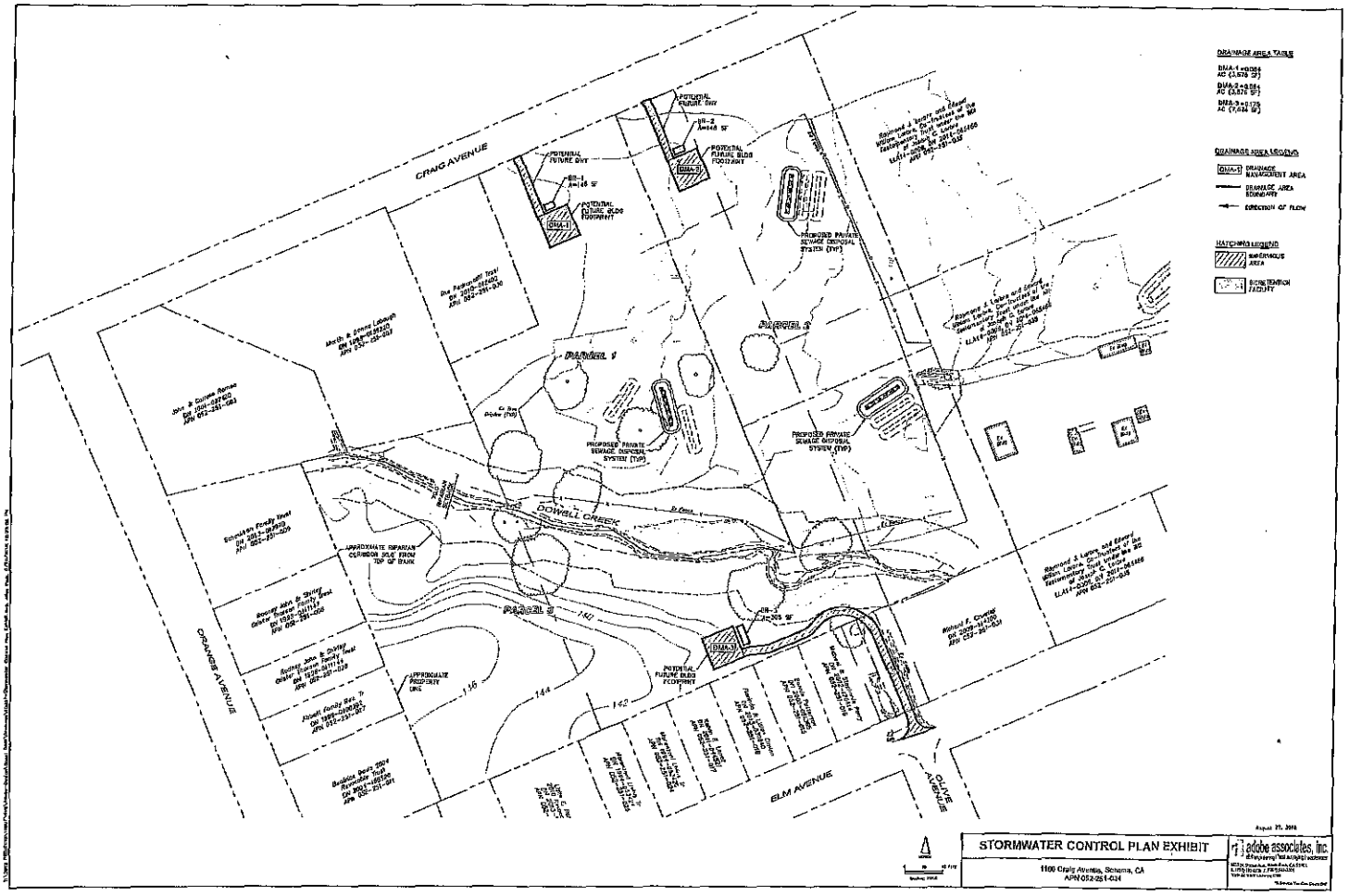
1100 Craig Avenue, Sonoma, CA
APN 052-251-034

adobe associates, inc.
civil engineering | land surveying | wastewater
1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com
"A Service You Can Count On!"

File: T:\2018 PROJECTS\10007\DWG\ADOBE-DESIGN\CONST DOCS\DRAINAGE\10007-VICINITY MAP.DWG,8/27/2018 12:24:57 PM,Alice Park

APPENDIX B

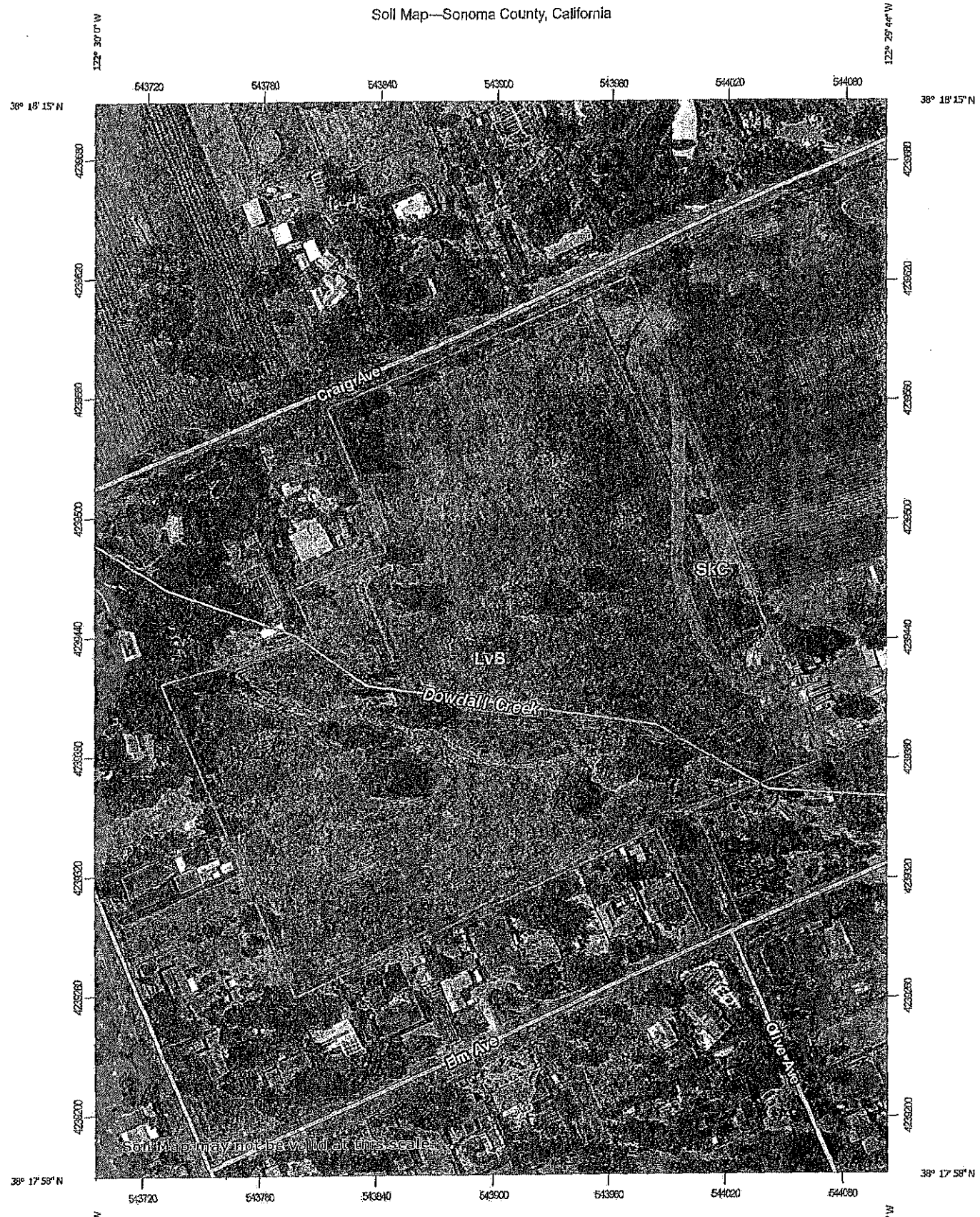
Stormwater Control Plan Exhibit


CRAIG AVENUE
ORANGE AVENUE
ELM AVENUE
OLIVE AVENUE
DOWELL CREEK
PARCEL 1
PARCEL 2
PARCEL 3
PROPOSED PRIVATE SEWAGE DISPOSAL SYSTEM (TYP)
POTENTIAL FUTURE BLDG FOOTPRINT
APPROXIMATE PROPERTY LINE
APPROXIMATE RIPARIAN CORRIDOR SET BACK FROM TOP OF BANK
DRAINAGE AREA TABLE
DRAINAGE AREA LEGEND
HATCHING LEGEND
STORMWATER CONTROL PLAN EXHIBIT
1100 Craig Avenue, Sonoma, CA
APN 052-251-034
adobe associates, inc.

APPENDIX C

Soil Analysis

Soil Map—Sonoma County, California



Map Scale: 1:2,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 29, 2015—Jun 3, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LvB	Los Robles gravelly clay loam, moderately deep, 0 to 5 percent slopes	15.9	94.7%
SkC	Spreckels loam, 2 to 9 percent slopes	0.9	5.3%
Totals for Area of Interest		16.8	100.0%

Sonoma County, California

LvB—Los Robles gravelly clay loam, moderately deep, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hfh4
Elevation: 200 to 500 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 220 to 245 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Los robles and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Los Robles

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from basic igneous rock

Typical profile

H1 - 0 to 7 inches: gravelly clay loam
H2 - 7 to 30 inches: gravelly clay loam
H3 - 30 to 44 inches: gravelly clay loam
H4 - 44 to 60 inches: stratified very gravelly sandy clay

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Tuscan

Percent of map unit: 8 percent
Hydric soil rating: No

Zamora

Percent of map unit: 7 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017

Sonoma County, California

SkC—Spreckels loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hfjp
Elevation: 100 to 800 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Spreckels and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Spreckels

Setting

Landform: Hills, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from metavolcanics

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 18 inches: clay loam
H3 - 18 to 37 inches: clay
H4 - 37 to 60 inches: cemented

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: About 18 inches to abrupt textural change
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Felta
Percent of map unit: 4 percent
Hydric soil rating: No

Laniger
Percent of map unit: 4 percent
Hydric soil rating: No

Toomes
Percent of map unit: 3 percent
Hydric soil rating: No

Rock outcrop
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 11, Sep 21, 2017