MEMORANDUM

To: Sonoma Resource Conservation District Board of Directors	**Date:** April 28, 2016
From: Anya Starovoytov, Resource Planner	**CC:** Kara Heckert, Executive Director Valerie Minton, Program Director
Subject: Lead Agency Changes to Initial Study/Mitigated Negative Declaration (IS/MND) SCH #: 2016022067	

This memorandum summarizes the revisions made by Sonoma Resource Conservation District, Lead Agency, to the Final Mitigated Negative Declaration for Sonoma County LandSmart® Program, as part of comments received from the Board of Directors while considering document adoption at their April 28, 2016 Board Meeting. The Board has adopted the Final Mitigated Negative Declaration with the following revisions:

1. Language in the second paragraph of section titled "Environmental Protection Measures, General Program Measures, and Mitigation Measures", on page 3 of the Final Mitigated Negative Declaration (MND), is revised as follows:

The following Environmental Protection Measures were developed for the LandSmart Program to require a minimum level of impact avoidance and minimization for all LandSmart projects. The Protection Measures are mandatory, and therefore, they are incorporated into all phases of all projects from planning and design through implementation, monitoring, and reporting. Construction materials and seed and plants used during implementation of LandSmart projects will be sourced locally, whenever feasible.

2. Language in Response to Comment 2-5, at the top of page 36 of the Final MND, is revised as follows:

The analysis included in the MND evaluated the impacts of the LandSmart activities, including diversions, with the implementation of the programmatic environmental protection measures and general program measures included in Section 2.10. The construction-period water quality and protection measures will be used for all ground disturbing activities, and ~~they~~ the measures will protect water quality by limiting the disturbance area and by requiring the development and implementation of a Stormwater Pollution Prevention Plan, or a similar document. Additionally, the post-construction measures require erosion and sedimentation control to prevent water quality impacts and monitoring to ensure the measures function properly. No additional changes to the MND are needed.

3. Language in Section 3.3, on page 65 of the Administrative Draft IS/MND, is revised as follows:

Stemple Creek is a tributary to the Estero ~~Americano~~ de San Antonio watershed. It is located in both Sonoma and Marin counties. The subbasin begins just west of the City of Petaluma and empties into the Pacific Ocean through the Estero de San Antonio in Marin County. The creek drains approximately 22 square miles of southern Sonoma County for the portion of Stemple Creek that is within the Sonoma RCD LandSmart area (CalWater 2.2.1 in NAD83). Nearly the entire watershed is in non-intensive agricultural production, including dairies and sheep/livestock ranches (Sonoma County 2007). Stemple Creek has high nutrient and sediment levels, and is identified as an impaired waterbody by the North Coast Regional Water Quality Control Board. Nutrient impairment is associated with historical confined animal facilities and manure application practices within the watershed while sediment impairment is related to channel and gully erosion, inadequate rangeland management, roads, and other land disturbance activities (NCRWQCB, 1997). As part of addressing these impairments, confined animal facilities within this watershed are now subject to regulatory permits that aim to minimize the potential of pollutant discharges into waterways. ~~s are primarily a result of the intensive use of pasture land and dairy manure lagoon management practices. (Sonoma County 2007)~~

This revision also adds a new reference as follows:
North Coast Regional Water Quality Control Board (NCRWQCB). 1997. *Resolution No. 97-108 Amending the Water Quality Control Plan for the North Coast Region to Include a Total Maximum Daily Load and Attainment Strategy for Stemple Creek Watershed Into Section 4, Implementation Plans, Nonpoint Source Measures*. December 19.

4. Language in Section 3.4, on page 65 of the Administrative Draft IS/MND, is revised as follows:

The Petaluma River watershed is located in southern Sonoma and northern Marin Counties. Approximately 112 square miles of the 146 square mile watershed are located in Sonoma County. The City of Petaluma and the unincorporated community of Penngrove are located in this watershed. A total of 17 square miles are urban and developed. The majority of the Petaluma River watershed is in agricultural production, including large areas of oat hay production and dairy cattle and sheep grazing lands. Irrigated hay and pasture lands (irrigated with reclaimed water from the City of Petaluma treatment plant) occur to the southeast of the city, along Lakeville Highway. Flooding in the Petaluma River watershed is highly influenced by tidal action in the San Pablo Bay, particularly in the lower and middle river reaches. The San Francisco Bay Regional Water Quality Control Board has classified the Petaluma River as an impaired water body due to sedimentation/siltation, diazinon, trash, and high levels of nutrients and pathogens. Elevated levels of nutrients, sediment, and pathogens are associated with inputs from agricultural and rural land uses as well as urban uses in the City of Petaluma (California Coastal Commission, 2006). ~~High nutrient levels can be attributed to dairy farms, equine facilities, and livestock producers. Sedimentation problems in tributaries are generally associated with new development and agricultural land use practices, and pathogen problems are generally attributed to agriculture and urban runoff~~. (Sonoma County 2007)

This revision also adds a new reference as follows:
California Coastal Commission. 2006. *State of the California Critical Coastal Areas (CCAs) Report*. June 5.

SONOMA RESOURCE CONSERVATION DISTRICT

MITIGATED NEGATIVE DECLARATION

FOR

SONOMA COUNTY LANDSMART® PROGRAM

STATE CLEARINGHOUSE NUMBER: 2016022067

April 2016

Prepared for:

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LandSmart®
Productive lands. Thriving streams.

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Project Title

Sonoma Resource Conservation District (RCD) LandSmart Program

Lead Agency Name and Address

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Project Location

The LandSmart Program is located throughout the Sonoma RCD District service area, which includes portions of Sonoma County, California. Sonoma County is located approximately 50 miles north of San Francisco. The LandSmart Program may be implemented in any of the following watersheds across Sonoma County: Russian River, Russian Gulch, Chileno Creek, Gualala River and north coastal watersheds, Petaluma River, Stemple Creek and Sonoma Creek.

Sonoma RCD LandSmart On-the-Ground Program

The LandSmart Program is a regional collaborative program that will help grape growers, ranchers, and other rural and agricultural land managers meet their natural resource management goals while supporting productive lands and improving water quality and wildlife habitat. The Sonoma RCD will implement the LandSmart On-the-Ground projects by providing project development, construction oversight, permitting, and environmental compliance for implementation of best management practices (BMPs). On-the-Ground projects are selected from LandSmart Plans; identified by Sonoma RCD staff, landowners, and managers; and identified through other natural resource priority planning efforts.

On-the-Ground projects implemented through the LandSmart Program will achieve natural and land management goals that include:

- Erosion control on roads, gullies, and streambanks,
- Enhancement of fish and wildlife habitat,
- Alternative water supply development,
- Manure and pasture management, and

- Soil health improvement and establishment of vegetation for agricultural productivity and carbon sequestration priorities.

The LandSmart Program includes 17 conservation practices that are grouped into seven categories. The practices are drawn from established Conservation Practice Standards developed by the USDA Natural Resources Conservation Service (NRCS). The NRCS practices will serve as a starting point for how Sonoma RCD will implement the Program. The statewide standards are designed to address a broad range of resource conservation needs by providing a framework under which more detailed, locally developed practice specifications will be utilized. Projects implemented under the LandSmart Program will be small-scale, consisting primarily of stabilization of eroding streambanks, development of stable stream crossings, improvements to access roads and decommissioning of unused roadways, installation of pipelines and diversions to move water to stable areas for discharge, establishment of vegetative cover, and invasive species control.

Findings

The project impacts would be mitigated to less-than-significant levels through implementation of mitigation measures or through compliance with existing County Municipal Code requirements. With the recommended mitigation measures, no significant adverse effects to the environment are expected from the project. The project would not have a detrimental effect upon either short-term or long-term environmental goals. This project would not have impacts which are individually limited but cumulatively considerable. This project would not have environmental impacts which will cause substantial adverse effects upon human beings, either directly or indirectly.

Initial Study

An Initial Study/Proposed MND was prepared for the LandSmart Program and sent to the State Clearinghouse and interested agencies on February 23, 2016 for a 30-day public review period. California Department of Fish and Wildlife requested and was granted an extension of the review period to April 7, 2016. Sonoma RCD notified the State Clearinghouse of the extended comment period.

Responses to Comments on the Initial Study

Sonoma RCD received two comment letters during the comment period: Caltrans and California Department of Fish and Wildlife. The Sonoma RCD must consider the comments received during the comment period prior to adopting a Mitigated Negative Declaration. Responses to the comments received are included below. The comments did not result in modifications to the analysis or mitigation measures, and no new mitigations were required. No significant effects were identified.

Location of Documents

Copies of the document are available for review at the Sonoma RCD office located at 1221 Farmers Lane, Suite F, Santa Rosa, CA 95405.

Environmental Protection Measures, General Program Measures, and Mitigation Measures

The following Environmental Protection Measures, General Program Measures, and Mitigation Measures have been added to the LandSmart Program, have been agreed to by the Sonoma RCD, and have been found to reduce potentially significant impacts of the LandSmart Program to less than significant. A Mitigation Monitoring and Reporting Plan has been is included as Appendix A.

The following Environmental Protection Measures were developed for the LandSmart Program to require a minimum level of impact avoidance and minimization for all LandSmart projects. The Protection Measures are mandatory, and therefore, they are incorporated into all phases of all projects from planning and design through implementation, monitoring, and reporting.

Construction-period Water Quality Protection and Erosion and Sedimentation Control Measures

Excavation and grading activities will occur only in dry weather periods. If flowing water is present at the work site, it will be temporarily diverted. Watercourses and water quality will be protected during construction activities with erosion control, sediment detention, and site maintenance measures, including:

Measures to Limit Site Disturbance

- Disturbance will be limited to the "Work Area," defined as anywhere subject to disturbance from access, staging, vegetation management, grading, and other human activities.
- Areas to be avoided during construction will be demarcated by the project manager or designated representative and approved by a qualified biologist, when one is required by Mitigation Measure BIO-1b.
- Existing points of access will be used to the extent feasible.
- Heavy equipment will not enter a flowing stream, creek, or ponded area without authorization from environmental regulators. If access requires heavy equipment to traverse a rocky or cobbled substrate, a rubber tire loader/backhoe is required unless such use is determined to be infeasible or less environmentally protective. Use of tracked vehicles may be considered.
- When possible, work will be performed from the top of bank. If work is required in waters, wetlands, or riparian areas, disturbance and compaction will be minimized by strict use of a single identified access route to the work area and by minimizing the work area to the smallest needed to construct the project.
- Temporary exclusionary fencing will be placed around work areas and adjacent sensitive habitat to prevent construction debris, equipment, and workers from entering.

Construction-period Measures for Erosion Control, Sediment Detention, and Site Maintenance

- All disturbed areas will be protected from erosion. When a project involves grading or work within or adjacent to a stream, waterway, or other sensitive habitats, a spill prevention and clean-up plan, Stormwater Pollution Prevention Plan, or similar document will be prepared, approved by the project manager, and implemented during construction activities. The plan will address polluted runoff and spill prevention policies, BMPs that are required to be available on site in case of rain or a spill (e.g., straw bales, silt fencing), clean-up and reporting procedures, and locations of refueling and minor maintenance areas.

- All debris, sediment, rubbish, vegetation, or other construction-related materials will be placed in a location approved by the project manager. No materials, including petroleum products, chemicals, silt, fine soils, or substances deleterious to the function of a watercourse, water quality, or biological resources, will be allowed to pass into, or be placed where it can pass into stream channels.
- If rain occurs while materials are temporarily stockpiled, they will be covered with plastic that is secured in place to ensure the piles are protected from rain and wind. Silt fencing or wattles will be installed on contour around all stockpile locations.
- Spoil materials from clearing, grubbing, grading, and channel excavation will be disposed of at a site approved by the project manager.
- Fire-suppression equipment will be reviewed and approved by the project manager before construction begins and will be available on site at all times.

Measures for Use of Concrete

- If used, concrete will be allowed to cure for a minimum of 30 days before being allowed to interface with a waterway, or it will be coated with an agency-approved sealant. If sealant is used, water will be excluded from the site until the sealant is dry.

Measures to Protect Native Trees during Construction

- Native trees are particularly susceptible to disturbance, including compaction and grading, especially within the root crown and root zone. This area is referred to as the Root Protection Zone (RPZ), which is defined as 1.5 times the dripline radius measured from the tree trunk, extending approximately three feet below the soil surface. Work within the RPZ will be avoided wherever possible. The outer extent of the RPZ will be clearly demarcated with exclusion fencing to keep construction vehicles and activities away from tree roots.
- A qualified professional, such as a Registered Professional Forester or an arborist will guide subsurface activities during installation of pipelines within the RPZ, including grading and trenching operations.
- If work must occur within the RPZ, all tree trunks will be wrapped up to eight feet high or the height of the equipment working in the area. Protection material could include wood boards or heavy-duty rubber matting. No work will occur within the RPZ when soils are wet. Trench plates and/or heavy mulch will be installed when working within the RPZ with heavy equipment. All roots larger than one inch will be cut with a clean, sharp saw. No more than 20 percent of live foliage should be pruned in one year and no more than 20 percent of the total root mass should be damaged in one year.
- Soil stockpiling (whether temporary or permanent) from construction activities should not occur in the RPZ in order to avoid root damage.

Post-construction Erosion and Sediment Control and Water Quality Protection Requirements

Watercourses and water quality will be protected after construction with erosion control, sediment detention, and maintenance measures, including:

Post Construction-period Measures for Erosion and Sedimentation Control

- All disturbed areas will be stabilized upon completion of work.
- Erosion and sedimentation control measures will be incorporated into project design and implemented upon completion of grading. Measures will include a combination of permanent native vegetation (e.g., live planting, native seed casting, or hydroseeding), weed-free mulch, erosion control fabrics, rock, and biotechnical treatments (e.g., filter strip, water and sediment control basins, weed-free straw bales). Measures will be in place prior to October 15 or the onset of rain, whichever is earlier, at all locations where the likelihood of sediment input exists.
- If required, temporary filter-fabric fencing, biodegradable fiber rolls, weed-free straw bales, gravel bars, or other runoff diversions will be utilized to keep sediment from flowing into an adjacent waterbody. After vegetation is sufficiently mature to provide erosion control, these measures may be removed.
- Any collected sediment will be disposed of away from the collection site and stabilized to ensure that no sediment-laden runoff will enter a water of the State.
- Erosion control, sediment detention, and water quality protection measures will be inspected regularly by the RCD or a designee to ensure they are functioning properly.
- No chemically treated timbers will be used on in-stream structures.

Post Construction-period Measures for Planting and Revegetation after Soil Disturbance

To the extent feasible, all plants disturbed by project activities will be replaced with native plant species in accordance with the following measures:

- Any area cleared of vegetation will be revegetated with plant propagules native to the project watershed, if possible, and with species appropriate to the site conditions. Otherwise, plants will be sourced from Sonoma County or adjacent counties. Plants from more distant sources will require pre-approval by a qualified biologist.
- In limited instances, non-invasive, non-persistent grass species (e.g., sterile wheat) may be used in conjunction with native species to provide fast-establishing, temporary cover for erosion control.
- Before purchasing any nursery stock for restoration plantings, it will be confirmed that the nursery follows current Best Management Practices for preventing the spread of SOD (consult the California Oak Mortality Task Force, www.suddenoakdeath.org, for current standards) and other plant pathogens. All plant materials will be inspected for symptoms of SOD before delivered onto the property.
- Native plant species with high wildlife and/or pollinator values will be used to the extent feasible.
- Planting will occur as soon as possible after construction. When timing does not coincide with suitable planting windows for permanent vegetation, a temporary cover (e.g., weed-free mulch or weed-free straw) will be used to protect soil until permanent vegetation can be established.

- The introduction and spread of invasive species during revegetation will be prevented. See Vegetation Management BMPs.
- Soil amendments are typically not needed for establishment of native vegetation in intact native soils. If soils have been disturbed and require additional organic matter or nutrients to support native plants, limited organic, weed-free amendments may be used to help establish restoration vegetation. Organic fertilizers may be used only above the normal high water mark of any adjacent waterways. No chemical fertilizers will be used.
- The species palette should be similar to that of native vegetation in the project area.
- For projects that have removed native vegetation, post-construction revegetation success will be based on individual site conditions, but will generally be based on the following: 1) establishment of native trees and shrubs at a ratio of 1:2 living after five years (or the ratio mandated by regulatory permits), 2) establishment of herbaceous cover equal to that of adjacent undisturbed ground within three years, and 3) no increase in invasive species populations (or no greater cover of invasive species than that of adjacent undisturbed ground).
- If needed, an irrigation system will be installed to ensure establishment of vegetation; when vegetation is sufficiently established, irrigation materials will be removed.

General Program Conditions for Vegetation Management

- Disturbance of native shrubs and woody perennials or removal of trees from streambanks or stream channels will be avoided where possible and minimized where avoidance is not feasible. If native riparian vegetation will be disturbed, it will be replaced with similar native species.
- Outside of riparian areas and other sensitive habitats, native vegetation may be removed only if replanting with native vegetation is completed at the site. If trees over six inches dbh (diameter at breast height) are cut, they will be replaced by native species appropriate to the site at a ratio of 3:1. Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.
- No more than 0.10 acre of native riparian trees, shrubs, or woody perennials will be removed from a stream area. Where the area contains a mix of native and invasive species, no more than 0.25 acre of vegetation will be removed from a streambank or stream channel. If the area is exclusively nonnative plants, up to 5 acres of riparian vegetation may be removed, except in areas with potential habitat for sensitive biological resources.
- Hand labor will be used to trim vegetation within the channel or on a streambank. Use of handheld motorized equipment, such as string trimmers and chainsaws, is authorized.
- The spread or introduction of exotic plant species will be avoided to the maximum extent possible by protecting areas with established native vegetation, implementing preventive measures during construction, restoring disturbed areas with native species where appropriate, and performing post-project monitoring and control of exotic species.
- Existing infestations of noxious weeds will be identified and measures implemented to prevent any spreading during construction.
- All landscape or road materials brought on site (e.g., seed, straw, compost, mulch, soil, and gravel) will be certified weed-free or inspected by the project biologist or a project manager prior to installation.

- Construction vehicles and other landscaping equipment will be cleaned of seed and soil from other sites or on-site areas infested with noxious weeds before entering new areas.
- Removal of invasive species will be done in preparation for establishment of native plantings primarily using manual or mechanical methods, such as hand pulling, weed wrenches, chainsaws, string trimmers, and, for large infestations of perennial species, limited use of excavation or mowing machinery. To the extent possible, revegetation will be implemented at the same time that removal of exotic vegetation occurs. See Post-Construction Erosion and Sediment Control BMPs for soil protection measures.
- All invasive plant materials with potential to germinate (e.g., seeds, rhizomes, stem fragments for stoloniferous species) will be removed from the site and burned or disposed of in a landfill.
- Exotic trees that are causing habitat damage or hazardous situations may be removed with approval of the project biologist. Any exotic trees removed will be replaced with appropriate natives at a minimum 1:1 ratio.
- No pesticides, with the exception of herbicide application to control established stands of exotics or to control the invasion of exotics into restoration plantings, will be allowed.
- Where it is necessary to use herbicides to control established stands of exotics or to control the invasion of exotics into restoration plantings, application will be compliant with the California Department of Pesticide Use regulations in accordance with Material Safety Data Sheets.
- A safety plan will be developed prior to chemical use. The plan will include telephone numbers and addresses of emergency treatment centers and the telephone number for the nearest poison control center.
- In riparian environments, an herbicide (without a surfactant) that has been registered for use in an aquatic environment will be used. Targeted, spot application will be used.
- No herbicides or fertilizers will be used in areas where special-status species or sensitive habitats occur or within a 50-foot buffer around those areas.
- Records will be maintained for two years after herbicide application.

General Measures to Avoid Impacts on Biological Resources

LandSmart On-the-Ground Program projects will be designed and implemented in accordance with the following measures to avoid disturbance within or adjacent to sensitive biological resources:

- During initial site review, RCD staff will determine whether any natural resources (e.g., sensitive habitat types, special-status species habitat) may be present that require further assessment by a qualified project biologist and will initiate those assessments. This initial review will include a site visit by RCD staff with expertise in sensitive habitats and special-status species requirements, as well as review of the current California Natural Diversity Database records for the project vicinity.
- When required, RCD staff will submit permit applications to the regulatory agencies. As part of permit approval, regulators may provide additional conditions beyond those required herein, which will be incorporated into the project plans and contracts with the cooperating landowner or approved representative. Should site-specific permits require for more stringent conditions to provide greater resource protection, the more protective conditions will apply.

- If a project would result in "take" of a listed or candidate species, which is defined as actions that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt any individual of an endangered, threatened, or candidate species, a site-specific Incidental Take Permit (ITP) will be obtained from CDFW, NMFS, and/or USFWS.
- Project planning and design will maintain naturally occurring seasonal water sources for wildlife and migratory corridors for fish and wildlife species.
- If a system is installed for establishment-period irrigation that relies on water from a stream or creek, it will meet NMFS Water Drafting Specifications (August 2001, or as updated).
- The timing of project construction will take into consideration soil and water quality protection, as well as fisheries and other wildlife usage in the project area. Practices that involve grading, other earth movement activities, and work within a channel or along a streambank will be implemented in the period between June 1 and October 15, unless site- or project-specific recommendations from the project biologist suggest a superior work window to avoid impacts on biological resources.
- Work beyond October 15 may be authorized on a site-specific basis by regulatory agencies, provided the work would be completed prior to first winter rains that result in stream flows.
- Planting may occur year-round under suitable conditions.

Mitigation Measures

Mitigation Measure BIO-1a, Avoid Loss of Listed or CNPS 1B, 2, 3, or 4 Plants and their Habitats, Sensitive Trees, and Sensitive Plant Communities

Sonoma RCD shall avoid loss of State and federally listed or special status plants, sensitive trees, and sensitive plant communities.

Special Status Plants

Sonoma RCD shall avoid loss of State and federally listed or proposed plant species; State candidates for listing; CNPS List 1B species; CNPS List 2, 3, and 4 species; and occupied or critical habitat for these species to the extent feasible. Where avoidance of individuals or habitat is infeasible, Sonoma RCD will compensate for loss of State and federally listed or proposed plant species, candidates for listing, and CNPS Rank 1 and 2 plants as required by USFWS or CDFW.

All protocol-level surveys shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.

- Where indicated by the RCD's initial site review, reconnaissance-level surveys shall be performed by a qualified biologist to determine whether suitable habitat for special-status plants is present within the project area. If habitat for listed or CNPS Ranks 1-4 plants is not identified during surveys, no further mitigation for impacts on target species is necessary under this measure.
- If suitable habitat is identified, focused surveys will be performed to determine presence or absence of target species wherever habitats for these species will be impacted. Any special-status species found will be documented. The suitable habitat will be avoided through project

design, where feasible, and a buffer zone of 50 feet will be established around State and federally listed or proposed plant species, candidates for listing, and CNPS Rank 1 and 2 plants to prevent entry and disturbance during work activities. A qualified biologist will designate the buffer zone if the zone will be less than 50 feet, and the buffer zone distance will be based on the target species and proposed work. The buffer zone will be clearly demarcated with construction fencing and avoided by all construction personnel and equipment.

- If suitable habitat cannot be avoided, project-specific protection measures will be developed with concurrence by USFWS or CDFW. The following are examples of measures that may be required:
    - Where project activities would result in impacts on vernal pool habitats, conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Project that may Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps Files #22342N) may need to be implemented.
    - Listed or List 1B and Rank 2 plants within the project footprint may need to be transplanted to a mitigation site approved by CDFW or USFWS. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
    - Where construction activities unavoidably affect a listed of List 1B plant species, pipeline corridor widths may need to limited to a maximum 5 feet through plant habitat.
    - Acquisition and preservation of at least an equal area and quality of habitat that is lost.
- Focused surveys for the federally listed Sonoma sunshine, Sebastopol meadowfoam, Burke's goldfields, and the many-flowered navarretia will be conducted in accordance with USFWS protocols developed for federally listed plants on the Santa Rosa Plain: Guidelines and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain (USFWS 1996). The project botanist will report special-status plant occurrences to the CNDDB.
- Any herbicide application to treat noxious non-native weeds will ensure that no native plants are affected.
- No fertilizers or irrigation will be used within the buffer zone around a special-status plant population.

Sensitive Plant Communities

The Sonoma RCD shall avoid permanent impacts to native special-status plant communities (as defined by CDFW) and protected trees (as defined by the Sonoma County Tree Ordinances), to the extent feasible. The following measures shall be implemented to protect specific natural communities:

Vernal Pools

- Consult a qualified biologist who specializes in vernal pool ecology about construction methods if construction activities cannot avoid disturbance in a vernal pool.
- Do not use heavy equipment in vernal pools to avoid compaction.

- Restore and revegetate any disturbed areas within a vernal pool or within 100 feet of a vernal pool as guided by a qualified biologist.
- Use non-chemical means for invasive species removal or control in vernal pools. Encourage selected grazing as a means to address invasive species where applicable.
- Consult a vernal pool expert if restoration or enhancement of vernal pools is required.

Native Grasslands

- Design LandSmart projects to improve natural drainage to prevent erosion and loss of grassland habitat.
- Avoid soil disturbance and compaction in grassland habitat during implementation of LandSmart projects.
- Do not convert native grassland to non-agricultural uses.
- Use native seed for revegetation and restoration in grassland habitat.

Oak Woodlands

- Do not alter grades in oak woodland habitat, including changes in the ground level under and near trees. Do not mound or remove soil near Root Protection Zones.
- Do not change drainage patterns and do not install irrigation in oak woodlands to avoid adding water in the root zone during the summer when soil temperatures are high and soils are normally dry.
- Do not alter flow patterns around oak trees that could result in water collecting around trees.

If permanent impacts cannot be avoided, sensitive plant communities shall be replaced, restored, or preserved. Measures may include:

- If permanent impacts to sensitive trees or plants occur in the project area and cannot be avoided, the RCD may develop a site-specific compensatory program for the affected resource. The compensatory program must be acceptable to the appropriate agency.
- Sensitive plant communities may need to be created using native seed on an approved mitigation site.
- Trees larger than 6 inches in diameter may be subject to protection and compensation.

Mitigation projects shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Mitigation Measure BIO-1b, Avoid Listed Special-status Wildlife Species

Sonoma RCD shall avoid loss of habitat or individuals of federally and State-listed species, to the extent feasible. Where avoidance of individuals or habitat is infeasible given the location of the LandSmart practice, Sonoma RCD shall ensure that a qualified biologist oversees implementation of the following measures. The qualified biologist shall obtain approval from CDFW, USFWS, and NMFS, as needed, to capture, handle, and release all species described in this mitigation measure. The qualified biologist shall have all the necessary permits and experience as determined by the

regulatory agencies to work with the target fish and wildlife species. This shall include a current CDFW Scientific Collecting Permit and USFWS Recovery Permits, as needed, and field experience identifying the target species and their habitats and capturing and relocating species.

Preconstruction Surveys for Biological Resources and Species Relocations

The project biologist shall assess the likelihood for sensitive biological resources to be present in the project area and perform a preconstruction survey(s) immediately prior to the onset of construction activities (on the day preceding work, ahead of the construction crew, or during the appropriate window for the target species) depending on the nature of the work and the target species. The focus of the preconstruction surveys shall include identifying the presence of target species and suitable relocation sites. With approval from the regulatory agencies, all fish and wildlife species shall be relocated outside of the area of impact in habitats suitable for the target species. A complete record of all fish and wildlife species observed during the preconstruction survey(s) and relocation process shall be kept by the project biologist and provided to CDFW, USFWS, NMFS, and other regulatory agencies as required.

Preconstruction Training and Biological Oversight Measures during Construction,

Preconstruction Crew Training Program

The project biologist shall provide a preconstruction training session for construction personnel about the potential presence of sensitive biological resources within the Work Area. Topics will include how to identify life history characteristics and habitats requirements for target special-status species, measures to avoid impacts, project boundaries, penalties for non-compliance, and biological conditions outlined in the project's permits and CEQA-required BMPs. All attendees shall be given handouts to assist with the identification of target species and protection measures summarized. Personnel who miss the first training session or are hired later in the season shall attend a make-up session before participating in on-the-ground activities. All attendees shall be required to sign an attendance sign-up sheet that will be maintained for the duration of the project.

Wildlife Exclusion

For project areas located within habitats with known presence of special-status species or critical wildlife corridors, temporary wildlife exclusion shall be installed around the project perimeter. Exclusion fencing shall be highly visible, and installation shall be overseen by the project biologist. Openings shall be restricted to areas of construction site access. The purpose of the temporary fencing is to preclude animals from entering the Work Area and prevent debris and workers from entering adjacent habitats.

Biological Monitoring during Construction Activities

On-going biological oversight shall occur as needed during construction to ensure that biological resources are not being adversely impacted by construction activities. Projects that require relocation of special-status fish and wildlife species shall be visited at least weekly by the project biologist following completion of the relocation activities and exclusion fencing installation. The

project biologist shall also train a biological monitor from the construction crew to check the site daily for special-status species and report back to the project biologist on adherence to the biological resource protection measures. If a special-status species enters the Work Area, the construction crew supervisor or biological monitor shall contact the project biologist or designee for further guidance. Special-status species shall not be captured or handled by the supervisor or field crew unless directed by the project biologist or regulatory agency personnel.

Mitigation Measure BIO-1c, Measures to Protect Listed Salmonids[1]

Sonoma RCD shall ensure that the following protection measures for listed salmonids are implemented for LandSmart practices in streams that support salmonid habitat:

General Conditions for Work in Salmonid Habitat

- The general work period for listed salmonids is June 15 through October 31 annually. Work outside this timeframe must be authorized by NMFS
- If water is present in the construction area at the time of construction, the project biologist shall prepare a project-specific aquatic species protection and dewatering plan and submit it to regulators for approval.
- Immediately prior to the beginning of construction work, the project biologist shall determine if any vertebrate aquatic species are present in the project vicinity. The assessment of presence shall follow protocols described in the CDFW California Salmonid Stream Habitat Restoration Manual (Flosi et al. 1998) and shall utilize visual streambank and underwater observations and seine net surveys. The entire project area shall be assessed, including all pools, riffles, and runs, as well as upstream and downstream of the site.
- If no aquatic species are detected following the preconstruction assessment, capture and relocation measures shall not be implemented. However, the project biologist shall survey the site periodically and be available on-call during the construction process to ensure no aquatic species have moved into the construction area. If listed salmonids are observed after construction commences, the project biologist shall have the authority to halt work until appropriate protection measures are taken.
- Salmonids shall be relocated in accordance with Procedures for Relocating Fish and Other Aquatic Species below and protected in accordance with the Corps Biological Opinion for Permitting of Fisheries Restoration Project within the Geographic Boundaries of the NMFS' Santa Rosa, California, Field Office (NMFS 2006) or as updated.
- Riparian vegetation that extends over or into the water or that has roots extending into the water shall be preserved in streams occupied by listed salmonids. Vegetation that does not provide shade or shelter for fish may be trimmed or removed, subject to measures stipulated in the project permits. The amount disturbed shall be the minimum necessary to complete the project.

[1] Steelhead, coho salmon, and Chinook salmon are collectively referred to as "listed salmonids" herein.

- Severely trimmed or removed vegetation shall be replaced at a 1:1 ratio in-place or at a 2:1 ratio, or as required by regulatory agencies, elsewhere within the watershed where these species historically occurred and where the likelihood of reestablishing populations is greatest. Restoration shall be accomplished using native vegetation.
- If unforeseen circumstances arise in project implementation that may lead to adverse impacts on steelhead, coho salmon, Chinook salmon, or their habitat, the project biologist shall have the authority to immediately halt work activities until measures for avoiding adverse effects are in effect.

Temporary Stream Diversion and Dewatering in Salmonid Streams

- In salmonid-bearing streams, water shall be diverted into a cofferdam and around the work site by a gravity-fed diversion pipe when possible; however, if the slope is not adequate, a pump may be required. Pumps shall be screened in accordance with Juvenile Fish Screen Criteria for Pump Intakes developed by NMFS (1996) and shall consist of 3/32" screen mesh. The pump shall be placed in a large basin with holes to allow water to be drawn into the pump. Both the outside of the basin and the pump shall be screened with 3/32" mesh to ensure aquatic species do not get sucked into the pumps.
- Optimum placement for a cofferdam is in a pool tail out or glide, leaving 2/3 or 3/4 of the pool volume upstream of the cofferdam for aquatic habitat. Cofferdams located at riffle crests are typically not advisable as water tends to flow subsurface, and the dam and backwater head it creates push water through the gravel crest at a faster rate. If the cofferdam is located at a riffle crest, an excavated sump is usually required directly downstream.
- An exclusion screen shall be placed immediately upstream of the inlet and downstream of the outlet of the diversion pipe. Appropriate materials for the exclusion screen include 3/16" Vexar, hardware cloth, and similar materials. The exclusion screen shall be of adequate height and securely fastened to the stream bottom, stakes, and both banks to prevent a breach if surface flow increases (i.e., due to rain or water backing up behind the cofferdam). The screen may also be reinforced with welded wire. The diversion pipe can be left open, without a screen, if the exclusion screens are completely secure, and the habitat units immediately up- and downstream of the inlet and outlet pipes have been cleared of all vertebrate aquatic species.
- The project biologist shall be on site during dewatering, stream diversion, and removal or decommissioning of the temporary diversion facilities, and as needed at other times to protect fish, other aquatic species, and water quality during construction activities.

Procedures for Relocating Fish and Other Aquatic Species

- If fish and other vertebrate species (e.g., frogs, salamanders) are present within the project area that requires dewatering, fish and other aquatic species shall be relocated up- or downstream prior to construction by the project biologist. Species shall be encouraged to move down from the upstream end of the site with the aid of weighted seines operated by the project biologist with assistants as needed or other industry approved techniques. D-frame nets shall be used for aquatic invertebrates (i.e., freshwater shrimp). Once they have

been guided to the downstream end of the work area, barrier seines/fencing shall be placed across the creek at both the up- and downstream ends to prevent re-entry.

- Once the barriers are in place and aquatic species have been encouraged downstream, cofferdams or similar water diversion structures shall be constructed immediately downstream of the upstream barrier and immediately upstream of the downstream barrier. When the cofferdams are in place and the construction area is sealed off, the biologist shall make his/her best effort to relocate aquatic species remaining within the work site as the water surface elevation drops.
- Aquatic species shall be relocated to suitable habitat up- or downstream of the construction area. Release sites shall contain suitable cover and foraging habitat and natural barriers present that are likely to preclude species from traveling back upstream or downstream into the work area.
- Electrofishing may be used as an alternative fish capture method in accordance with *Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act* (NMFS 2000). If electrofishing is utilized, the project biologist overseeing the aquatic species relocation shall have the appropriate training and experience.
- Throughout project construction, the project biologist shall make weekly visits to the site to ensure that no fish or other aquatic species are being impacted by construction activities. If fish and other aquatic species are observed in the work area after construction commences, work shall be stopped and appropriate actions taken to remove the species to a safe location.

Mitigation Measure BIO-1d, Measures to Protect California Freshwater Shrimp

Sonoma RCD shall ensure that the following protection measures for California freshwater shrimp (CFS) are implemented for LandSmart practices in California freshwater shrimp (CFS) habitat:

- For all projects where work will occur within the stream channel or banks in a watershed occupied by CFS, and where water is present in the construction area at the time of construction, the project biologist shall survey all areas within and adjacent to streams to ensure shrimp are not present within the work site or 300 feet downstream. The project biologist shall prepare a project-specific aquatic species protection and dewatering plan and submit it to regulators for approval if dewatering and shrimp relocation is deemed necessary. See Procedures for Relocating Fish and Aquatic Vertebrate Species above.
- No activities shall be conducted in channels with flowing or standing water within potential CFS habitat without site-specific permits from USFWS and CDFW. If required, an agency-approved biologist shall monitor all construction activity within 300 feet of CFS habitat and have the authority to halt work if adverse impacts may occur.
- No rock structures or bank stabilization measures shall be constructed in channel bottoms that may interfere with CFS migration between in-channel pools.
- Overhanging banks and riparian vegetation that extends over or into the water or that has roots extending into the water shall be preserved in a stream occupied by CFS. Riparian vegetation that does not provide cover or foraging areas for shrimp may be trimmed or removed. The amount disturbed shall be restricted to the minimum necessary to complete

the project. Severely trimmed or removed vegetation shall be replaced at a 1:1 ratio in place or at a 2:1 ratio, or as required by resources agencies, elsewhere within the watershed where CFS historically occurred and where the likelihood of reestablishing populations is greatest. Replacement shall be with native vegetation.

- All temporarily impacted habitat shall be restored to pre-project conditions or better upon completion of construction activities.

Mitigation Measure BIO-1e, Measures to Protect California Tiger Salamander

Sonoma RCD shall ensure that the following protection measures for California tiger salamander (CTS) are implemented for LandSmart practices in or near CTS habitat:

- Potential habitat for CTS is defined as land designated by the Santa Rosa Plain Conservation Strategy Map, as revised by USFWS on April 17, 2007, or any subsequent prevailing documents as requiring mitigation for impacts on salamanders. Potential habitat is also identified outside the Santa Rosa Plain, including areas in west Petaluma.
- For all projects in areas of suitable habitat within the Santa Rosa Plain and west Petaluma, a formal CTS site assessment of habitats potentially suitable for use by CTS for breeding, aestivation, and migration and determination of a site's proximity to current CTS occurrences shall be completed. If the project falls within the potential range of CTS and suitable habitat is present, Sonoma County, CDFW, and USFWS shall be consulted to determine if focused surveys or formal consultation is warranted.
- Mitigation for impacts on CTS habitat shall be as stipulated in the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by USFWS. Such documents included the Draft Recovery Plan for the Santa Rosa Plain (USFWS 2014) and Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (USFWS 2007) or as updated. Mitigation lands shall be located within the watershed where the impact occurs. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat, or as guided by USFWS.
- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where CTS may occur.
- Initial ground disturbance during construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat.
- All temporarily impacted habitat shall be restored to pre-project conditions or better upon completion of construction activities.

Mitigation Measure BIO-1f, Protect California Red-legged Frog

Sonoma RCD shall ensure that the following protection measures for California red-legged frog (CRLF) are implemented for LandSmart practices in or near CRLF habitat:

- Projects within potential CRLF habitat shall be designed to minimize disturbance to vegetation near or in permanent and seasonal pools of streams, marshes, ponds, or shorelines with extensive emergent or weedy vegetation.
- If a project site occurs in potential CRLF habitat, the project biologist shall conduct a preconstruction survey of all aquatic areas and immediately adjacent uplands with suitable vegetation cover that is potential habitat for CRLF no more than 48 hours before the start of construction activities. The biologist shall look for individual frogs, evaluate the likelihood of usage, and determine if additional biological monitoring is needed during construction to ensure that individuals present shall be removed or avoided.
- The project biologist shall monitor initial ground-disturbing activities within 300 feet of CRLF habitat and shall have the authority to halt work activities that may adversely affect CRLF until they no longer occupy the project area. Relocation of CRLF shall be performed only by individuals approved in advance by CDFW and USFWS.
- If suitable CRLF breeding habitat is present, project activities shall occur between July 1 and October 15 to avoid impacts on breeding CRLF or egg masses.

Mitigation Measure BIO-1g, Protect Foothill Yellow-legged Frog

Sonoma RCD shall ensure that the following protection measures for foothill yellow-legged frog are implemented for LandSmart practices in or near its habitat:

- A preconstruction survey shall occur prior to beginning work within stream channels with water present. The survey shall be conducted within 24 hours prior to the start of construction activities. If found, the project biologist shall move foothill yellow-legged frogs to a safe location outside of the project area, temporary exclusionary fencing shall be installed, as appropriate, and ongoing monitoring shall occur during construction to ensure that no frogs have reentered the site.
- If potential habitat for the frog is identified and cannot be avoided, construction activities shall be scheduled so that they do not interfere with the reproductive cycles of the foothill yellow-legged frog by restricting work in the riparian zone to the period from June 15 to October 15. Work periods shall be timed to avoid the breeding season for the frogs, as well as the majority of the incubation period of frog eggs.
- For vegetation maintenance activities where breeding and foraging areas for foothill yellow-legged frogs have been identified, these areas shall be demarcated by the project biologist and avoided by maintenance crews.

Mitigation Measure BIO-1h, Protect Northern Western Pond Turtle

Sonoma RCD shall ensure that the following protection measures for northern western pond turtles are implemented for LandSmart practices in or near its habitat:

- A preconstruction survey for adult northern western pond turtles and nest sites shall occur prior to beginning work for all projects within or near streams and other permanent water bodies. Any adults found within the work area shall be relocated to suitable off-site habitat.

Nest sites discovered during the preconstruction survey or anytime during construction shall be avoided until vacated, as determined by the project biologist. Ongoing monitoring shall occur during construction to ensure no turtles have moved back into the area.

Mitigation Measure BIO-1i, Protect Nesting Birds during Construction

Sonoma RCD shall ensure that the following protection measures for nesting birds are implemented for LandSmart practices:

- Preconstruction breeding bird surveys shall be completed for projects occurring from mid-March through mid-August for special-status birds, migratory birds, and raptors. The surveys shall be conducted within two weeks prior to initiation of vegetation clearing, tree removal and trimming, or other construction activities. If the biologist finds no active nesting or breeding activity, work can proceed without restrictions, except in areas with suitable habitat for bank swallows.
- In areas with suitable habitat for bank swallows, the biologist shall assess the suitability of the habitat for nesting bank swallows and determine if bank swallows could occupy the habitat during the nesting period. If the habitat is determined to be unsuitable for bank swallow nesting, no additional construction measures are necessary. However, if the habitat has become suitable, the Sonoma RCD shall be responsible for installing netting along the bank prior to bank swallows arriving in the area (i.e., during the first week of March) and under the supervision of a qualified biologist. The netting shall consist of a plastic net or poultry wire with a mesh size of about 3/4 to 1 inch. The netting shall remain in place until construction activities commence, and it can be removed once construction starts. A qualified biologist shall monitor the netting weekly between the time it is installed and construction commences and conduct a survey the day prior to the start of construction to ensure no bank swallows have occupied the habitat.
- If active raptor or owl nests are identified within 100 feet of the construction area or active nests of other special-status birds (e.g., passerines, woodpeckers, hummingbirds, etc.) are identified within 50 feet of the construction area, a qualified biologist shall determine whether or not construction activities may impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction can proceed without restrictions. The determination of disruption shall be based on the species' sensitivity to disturbance, which can vary among species; the level of noise or construction disturbance; and the line of sight between the nest and the disturbance.
- If the project biologist determines that construction activities would likely disrupt breeding or nesting activities, a no-disturbance buffer shall be placed around the nesting location. The buffer shall include the active nest or breeding areas plus a 50-foot buffer for small songbirds and a 100-foot buffer for larger birds (e.g., owls, raptors). Construction activities in the no-disturbance buffers shall be avoided until the nests have been vacated.
- If the site is left unattended for more than one week following the initial surveys, additional surveys shall be completed. Ongoing construction monitoring shall occur to ensure no nesting

activity is disturbed. If State and/or federally listed birds are found breeding within the area, activities shall be halted, and consultation with the CDFW and USFWS shall occur.

Mitigation Measure BIO-1j, Protect Northern Spotted Owl

Sonoma RCD shall ensure that the following protection measures for northern spotted owls are implemented for LandSmart practices:

- Breeding northern spotted owls (NSO) shall be protected in accordance with the *Measures to Protect Nesting Birds* above. Protection shall include focused breeding owl surveys for projects occurring from March 1 through August 31 in areas of suitable forested and woodland habitat and within 1 mile of a documented owl occurrence (USFWS 2011).
- If NSO are determined to be present during the breeding season within 0.5 miles of the Work Area, no work shall occur between March 1 and August 31 or until nesting completion has been verified by the project biologist.
- If the absence of NSO cannot be verified, the species shall be assumed to be present and either: 1) the work shall be performed after August 31, or 2) sound reduction measures shall be implemented in consultation with the project biologist, CDFW, and USFWS to ensure activities do not significantly raise noise above ambient levels.
- No trees or understory vegetation shall be removed within 500 feet of a documented active breeding location for NSO (either through previously confirmed sightings or project-specific verification by the project biologist).
- For projects proposed during the non-breeding season in suitable habitat, construction activities shall be overseen by the project biologist to ensure roosting and foraging birds are not being impacted.

Mitigation Measure BIO-1k, Protect Special-status Bats

Sonoma RCD shall ensure that the following protection measures for bats are implemented for LandSmart practices:

A qualified biologist shall conduct an assessment of potentially suitable bat habitat at LandSmart project areas. If potentially suitable habitat is identified, a biologist with expertise in bat biology will evaluate the habitat and develop an impact avoidance and protection plan within six months of project activities. The assessment will:

1. Evaluate the suitable habitat present within and directly adjacent to the project footprint.
2. Evaluate and develop appropriate work windows.
3. Identify appropriate buffers both during and outside the work windows.
4. Identify construction methods to be used to implement the LandSmart project.
5. Outline potential project impacts due to project activities, (e.g., noise and vibration) and develop construction measures to avoid or reduce project impacts where feasible (e.g., tree removal timing and techniques).
6. Develop potential habitat replacement if necessary depending on the site-specific project, the project area, and the availability of habitat in adjacent locations.

Mitigation Measure BIO-1l, Protect Special-status Butterflies

Sonoma RCD shall ensure that the following protection measures for butterflies are implemented for LandSmart practices that occur in or near suitable grassland habitat:

- Reconnaissance-level surveys shall be performed by the project biologist to determine whether suitable habitat for Myrtle's or Callippe silverspot butterflies is present in the project area. If larval host or nectar plants for listed butterflies are present and the target species is documented within the project vicinity (e.g., Callippe silverspot near Sonoma Raceway), the project biologist shall perform a survey to determine presence or absence utilizing widely accepted scientific protocols.
- If suitable habitat for listed butterflies is present, project work shall be carried out with minimum soil compaction and disturbance. Wherever possible, work shall be performed with hand tools. No herbicides or fertilizers shall be used in habitat that supports special-status butterflies.
- Host plants for listed butterflies, including broadleaf stonecrop and *Viola adunca*, shall be protected with a clearly demarcated 20-foot buffer zone.

Mitigation Measure BIO-1m, Protect American Badger

Sonoma RCD shall ensure that the following protection measures for American badgers are implemented for LandSmart practices:

- For all projects requiring disturbance to open grasslands or low-growing vegetation habitats, a preconstruction survey for American badger shall occur prior to beginning work. If any badgers are documented within the project area or within 500 feet of it, buffer zones shall be established and maintained until the badgers have vacated the area. No work shall occur within the buffer zone until the area is cleared by the project biologist. Additional protection measures may be required and shall be developed in consultation with CDFW; they may include larger buffer zones or relocations, as appropriate.

Mitigation Measure BIO-1n, Protect Sonoma Tree Vole

Sonoma RCD shall ensure that the following measures for the protection of Sonoma tree vole are implemented for LandSmart practices impacting trees in Douglas fir forestland:

- For all projects requiring removal of Douglas-fir trees, a preconstruction survey for Sonoma tree vole shall occur prior to beginning work.
- If occupied trees or nests are identified within 100 feet of the Work Area, the project biologist shall determine whether or not construction activities may impact the voles. If it is determined that construction would not affect tree voles, construction can proceed without restrictions. The determination of disruption shall be based on the level of noise or construction disturbance and the line of sight between the tree and the disturbance.
- If the project biologist determines that construction activities would likely disrupt tree voles, a no-disturbance buffer shall be placed around the occupied tree locations. The no-disturbance

buffer shall include the occupied tree plus a 50-foot buffer. Construction activities in the no-disturbance buffer shall be avoided until the tree is unoccupied as determined by the project biologist.

Mitigation Measure BIO-2, Protect Wetlands and Waters

Sonoma RCD shall conduct a wetlands survey for areas that would be permanently or temporarily disturbed to confirm the location, extent, and regulatory status of wetland and water features within the LandSmart practice area. Sites that are entirely paved, compacted, or maintained as landscaped areas are not subject to this measure. Sonoma RCD shall ensure that project impacts on wetlands and waters are avoided where feasible. If jurisdictional wetlands cannot be avoided, the project shall require a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers and a Section 401 permit from Regional Water Quality Control Board; all permit requirements shall be implemented.

In addition, compensation for impacts on wetlands and waters shall follow the requirements in the CWA Section 404/401 permits. Compensatory mitigation may consist of the following:

- Providing compensatory mitigation through aquatic resource restoration, establishment, enhancement, and/or preservation.
- Obtaining credits from a mitigation bank.

Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans

The Sonoma RCD shall determine if individual properties have an active habitat conservation plan or fall within the Santa Rosa Plain Conservation Strategy Area. Where a LandSmart practice is located within an area or on a property with an active habitat conservation plan, Sonoma RCD shall require that the design and implementation of the practice be in full compliance with the biological goals, objectives, and requirements in the plan. The requirements may include specific surveys, preservation requirements, mitigation needs, and potential translocation requirements.

Mitigation Measure CR-1, Identify and Avoid or Minimize Impacts on Historic Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted by the Sonoma RCD or their representative for any practices with ground disturbance to identify known historic resources within or near the project area. If potentially historic resources or buildings older than 45 years are located within 100 feet of the project area, a qualified historian or archaeologist shall be retained to perform an evaluation of the potential historic resource and determine whether the project would impact the resource. If the resource is determined to qualify as historic under CEQA Guidelines Section 15064.5(a), and the LandSmart practice would impair the resource, such impacts on the resource shall be avoided. The LandSmart practice shall be designed and constructed to avoid impairment of the historic resources. Measures to protect historic resources may include, for example, temporary protective barriers, construction worker training, movement of the facility or practice site, and landscape screening.

Should the historic resource survey identify significant resources that cannot be avoided, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* shall be followed. A qualified historic preservation professional shall be retained to develop a treatment plan. Such professionals may include architects, architectural historians, historians, historic engineers, archaeologists, and others who have experience in working with historic structures. Mitigation measures recommended by the qualified historic preservation professional shall be implemented. These measures could include, but not necessarily be limited to:

- Avoidance of significant historic resources;
- Graphic documentation (photographs, drawings, etc.); and/or
- Restoration, stabilization, repair, and reconstruction.

If subsurface historic materials are encountered during construction activities, the piece of equipment or crew member that encountered the materials shall stop and the find inspected by a qualified historian/archaeologist. Project personnel shall not collect historic materials. If the historian/archaeologist determines that the find qualifies as a unique historic resource for the purposes of CEQA (Guidelines Section 15064.5(c)), all work shall be stopped in the immediate vicinity to allow the archaeologist to evaluate the find and recommend appropriate treatment. Such treatment and resolution shall include either modifying the project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment is protection and preservation.

Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts on Archaeological Resources

Prior to ground-disturbing activities, the Sonoma RCD or their representative shall be conduct a literature and archival records search to identify known archaeological resources within the disturbance area for individual LandSmart project implementation. If archaeological resources are located within the project site, a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for the purposes of CEQA (Guidelines Section 15064.5(c)), and project construction would adversely affect the resource, such impacts shall be avoided. The LandSmart practice shall be designed, constructed, and operated to avoid damage to the resource. Measures may include, for example, temporary protective barriers, construction worker training, or relocation of the project itself.

If previously unknown archaeological materials are encountered during construction, the piece of equipment or crew member that encountered the materials shall stop, and the find shall be inspected by a qualified archaeologist. Project personnel shall not collect archaeological materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for the purposes of CEQA (Guidelines Section 15064.5(c)), all work shall be stopped in the immediate vicinity to allow the archaeologist to evaluate the find and recommend appropriate treatment. Such treatment and resolution shall include either project modification to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment is protection and preservation.

Mitigation Measure CR-3, Procedures for Encountering Human Remains

The treatment of any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities shall comply with applicable State laws. If human graves are encountered, Sonoma RCD and private landowners and managers shall ensure that all work stops in the vicinity and the Sonoma County Coroner is notified. A qualified archaeologist shall evaluate the remains. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of identification, pursuant to PRC Section 5097.98. NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, Sonoma RCD, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. If the MLD and the other parties cannot not agree on the reburial method, Sonoma RCD shall follow PRC Section 5097.98(b), which states that "the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Mitigation Measure CR-4, Avoid or Document Paleontological Resources

If a paleontological resource is discovered during construction, all ground-disturbing activities within 50 feet of the find shall be temporarily halted but may be diverted to areas beyond 50 feet from the discovery and continue working. Sonoma RCD shall notify a qualified paleontologist who will document the discovery, evaluate the potential resource, and assess the nature and significance of the find. Based on scientific value or uniqueness, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the material. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices.

Mitigation Measure CR-5, Identify and Avoid or Minimize Impacts on Tribal Resources

The District shall consult annually with representatives from interested tribes following the Sonoma RCD Board of Director's selection of the year's LandSmart projects, to identify known tribal resources within the disturbance area for individual LandSmart project implementation.

If the annual review of LandSmart projects identifies that a project may cause substantial adverse change to a tribal cultural resource then the Sonoma RCD shall avoid or minimize adverse impacts in one of the following ways:

1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context.

2) Treatment of the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

- Protecting the cultural character and integrity of the resource.
- Protecting the traditional use of the resource.
- Protecting the confidentiality of the resource.

Mitigation Measure HAZ-1, Avoid Release of Contaminated Soils

During project planning, Sonoma RCD shall determine whether a known hazardous material site is located within 200 feet of a LandSmart practice if the work would require excavation, trenching, or drilling. If the practice is located near a hazardous site, Sonoma RCD shall require the property owner or manager to move the project to a location greater than 200 feet away from the contaminated site or require the property owner or manager to implement control measures to protect human health and the environment during construction, including, but not limited to, the following:

- Prepare and implement a site-specific health and safety plan in accordance with federal Occupational Safety and Health Administration (OSHA) and Cal-OSHA regulations to address worker health and safety issues during construction. The health and safety plan shall identify the potentially present chemicals, health and safety hazards associated with those chemicals, all required measures to protect construction workers from exposure to harmful levels of any chemicals identified at the site. The health and safety plan shall also specify the method for handling and disposal of both chemical products and hazardous materials used in construction and contaminated soil, should any be encountered during construction.

Mitigation Measure HAZ-2, Reduce Wildland Fire Hazards during Construction

Where a LandSmart practice is located within a very high fire hazard severity zone as shown on the latest CalFire Fire and Resource Assessment Program Map for Sonoma County, Sonoma RCD shall require property owners to remove and clear away dry, combustible vegetation from the construction site with specific focus on the staging areas for heavy equipment. Grass and other vegetation less than 18 inches in height shall be maintained where necessary to stabilize the soil and prevent erosion. Vehicles shall not be parked in areas where exhaust systems can contact combustible materials. Fire extinguishers shall be available on the site when working in high fire hazard areas.

Response to Agency Comments

Sonoma RCD received two comment letters during the comment period. The comment letters are provided on the following pages. The RCD's responses to the comments follow each letter. Revisions to the Draft Initial Study/Proposed Mitigated Negative Declaration in response to the comment letters are shown in ~~strikeout~~ and <u>underline</u> text.

Comment Letter #1

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

*Serious Drought.
Help save water!*

March 23, 2016

SONGEN178
SON-VAR-VAR
SCH # 2016022067

Ms. Valerie Minton
Sonoma County
Resource Conservation District
1221 Farmers Lane, Suite F
Santa Rosa, CA 95405

Sonoma County LandSmart Program – Mitigated Negative Declaration

Dear Ms. Minton:

1-1 Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Sonoma County LandSmart Program. Caltrans' new mission, vision, and goals signal a modernization of our approach to California's transportation system, in which we seek to reduce statewide vehicle miles traveled (VMT) and increase non-auto modes of active transportation. Caltrans plans to increase non-auto mode shares by 2020 through tripling bicycle, and doubling both pedestrian and transit. Also, these targets support the Metropolitan Transportation Commission's Sustainable Communities Strategy, which promotes the increase of non-auto mode shares by ten percentage points and a decrease in automobile VMT per capita by ten percent. Our comments are based on the mitigated negative declaration. Additional comments may be forthcoming pending final review.

Project Understanding

1-2 The proposed project would implement the LandSmart Program which would seek to improve the water quality and quantity issues, improve resilience to the impacts of climate change, and enhance the wildlife habitat of the project area. The proposed program would continue for 10 years, 2016 to 2025, and has identified 17 conservation practices drawn from the Conservation Practice Standards developed by the United States Department of Agriculture Natural Resources Conservation Service. These practices include road upgrades and decommissioning, stream habitat improvements, installation of a stream crossings, in-channel stabilizations, installation of irrigation pipeline, diversion of water around areas of concern, vegetation management, and invasive species control.

Lead Agency

1-3 As the lead agency, the County of Sonoma is responsible for all project mitigation, including any

1-3 Cont

needed improvements to State highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Habitat Restoration and Management

1-4

Project level activities related to habitat restoration and management should be done in coordination with local and regional Habitat Conservation Plans, and with Caltrans where our programs share stewardship responsibilities for habitats, species and/or migration routes.

Bridges, Trestles, Culverts and Other Structures in Riparian Environments

1-5

Some project level activities may affect riparian flow patterns upstream of bridges, trestles, culverts or other structures for which Caltrans holds responsibility. Please ensure your project level environmental documents include hydrological studies to determine whether such impacts will occur, and to identify appropriate mitigation measures.

Cultural Resources

1-6

Caltrans requires that a project environmental document include documentation of a current archaeological record search from the Northwest Information Center of the California Historical Resources Information System if construction activities are proposed within State right-of-way. Current record searches must be no more than five years old. Caltrans requires the records search, and if warranted, a cultural resource study by a qualified, professional archaeologist, and evidence of Native American consultation to ensure compliance with the California Environmental Quality Act (CEQA), Section 5024.5 and 5097 of the California Public Resources Code, and Volume 2 of Caltrans' Standard Environmental Reference (http://www.dot.ca.gov/ser/vol2/vol2.htm).

These requirements, including applicable mitigation, must be fulfilled before an encroachment permit can be issued for project-related work in State right-of-way (ROW); these requirements also apply to National Environmental Policy Act (NEPA) documents when there is a federal action on a project. Work subject to these requirements includes, but is not limited to: lane widening, channelization, auxiliary lanes, and/or modification of existing features such as slopes, drainage features, curbs, sidewalks and driveways within or adjacent to State ROW.

Encroachment Permit

1-7

Please be advised that any work or traffic control that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW must be submitted to the following address: David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website linked below for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits

Should you have any questions regarding this letter or require additional information, please contact Cole Iwamasa at (510) 286-5534 or cole.iwamasa@dot.ca.gov.

Sincerely,

PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

Response to Comment Letter 1: Caltrans

Response to Comment 1-1

The comment articulates the agency's commitment to reduce the statewide vehicle miles traveled (VMT). The comment does not relate to the Sonoma RCD's LandSmart Program, and therefore, no response is provided.

Response to Comment 1-2

In the comment, Caltrans presents the project understanding. The project is correctly characterized.

Response to Comment 1-3

The comment states that the County of Sonoma is the lead agency and is responsible for all project mitigation, included improvements to State highways. The comment also discusses the potential need for fair share contribution, financing, scheduling, and implementation responsibilities.

The comment incorrectly identifies Sonoma County as the lead agency. The Sonoma Resource Conservation District is the lead agency for the LandSmart Program. Improvements to State highways are not included in the LandSmart Program, nor will improvements occur within the Caltrans right-of-way; therefore, no mitigation measures warrant inclusion of fair share funding with Caltrans, as Sonoma RCD will be responsible for funding and implementation of mitigation measures.

Response to Comment 1-4

Caltrans states that project level activities related to habitat restoration and management should be done in coordination with local and regional Habitat Conservation Plans. There are no regional HCPs in the LandSmart Program area. There is one location HCP in the Petaluma River watershed for a property on Valley View Drive (APN 113-172-004), in Sonoma County, CA. Sonoma RCD will coordinate efforts should a LandSmart project be located near the HCP boundary.

Response to Comment 1-5

Caltrans noted that some project activities may affect flow patterns upstream of bridges, trestles, culverts or other structures for which Caltrans holds responsibility. Caltrans requests that project-level environmental documents include hydrological studies to determine impacts and to identify mitigation measures.

Sonoma RCD will carefully plan projects to ensure that adverse conditions downstream will not occur, and hydrology studies will be done where deemed appropriate based on the type and location of the LandSmart project. In most cases, the LandSmart project will be small in nature and will focus on restoration work on individual private properties with no influence on infrastructure for which Caltrans holds responsibility.

Response to Comment 1-6

The comment states that Caltrans requires current archaeological record searches if construction activities are proposed within the State right-of-way and that encroachment permits are required for work in these areas.

The LandSmart project does not include work in the State right-of-way, and no encroachment permits will be needed.

Response to Comment 1-7

The comment advises that any work or traffic control that encroaches onto the State right-of-way will require an encroachment permit, and the comment explains the process to apply for the permit.

The LandSmart program does not include work in the State right-of-way, and no encroachment permits will be needed.

State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Comment Letter #2

April 7, 2016

Ms. Valerie Minton
Sonoma Resource Conservation District
1221 Famers Lane, Suite F
Santa Rosa, California 95405

Dear Ms. Minton:

Subject: Sonoma County LandSmart® Program Coordinated CEQA Compliance, Public Draft, Mitigated Negative Declaration, SCH #2016022067, Sonoma County

2-1

The California Department of Fish and Wildlife (CDFW) has reviewed the draft Mitigated Negative Declaration (MND) for the Sonoma County LandSmart® Program Coordinated CEQA Compliance Project (Project). CDFW is providing comments on the draft MND as a Trustee Agency and Responsible Agency. On March 22, 2016, CDFW received your approval to extend the comment period for CDFW to April 7, 2016.

As Trustee for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California. CDFW also acts as a Responsible Agency pursuant to the California Environmental Quality Act (CEQA) Section 15381 if a project requires discretionary approval, such as issuance of a California Endangered Species Act (CESA) Incidental Take Permit (ITP) [Fish and Game Code section 2080 *et seq.*], or Lake or Streambed Alteration Agreement (LSAA) (Fish and Game Code section 1600 *et seq.*). Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the proposed Project.

Project Location and Description

The Project is located in the Sonoma Resource Conservation District (Sonoma RCD) service area, which includes portions of Sonoma County. The proposed Project may be implemented in any of the following watersheds across Sonoma County: Russian River, Russian Gulch, Chileno Creek, Gualala River and north coastal watersheds, Petaluma River, Stemple Creek and Sonoma Creek.

2-2

The Sonoma RCD is proposing to implement the Project as a means to provide grape growers, ranchers, and other land managers an opportunity to meet their natural resource management goals while supporting productive lands and improving water quality and wildlife habitat. Aspects of the Project include project development, construction oversite, permitting, and environmental compliance for implementation of best management practices. The best management practices included in the Project are designed to improve water quality and quantity issues, improve resilience to the impacts of climate change, and enhance fish and wildlife habitat across the County.

2-2

The LandSmart® Coordinated CEQA Compliance Program includes 17 conservation practices that are grouped into 7 categories. The practices are drawn from established Conservation Practice Standards developed by the USDA Natural Resources Conservation Service (NRCS). The NRCS practices will serve as a starting point for how Sonoma RCD will implement projects. Projects will generally consist of stabilization of eroding streambanks, development of stable stream crossings, improvements to access roads, installation of pipelines and diversions to move water to stable areas for discharge, establishment of vegetative cover, and invasive species control.

It is stated that this Project will be implemented through 2025 and may include 300 projects, averaging 30 per year.

Program MND

As stated on page 5, this is a Program MND. As such, the specifics of an individual project's impact have not been analyzed, rather the evaluation of environmental impacts focuses on effects that could be expected to result from the 7 categories of project types.

2-3

Section 2.4 of the document outlines the procedure that Sonoma RCD will take to ensure future projects comply with CEQA. CDFW recommends that when Sonoma RCD's CEQA sub-committee review the annual projects for CEQA compliance, that the CEQA Guidelines §15168(c)(4) be followed, "Where the subsequent activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR," or the Program MND in this case. CDFW recommends reviewing the level of CEQA and if a Program MND is appropriate for future projects; if so, a checklist should be developed and included in the Program MND.

Project Description Comments

In Section 2.6.2 Stream Restoration and Habitat improvement, on page 16 states that an operations and maintenance plan will be developed for channel stabilization and fish passage projects that will guide inspections, repair, modification, and maintenance of these project types.

Section 2.6.5: Pipelines on page 28 addresses water drafting and relies on compliance with land owner's water right permit to reduce impacts.

2-4

The stream stabilization, fish passage, and water diversion activities may include an activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, for which, CDFW may require an LSAA, pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. CDFW, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at http://www.wildlife.ca.gov/habcon/1600/ or to request a notification package, contact the Bay Delta Regional Office at (707) 944-5500. In addition, any water diversion must be otherwise legal under the State Water Resource Control Board Division of Water Rights.

2-5

Activity 2.6.6 (Diversions) involves grading or constructing drainage diversion channels to either intercept concentrated runoff from developed areas or to divert sheet flow. CDFW is concerned that potentially significant impacts from this activity are not specifically addressed in the impact analysis nor are they, or other impacts, addressed in a cumulative impact analysis section. While CDFW agrees that diverting gutter downs spouts and concentrated curb and gutter flow before entering animal waste systems could be beneficial, the effect of grading up to 3,000 cubic yards across 5,000 linear feet of land could have adverse impacts. This form of land shaping could facilitate water capture and storage for agricultural consumptive use of water that would otherwise benefit fish and wildlife resources. Diverting water off of the landscape for storage could impact the hydrologic regime of rare plants, ephemeral streams, perennial streams, and springs that support fish and wildlife resources. This practice could concentrate flow and result in erosion and scour of the receiving waterway from the modified peak flow. The MND should more clearly address this activity, impacts and propose mitigation as appropriate.

Species and Habitat Occurrence Evaluation

2-6

Section 3: Existing Conditions briefly discusses habitats and species that occur in specific land areas. Species and habitat occurrences for the evaluation of future projects in the program should not solely rely upon this CEQA document. The occurrence of species listed in this document is based on existing documentation and positive occurrence databases such as the California Natural Diversity Database (CNDDB) and may not reflect actual species occupancy. Please note that the CNDDB contains only records of species and natural communities which have been observed and documented. Absence of data in such sources does not confirm that the species is absent from the proposed Project area.

The Project covers a large regional area which contains habitat for special-status species. CDFW recommends focused species surveys be conducted at future Project locations by qualified biologists during the appropriate survey period(s) to determine if any species are present and if they would be impacted by any of the proposed Project activities. Information regarding survey and monitoring protocols and guidelines for sensitive species can be found on CDFW's website at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.

Rare Plants

2-7

California Native Plant Society (CNPS) recommends that project impacts on Ranks 1-4 plant species be analyzed under CEQA. If a plant meets the CEQA Guidelines 15380 criteria, impacts on it would generally be considered potentially significant warranting mitigation. Even if a plant does not meet these criteria, impacts may still be considered significant warranting mitigation. This should be determined on a case-by-case basis. See the following link for more information: http://www.cnps.org/cnps/rareplants/ranking.php

The CEQA Appendix G checklist (section IV.A) requires analysis of substantial adverse effects on special status species identified by U.S. Fish and Wildlife Service. Therefore, the CEQA document should analyze impacts on Federal Species of Concern and provide mitigation for any substantial adverse effects on the species.

Botanical surveys should be conducted throughout the blooming period for all sensitive plant species potentially occurring within the proposed Project area. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. The assessment should include endangered, threatened, and locally unique species and sensitive habitats. Rare, threatened

2-7 Cont.

and endangered species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, section 15380). The potential for sensitive plant species, including those listed by the California Native Plant Society should be evaluated.

Special-Status Wildlife: Tricolored Blackbird

In January 2016, the tricolored blackbird (TRBL) was made a candidate species under CESA by the California Fish and Game Commission. During the candidacy period, "take" as defined in the Fish and Game Code §86 shall be prohibited unless authorized by CDFW pursuant to §§ 2080.1, 2091(a), or 2081(b) of CESA.

2-8

Table 6. Special-Status Wildlife Species with Potential to Occur in the LandSmart® Program Area on page 87 should be updated to include Tricolored blackbird as a candidate species. CDFW recommends that the MND include measures to avoid or minimize loss of TRBL nesting and foraging habitat, and full mitigation to offset any unavoidable losses. Loss of nesting habitat is considered a significant impact; therefore, mitigation should be identified and included in the MND.

2-9

A discussion should be included that states that CESA prohibits unauthorized take of a candidate species, just as it prohibits such take of threatened and endangered species. Therefore, if "take" or adverse impacts to candidate or any other species listed under CESA cannot be avoided either during Project activities or over the life of the Project; an Incidental Take Permit (CESA permit) must be obtained (pursuant to Fish and Game Code Section 2080 et seq.). Issuance of a CESA Permit is subject to CEQA documentation; therefore, the MND must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the proposed Project will impact CESA-listed species, early consultation with CDFW is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit. More information about the CESA permit process can be found on the CDFW website at https://www.wildlife.ca.gov/Conservation/CESA.

Mitigation Measures

In all instances where "take" of a State listed or candidate species may occur, an Incidental Take Permit from CDFW may be required. The MND shall clearly identify possible and foreseeable mitigation requirements of the Incidental Take Permit such as compensatory habitat creation and or conservation.

2-10

The MND should identify and discuss any impacts to habitats and any mitigation measures necessary to offset those impacts. CDFW recommends mitigation for impacts to sensitive habitat types including, but not limited to, grasslands, riparian, wetlands, oak woodland, and vernal pool. In addition, impacts to special-status species and the habitats upon which they depend should be identified and appropriate mitigation measures included in the MND. We recommend temporary and permanent impacts be mitigated by avoidance, minimization of impacts, and acquisition and preservation of at least an equal area and quality as that lost. These measures can then be incorporated as enforceable project conditions to reduce potential impacts to biological resources to less than significant levels.

In all instances where the project will have a substantial adverse effect on a lake or stream, the MND mitigation measures should identify possible and foreseeable mitigation requirements of the LSAA such as compensatory habitat creation and or conservation; the MND should also state that an LSAA would be required.

2-11 Mitigation Measure BIO-1b on page 89 outlines capturing, handling and releasing special-status wildlife species; a CDFW-issued scientific collection permit should not be used as authorization to handle species related to projects.

2-12 Mitigation Measure BIO-1i on page 96 outlines protecting nesting birds during construction; it should be changed to state that buffer distances for bird nests should be site-specific and an appropriate distance, as determined by a Qualified Biologist. The buffer distances should be specified to protect the bird's normal bird behavior to prevent nesting failure or abandonment. The buffer distance recommendation should be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances.

2-13 Regarding Mitigation Measure BIO-1k for protecting special-status bats, should add the following language: a Qualified Biologist, with experience in bat biology, shall conduct a habitat assessment for potentially suitable bat habitat within six months of project activities. If the habitat assessment reveals suitable bat habitat, then the Qualified Biologist should develop an avoidance and protection plan. The avoidance and protection plan should: 1) Evaluate the suitable habitat present within and directly adjacent to the Project footprint. 2) Evaluate and develop work windows, if appropriate. Work windows that may avoid sensitive life stages include September 1 through October 15, when young would be self-sufficiently Volant, and prior to hibernation, and March 1 to March 31 to avoid hibernating bats and prior to formation of maternity colonies. 3) Identify appropriate buffers both during and outside of the work windows. 4) Outline potential project impacts due to Project activities, e.g. noise and vibration. The MND should include biological mitigation measures, such as potential habitat mitigation, to conclude that the impacts have been mitigated to less-than-significant levels.

CDFW appreciates the opportunity to comment on the Sonoma County LandSmart® Program Coordinated CEQA Compliance Project. CDFW staff is available to meet with you to further clarify our comments and provide technical assistance on any changes necessary to protect resources. If you have any questions, please contact Mr. Timothy S. Dodson, Environmental Scientist, at (707) 944-5513; or Ms. Karen Weiss, Senior Environmental Scientist (Supervisory), at (707) 944-5525.

Sincerely,

Scott Wilson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Response to Comment Letter 2: California Department of Fish and Wildlife

Response to Comment 2-1

The comment articulates the agency's role as a Trustee for the State's fish and wildlife resources and as a Responsible Agency pursuant to CEQA. Sonoma RCD agrees with the comment.

Response to Comment 2-2

In the comment, CDFW presents the project understanding. The project is correctly characterized.

Response to Comment 2-3

CDFW requests the addition of a checklist or similar mechanism to the programmatic MND for use by the Sonoma RCD to evaluate individual LandSmart projects to determine if the environmental effects of the project were covered in the programmatic MND. The programmatic MND included a discussion about the annual selection process and the requirements to assess individual project impacts and prepare documentation for each project. However, Sonoma RCD agrees to add a checklist to the programmatic MND as Appendix B. Sonoma RCD staff will use the checklist to evaluate projects, to identify appropriate site-specific mitigation measures, and to document evaluation results for each LandSmart project.

The Project Description is revised as follows on page 5 under Section 2.4 Annual Project Selection Process paragraph 3:

> Upon approval of this programmatic MND, the RCD will review all proposed LandSmart projects annually, or as needed, to evaluate their applicability for coverage under this programmatic environmental assessment and document the impacts of individual LandSmart projects using the checklist included in Appendix B, LandSmart Project Checklist. ~~Staff will review potential projects and prepare documentation of the projects to be covered by the LandSmart Program which will be publicly noticed as part of the agenda of a regularly scheduled or special meeting of the Sonoma RCD Board of Directors and approved for final design and implementation.~~ The review of these documents will be included as a publicly noticed agenda item of a regularly scheduled or special meeting of the Sonoma RCD Board of Directors. Projects that are not applicable for coverage under this programmatic environmental assessment will proceed with CEQA evaluations on a project-by-project basis.

The Appendix B, LandSmart Project Checklist, is included as Appendix A to this document.

Response to Comment 2-4

The comment explains that the issuance of a Lake and Streambed Alteration Agreement (LSAA) is the agency's responsibility for stream stabilization, fish passage, and water diversion activities and that issuance of an LSAA is subject to CEQA. The agency states that the potential impacts to the stream or riparian resources, mitigation measures, and monitoring requirements need to be addressed. The comment also states that water diversions must also be legal under the State Water Resource Control Board Division of Water Rights.

The programmatic MND includes an evaluation of potential impacts from stream stabilization, fish passage, and water diversion activities and the mitigation measures needed to reduce potential impacts. Sonoma RCD also understands that a LSAA will be required for work within CDFW jurisdiction, specifically for the activities that CDFW identifies in the comment. Table 3, Regulatory/Permitting Agencies on page 35 identifies the need for compliance with Fish and Game Code Section 1602. The LSAA permit application will include the individual project size, location, and impacts within CDFW jurisdiction, as well as the specific avoidance and minimization measures and mitigation measures needed for the specific project. No changes to the programmatic MND are required.

Response to Comment 2-5

The comment articulates CDFW's concern that the environmental impacts of diversions are not specifically addressed in the analysis section of the programmatic MND and that the effects of grading up to 3,000 cubic yards across 5,000 linear feet of land could have adverse impacts.

An individual diversion project may be up to 1,000 feet long; however, most diversions will be much shorter and likely in the range of a couple hundred feet. On average, the LandSmart Program may include up to an average 2,000 feet of diversion in a given year spread across the entire LandSmart Program area. The annual maximum will be 5,000 feet, again, spread across the entire LandSmart Program area. The characterization of 3,000 cubic yards across a single 5,000 linear foot diversion is not correct.

The primary objective of diversions or earthen channels installed across a slope is to break up concentrated flows on long slopes and to direct surface runoff into a grassy or vegetated channel to allow for infiltration into the ground or to facilitate discharge into an underground outlet or stable watercourse. The cross-slope berms will slow stormwater runoff so that it infiltrates, entering the streams in summer when wildlife and riparian plants need it most, rather than in winter when the system is not water-limited. Diversions that protect agricultural land will have a minimum capacity of a 10-year frequency, 24-hour duration storm. The diversions from farm or grazing land will not be stored and used for agricultural purposes, and therefore, water would still be available for fish and wildlife resources. The following text from page 28 is revised in response to the comment to remove reference to water storage:

> **2.6.6 Diversion**
>
> The primary purpose of a diversion is to direct excess water for safe disposal <u>and as a pollution control activity</u> ~~or storage for use~~. Diversions intercept surface and shallow subsurface flows, reduce damage from upland runoff, and direct water away from features such as watercourses, actively eroding areas, rural infrastructure, and animal waste systems. Diversions break up concentrated flows on long slopes and can be used on land that is generally considered too flat or irregular for terracing.

Diversions designed to protect buildings, roads, and animal waste management systems would have a minimum capacity for the peak discharge from a storm of at least a 25-year frequency, 24-hour duration. These standards meet the Regional Water Board Low Impact Development Standards to help

mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

The analysis included in the MND evaluated the impacts of the LandSmart activities, including diversions, with the implementation of the programmatic environmental protection measures and general program measures included in Section 2.10. The construction-period water quality and protection measures will be used for all ground disturbing activities, and they measures will protect water quality by limiting the disturbance area and by requiring the development and implementation of a Stormwater Pollution Prevention Plan, or a similar document. Additionally, the post-construction measures require erosion and sedimentation control to prevent water quality impacts and monitoring to ensure the measures function properly. No additional changes to the MND are needed.

Response to Comment 2-6

CDFW comments that species and habitat occurrences for the evaluation of future projects in the program should not rely solely on the programmatic MND. CDFW goes on to recommend that focused species surveys be conducted at future project locations and that the surveys be completed by a qualified biologist during the appropriate time of year.

Sonoma RCD agrees that the programmatic document does not provide all the information needed to evaluate the impacts of individual projects. The following general measures will be added to the Project Description as a new section 2.10.4 on page 41:

General Measures to Avoid Impacts on Biological Resources

LandSmart On-the-Ground Program projects will be designed and implemented in accordance with the following measures to avoid disturbance within or adjacent to sensitive biological resources:

- During initial site review, RCD staff will determine whether any natural resources (e.g., sensitive habitat types, special-status species habitat) may be present that require further assessment by a qualified project biologist and will initiate those assessments. This initial review will include a site visit by RCD staff with expertise in sensitive habitats and special-status species requirements, as well as review of the current California Natural Diversity Database records for the project vicinity.
- When required, RCD staff will submit permit applications to the regulatory agencies. As part of permit approval, regulators may provide additional conditions beyond those required herein, which will be incorporated into the project plans and contracts with the cooperating landowner or approved representative. Should site-specific permits require for more stringent conditions to provide greater resource protection, the more protective conditions will apply.
- If a project would result in "take" of a listed or candidate species, which is defined as actions that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt any individual of an endangered, threatened, or candidate species, a site-specific Incidental Take Permit (ITP) will be obtained from CDFW, NMFS, and/or USFWS.
- Project planning and design will maintain naturally occurring seasonal water sources for wildlife and migratory corridors for fish and wildlife species.

- If a system is installed for establishment-period irrigation that relies on water from a stream or creek, it will meet NMFS *Water Drafting Specifications* (August 2001, or as updated).
- The timing of project construction will take into consideration soil and water quality protection, as well as fisheries and other wildlife usage in the project area. Practices that involve grading, other earth movement activities, and work within a channel or along a streambank will be implemented in the period between June 1 and October 15, unless site- or project-specific recommendations from the project biologist suggest a superior work window to avoid impacts on biological resources.
- Work beyond October 15 may be authorized on a site-specific basis by regulatory agencies, provided the work would be completed prior to first winter rains that result in stream flows.
- Planting may occur year-round under suitable conditions.

Response to Comment 2-7

CDFW comments that the California Native Plant Society (CNPS) recommends that project impacts on Ranks 1-4 plant species be analyzed in CEQA. The comment also proposes that the document analyze impact on Federal Species of Concern and provide mitigation for any substantial adverse effects on the species.

Sonoma RCD addressed special-status plants in the MND, which is defined as plants that are legally protected under the California and federal Endangered Species Acts or other regulations, and species that are considered rare by the scientific community. CEQA Guidelines (§15380) require the evaluation of endangered, rare, or threatened plants. Species are presumed to be endangered, rare, or threatened if it is listed as such in the California or federal Endangered Species Acts or if the plant meets the definition of "endangered, "rare", or "threatened" under CEQA. Although plants included in the CNPS inventory have no formal legal protection, Sonoma RCD includes Rank 1-4 species in their list of special status species.

Mitigation Measure BIO-1a addresses the loss of Rank 1b plants. Sonoma RCD has expanded the measure to include CNPS List 2, 3, and 4 (sensitive) plant species as well as Federal Species of Concern in response to the CDFW request. Mitigation measure BIO-1 addresses State and federally listed or proposed plant species and occupied or critical habitat. The measure goes on to list the methods for focused surveys. Mitigation Measure BIO-1a is revised as follows:

> **Mitigation Measure BIO-1a, Avoid Loss of Listed or CNPS 1B, 2, 3, or 4 Plants and their Habitats**
> Sonoma RCD shall avoid loss of State and federally listed or proposed plant species; State candidates for listing; CNPS List 1B species; CNPS List 2, 3, and 4 species; and occupied or critical habitat for these species to the extent feasible. Where avoidance of individuals or habitat is infeasible, Sonoma RCD shall compensate for loss of State and federally listed or proposed plant species, candidates for listing, and CNPS Ranks 1 and 2 plants as required by USFWS or CDFW.
>
> All protocol-level surveys shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.

Where indicated by the RCD's initial site review, reconnaissance-level surveys shall be performed by a qualified biologist to determine whether suitable habitat for special-status plants is present within the project area. If habitat for listed or CNPS ~~List 1B~~ Rank 1-4 plants is not identified during surveys, no further mitigation for impacts on target species is necessary under this measure.

Response to Comment 2-8

CDFW comments that the tricolored blackbird was made a candidate species under CESA in January 2016 and that the loss of nesting habitat is considered a significant impact.

The April 2016 list of state and federally listed species in California includes six State Candidate species, and three of the species were addressed in the MND as potentially present in the LandSmart program area. The conservation status for tricolored blackbird and Townsend's big-eared bat are revised in Table 6, Special-status Wildlife Species with Potential to Occur in the LandSmart Program as follows. Northern spotted owl was already listed as a Candidate species in Table 6, and, therefore, no changes were necessary.

Table 1. Special-Status Wildlife Species with Potential to Occur in the LandSmart Program Area

Common Name	Scientific Name	Federal Listing	State Listing	Other Conservation Status
Terrestrial Species				
Callippe silverspot butterfly	*Speyeria callippe callippe*	E	--	--
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	E	--	--
Northern spotted owl	*Strix occidentalis caurina*	T	C	SSC
western snowy plover[(b)]	*Charadrius alexandrinus nivosus*	T	--	SSC
California clapper rail[(b)]	*Rallus longirostris obsoletus*	E	E	--
California black rail[(b)]	*Laterallus jamaicensis coturniculus*	--	T	FP
bank swallow	*Riparia riparia*	--	T	
tricolored blackbird	*Agelaius tricolor*	--	SC	~~SSC~~
Townsend's big-eared bat	*Corynorhinus townsendii*	C	SC	~~SSC~~
White-tailed kite	*Elanus leucurus*		--	FP
Pallid bat	*Antrozous pallidus*	--	--	SSC
American badger	*Taxidea taxus*	--	--	SSC
Burrowing owl	*Athene cunicularia*	--	--	SSC
Sonoma tree vole	*Arborimus pomo*	--	--	SSC

The tricolored blackbird and Townsend's big-eared bat were already included in the discussion of special-status birds and bats starting on page 95 of the MND. Mitigation Measure BIO-1i includes protection of the bird during construction, and Mitigation Measure BIO-1k, Protect Special-status Bats

addresses protection measures needed to implement LandSmart projects. No additional changes to the MND are required.

Response to Comment 2-9

CDFW comments that all instances where "take" of a State-listed or candidate species may require an Incidental Take Permit (ITP) from the agency. CDFW requests that the programmatic MND clearly identify possible and foreseeable mitigation requirements of the ITP such as compensatory habitat creation and/or conservation. Since specific individual project impacts are speculative and will depend on the location and the components of the LandSmart project, specific compensatory mitigation required by CDFW is not ready for evaluation at this time. However, the post-construction erosion and sediment control measures and some mitigation measures, such as measures for plants, wetlands, and California tiger salamander, include discussion of compensatory mitigation. Sonoma RCD assumes that actions that may be required for any compensatory mitigation efforts will be of similar nature to the ones analyzed in the LandSmart Program as described in the MND.

Response to Comment 2-10

The comment notes that the MND should identify and discuss any impacts to habitats and any mitigation measures necessary to offset those impacts.

Mitigation measures for protection of special-status plant and wildlife species habitats are included in mitigation measures BIO-1a through BIO-1n, and these measures include protection of individuals and the habitat and plant communities in which they occur. Nonetheless, Sonoma RCD agrees to expand Mitigation Measure BIO-1a to include measures to mitigate impacts to sensitive plant communities as requested by CDFW. Mitigation Measure BIO-1a is revised as follows:

> **Mitigation Measure BIO-1a, Avoid Loss of Listed or CNPS 1B, 2, 3, or 4 Plants and their Habitats, Sensitive Trees, and Sensitive Plant Communities**
> Sonoma RCD shall avoid loss of State and federally listed or special status plants, sensitive trees, and sensitive plant communities.
>
> *Special Status Plants*
>
> Sonoma RCD shall avoid loss of State and federally listed or proposed plant species; State candidates for listing; CNPS List 1B species; CNPS List 2, 3, and 4 species; and occupied or critical habitat for these species to the extent feasible. Where avoidance of individuals or habitat is infeasible, Sonoma RCD will compensate for loss of State and federally listed or proposed plant species, candidates for listing, and CNPS Rank 1 and 2 plants as required by USFWS or CDFW.
>
> All protocol-level surveys shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.
>
> - Where indicated by the RCD's initial site review, reconnaissance-level surveys shall be performed by a qualified biologist to determine whether suitable habitat for special-status plants is present within the project area. If habitat for listed or CNPS ~~List 1B~~ Ranks 1-4 plants is

not identified during surveys, no further mitigation for impacts on target species is necessary under this measure.

- If suitable habitat is identified, focused surveys will be performed to determine presence or absence of target species wherever habitats for these species will be impacted. Any special-status species found will be documented. The suitable habitat will be avoided through project design, where feasible, and a buffer zone of 50 feet will be established around State and federally listed or proposed plant species, candidates for listing, and CNPS Rank 1 and 2 plants ~~any special-status plant populations~~ to prevent entry and disturbance during work activities. A qualified biologist will designate the buffer zone if the zone will be less than 50 feet, and the buffer zone distance will be based on the target species and proposed work. The buffer zone will be clearly demarcated with construction fencing and avoided by all construction personnel and equipment.
- If suitable habitat cannot be avoided, project-specific protection measures will be developed with concurrence by USFWS or CDFW. The following are examples of measures that may be required:
  - Where project activities would result in impacts on vernal pool habitats, conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Project that may Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps Files #22342N) may need to be implemented.
  - Listed or List 1B and Rank 2 plants within the project footprint may need to be transplanted to a mitigation site approved by CDFW or USFWS. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
  - Where construction activities unavoidably affect a listed of List 1B plant species, pipeline corridor widths may need to limited to a maximum 5 feet through plant habitat.
  - Acquisition and preservation of at least an equal area and quality of habitat that is lost.
- Focused surveys for the federally listed Sonoma sunshine, Sebastopol meadowfoam, Burke's goldfields, and the many-flowered navarretia will be conducted in accordance with USFWS protocols developed for federally listed plants on the Santa Rosa Plain: Guidelines and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain (USFWS 1996). The project botanist will report special-status plant occurrences to the CNDDB.
- Any herbicide application to treat noxious non-native weeds will ensure that no native plants are affected.
- No fertilizers or irrigation will be used within the buffer zone around a special-status plant population.

Sensitive Plant Communities

The Sonoma RCD shall avoid permanent impacts to native special-status plant communities (as defined by CDFW) and protected trees (as defined by the Sonoma County Tree Ordinances), to the extent feasible. The following measures shall be implemented to protect specific natural communities:

Vernal Pools

- Consult a qualified biologist who specializes in vernal pool ecology about construction methods if construction activities cannot avoid disturbance in a vernal pool.
- Do not use heavy equipment in vernal pools to avoid compaction.
- Restore and revegetate any disturbed areas within a vernal pool or within 100 feet of a vernal pool as guided by a qualified biologist.
- Use non-chemical means for invasive species removal or control in vernal pools. Encourage selected grazing as a means to address invasive species where applicable.
- Consult a vernal pool expert if restoration or enhancement of vernal pools is required.

Native Grasslands

- Design LandSmart projects to improve natural drainage to prevent erosion and loss of grassland habitat.
- Avoid soil disturbance and compaction in grassland habitat during implementation of LandSmart projects.
- Do not convert native grassland to non-agricultural uses.
- Use native seed for revegetation and restoration in grassland habitat.

Oak Woodlands

- Do not alter grades in oak woodland habitat, including changes in the ground level under and near trees. Do not mound or remove soil near Root Protection Zones.
- Do not change drainage patterns and do not install irrigation in oak woodlands to avoid adding water in the root zone during the summer when soil temperatures are high and soils are normally dry.
- Do not alter flow patterns around oak trees that could result in water collecting around trees.

If permanent impacts cannot be avoided, sensitive plant communities shall be replaced, restored, or preserved. Measures may include:

- If permanent impacts to sensitive trees or plants occur in the project area and cannot be avoided, the RCD may develop a site-specific compensatory program for the affected resource. The compensatory program must be acceptable to the appropriate agency.
- Sensitive plant communities may need to be created using native seed on an approved mitigation site.
- Trees larger than 6 inches in diameter may be subject to protection and compensation.

Mitigation projects shall be monitored annually for five years using success criteria developed in coordination with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

In addition to the changes to Mitigation Measure BIO-1a, other biological resources measures and mitigation measures include avoidance and impact minimization requirements and required replacement ratios. *Measures for Planting and Revegetation after Soil Disturbance* in Section 2.10.2 in

the Project Description include replacement ratios for native trees and shrubs. Section 2.10.3 General Program Conditions for Vegetation Management includes a 3:1 replanting ratio and canopy cover sufficient for habitat needs required to prevent impacts on native species.

Mitigation Measure BIO-1b, Avoid Listed Special-status Wildlife Species, includes a list of required activities needed if the avoidance of individuals or habitat is not feasible given the location of the LandSmart practice.

Mitigation Measure BIO-1c, Measures to Protect Listed Salmonids, and Mitigation Measure BIO-1d, Measures to Protect California Freshwater Shrimp, include vegetation replacement ratios to account for impacts of severely trimmed or removed vegetation in riparian areas that serve as habitat for salmonids and California freshwater shrimp.

Mitigation Measure BIO-2, Protect Wetlands and Waters, requires compensation for impacts on wetlands and waters and identifies the need for CWA 404/401 permits.

Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans, requires full implementation of the Santa Rosa Plain Conservation Strategy's biological goals, objectives, mitigation needs, and preservation requirements.

In response to the CDFW comment, Sonoma RCD also makes the following changes to the Draft IS/MND:

Page 82:

Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
IV. Biological Resources: Would the project:				
a&b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, special status species, or riparian or other sensitive natural community identified in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
~~b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?~~	~~☐~~	~~☐~~	~~☒~~	~~☐~~

Page 83:

IV.a) Impacts on Special-status Species and Sensitive Natural Communities – Less than Significant with Mitigation

The biological evaluation of the LandSmart Program area identifies the presence of potential habitat for special-status plant and wildlife species, including nesting birds covered under the Migratory Bird Treaty Act (MBTA) and sensitive natural communities that provide habitat. Information about special-status species and habitat types within the LandSmart Program area was obtained from the following sources, and the results are shown in Table 5:

- California Natural Diversity Database (CNDDB 2015),
- California Wildlife Habitat Relationships (CDFW 2015),
- California Native Plant Society Online Inventory of Rare and Endangered Plants (CNPS 2015),
- National Marine Fisheries Service , and
- U.S. Fish and Wildlife Services (USFWS 2015) online database for federal threatened and endangered species.

Page 84:

Special-status Plants and Sensitive Natural Communities

Special-status Plants

Special-status plants are those listed as endangered or threatened by USFWS or listed as endangered, threatened, a candidate for listing, a species-of-special concern, or rare by the State and CDFW.

Page 85:

Sensitive Plant Communities

Sensitive natural communities within the LandSmart Program area include riparian areas, oak woodland, native grasslands, mixed evergreen forests, and chaparral.

LandSmart practices could be implemented throughout Sonoma County and would range in size depending on the individual practice and site conditions; see the Project Description for project sizing limitations. A number of LandSmart practices, including many of the stream habitat improvement practices, pipelines, etc., could temporarily impact sensitive natural communities. Although the exact location of LandSmart projects will be determined on an annual basis as discussed in the Project Description, construction could require tree removal or trimming within riparian habitat.

BMPs, including the requirement to replant areas affected during construction of LandSmart practices, are included as part of the LandSmart Program and presented in the Project Description. The Vegetation Management measures and Post-construction Erosion and Sedimentation Control requirements include limitations on the amount and total area of native riparian shrubs and woody perennials removed for each LandSmart project. Strict adherence to the Vegetation Management requirements will keep potential impacts on riparian communities to less than significant during construction of LandSmart

practices by limiting the disturbance and requiring revegetation with appropriate native plantings following construction activities.

Even with the BMPs from the Project Description, the LandSmart practices could impact vernal pools through ground disturbance and compaction. If construction activities occur in or close to a vernal pool, the impacts could be significant and mitigation would be required. The measures are included in Mitigation Measure BIO-1a. Through implementation of the mitigation measure, which restricts the use of heavy equipment and chemicals and requires the restoration and revegetation of disturbed areas in vernal pools, the impact would be reduced to less than significant.

Native grasslands located in or near a LandSmart project could be impacted if native plants are lost due to construction activities or due to existing uncontrolled erosion. The loss of native grassland could be significant and would require restoration and replacement to reduce impacts. Mitigation requirements for native grasslands are included in Mitigation Measure BIO-1a, which includes avoidance and revegetation requirements that would reduce the impact to less than significant.

Project Description Section 2.10 includes extensive requirements for the protection of native trees, and these measures would also protect oak woodlands. However, if individual trees and shrubs in the oak woodlands are lost during implementation of the LandSmart Program, the impact could be significant. Mitigation Measure BIO-1a includes additional measures to protect oak woodland habitat and reduce impacts to less than significant. The measures require protection against changes in the hydrologic characteristics of the soils in oak woodlands that could lead to the proliferation of harmful soil microorganisms that can injure roots and result in tree mortality.

Page 100:

~~IV.b) Impacts on Riparian or Sensitive Natural Communities – Less than Significant~~

~~Sensitive natural communities within the LandSmart Program area include riparian areas, oak woodland, native grasslands, mixed evergreen forests, and chaparral.~~

~~LandSmart practices could be implemented throughout Sonoma County and would range in size depending on the individual practice and site conditions; see the Project Description for project sizing limitations. A number of LandSmart practices, including many of the stream habitat improvement practices, pipelines, etc., could temporarily impact sensitive natural communities. Although the exact location of LandSmart projects will be determined on an annual basis as discussed in the Project Description, construction could require tree removal or trimming within riparian habitat.~~

~~LandSmart practices could impact vernal pools. These impacts and the mitigation measure to reduce impacts are presented under Checklist Question IV.a) above. LandSmart practices could also impact wetlands, and these impacts are addressed under Checklist Question IV.c) below.~~

~~BMPs, including the requirement to replant areas affected during construction of LandSmart practices, are included as part of the LandSmart Program and presented in the Project Description. The Vegetation~~

~~Management measures and Post-construction Erosion and Sedimentation Control requirements include limitations on the amount and total area of native riparian shrubs and woody perennials removed for each LandSmart project. Strict adherence to the Vegetation Management requirements will keep potential impacts on riparian communities to less than significant during construction of LandSmart practices by limiting the disturbance and requiring revegetation with appropriate native plantings following construction activities.~~

Response to Comment 2-11

The comment notes that a CDFW-issued scientific collection permit should not be used as authorization to handle, capture, and release of special-status species.

Sonoma RCD acknowledges that a scientific collection permit is not the sole authorization, that a project-specific permit is required to handle, capture, and relocate special-status species. No changes to the MND are required.

Response to Comment 2-12

The comment requested a change to Mitigation Measure BIO-1i to state that buffer distances for the protection of nesting birds be determined on a site-specific basis.

Sonoma RCD agrees to change the mitigation measure as follows on Page 96-97:

- If active raptor or owl nests are identified within 100 feet of the construction area or active nests of other special-status birds (e.g., passerines, woodpeckers, hummingbirds, etc.) are identified within 50 feet of the construction area, a qualified biologist shall determine whether or not construction activities may impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction can proceed without restrictions. The determination of disruption shall be based on the species' sensitivity to disturbance, which can vary among species; the level of noise or construction disturbance; and the line of sight between the nest and the disturbance.
- <u>If a qualified biologist determines that construction activities would likely disrupt breeding or nesting activities, a no-disturbance buffer should be placed around the nesting location. The no-disturbance buffer should include the active nest or breeding areas within an area designated by a qualified biologist based on the species sensitivity and site-specific conditions. Construction activities in the no-disturbance buffers should be avoided until the nests have been vacated and verified by a qualified biologist.</u>
- ~~If the project biologist determines that construction activities would likely disrupt breeding or nesting activities, a no-disturbance buffer shall be placed around the nesting location. The buffer shall include the active nest or breeding areas plus a 50-foot buffer for small songbirds and a 100-foot buffer for larger birds (e.g., owls, raptors). Construction activities in the no disturbance buffers shall be avoided until the nests have been vacated.~~

Response to Comment 2-13

The comment requested a change to Mitigation Measure BIO-1k for additional protection of special-status bats to require a bat habitat assessment for all LandSmart projects.

Sonoma RCD agrees with the request to revise the mitigation measure and makes the following revisions to the bat mitigation on page 98. However, a number of LandSmart project types will be located in areas that do not support bat habitat and have no bat habitat nearby. As such, the Sonoma RCD will not require a bat habitat assessment in areas where no habitat exists; therefore, the mitigation language change does not include all the suggested language changes.

Mitigation Measure BIO-1k, Protect Special-status Bats

Sonoma RCD shall ensure that the following protection measures for bats are implemented for LandSmart practices:

A qualified biologist shall conduct an assessment of potentially suitable bat habitat at LandSmart project areas. If potentially suitable habitat is identified, a biologist with expertise in bat biology will evaluate the habitat and develop an impact avoidance and protection plan within six months of project activities. The assessment will:

1. Evaluate the suitable habitat present within and directly adjacent to the project footprint.
2. Evaluate and develop appropriate work windows.
3. Identify appropriate buffers both during and outside the work windows.
4. Identify construction methods to be used to implement the LandSmart project.
5. Outline potential project impacts due to project activities, (e.g., noise and vibration) and develop construction measures to avoid or reduce project impacts where feasible (e.g., tree removal timing and techniques).
6. Develop potential habitat replacement if necessary depending on the site-specific project, the project area, and the availability of habitat in adjacent locations.

- ~~The project biologist shall survey for bats in all habitats with trees greater than 6 inches diameter at breast height (DBH) and at sites with bridge crossings or other man-made structures capable of supporting roosting bats prior to any disturbance. If occupied roosting habitat is identified, disturbance shall not be allowed until the roost is abandoned, unoccupied, and/or CDFW has been consulted and recommendations implemented.~~
- ~~For all tree removal, trees shall be taken down in a two-step process – limb removal on day one shall be followed by bole removal on day two. This approach will allow bats an opportunity to move out of the area prior to completing removal of the trees. No trees supporting special-status bats shall be removed without prior consultation with CDFW.~~
- ~~If work is postponed or interrupted for more than two weeks from the date of the initial bat survey, the preconstruction survey shall be repeated.~~
- ~~Construction shall be limited to daylight hours to avoid interference with the foraging abilities of bats.~~

The following LandSmart Project Specific CEQA Checklist is added as Appendix B to the Draft Initial Study/Proposed Mitigated Negative Declaration in response to Comment 2-3 from the California Department of Fish and Wildlife.

Appendix B – LandSmart Project Specific CEQA Review

This checklist shall be used to determine whether or not individual LandSmart Projects are within the scope of the LandSmart Program MND or whether subsequent environmental review is needed to examine significant environmental impacts of the project. The checklist was prepared under Section 15168(c)(4) of the CEQA Guidelines to document the evaluation of the site and the activity if the project size and location are within the LandSmart Program, to determine whether the environmental effects of the project were covered in the program document, and to determine the appropriate mitigation measures are identified for the individual project, and to determine if further environmental evaluation is warranted.

The checklist is divided into four steps:

1. Verify that the individual project meets the size characteristics evaluated in the LandSmart Program.
2. Evaluate the potential impacts of the project against the impacts identified for the LandSmart Program.
3. If the project meets the sizing requirements and the impacts were properly evaluated, identify the mitigation measures required to reduce potential impacts to less-than-significant levels.
4. Document findings for each project.

LandSmart Project Verification Report

LandSmart Project Name:	
Evaluator:	**Date:**

Project Type:

- ❒ **Road Upgrade and Decommissioning**
  - ❒ Access Road
  - Road Closure/ Decommissioning
- ❒ **Stream Habitat Improvement**
  - ❒ Stream Habitat Improvement
  - ❒ Aquatic Organism Passage
  - ❒ Channel Bed Stabilization
- ❒ **Stream Crossing**
- ❒ **In-channel Stabilization**
- ❒ **Structures**
  - Grade Stabilization Structure
  - Lined Waterway/ Outlet
  - Streambank and Shoreline Protection
- ❒ **Pipeline**
  - ❒ Irrigation Pipeline
  - ❒ Livestock Pipeline
  - ❒ Waste Transfer
  - ❒ Underground Outlet
  - ❒ *Pipelines located in-stream or in the riparian zone*
- ❒ **Diversion**
- ❒ **Brush Management**
  - ❒ Brush Management
  - ❒ Herbaceous Weed Control

Observations:

Recommendations:

Required Mitigation Measures:

Approved by:	**Date:**

Sonoma Resource Conservation District – LandSmart Program Annual Size Limitations

Road Upgrade and Decommissioning Size Limitations

	Road Length		Disturbance Acres		Disturbance Volume		Additional Criteria
	Annual Average	Annual Maximum	Annual Average	Annual Maximum	Annual Average	Annual Maximum	
Access Road	1 mile	4 miles	2 acres	6 acres	--	--	Miles of road is disturbed area only. Length of road network treated may be greater
Road Closure/ Decommissioning	2 miles	--	1.5 acres	--	--	--	Up to 500 feet of channel may be dewatered

Stream Habitat Improvement Size Limitations

	Project Length (feet)		Disturbance Area (acres)		Soil Disturbance (cubic yards, cy)		Additional Criteria
	Annual Average	Annual Maximum	Annual Average	Annual Maximum	Annual Average	Annual Maximum	
Stream Habitat Improvement	2,000 feet	1 mile	3 acres	5 acres	50 cy	1,000 cy	May include multiple in-stream structures, maximum 500 feet channel dewatered
Aquatic Organism Passage	100 feet	500 feet	0.25 acre	0.5 acre	1,000 cy	4,000 cy	Includes barrier removal, rock weirs (3 structures per 500 feet of stream), riparian area planting
Channel Bed Stabilization	1,000 feet	2,000 feet	1.5 acres	2.5 acres	1,000 cy	4,000 cy	

Stream Crossing Size Limitations

	Project Length (feet)		Disturbance Area (acres)		Soil Disturbance (cubic yards, cy)		Additional Criteria
	Annual Average	Annual Maximum	Annual Average	Annual Maximum	Annual Average	Annual Maximum	
Stream Crossing	100 feet (per structure)		0.1 acre	0.2 acre	250 cy	2,000 cy	300 feet of channel dewatered

In-channel Stabilization Structures Size Limitations							
	Project Length		**Disturbance Area**		**Soil Disturbance**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Grade Stabilization Structure	1,000 feet 3 structures per 500 feet of channel or gully	2,000 feet 10 structures per 1000 feet of channel or gully	1.5 acres	2.5 acres	1,000 cy 300 cy per structure	4,000 cy 300 cy per structure	No larger than 5 feet tall, 30 feet wide, 60 feet long, 100 cy of fill per rock structure
Lined Waterway/ Outlet	500 feet	2,000 feet	2 acres	4 acres	2,000 cy	4,000 cy	No longer than 500 feet per project
Streambank and Shoreline Protection	500 feet	2,000 feet	1 acre	5 acres	1,000 cy	7,500 cy	No longer than 500 feet per project

Pipeline Size Limitations							
	Length		**Disturbance Acres**		**Soil Volumes**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Irrigation Pipeline	2,000 feet	5,000 feet	0.5 acre	1 acre	500 cy	2,000 cy	
Livestock Pipeline	6,000 feet	12,000 feet	1.5 acres	3 acres	1,500 cy	2,000 cy	Limited to 50 feet across a channel with disturbance to 0.05 acre per project
Waste Transfer	6,000 feet	12,000 feet	1.5 acres	3 acres	1,500 cy	2,000 cy	Limited to 50 feet across a channel with disturbance to 0.05 acre per project
Underground Outlet	300 feet	500 feet	0.2 acre	0.4 acre	200 cy	500 cy	
Pipelines located in-stream or in the riparian zone	*100 feet*	*200 feet*	*100 ft^2*	*200 ft^2*	*15 cy*	*30 cy*	*Included in the totals listed above*

Diversion Size Limitations							
	Project Length		**Disturbance Acres**		**Disturbance Area**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Diversion	2,000 feet	5,000 feet	1 acre	2.5 acre	1,500 cy	3,000 cy	

Brush Management Size Limitations					
	Project Length		**Disturbance Acres**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Brush Management	1,000 feet	1,500 feet	1 acre	3 acres	
Herbaceous Weed Control	1,000 feet	1,500 feet	1 acre	3 acres	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
5.1 Aesthetics					
a) Have a substantial adverse effect on a scenic vista?	Strong visual contrast; permanent visual obstruction; or loss or alteration of a specific scenic resource	LS		None	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Strong visual contrast; permanent visual obstruction; or loss or alteration of a specific scenic resource	LS		None	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Strong visual contrast; permanent visual obstruction; or loss or alteration of a specific scenic resource	LS		None	
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	Greater than 0 residences affected by light/glare	NI		None	
5.2 Agriculture and Forest Resources					
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?	Greater than 0 acres	NI		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	Greater than 0 acres of land removed from Williamson Act contracts	NI		None	
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in PRC §12220(g)), timberland (PRC §4526), or timberland zoned Timberland Production (Government Code §51104(g))?	Greater than 0 acres of zoning conflict or rezoning	NI		None	
d) Result in the loss of forestland or conversion of forestland to non-forest use?	Greater than 0 of forest land lost	NI		None	
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	Greater than 0 acres converted	NI		None	
5.3 Air Quality					
a) Conflict with or obstruct implementation of the applicable air quality plan?	Greater than 0 conflicts	NI		None	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Standards exceedance	LS		Basic Construction Methods to prevent fugitive dust	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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 standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	Great than 0 exceedances	LS		None	
d) Expose sensitive receptors to substantial pollutant concentrations?	Greater than small quantities and short duration	NI		None	
e) Create objectionable odors affecting a substantial number of people?	Potential complaints about objectionable odors	LS		None	
5.4 Biological Resources					
a&b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, special status species, or sensitive natural communities in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Impacts to candidate, sensitive, special status plants or animals and sensitive natural communities	LSM		BIO-1a ,Plants and Communities BIO-1b, Special-status Wildlife Species BIO-1c, Listed Salmonids BIO-1d, California Freshwater Shrimp BIO-1e, California Tiger Salamander BIO-1f, California Red-legged Frog BIO-1g, Foothill Yellow-legged Frog BIO-1h, Northern Western Pond Turtle BIO-1i, Nesting Birds BIO-1j, Northern Spotted Owl BIO-1k, Special-status Bats BIO-1l, Special-status Butterflies BIO-1m, American Badger BIO-1n, Sonoma Tree Vole	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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?		LSM		Mitigation Measure BIO-2, Protect Wetlands and Waters	
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?	Greater than 0 conflicts	LS		None	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Greater than 0 conflicts	LS		None	
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?	Greater than 0 conflicts	LS		Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans	
5.5 Cultural Resources					
a) Cause a substantial adverse change in the significance of a historic resource as defined in §15064.5?	Impacts to historic resources	LSM		Mitigation Measure CR-1, Identify and Avoid or Minimize Impacts on Historic Resources	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Impacts to archaeological resources	LSM		Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts on Archaeological Resources	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Impacts to unique paleontological resources	LSM		Mitigation Measure CR-3, Procedures for Encountering Human Remains	
d) Disturb any human remains, including those interred outside of formal cemeteries?	Impacts to human remains	LSM		Mitigation Measure CR-4, Avoid or Document Paleontological Resources	
e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code §21074?	Impacts to tribal resources	LSM		Mitigation Measure CR-5, Identify and Avoid or Minimize Impacts on Tribal Resources	
5.6 Geology and Soils					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.	Risk to people and structures from projects	LS		None	
b) Result in substantial soil erosion or the loss of topsoil?	Loss of topsoil	LS		Erosion Control and Revegetation Measures needed	
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?	Project located in unstable area	LS		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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?	Risk to life and property from expansive soils	LS		None	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Project involving septic systems or waste water	NI		None	
5.7 Greenhouse Gas Emissions					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Projects that generate considerable amounts of GHG emissions	LS		None	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Greater than 0 conflicts	NI		None	
5.8 Hazardous Materials					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Transportation of hazardous materials needed	LS		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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?	Potential to release hazardous materials into the environment	LS		None	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Use of hazardous materials within ¼ mile of a school	LS		None	
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?	Located on a hazardous materials site	LSM		Mitigation Measure HAZ-1, Avoid Release of Contaminated Soils	
e&f) Safety hazard for people residing or working within two miles of an airport?	Incompatible structure within CALUP	NI		None	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Closure of an emergency response route	NI		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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 or where residences are intermixed with wildlands?	Project located in a very high fire hazard severity zone	LSM		Mitigation Measure HAZ-2, Reduce Wildland Fire Hazards during Construction	
5.9 Hydrology					
a&f) Violate any water quality standards or waste discharge requirements?	Violate standard	LS		Erosion control and water quality protection measures in Project Description	
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?	Potential to deplete groundwater	LS		None	
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 that would result in substantial erosion or siltation on- or off-site?	Changes in drainage patterns	LS		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
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 a manner that would result in flooding on- or off-site?	Substantial change in drainage patterns	LS		Erosion control and water quality protection measures in Project Description	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Substantial runoff	LS		Erosion control and water quality protection measures in Project Description	
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	Placement of structures in 100-year flood area	LS		None	
5.10Land Use Planning					
a) Physically divide an established community?	Large project that divides a community	NI		None	
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?	Greater than 0 conflicts	NI		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	Greater than 0 conflicts	LSM		Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans	
5.12 Noise					
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?	Excessive noise	NI		None	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Excessive vibration	NI		None	
c) A substantial temporary or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Substantial temporary or permanent increase in noise	NI		None	
5.15 Transportation					
a,b,f) Conflict with transportation plans, congestion management plans or alternative transportation plans?	Greater than 0 conflicts	NI		None	
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Greater than 0 safety issues	NI		None	

Appendix B - LandSmart Project Evaluation, CEQA Checklist

Evaluation Criteria	Significance Thresholds	Program Level Significance	Project Level Significance	Mitigation Measure	Mitigation Need for Project
e) Result in inadequate emergency access?	Reduce or eliminate emergency access	NI		None	

SONOMA RESOURCE CONSERVATION DISTRICT

ADMINISTRATIVE DRAFT
INITIAL STUDY/PROPOSEDMITIGATED NEGATIVE DECLARATION/

FOR

SONOMA COUNTY LANDSMART® PROGRAM COORDINATED CEQA COMPLIANCE

February 2016

Prepared for:

Sonoma Resource Conservation District
1221 Farmers Lane, Suite F
Santa Rosa, CA 95405
707.569.1448

Prepared by:

Prunuske Chatham, Inc.
400 Morris Street, Suite G
Sebastopol, CA 95472
707.824.4600

LandSmart®
Productive lands. Thriving streams.

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California Environmental Quality Act

NOTICE OF INTENT TO ADOPT MITIGATED NEGATIVE DECLARATION

Contact: Valerie Minton **Phone: 707.569.1448 x102**

Subject: **Notice of Intent to Adopt a Mitigated Negative Declaration pursuant to §21092 and §21092.3 of the Public Resources Code and California Environmental Quality Act (CEQA) Guidelines §15072**

Lead Agency: Sonoma Resource Conservation District (Sonoma RCD)

Project Title: Sonoma County LandSmart® Program Coordinated CEQA Compliance

Project Location: Sonoma RCD district service area, which includes portions of Sonoma County, CA. Sonoma County is located approximately 50 miles north of San Francisco. The LandSmart Program may be implemented in any of the following watersheds across Sonoma County: Russian River, Russian Gulch, Chileno Creek, Gualala River and north coastal drainages, Petaluma River, Stemple Creek, and Sonoma Creek.

Project Description: The LandSmart® Program is a regional collaborative program that will help rural and agricultural land managers meet their natural resource management goals while supporting productive lands and improving water quality and wildlife habitat. The best management practices included in the Program are designed to improve water quality and quantity issues, improve resilience to the impacts of climate change, and enhance fish and wildlife habitat across the County.

The LandSmart® Coordinated CEQA Compliance Program includes 17 conservation practices. The practices are drawn from established Conservation Practice Standards developed by the USDA Natural Resources Conservation Service (NRCS). The NRCS practices will serve as a starting point for how Sonoma RCD will implement projects in the Program. Projects will generally be small-scale, consisting primarily of stabilization of eroding streambanks, development of stable stream crossings, improvements to access roads, installation of pipelines and diversions to move water to stable areas for discharge, establishment of vegetative cover, and invasive species control.

Mitigated Negative Declaration: A copy of the Mitigated Negative Declaration and supporting documents are available for review on the Sonoma RCD's website at http://sonomarcd.org/htm/board-meetings-and-agendas.htm and at the Sonoma RCD's office at 1221 Farmers Lane, Suite F, Santa Rosa, CA 95405.

Written comments on the Initial Study and Mitigated Negative Declaration must be addressed to:

Valerie Minton, Program Director
Sonoma Resource Conservation District
1221 Farmers Lane, Suite F
Santa Rosa, CA 95405

Comments may also be sent by fax to 707.569.0434 or by email to VMinton@sonomarcd.org.

Comments on the Initial Study and Mitigated Negative Declaration will be accepted starting February 19, 2016 and must be received by 5:00 pm on March 21, 2016.

Public Hearing: On Thursday, April 28, 2016, the Board of Directors of the Sonoma Resource Conservation District will conduct a public hearing to consider adoption of a Mitigated Negative Declaration pursuant to the CEQA Guidelines, as part of their regularly scheduled Board Meeting. The meeting will be held from 9 a.m. to noon in the meeting room of the Sonoma RCD office. Please contact Sonoma RCD or visit www.sonomarcd.org/htm/board-meetings-and-agendas.htm to obtain the meeting agenda.

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Appendices

1 Project Information

1. Project Title	Sonoma Resource Conservation District (RCD) LandSmart Program
2. Lead Agency Name & Address	Sonoma Resource Conservation District 1221 Farmers Lane, Suite F Santa Rosa, CA 95405
3. Contact Person & Information	Valerie Minton, Program Director 707.569.1448 x102 VMinton@sonomarcd.org
4. Project Location	Sonoma RCD District service area, which includes portions of Sonoma County, California. Sonoma County is located approximately 50 miles north of San Francisco. The LandSmart Program may be implemented in any of the following watersheds across Sonoma County: Russian River, Russian Gulch, Chileno Creek, Gualala River and north coastal watersheds, Petaluma River, Stemple Creek and Sonoma Creek.
5. Project Sponsor's Name & Address	Sonoma Resource Conservation District 1221 Farmers Lane, Suite F Santa Rosa, CA 95405
6. General Plan Designation	Sonoma RCD District service area-wide agriculture and resources & rural development (varies)
7. Zoning	Sonoma RCD District service area-wide (varies)
8. Description of Project	The LandSmart Program is a regional collaborative program that will help grape growers, ranchers, and other rural and agricultural land managers meet their natural resource management goals while supporting productive lands and improving water quality and wildlife habitat.
9. Surrounding Land Uses & Setting	The Program encompasses ranches, vineyards, dairies, forestlands and rural lands within the Sonoma Resource Conservation District service area as shown in Figure 1.
10. Other public Agencies Whose Approval may be Required	Please refer to Table 3 for a list of the regulatory agencies that may have permitting or approval authority over certain aspects of the LandSmart Program.

1.1 Background and Need

The Sonoma Resource Conservation District (RCD) is proposing to implement the LandSmart Program (Program) to provide a means for grape growers, ranchers, and other land managers to meet their natural resource management goals while supporting productive lands and improving water quality and wildlife habitat. A coordinated program will provide an efficient means for accomplishing restoration work on private lands. The restoration practices of the Program are designed to improve critical water quality and quantity issues, improve resilience to the impacts of climate change, and enhance fish and wildlife habitat, including habitat improvement and connectivity for salmonids, native riparian and grassland habitats, and habitat for a variety of other plant and wildlife species across the County.

The LandSmart Program includes 17 conservation practices that are grouped into seven categories. The practices are drawn from established Conservation Practice Standards developed by the USDA Natural Resources Conservation Service (NRCS). The NRCS practices will serve as a starting point for how Sonoma RCD will implement the Program. The statewide standards are designed to address a broad range of resource conservation needs by providing a framework under which more detailed, locally developed practice specifications will be utilized. Projects implemented under the Program will be small-scale, consisting primarily of stabilization of eroding streambanks, development of stable stream crossings, improvements to access roads and decommissioning of unused roadways, installation of pipelines and diversions to move water to stable areas for discharge, establishment of vegetative cover, and invasive species control. Descriptions of the current State Conservation Practice standards can be found online through the NRCS Field Office Technical Guide (FOTG), Section IV (www.ca.nrcs.usda.gov/technical/efotg).

1.2 California Environmental Quality Act Requirements

Implementation of the Program is subject to the California Environmental Quality Act (CEQA). Sonoma RCD is the CEQA lead agency. Prior to making a decision to approve implementation of the Program and individual projects, Sonoma RCD must identify and document potential significant environmental effects of the Program in accordance with CEQA. This Initial Study/Proposed Mitigated Negative Declaration (MND) has been prepared under the direction of the Sonoma RCD to fulfill the CEQA requirements.

As provided in Section 15146 of the CEQA Guidelines, the degree of specificity required in a CEQA document will correspond to the degree of specificity involved in the underlying activity that is described in the document. The evaluation of environmental impacts of Sonoma RCD's LandSmart Program will focus on the effects that can be expected to follow the annual approval of specific projects in the Program, but this Initial Study/Proposed MND need not be as detailed as the specific projects that may follow. Implementation of some individual projects may require project-specific environmental review if it is determined that such projects could have site-specific environmental impacts beyond those effects analyzed in this Initial Study, as provided for in Section 15162 of the CEQA Guidelines, Subsequent EIRs and Negative Declarations.

This Initial Study/Proposed MND will be circulated for public and agency comment for 30 days from February 19 to March 21, 2016. Written comments may be emailed, delivered, or mailed to the following address until the close of business on March 21, 2016:

Valerie Minton, Program Director
Sonoma Resource Conservation District
1221 Farmers Lane, Suite F
Santa Rosa, CA 95405
VMinton@sonomarcd.org

This Initial Study/Proposed MND is intended to satisfy the requirements of CEQA (Public Resources Code §§2100-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, §§15000-15387). Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study are as follows:

15063(d) Contents. An Initial Study shall contain in brief form:

1) A description of the Project including the location of the Project;
2) An identification of the environmental setting;
3) An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4) A discussion of the ways to mitigate the significant effects identified, if any;
5) An examination of whether the Project would be consistent with existing zoning, plans and other applicable land use controls;
6) The name of the person or persons who prepared or participated in the Initial Study.

2 Project Description

2.1 Sonoma RCD LandSmart Program Overview

The LandSmart Program is an initiative carried out by partnering with landowners and managers who strive to achieve productive lands and thriving streams on their properties. The RCD creates and procures funding for this conservation program to proactively address natural resource concerns on the diverse rural and agricultural landscapes of Sonoma County. One component of the LandSmart Program involves implementing LandSmart On-the-Ground projects through providing project development, construction oversight, permitting, and environmental compliance for implementation of best management practices (BMPs). On-the-Ground projects are selected from LandSmart Plans; identified by RCD staff, landowners, and managers; and identified through other natural resource priority planning efforts.

On-the-Ground projects implemented through the LandSmart Program will achieve natural and land management goals that include:

- Erosion control on roads, gullies, and streambanks,
- Enhancement of fish and wildlife habitat,
- Alternative water supply development,
- Manure and pasture management, and
- Soil health improvement and establishment of vegetation for agricultural productivity and carbon sequestration priorities.

A more detailed description of the specific programmatic environmental protection measures that are evaluated in this document is provided in Section 2.10.

2.2 Program Sponsor

Sonoma RCD is the local agency sponsor and lead agency for the Program's compliance with CEQA. Sonoma RCD's mission is to help agricultural and rural landowners protect, conserve, and restore natural resources through information, education, and technical assistance programs.

2.3 Eligible Participants and Program Geographic Scope

The LandSmart Program primarily serves agricultural and rural landowners throughout the Sonoma RCD coverage area, which encompasses approximately 85% of Sonoma County and includes the following watersheds: Russian River, Russian Gulch, Gualala River and north coastal watersheds, Chileno Creek, Petaluma River, Stemple Creek, and Sonoma Creek. These areas are illustrated on Figure 1. The Program will not include projects in any of the following areas or habitats:

- Baylands,
- Coastal estuaries, and
- Dune habitat

The general exclusion boundaries for these areas are also shown in Figure 1. However, LandSmart projects proposed within an exclusion area on land that is currently being used for agricultural cultivation and production (e.g., vineyards, row crops, orchards, and other agricultural activities that involve regular ground disturbance and access roads associated with those agricultural operations) will qualify for coverage under this Program and document.

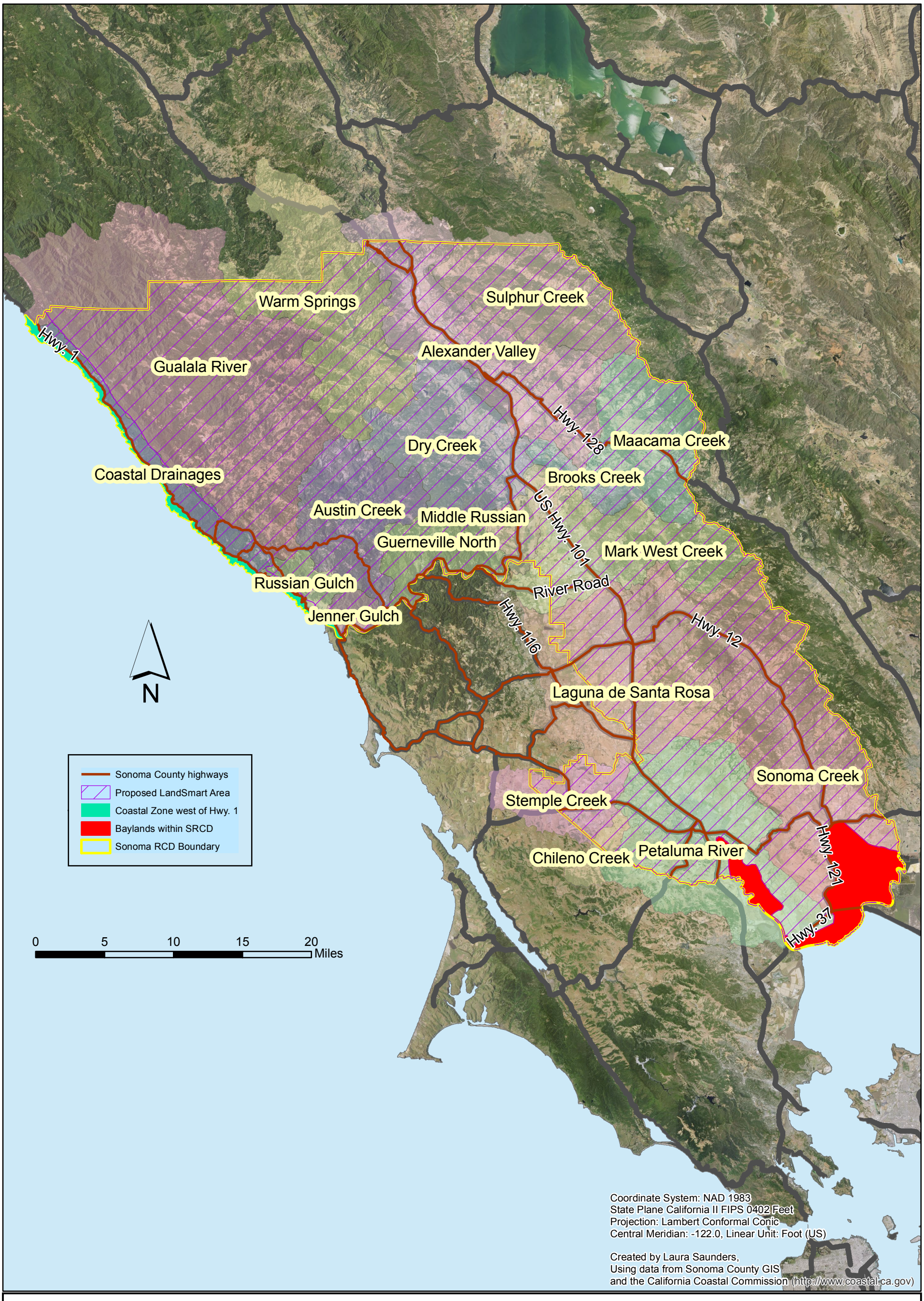
Due to the increasing need to restore critical fish habitat connectivity, the LandSmart Program may also work with organizations wanting to do small-scale fish barrier removal, stream crossing improvements, stream habitat enhancement, and other restoration projects that qualify (i.e., meet all program guidelines described within this document). However, given the stated mission of the RCD, agricultural and rural landowners will be given priority if all proposed projects in a given year cannot be accommodated due to staffing or temporal constraints.

2.4 Annual Project Selection Process

The LandSmart Program will follow standard Sonoma RCD policies regarding project selection and approval. Project selection is driven by grant deliverables and regional priorities pre-determined by Sonoma RCD staff, as well as landowner interest. Potential projects, once identified, are vetted and prioritized by Sonoma RCD staff at regular LandSmart On-the-Ground meetings. The top projects are then selected for implementation with available grant funds.

Upon making a decision to fund the proposed project, Sonoma RCD staff will determine permit requirements and begin to prepare CEQA documentation. CEQA documents for any projects planned by Sonoma RCD are reviewed by a CEQA sub-committee, which consists of several members of the Sonoma RCD Board of Directors and are then adopted by the full RCD Board once public review is complete.

Upon approval of this programmatic MND, the RCD will review all proposed LandSmart projects annually, or as needed, to evaluate their applicability for coverage under this programmatic environmental assessment. Staff will review potential projects and prepare documentation of the projects to be covered by the LandSmart Program, which will be publicly noticed as part of the agenda of a regularly scheduled or special meeting of the Sonoma RCD Board of Directors and approved for final design and implementation. Projects that are not applicable for coverage under this programmatic environmental assessment will proceed with CEQA evaluations on a project-by-project basis.



Sonoma Resource Conservation District
Proposed LandSmart Program Area

PRUNUSKE CHATHAM, INC.

January 29, 2016

Note: Existing agricultural areas in the Baylands boundaries may be included in the LandSmart Program area.

2.5 Program Implementation Period and Estimated Number of Projects to be Constructed

The Sonoma RCD proposes that the LandSmart Program continue for 10 years, with implementation of the Program's first projects in 2016 continuing through the fall of 2025. A five-year Program evaluation and assessment report will be produced and publically noticed on a board agenda after completion of the 2020 construction season. The estimated number of individual projects to be implemented under the Program is up to 30 per year for an estimated total of up to 300 for the life of the Program. Sonoma RCD activities that are not covered under the Program will continue to require CEQA evaluations on a project-by-project basis.

2.6 Activities Included in the Program

Sonoma RCD has identified 17 conservation practices for the LandSmart Program. The practices are drawn from established NRCS Conservation Practice Standards. Potential project activities are described in this and the following sections using associated practice standards developed by NRCS. However, in instances where NRCS funding through Farm Bill programs is not used for project implementation, NRCS practice standards may not be used as guiding documents. In those cases, project-specific designs and specifications may be developed by qualified Sonoma RCD in-house staff or by a subcontractor with appropriate professional qualifications.

The practice descriptions include the average size of installed practices and proposed maximum size limitations for each. Individual practices or projects that exceed the projected maximum limits will not qualify for coverage under this programmatic environmental document. In order to avoid the potential to "piecemeal" projects (dividing larger projects into sizes that fit within the project size maximums but that as a whole would not qualify), Sonoma RCD will continue the standard procedure described in Section 2.4 above to track the types of projects being implemented.

It should also be noted that usually a group of practices will be needed to complete a single project. For example, a common scenario would involve using several practices to decrease erosion from a roadway. In that case, adding erosion-control features to an *access road* might be combined with a *diversion* that would carry excess upland surface runoff to an *underground outlet*. These three practices together would make up one project.

Table 1. LandSmart Program Activities

Activities	Description	Associated NRCS Practices*
Road Upgrade and Decommissioning	Improvements to existing road network that may include re-grading road surfaces (outsloping, crowning, insloping); construction of water bars, rolling dips, critical dips, or speed bumps on paved road; removal or addition of roadside ditches to assist with stormwater drainage; installation or repair of ditch relief culverts or critical culverts; removal of a screen from culvert inlet; installation of a trash rack at a culvert inlet; construction of cross road drains.	Access Road (560), Road Closure and Treatment (654)
Stream Habitat Improvement	Restoration, improvement, or maintenance of aquatic habitat by improving physical, chemical, or biological conditions of the stream and associated riparian zone. Practices will include controlling erosion, maintaining in-stream flows, restoring floodplain connectivity, ensuring up- and downstream passage, providing in-stream habitat elements such as large wood, spawning gravels, and pool and riffle structure.	Stream Habitat Improvement and Management (395), Aquatic Organism Passage (396), Channel Bed Stabilization (584)
Stream Crossing	Installation of a, or improvement of an existing, ford, bridge, or culvert crossing where necessary for access over a watercourse or drainage.	Stream Crossing (578)
In-Channel Stabilization	Stabilization of a gully or downcutting channel by installing a structure to control the grade and stabilize the slope. Work will involve some grading and installation of brush, erosion-control fabric, rock, or timber structures that do not impound water but rather allow water to be conveyed in a stable manner. Actions may include installation of a rock weir to control and slow in-channel flow; adding rock to stabilize gully formation draining toward a stream channel; lining an eroding swale or diversion ditch; rock armoring of an eroding ditch; armoring below an outlet; installation of an energy dissipater at a spillway or pipe that outlets to a channel; stabilizing and protecting streambanks through layback, bioengineering, or rock installation.	Grade Stabilization Structure (410), Lined Waterway/ Outlet (468), Streambank and Shoreline Protection (580)
Pipeline	Installation of pipeline and appurtenances below ground. Practice will involve shallow digging/trenching for removal/installation of piping and associated equipment. Pipeline will be used to convey water or manure for storage/application as part of an irrigation or agricultural waste treatment system, to supply water to livestock, or to convey stormwater to a stable outlet. Practice may include installation of a drop inlet pipe (storm drain) or installation of a level rock bench or tee spreader at the outlet to disperse concentrated runoff. Practice may also include installation of soil moisture probes or sensors to assist with efficient irrigation scheduling.	Irrigation Pipeline (430), Irrigation Water Management (449), Livestock Pipeline (516), Waste Transfer (634), Underground Outlet (620)

Table 1. LandSmart Program Activities

Activities	Description	Associated NRCS Practices*
Diversion	A channel, typically constructed cross-slope with a supporting ridge on lower side, to divert water away or around an area of concern. Practice will involve minor grading/reshaping and re-seeding with grasses/forbs. May include diverting downspout water away from manure-contaminated areas or installation of a mid-slope runoff conveyance ditch with a protected outlet to break up concentration of water on long slopes or route water away from an unstable area.	Diversion (362)
Vegetation Management	Removal of invasive riparian plants and establishment of native vegetation. Invasive removal may use mechanical methods or localized application of herbicides. Re-seeding with native plants will occur immediately after. Straw, erosion control blankets, or other temporary erosion-control methods may be applied to prevent soil erosion while new vegetation is getting established.	Brush Management (314), Herbaceous Weed Control (315)

*** Copies of NRCS Practice Standards available at:**
http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849

2.6.1 Road Upgrade and Decommissioning

The purpose of road upgrade and decommissioning activities is to enhance and storm-proof existing necessary roadways in order to avoid erosion and adverse impacts on water quality and to route stormwater flow to a stable area and encourage infiltration. Two road improvement practices are included in the LandSmart Program: Access Road and Road Closure and Treatment. The practices will improve roadway stability and durability and limit road damage during all weather conditions. Roads that are no longer needed for land management purposes will be decommissioned to protect water quality and restore habitat connectivity. Access road improvements typically involve multiple installations spread out over a long reach of road; both road upgrades and decommissioning typically require use of heavy equipment.

Access Road

An access road is an established route for equipment and other vehicles used for resource management activities. Access roads range from single-purpose, seasonal-use roads designed for low speed and rough driving conditions to all-purpose, all-weather roads. This practice is used to make improvements to existing roads used for moving livestock, produce, vehicles, or equipment. Design criteria for access road improvements will include assessment of the effects on downstream flows, wetlands, or other aquifers and on wildlife habitat, as well as potential short-term and construction-related impacts. Buffers will be incorporated into the design where possible to protect surface waters.

Improvements to existing roads may include surface grading to effectively drain water and to prevent concentration of water and gully and rill erosion. Water bars and rolling dips may be installed along roadways to redirect water off the road before it can concentrate and lead to erosion of the road surface. Road upgrades may also include the addition or removal of roadside ditches to improve

drainage. Culverts may be installed or replaced to provide drainage of ditches under the road; the culvert outlets will be placed in an area that will not be subject to erosion, or the outlet will be rocked to provide a stable location to discharge stormwater from the roadway.

Road Closure and Treatment

The road/trail/landing closure and treatment practice involves decommissioning and abandonment of travel ways. Implementation will result in the stabilization and restoration of unneeded roads and trails to address chronic erosion; restore hillslope hydrology; reestablish drainage patterns; and reduce impacts on aquatic, riparian, and terrestrial ecosystems. Road closure and decommissioning will include a range of activities such as blocking the road entrance to eliminate vehicle access, revegetation and water barring to reduce runoff, removal of fills and culverts, establishment of drainages, and full obliterations by recontouring and restoring natural slopes.

Top Row: Road drainage and erosion problems. Bottom Row:
Access road improvements. (Photographs courtesy of NRCS and the U.S. Forest Service)

Activity Conditions

Size Limitations

Road Upgrade and Decommissioning Size Limitations							
	Road Length		**Disturbance Acres**		**Disturbance Volume**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Access Road	1 mile	4 miles	2 acres	6 acres	--	--	Miles of road is disturbed area only. Length of road network treated may be greater
Road Closure/ Decommissioning	2 miles	--	1.5 acres	--	--	--	Up to 500 feet of channel may be dewatered

Additional General Project Conditions

This practice does not include construction of new roads.

Plans and specifications that describe the requirements for applying the practices to achieve the intended purpose will be prepared for the specific site conditions. Details will include the location; designated level of treatment; the kind, amount and quality of materials and acceptable equipment to be used; and the sequence, timing, and details of road improvement or closure treatment activities.

Road improvements will be modeled on the *Handbook for Forest and Ranch Roads: A Guide for planning, designing, constructing, reconstructing, maintaining and closing wildland roads* by Pacific Watershed Associates (Weaver, Weppner, & Hagans 2014) and Publication 8262 *Rural Roads: A Construction and Maintenance Guide for California Landowners* (ANR University of California 2007). These manuals contain descriptions of sound methods and designs to improve and maintain rural roads to correct problems associated with poor road placement and design that cause excessive runoff and erosion.

Access roads may be relocated only to provide a setback from a stream corridor or in order to plant riparian vegetation as part of a stream corridor restoration or for other natural resource protection or enhancement purpose. Relocated roadway segments will be constructed to follow natural contours and will be sited on low slopes to minimize disturbance of drainage patterns.

Improvements carried out under this practice will not be done for the purpose of accommodating future non-agricultural development or as a precursor to intensification of land use.

The practice does not include the addition of asphalt or concrete to existing roads, widening roadways, or increasing weight-bearing capacity.

An energy dissipater will be installed at the outlet of any water bar, cross drain, and roadway drainage culvert in areas where roadway drainage may cause erosion and sedimentation. Otherwise, outlets will be directed to well-vegetated locations.

An operations and maintenance plan will be developed that will include inspection of the road surface and the drainage features after every major runoff event and prompt repair or replacement of damaged components. Monitoring will be conducted following heavy rain or high-wind events until the site is determined to be stable. Dead or dying vegetation will be replaced as necessary, and nuisance, noxious, or invasive species will be controlled until the site is fully occupied by desired vegetation.

Environmental Benefits

Installation of road upgrades and decommissioning of unneeded roads will improve water quality by controlling runoff and removing sources of chronic erosion and sediment input; reduce habitat disruption; and protect aquatic resources. Road closure and treatment will also restore land to a productive state by reestablishing native plants and habitat (e.g., wildlife food, cover, and shelter); reconnect wildlife migration corridors, including streams and riparian areas; reestablish drainage patterns; and minimize human impacts on the closed area to meet safety, aesthetic, sensitive area protection, or wildlife habitat requirements.

2.6.2 Stream Restoration and Habitat Improvement

The purpose of this activity is to improve in-stream habitat supporting fish and other aquatic species. The work associated with stream restoration and habitat improvement is composed of three practices: Stream Habitat Improvement, Aquatic Organism Passage, and Channel Bed Stabilization. Activities will include:

- Installation of large woody debris,
- Grading and bioengineering to stabilize the stream channel and to add deeper pools,
- Removal of fish barriers,
- Revegetation, and
- Exclusion of livestock.

Installation of stream restoration and habitat improvement infrastructure will often require grading and use of heavy equipment.

Stream restoration and riparian habitat improvements (Photographs courtesy of PCI and the U.S. Forest Service)

Stream Habitat Improvement

Stream habitat improvement is the maintenance, enhancement, and restoration of physical, chemical, and biological functions of a waterway. This practice will be conducted in streams and their adjoining backwaters, floodplains, wetlands, and riparian areas where conditions limit reproduction, growth, survival, and diversity of aquatic species. This practice will be used to remove structures that are barriers to fish passage; add habitat features for salmonids such as spawning substrates and structural elements (e.g., boulder clusters, root wads, large wood, resting pools, overhead cover); and plant native riparian vegetation on streambanks. Planned stream habitat improvements will be based on an assessment of watershed, stream, and riparian conditions, including a site-specific assessment of local hydrology, channel morphology, geomorphic setting, fish and other aquatic species present, riparian and floodplain conditions, and any habitat limitations such as water quantity and quality, food supply, and restriction of up- and downstream movement of aquatic species. Emphasis will be on establishing an ecologically self-sustaining stream-riparian system, improving floodplain-to-channel connectivity, and enhancing wetland and off-channel habitats consistent with the local climate and hydrology of the stream.

Operations and maintenance requirements include the periodic inspection and repair of structures that are found to cause excessive streambank or streambed instability. The stream and riparian habitat conditions will be monitored and evaluated to determine if they meet design objectives.

Aquatic Organism Passage

Fish passage is the modification or removal of barriers that restrict movement of fish and other aquatic organisms. It addresses the functional and physical conditions of a stream corridor to enhance habitat, provide management options that enhance long-term stability, and improve target species' population status by restoring access to spawning and rearing habitat. It applies in freshwater habitats where barriers prevent migration or movement.

Fish passage design criteria will incorporate considerations of hydraulics, geomorphic impacts, sediment transport and continuity, and organic debris movement. Barrier removal will be the preferred method for creating fish passage because it provides the best mix of passage quality and geomorphic function. Where removal of the barrier is not possible, options include culverts (pipe, bottomless, and concrete), low water crossings, and bridges.

Operations and maintenance requirements for the fish passage practice include sediment and debris removal, gate adjustments to control flow, periodic inspections with prompt repair of damaged components, and monitoring to ensure the continued success of the practice.

Channel Bed Stabilization

This practice consists of measures used to stabilize the bed of a channel in order to:

- Maintain or alter channel bed elevation or gradient,
- Modify sediment transport or deposition, or
- Manage surface water and groundwater levels in floodplains, riparian areas, and wetlands.

Channel bed stabilization is applied when an imbalance in a stream system causes damage to the bed of an existing channel. This practice applies to the beds of channels undergoing damaging aggradation or downcutting that cannot be feasibly controlled by clearing or snagging, establishment of vegetative protection, installation of bank protection, or installation of upstream water control measures. Design will include an evaluation of the effects of work on existing channel morphology, hydrology, and structures (e.g., culverts, bridges, buried cables, pipelines, and irrigation flumes); analysis of current and future sediment transport; and upstream improvements or structural measures.

Operations and maintenance of a channel bed stabilization measure will consist of conducting periodic inspections and repairing or replacing damaged components.

Activity Conditions

Size Limitations

Stream Habitat Improvement Size Limitations							
	Project Length (feet)		**Disturbance Area (acres)**		**Soil Disturbance (cubic yards, cy)**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Stream Habitat Improvement	2,000 feet	1 mile	3 acres	5 acres	50 cy	1,000 cy	May include multiple in-stream structures, maximum 500 feet channel dewatered
Aquatic Organism Passage	100 feet	500 feet	0.25 acre	0.5 acre	1,000 cy	4,000 cy	Includes barrier removal, rock weirs (3 structures per 500 feet of stream), riparian area planting
Channel Bed Stabilization	1,000 feet	2,000 feet	1.5 acres	2.5 acres	1,000 cy	4,000 cy	

Additional General Project Conditions

All stream and riparian activities will occur in accordance with State and federal guidelines about timing of spawning, breeding, incubation, and rearing of aquatic organisms and breeding and nesting of terrestrial species.

Plans and specifications will be developed by a qualified professional that will include detailed goals and objectives of the planned actions; a project description and location with existing and planned site conditions; dates and sequence in which improvements or management actions will be completed; a vegetation planting plan with site protection and preparation requirements for establishment or recruitment of riparian vegetation, if needed; maintenance requirements; and monitoring guidelines for evaluating effectiveness, structural integrity, and compliance with design criteria.

Projects will be designed to meet the high-flow characteristics of the channel flow; maintain sufficient depth to provide adequate outlets for subsurface drains, tributary streams, ditches, or other channels; and maintain the appropriate sediment transport regime in order to avoid detrimental erosion or sedimentation up- and downstream.

Habitat restoration will be modeled after the *California Salmonid Stream Habitat Restoration Manual*, published by the California Resources Agency and the California Department of Fish and Wildlife (CDFW 2010). The manual describes methods and techniques used by habitat restoration specialists and provides information on project design and methodologies to improve habitat and provide fish passage without causing excessive bank erosion, unintentional lateral migration, aggradation or degradation of the channel, or hindering channel-floodplain interactions.

As appropriate, Sonoma RCD will consult with staff from CDFW and NOAA's National Marine Fisheries Service (NMFS) during project design.

In-channel structures utilized to improve habitat will not impede or prevent passage of fish and other aquatic organisms.

Implementation of these practices will not impair the floodway or floodplain functions or change surface water elevations.

Culverts will be designed to minimize habitat fragmentation and barriers to aquatic movement. The design and location of crossings will provide passage for as many different aquatic species and age classes as possible. Natural streambed substrates will be used throughout the culvert length for passage of aquatic organisms.

No gabions or concrete will be used in any waterway (fish-bearing or non-fish-bearing) for grade stabilization, channel bed stabilization, streambank protection, or stream improvement projects.

Biotechnical approaches will be used for streambank protection, where feasible. Project designs will justify the use of rock and other non-biotechnical treatments for streambank protection. Use of rock to support habitat requirements of aquatic and terrestrial fauna is classified as restoration and is authorized under the LandSmart Program if it meets the conditions of all site-specific permits.

Spoil material from clearing, grubbing, and channel excavation will be disposed of in a manner that will not interfere with the function of the channel and in accordance with local, State, and federal laws and regulations.

Channel clearing to remove stumps, fallen trees, debris, and sediment bars will only be done when they are causing or could cause detrimental bank erosion or structural failure. Habitat-forming elements that provide cover, food, pools, and water turbulence will be retained or replaced to the extent possible.

Riparian and streambank vegetation will be retained as much as possible during project access and construction activities to maintain shade, riparian continuity, and sources of nutrient and structural stability for aquatic ecosystems.

All disturbed areas will be protected from erosion. Vegetation will be selected that is best suited to the site conditions.

An operations and maintenance plan will be developed for channel stabilization and fish passage projects that will provide timing for periodic inspections and prompt repair or modification of any projects that are found to be causing streambank or streambed instability; practice-specific requirements are included in the three practice descriptions above. Post-project monitoring and evaluation of stream and riparian habitat conditions will be conducted to determine if actions implemented are providing for management of the stream corridor habitats as planned. Any repair actions, if needed, will comply with State and federal guidelines for protecting spawning, breeding, incubation, and rearing cycles of aquatic species and breeding and nesting times of terrestrial species.

Environmental Benefits

Stream habitat improvement activities will restore and enhance physical, chemical, and biological functions of aquatic and riparian habitats. Implementation will provide channel and riparian conditions that maintain stream corridor ecological processes and hydrological connections of diverse stream habitat types important to aquatic species and provide passage to previously unavailable habitat for salmonids and other aquatic species. Use of these practices will also protect water quality through erosion control and native revegetation.

2.6.3 Stream Crossing

The purpose of the stream crossing practice is to install or upgrade a stabilized area or structure across a stream to provide access for people, livestock, equipment, and vehicles that protects water quality through reducing potential for delivery of sediment and other pollutants into the water during use of the crossing. Implementation of stream crossings may require grading and use of mechanized equipment.

Stream crossings include stabilized areas, such as fords and structures (e.g., bridges and culverts) constructed across a watercourse. Proposed crossing sites will be evaluated to determine potential flood stages and discharge, hydraulics, fluvial geomorphic conditions, sediment transport and flow continuity, groundwater conditions, and movement of woody and organic material. The crossings will be designed to account for site conditions and to accommodate transport of large woody material, where appropriate. In addition, habitat requirements of both target aquatic organisms and other aquatic and terrestrial species that may be affected by construction of the crossing will be assessed. Ford crossings have the least detrimental effect on water quality and are best suited for use in wide, shallow watercourses with firm streambeds and when use of the crossing is infrequent; if the stream crossing will be used often, as in a dairy operation, a bridge or culvert crossing will often be required.

Example stream crossings (Photographs courtesy of NRCS and U.S. Forest Service)

Activity Conditions

Size Limitations

Stream Crossing Size Limitations							
	Project Length (feet)		Disturbance Area (acres)		Soil Disturbance (cubic yards, cy)		Additional Criteria
	Annual Average	Annual Maximum	Annual Average	Annual Maximum	Annual Average	Annual Maximum	
Stream Crossing	100 feet (per structure)		0.1 acre	0.2 acre	250 cy	2,000 cy	300 feet of channel dewatered

Additional General Project Conditions

Site-specific land-use operations will be assessed to consolidate and minimize the number of crossings needed.

Plans and specifications will be prepared for stream crossings that clearly describe the requirements for applying the practice to achieve its intended purpose and that, at a minimum, include location; width and length with profile and typical cross sections; design grades or slopes for approaches; design flow calculations, where necessary; thickness, gradation, quantities, and type of rock or stone; type, dimensions, and anchoring requirements of geotextile; thickness, compressive strength, reinforcement and other special requirements for concrete, if used; vegetative requirements that include seed and plant materials to be used, establishment rates, and season of planting; location, type, and extent of fencing required; method of surface water diversion and dewatering during construction; and location of utilities and notification requirements. Culvert and bridge projects may require prior review and approval by Sonoma County or a municipal agency, such as a flood control district or a building and safety or fire department. Any additional conditions required by local regulations will be incorporated into the project design.

Culverts installed in fish-bearing streams will be consistent with CDFW's "Culvert Criteria for Fish Passage Revised May 2002" and NMFS Southwest Region's "Guidelines for Salmonid Passage at Stream Crossings" (September 2001).

Bridges, bottomless arch culverts, or other fish-friendly designs will be required in salmonid streams.

Crossings will be designed with sufficient capacity to convey the design flow and transported material without altering the stream flow characteristics. Crossings will be protected so that flood flows safely bypass without damaging the crossing or eroding streambanks.

Crossings will be designed to provide adequate travel-way width for the intended use. The approaches will receive surface treatment to prevent erosion or to protect livestock, or surface runoff may be diverted around the approaches to prevent erosion and sedimentation. Methods for stabilizing stream approaches will be included in the project design.

Ford-type stream crossings will provide cutoff walls or other stabilizing features at the up- and downstream edges to protect against undercutting.

Livestock crossings will include methods that will minimize time in the waterway. Fences, gates, and other methods will be used to exclude livestock access to the crossing, as needed. Cross-stream fencing at fords will be made of breakaway wire, swinging floodgates, hanging electrified chain, or other devices that allow the passage of floodwater and large woody material during high flows.

All rock crossings will be designed to withstand exposure to air, water, freezing, and thawing. Rock will be of sufficient size and density to resist mobilization by design flood flows. Rock crossings will be sized to accommodate the intended traffic without damage to livestock, people, or vehicles using the feature.

Crossings will provide natural substrate material to allow passage of aquatic organisms. Stream crossings will not be placed within 300 feet of known spawning areas of listed species. All crossings will be designed to pass low flows.

An operations and maintenance plan will be developed and implemented for all crossings. The following requirements, at a minimum, will be included in the plan:

- Inspect the stream crossing, appurtenances, and associated fencing after each major storm event and make repairs if needed,
- Remove any accumulation of organic material, woody debris, or excess sediment, and
- Replace surfacing stone used for livestock crossing as needed.

Environmental Benefits

Stream crossings prevent loss of land and improve water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream and by providing protection against streambed and bank erosion. Crossings that are designed to remove existing barriers to aquatic passage improve habitat connectivity for salmonids and other aquatic organisms. Crossings designed to exclude livestock from the stream except when being moved from one side to the other reduce habitat disruption from unrestricted use by agricultural animals.

2.6.4 In-channel Stabilization

In-channel stabilization activities will include three practices: Grade Stabilization Structure, Lined Waterway/Outlet, and Streambank and Shoreline Protection, which are used to stabilize grade, prevent channel downcutting, reduce erosion and undermining of creek banks, avoid formation or advancement of gullies, and reduce sediment delivery to receiving waters. The practices can also be used to remediate aggrading channels that may be limiting aquatic passage and to install hydraulic alterations designed to maintain the water table. Implementation of in-channel stabilization measures will generally require grading and use of construction equipment.

In-Channel stabilization structures (Photographs courtesy of NRCS, Napa RCD, and PCI, Inc.)

Grade Stabilization Structures

A grade stabilization structure is used to control grade or stabilize a slope, manage gully erosion, and eliminate erosional headcutting in upland gullies; grade control structures in streams are not authorized for coverage under this programmatic environmental document.[1] This practice enhances the natural functioning of a gully, including raising the water table and allowing for establishment of vegetation. For the LandSmart Program, this practice refers to brush, erosion-control fabric, rock, or timber structures that do not impound water but rather allow water to be conveyed in a stable manner that results in reduced erosion and improved downstream water quality and that are five feet tall or less. Structures taller than five feet will require geotechnical analysis. The program is intended to promote biotechnical approaches; hard structural solutions will be recommended only in unusual circumstances that will require justification for regulatory approval. Installation will involve grading and bioengineering techniques for placement of rock or geotextile fabric and revegetation to stabilize the eroding area or prevent headcuts from moving further upslope.

Lined Waterway/Outlet

A lined waterway or outlet has an erosion-resistant lining of concrete, rock, synthetic turf reinforcement fabric, or other permanent material designed to convey runoff without causing erosion or flooding. This practice is used to provide safe conveyance from diversions, terraces, or other concentrated water sources on sites where it is not practical to establish or maintain a grass-covered waterway; it is not used for irrigation water conveyance or in a stream channel. Lined waterways will be used in areas where:

- Concentrated runoff, steep grades, wetness, seepage, or piping is causing erosion,
- Soils are highly erosive or other conditions are present that preclude use of vegetation only to prevent erosion, or
- Limited space is available, and a lining is required to address higher velocities.

Streambank and Shoreline Protection

Streambank and shoreline protection will include installation of native vegetation or other treatments to stabilize and protect streambanks and shorelines from scour and erosion. Protection measures may also be used to maintain flow capacity of a watercourse, reduce downstream effects of sediment resulting from bank erosion, improve fish and wildlife habitat, and protect adjacent land from erosion damage. This practice is intended to promote biotechnical approaches; however, with site-specific approval from regulatory agencies, hard structural solutions may be used to address unusual circumstances.

[1] A headcut is an erosional feature of some streams and drainages where an abrupt vertical drop, also known as a knickpoint, in the stream bed occurs. The headcut resembles a short cliff or bluff. A headcut often migrates upstream as erosion continues.

Activity Conditions

Size Limitations

In-channel Stabilization Structures Size Limitations							
	Project Length		**Disturbance Area**		**Soil Disturbance**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Grade Stabilization Structure	1,000 feet 3 structures per 500 feet of channel or gully	2,000 feet 10 structures per 1000 feet of channel or gully	1.5 acres	2.5 acres	1,000 cy 300 cy per structure	4,000 cy 300 cy per structure	No larger than 5 feet tall, 30 feet wide, 60 feet long, 100 cy of fill per rock structure
Lined Waterway/ Outlet	500 feet	2,000 feet	2 acres	4 acres	2,000 cy	4,000 cy	No longer than 500 feet per project
Streambank and Shoreline Protection	500 feet	2,000 feet	1 acre	5 acres	1,000 cy	7,500 cy	No longer than 500 feet per project

Additional General Project Conditions

Grade stabilization, lined waterways, and streambank protection measures will be planned, designed, and constructed to comply with all local, State, and federal laws and regulations. Plans will include practices to minimize erosion and sediment production during construction and requirements necessary to comply with conditions of any environmental agreements, biological opinions, or other terms of applicable permits.

An assessment of the erosion sites will be conducted in sufficient detail to identify the causes contributing to the instability (e.g., livestock access; watershed alterations resulting in significant modifications of discharge or sediment production; in-channel modifications such as gravel mining, headcutting, and water level fluctuations; increased runoff due to urban development in the watershed; or degradation due to channel modifications).

Plans and specifications will be prepared that include, at a minimum, a plan view; typical profiles and cross sections; structural drawings, as needed; seeding requirements, as needed; safety features; disposal requirements for excess soil material; environmental agreements with regulators, including permit conditions and pertinent biological opinions; and site-specific construction requirements.

Structures will not create a fish passage barrier or impede wildlife movement.

Lined waterways will not be installed within a 100-foot setback from riparian vegetation.

Lined waterways and outlets will not divert water out of the natural subwatershed.

An energy dissipater will be installed at the outlet of any grade stabilization structure and lined waterway/outlet in areas where concentrated drainage may cause erosion and sedimentation. Otherwise, outlets will be directed to well-vegetated locations.

Geotextiles or properly designed filter bedding will be incorporated with structural measures where there is the potential for migration of material from behind the stabilization structure.

Toe erosion will be stabilized by treatments that redirect the stream flow away from the toe or by structural treatments that armor the toe. Where toe protection alone is inadequate to stabilize the bank, the upper bank will be shaped to a stable slope and vegetated or will be stabilized with structural or soil-bioengineering treatments.

All disturbed areas around the treatments will be protected from erosion. Disturbed areas that will not be cultivated will be protected as soon as practical after construction.

Native plantings will be incorporated into project designs whenever possible.

An operations and maintenance plan will be developed and implemented by property owners; the plan will be specific to the types of treatments selected for each site. It will require that the treatments be inspected periodically and after storm events and that all repairs be completed within a specified timeframe. Repairs may include additional revegetation efforts and placement or replacement of materials to stabilize the site. Maintenance requirements for lined waterways include regular inspections, removal of sediment and debris, and repair of eroded or damaged areas. It may be necessary to periodically reshape the waterway to maintain the design capacity and grade.

Environmental Benefits

In-channel stabilization activities will provide safe conveyance of runoff; reduce offsite or downstream effects of sediment resulting from bank erosion; improve water quality; and prevent loss of land and damage to land uses or facilities adjacent to watercourses, including the protection of known historic, archeological, and traditional cultural resources. Stabilization activities will maintain the flow capacity of streams or channels and improve or enhance the stream corridor for fish and wildlife habitat, aesthetics and recreation. They will also reduce habitat disruption by addressing sources of sediment input from chronic or episodic erosion.

2.6.5 Pipelines

Pipelines will be installed to move water and agricultural wastes to areas where they will be useful or appropriately managed. Pipelines may be part of habitat protection, as when used to move water to drinking troughs to keep cattle out of creeks; part of agricultural operations, as in the establishment of irrigation systems; or part of pollution prevention, as in managing flows of runoff or wastes. Smaller pipelines will be used to convey water for irrigation, to livestock troughs, or into storage tanks. Larger pipelines will be installed to convey manure to a storage or treatment area or for application on agricultural fields. The pipeline activity for the LandSmart Program is a combination of four practices: Irrigation Pipeline, Livestock Pipeline, Waste Transfer, and Underground Outlet.

Pipelines and irrigation probes (Photographs courtesy of NRCS)

Irrigation Pipeline/Livestock Pipeline

Pipelines and appurtenances will be installed under or above ground to convey water from its source to an irrigation system, livestock water trough, or storage facility. They may be made of flexible conduit materials, such as plastic, steel, corrugated metal, or ductile iron pipe, or from rigid conduit, such as plastic mortar pipe. Corrosion protection may be needed depending on the metals used and the soils present on the site. Appurtenances used with pipelines will include inlets, outlets, check valves, backflow prevention devices, surge tanks, air chambers, and pressure or air relief valves. Irrigation pipeline installations may also include installation of soil probes and other soil moisture monitoring components.

Design criteria for pipelines will provide measures to address safety during both installation and operation. Issues will include trench safety; protection for people from inlets, open stands, and water blowing from pressure-relief, air-release, or other valves; and presence of underground utilities.

Measures to protect water quality and quantity will also be included to protect water supply, downstream flows or aquifers, vegetation, soil stability, aquatic and wildlife habitat needs, and aesthetic resources.

Buried pipelines will be installed using traditional open-cut construction methods. Trenches will be dug using backhoes or other machinery based on the size of the pipeline, although trenches for smaller pipelines may be dug manually depending on the size, location, and availability of machinery. The trench will be wide enough to allow proper pipeline and appurtenance installation; trench width and depth and total disturbance area will depend on the size of the pipeline being installed and the soil conditions.

Installation of probes with 4- to 6-inch diameter holes to determine soil moisture depths will require drilling of 4-foot deep holes at appropriate locations in agricultural fields using hand tools or a small, truck-mounted auger. The soil probe will be installed in the hole, and any appurtenances will be installed above ground.

Routine maintenance will be needed to ensure that the pipeline and all other components operate as designed, and maintenance requirements for pipelines and soil probes will depend upon the complexity of the system and the type of pipe material chosen. The operations and maintenance plan will include, but not be limited to, schedule for periodic inspections, pipeline draining procedures, marking crossing locations, valve operation to prevent pipe or appurtenant damage, appurtenance or pipe maintenance, and recommended operating procedures. It will also include information on filling and draining the system, as needed, and a procedure for monitoring any cathodic protection systems that are installed for galvanized steel pipe.

Waste Transfer

The waste transfer practice is a conveyance system of pipelines and appurtenances installed to convey wastes and waste byproducts from agricultural operations (e.g., manure and wastewater). Materials generated by livestock or agricultural production will be transferred from the source to a storage/ treatment facility, loading area, or agricultural land for application. The transfer component will be part of a planned waste management or comprehensive nutrient management system.

Pipeline designs for waste transfer will be based on the waste material properties and management operations. The minimum pipeline size and capacity will accommodate the maximum peak flow anticipated from the collection site to the storage or treatment area. Design considerations and installation methods will be the same as those discussed above for irrigation and livestock pipelines.

An operations and maintenance plan for each component of this practice will be prepared for the operator to evaluate the overall functionality of the waste transfer system for possible malfunctions that could lead to a spill or release of waste material. Measures to address potential failures and an emergency response plan to be implemented in the event of such a failure will be included**.** The plan will provide guidance for how to handle liquid or slurry waste material prior to transfer for land application; how to flush pipelines used for transferring waste material with clean water after use to reduce the risk

of gas build up and pipeline explosion; and how to remove solids from conveyance conduits such as concrete lined ditches and grates during management operations.

Underground Outlet

An underground outlet is a conduit or system of conduits installed below the ground to convey surface water to a suitable outlet where the discharge can occur without causing damage by erosion, polluted runoff, or flooding. The design capacity of the underground outlet will be based on size of the structure or feature that it serves and its intended purpose. It may be designed to function as the only outlet or in conjunction with other types of outlets. Components of underground outlets, including inlet collection boxes and conduit junction boxes, will be designed with sufficient size to allow maintenance and cleaning operations. All outlets will have animal guards that allow passage of debris while blocking entry of animals large enough to restrict the flow in the conduit.

An underground outlet operations and maintenance plan will be prepared for the operator that details periodic inspections, especially immediately following significant runoff events, to keep inlets, trash guards, and collection boxes and structures clean and free of materials that can reduce flow; prompt repair or replacement of damaged components; repair or replacement of inlets damaged by farm equipment; repair of leaks and broken or crushed lines to insure proper functioning of the conduit; periodic inspection of the outlet and animal guards to ensure proper functioning; repair of eroded areas at the pipe outlet; maintenance of adequate backfill over the conduit; and, to maintain the permeability of surface materials on blind inlets, periodic scouring or removal and replacement of the surface soil, if required.

Activity Conditions

Size Limitations

Pipeline Size Limitations							
	Length		**Disturbance Acres**		**Soil Volumes**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Irrigation Pipeline	2,000 feet	5,000 feet	0.5 acre	1 acre	500 cy	2,000 cy	
Livestock Pipeline	6,000 feet	12,000 feet	1.5 acres	3 acres	1,500 cy	2,000 cy	Limited to 50 feet across a channel with disturbance to 0.05 acre per project
Waste Transfer	6,000 feet	12,000 feet	1.5 acres	3 acres	1,500 cy	2,000 cy	Limited to 50 feet across a channel with disturbance to 0.05 acre per project
Underground Outlet	300 feet	500 feet	0.2 acre	0.4 acre	200 cy	500 cy	
Pipelines located in-stream or in the riparian zone	*100 feet*	*200 feet*	*100 ft^2*	*200 ft^2*	*15 cy*	*30 cy*	*Included in the totals listed above*

Additional General Project Conditions

Plans and specifications for irrigation, livestock, and waste transfer pipelines will be prepared that include a location map; plan view, profile, and typical cross sections, if required; pipe materials and sizes; pipe joint requirements; site-specific construction specifications that include the specification for pressure testing of pipeline; depth of cover and backfill requirements; disposal requirements for excess soil material; and vegetative establishment requirements.

Plans and specifications for an underground outlet may be included with those for the structure or practice it serves. At a minimum, the plans and specifications will include plan view, profile, and typical cross sections of the underground outlet; bedding requirements; details of the inlet and outlet; seeding requirements, if needed; construction specifications that include site-specific installation requirements.

These practices rely on an existing source of water. This includes harvesting rainfall for livestock or non-commercial garden or landscape irrigation. No new water supply sources will be developed.

Drafting of surface water from a creek is not allowed unless existing water rights allow such activity, in which case pumping will be limited to the maximum permitted rate under a landowner's valid water rights permit.

Pipelines will be placed only in or on soils with environmental conditions suitable for the type of material selected. Pipeline material may include metal or plastic. Steel pipe installed above ground will be galvanized, or it will be insulated with a suitable protective paint coating. Plastic pipe installed above ground will be resistant to ultraviolet light throughout the intended life of the pipe, or measures will be taken to protect the pipe from damage due to ultraviolet light.

Pipelines and outlets installed in a stream will not include grouted rock, headwalls, or similar features.

Underground outlets will be designed to avoid changes to the stream hydrograph.

Operations and maintenance plans for each pipeline practice are found in the practice-specific discussions above.

Environmental Benefits

Use of pipelines and underground outlets will improve water quality, protect against soil erosion and sedimentation, reduce energy consumption, and may encourage development of renewable energy systems (i.e., in-pipe hydropower).

2.6.6 Diversion

The primary purpose of a diversion is to direct excess water for safe disposal or storage for use. Diversions intercept surface and shallow subsurface flows, reduce damage from upland runoff, and direct water away from features such as watercourses, actively eroding areas, rural infrastructure, and animal waste systems. Diversions break up concentrated flows on long slopes and can be used on land that is generally considered too flat or irregular for terracing.

Diversion examples (Photographs courtesy of NRCS)

A diversion is an earthen channel installed across a slope with a supporting ridge on the downhill side and has stable side slopes. Both channel and ridge are vegetated. The diversion outlets into a stable channel such as a grassed or lined waterway, grade stabilization structure, underground outlet, or a stable watercourse. The size of the diversion and basis of design will depend on its purpose; design criteria will include storm capacity, ridge and channel stability, erosion and sedimentation control, and revegetation. The location of a diversion will be determined by outlet conditions, topography, land use, agricultural operations, and soil type. Construction of diversions will generally require grading and use of mechanized equipment.

Activity Conditions

Size Limitations

Diversion Size Limitations							
	Project Length		**Disturbance Acres**		**Disturbance Area**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Diversion	2,000 feet	5,000 feet	1 acre	2.5 acre	1,500 cy	3,000 cy	

Additional General Project Conditions

Plans and specifications will be developed for diversions that, at a minimum, include plan view, typical cross sections, and profile; disposal requirements for excess soil material; site-specific construction specifications that describe the installation of the diversion and include a specification for control of concentrated flow during construction and vegetative establishment; and vegetative establishment requirements.

All diversions will be designed to have stable side slopes and will be vegetated. Mulch anchoring, rock, straw bale dikes, fabric checks, filter fences, or runoff controls will be used in the diversion to protect the vegetation until it is established.

Diversions in a cultivated field will be aligned and spaced from other structures or practices to allow use of farming equipment.

Diversions used as temporary measures (i.e., with an expected life span of less than 2 years) will have a minimum capacity for the peak discharge from the 2-year frequency, 24-hour duration storm.

Diversions that protect agricultural land will have a minimum capacity for the peak discharge from a 10-year frequency, 24-hour duration storm.

Diversions designed to protect areas such as urban development, buildings, roads, and animal waste management systems will have a minimum capacity for the peak discharge from a storm of at least a 25-year frequency, 24-hour duration.

An operations and maintenance plan will be prepared. The plan will include specific instructions for monitoring and maintaining diversion capacity, storage, ridge height, and outlets. Maintenance requirements will include regular inspections, removal of accumulated sediment, repair and revegetation of eroded areas and outlets, and re-grading the diversion to maintain the planned capacity.

Environmental Benefits

Diversions will reduce runoff and erosion to protect water quality and direct water to storage and water-harvesting systems that result in water conservation. Vegetated diversions will provide habitat for nesting birds and terrestrial wildlife.

2.6.7 Vegetation Management

The LandSmart Program vegetation management activity includes two practices: Brush Management and Herbaceous Weed Control. The purposes of vegetation management are to:

- Restore, enhance, or create desired plant communities and fish and wildlife habitats;
- Protect soils, control erosion, reduce sediment, and improve water quality;
- Improve accessibility, quantity, and quality of forage and browse for livestock and wildlife; and
- Manage fuel loads, reduce fire hazards, and improve air quality.

Vegetation management activities may include minor grading or digging to remove roots and prepare the area for planting. Herbicides will be used where required to control or eliminate invasive, noxious, or toxic infestations; see Section 2.10, Programmatic Environmental Protection Measures.

Vegetation management and weed control examples (Photographs courtesy of US Forest Service)

Brush Management

Brush management will be used to control woody (i.e., non-herbaceous or succulent) plants, including those that are invasive and/or are the source of disease. It will involve removal or limiting of woody plants using a variety of techniques, including mechanical, chemical, or biological methods either alone or in combination. Brush management is designed to achieve the optimum level of control of the target woody species and protection of desired species, while meeting fish and wildlife habitat requirements; it will include monitoring for regrowth and spot retreatment of young plants.

Herbaceous Weed Control

Herbaceous weed control will be used to address invasive, and noxious plants. It will be applied in a manner to achieve the desired control of the target species and protection of desired species. Like brush management, herbaceous weed control will include mechanical, chemical, biological, or a combination of techniques.

Activity Conditions

Size Limitations

Brush Management Size Limitations					
	Project Length		**Disturbance Acres**		**Additional Criteria**
	Annual Average	**Annual Maximum**	**Annual Average**	**Annual Maximum**	
Brush Management	1,000 feet	1,500 feet	1 acre	3 acres	
Herbaceous Weed Control	1,000 feet	1,500 feet	1 acre	3 acres	

Additional General Project Conditions

This practice does not include use of prescribed fire or burning as a means of brush or weed control.

Plans and specifications will be prepared that contain, at a minimum, clearly stated goals and objectives; pre-treatment cover or density of the target plant(s) and the planned post-treatment cover or density and desired efficacy; maps, drawings, and/or narratives identifying areas to be treated, pattern of treatment, if applicable, and areas that will not be disturbed; and a monitoring plan that identifies what will be measured, including timing and frequency, and documents the changes in the plant community compared with objectives. For mechanical treatment methods, plans and specifications will also include types of equipment and any modifications necessary to enable the equipment to adequately complete the job; dates of treatment to best effect control; operating instructions, if applicable; and techniques or procedures to be followed. For chemical treatment methods, they will include acceptable chemical treatment references for containment and management or control of target species; evaluation and interpretation of herbicide risks associated with the selected treatments; acceptable dates or plant growth stage at application to best effect control and dampen reinvasion; any special mitigation, timing considerations or other factors (such as soil texture and organic matter content) that must be considered to ensure the safest, most effective application of the herbicide; and reference to product label instructions. For biological treatment methods, they will define acceptable biological treatment references for containment and management or control of target species; kind of grazing animal to be used, if applicable; timing, frequency, duration and intensity of grazing or browsing; desired degree of grazing or browsing use for effective control of target species; maximum allowable degree of use on desirable non-target species; and special mitigation, precautions, or requirements associated with the selected treatment(s).

Treatments will be conducted during periods of the year when weed species are most vulnerable and will promote restoration of the native or desired plant communities. Brush and weed control practices will be applied using approved materials and procedures. Operations will comply with all local, State, and federal laws and ordinances.

An operations and maintenance plan will be developed for vegetation management, and success of the practices will be determined by evaluating post-treatment regrowth of target species after sufficient time has passed to monitor and gather reliable data. Length of evaluation periods will depend on the

herbaceous weeds and woody species being monitored, proximity of propagules (seeds, branches, and roots) to the site, transport mode of seeds (wind or animals), and methods and materials used. Following initial application, some regrowth, resprouting, or reoccurrence may be expected. Spot treatment of individual plants or areas needing re-treatment will be completed as needed while herbaceous or woody vegetation is small and most vulnerable to desired treatment procedures.

Environmental Benefits

Vegetation management activities will provide opportunities for native plants and plant communities to become established, which will protect soils, control erosion, and improve water quality. Vegetation management will provide new forage and browsing opportunities for livestock and wildlife. Activities to reduce fuel loads will lessen fire hazards and result in improved air quality.

2.7 Exempt LandSmart Activities

Several of the activities that may be included in LandSmart projects are minor actions that are exempt from CEQA and have little or no possibility of creating adverse environmental impacts. These activities may occur in conjunction with the activities described in Table1 in Section 2.6. The exempt activities are described in Table 2 below.

Table 2. Exempt LandSmart Activities

Activity	Description	Associated NRCS Practices*	CEQA Exemption
Composting Facility	A structure to contain and facilitate controlled aerobic decomposition of manure or other organic material into biologically stable organic material that is suitable for use as a soil amendment. Typically involves a concrete pad with concrete or wood walls; may include a roof structure and a drain to outlet leachate into a stable/vegetated area.	Composting Facility (317)	§15303 for new construction or conversion of small structures
Critical Area Planting	Planting to stabilize disturbed areas, reduce stormwater flow velocities, and encourage infiltration of stormwater and reduction of surface soil erosion. Actions include planting a vegetative buffer in a down-gradient point; establishing native plants in disturbed or eroding areas; creating a vegetated swale; planting permanent vegetation at a pipe or gutter outlet; establishing a dense line of vegetation to function as a wind break/habitat enhancement/ barrier to noise; increase carbon storage capacity; establishing native multi-story riparian vegetation; and replacing invasive plants and Pierce's Disease host plants.	Conservation Cover (327), Cover Crop (340), Critical Area Planting (342), Field Border (386), Filter Strip (393), Grassed Waterway (412), Hedgerow Planting (422), Range Planting (550), Riparian Herbaceous Cover (390), Riparian Forest Buffer (391), Vegetated Barrier (601)	§15304 for minor alterations of land

Table 2. Exempt LandSmart Activities

Activity	Description	Associated NRCS Practices*	CEQA Exemption
Fencing	Installation of fencing, which includes digging/trenching for post holes and installation of above-ground fencing. Fencing can be used for livestock management in a rotational grazing program, to restrict access to an area being revegetated, and to restrict access for livestock into a riparian area or creek.	Fence (382)	§15303 for new construction or conversion of small structures
Heavy Use Area Protection	Provide a stable, non-eroding surface for areas frequently used by animals, people, or vehicles. Can be done through vegetative cover, surfacing with suitable materials (e.g., concrete pad) or installing needed structures (e.g., roof, drainage and stable outlet, or vegetative filter strip).	Heavy Use Area Protection (561)	§15303 for new construction or conversion of small structures or §15304 for minor alterations of land
Mulching	Application of plant residues or other suitable materials (e.g., compost, wood chips, bark) to the land surface. May occur under vinerows or in middles (between vinerows) to protect disturbed soils. May include application of compost across rangeland and vineyard agricultural lands or of mulch after seeding.	Mulching (484)	§15304 for minor alterations of land
Roof Improvements	Installation of a roof or cover on an existing structure to divert clean water from livestock areas; installation of roof gutters and downspouts; tying down spouts into a subsurface drainage system.	Roof and Covers (367), Roof Runoff Structure (558)	§15301 for existing facilities
Small Water Storage	Installation of water storage tanks (rainwater and groundwater supply) or water troughs. Includes minor grading, shaping, and construction of a pad for tank/troughs.	Watering Facility (614)	§15303 for new construction or conversion of small structures or §15304 for minor alterations of land

*Copies of NRCS Practice Standards available at:
http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849

2.8 Activities not included in the LandSmart Program

The following types of projects are not covered by this programmatic environmental document:

- Projects by private landowners not working with the Sonoma RCD or NRCS.
- Projects that do not meet the limitations on project size or cannot fulfill the environmental protection measures established in this document.
- Projects of any type other than those within the seven identified project categories covered in the LandSmart Program, as defined in Table 1 in Section 2.6 above.

2.9 Permits and Approvals

The table below lists the federal, State, and local regulatory or permitting agencies that may have permitting or approval authority over projects within the LandSmart Program.

Table 3. Regulatory/Permitting Agencies

Regulatory/Permitting Agency	Requirement	Potential Permit/Approval
Federal Agency		
U.S. Army Corps of Engineers	Compliance with the Clean Water Act (CWA) Section 404	Approval of fill in waters of the U.S. or jurisdictional wetlands pursuant to the federal Clean Water Act
U.S. Fish and Wildlife Service	Endangered Species Act (ESA) Section 7 consultation	Programmatic Biological Opinion for projects with NRCS funding or for projects requiring CWA Section 404 permit
	ESA Section 10 consultation	Individual consultation for Sonoma RCD-funded projects
National Marine Fisheries Service	ESA Section 7 consultation	Programmatic Biological Opinion for projects with NRCS funding or for projects requiring CWA Section 404 permit
	ESA Section 10 consultation	Individual consultation for Sonoma RCD funded projects
State Agencies		
North Coast or San Francisco Bay Regional Water Quality Control Board	Compliance with the CWA Section 401 or State CWA	Water Quality Certification or Waste Discharge Requirements
California Department of Fish and Wildlife	Compliance with Fish and Game Code Section 1602	1602 Lake and Streambed Alteration Agreement
	Compliance with Fish and Game Code Section 2081	Incidental Take Permit for state-listed wildlife and/or plant species covered under the California ESA
Coastal Commission	Coastal Zone Management Act	Coastal Development Permit

Table 3. Regulatory/Permitting Agencies

Regulatory/Permitting Agency	Requirement	Potential Permit/Approval
Local and Regional Agencies		
Sonoma County Permit and Resource Management Department	Sonoma County Ordinances	Grading, Building, Roiling, Zoning, and Coastal Development Permits

2.10 Programmatic Environmental Protection Measures and General Program Measures

The intent of the LandSmart Program and the associated conservation and restoration practices is to reduce erosion and sedimentation and to enhance habitat values in the watersheds of Sonoma County. Project implementation will improve water quality and the health of the natural resources and will contribute to sustainable agricultural practices. However, any activity that involves work in an area with sensitive resources, no matter what the intent, has the potential for short-term adverse impacts. The following Environmental Protection Measures were developed for the LandSmart Program to require a minimum level of impact avoidance and minimization for all LandSmart projects. The Protection Measures are mandatory, and therefore, they are incorporated into all phases of all projects from planning and design through implementation, monitoring, and reporting. The Environmental Protection Measures are an essential part of the project description.

Protection Measures include temporal constraints, limitations on the size or general location of the specific LandSmart practices, erosion control needs, site maintenance requirements, equipment use, and post construction planting and revegetation requirements. These protective measures are intended as minimum conditions that will be incorporated into the design and implementation of each LandSmart project. Because the Protection Measures listed below will be included in each LandSmart project, the impact analyses presented in Section 6 of this Initial Study/Proposed Negative Declaration are based on implementation of the Protection Measures. Mitigation measures were developed where needed to reduce impacts to less than significant levels where project-specific impacts may occur. Mitigation measures are not included in the Project Description, since these measures are not required in all projects and all locations. Mitigation measures can be found in the impacts analysis for each resource area and are identified by a unique identification system based on the impact being addressed. For example, Mitigation Measure BIO-1b, Avoid Listed Special-status Wildlife Species, is presented in the Biological Resources Section.

The minimum Protection Measures are described in detail below. In cases where applicable local regulatory requirements exist and are more stringent than Protection Measures described below, the local regulatory requirements will be followed.

2.10.1 Construction-period Water Quality Protection and Erosion and Sedimentation Control Measures

Excavation and grading activities will occur only in dry weather periods. If flowing water is present at the work site, it will be temporarily diverted. Watercourses and water quality will be protected during construction activities with erosion control, sediment detention, and site maintenance measures, including:

Measures to Limit Site Disturbance

- Disturbance will be limited to the "Work Area," defined as anywhere subject to disturbance from access, staging, vegetation management, grading, and other human activities.
- Areas to be avoided during construction will be demarcated by the project manager or designated representative and approved by a qualified biologist, when one is required by Mitigation Measure BIO-1b.
- Existing points of access will be used to the extent feasible.
- Heavy equipment will not enter a flowing stream, creek, or ponded area without authorization from environmental regulators. If access requires heavy equipment to traverse a rocky or cobbled substrate, a rubber tire loader/backhoe is required unless such use is determined to be infeasible or less environmentally protective. Use of tracked vehicles may be considered.
- When possible, work will be performed from the top of bank. If work is required in waters, wetlands, or riparian areas, disturbance and compaction will be minimized by strict use of a single identified access route to the work area and by minimizing the work area to the smallest needed to construct the project.
- Temporary exclusionary fencing will be placed around work areas and adjacent sensitive habitat to prevent construction debris, equipment, and workers from entering.

Erosion Control, Sediment Detention, and Site Maintenance

- All disturbed areas will be protected from erosion. When a project involves grading or work within or adjacent to a stream, waterway, or other sensitive habitats, a spill prevention and clean-up plan, Stormwater Pollution Prevention Plan, or similar document will be prepared, approved by the project manager, and implemented during construction activities. The plan will address polluted runoff and spill prevention policies, BMPs that are required to be available on site in case of rain or a spill (e.g., straw bales, silt fencing), clean-up and reporting procedures, and locations of refueling and minor maintenance areas.
- All debris, sediment, rubbish, vegetation, or other construction-related materials will be placed in a location approved by the project manager. No materials, including petroleum products, chemicals, silt, fine soils, or substances deleterious to the function of a watercourse, water quality, or biological resources, will be allowed to pass into, or be placed where it can pass into stream channels.
- If rain occurs while materials are temporarily stockpiled, they will be covered with plastic that is secured in place to ensure the piles are protected from rain and wind. Silt fencing or wattles will be installed on contour around all stockpile locations.

- Spoil materials from clearing, grubbing, grading, and channel excavation will be disposed of at a site approved by the project manager.
- Fire-suppression equipment will be reviewed and approved by the project manager before construction begins and will be available on site at all times.

Measures for Use of Concrete

- If used, concrete will be allowed to cure for a minimum of 30 days before being allowed to interface with a waterway, or it will be coated with an agency-approved sealant. If sealant is used, water will be excluded from the site until the sealant is dry.

Measures to Protect Native Trees during Construction

- Native trees are particularly susceptible to disturbance, including compaction and grading, especially within the root crown and root zone. This area is referred to as the Root Protection Zone (RPZ), which is defined as 1.5 times the dripline radius measured from the tree trunk, extending approximately three feet below the soil surface. Work within the RPZ will be avoided wherever possible. The outer extent of the RPZ will be clearly demarcated with exclusion fencing to keep construction vehicles and activities away from tree roots.
- A qualified professional, such as a Registered Professional Forester or an arborist will guide subsurface activities during installation of pipelines within the RPZ, including grading and trenching operations.
- If work must occur within the RPZ, all tree trunks will be wrapped up to eight feet high or the height of the equipment working in the area. Protection material could include wood boards or heavy-duty rubber matting. No work will occur within the RPZ when soils are wet. Trench plates and/or heavy mulch will be installed when working within the RPZ with heavy equipment. All roots larger than one inch will be cut with a clean, sharp saw. No more than 20 percent of live foliage should be pruned in one year and no more than 20 percent of the total root mass should be damaged in one year.
- Soil stockpiling (whether temporary or permanent) from construction activities should not occur in the RPZ in order to avoid root damage.

2.10.2 Post-construction Erosion and Sediment Control and Water Quality Protection Requirements

Watercourses and water quality will be protected after construction with erosion control, sediment detention, and maintenance measures, including:

Measures for Erosion and Sedimentation Control

- All disturbed areas will be stabilized upon completion of work.
- Erosion and sedimentation control measures will be incorporated into project design and implemented upon completion of grading. Measures will include a combination of permanent native vegetation (e.g., live planting, native seed casting, or hydroseeding), weed-free mulch, erosion control fabrics, rock, and biotechnical treatments (e.g., filter strip, water and sediment

control basins, weed-free straw bales). Measures will be in place prior to October 15 or the onset of rain, whichever is earlier, at all locations where the likelihood of sediment input exists.

- If required, temporary filter-fabric fencing, biodegradable fiber rolls, weed-free straw bales, gravel bars, or other runoff diversions will be utilized to keep sediment from flowing into an adjacent waterbody. After vegetation is sufficiently mature to provide erosion control, these measures may be removed.
- Any collected sediment will be disposed of away from the collection site and stabilized to ensure that no sediment-laden runoff will enter a water of the State.
- Erosion control, sediment detention, and water quality protection measures will be inspected regularly by the RCD or a designee to ensure they are functioning properly.
- No chemically treated timbers will be used on in-stream structures.

Measures for Planting and Revegetation after Soil Disturbance

To the extent feasible, all plants disturbed by project activities will be replaced with native plant species in accordance with the following measures:

- Any area cleared of vegetation will be revegetated with plant propagules native to the project watershed, if possible, and with species appropriate to the site conditions. Otherwise, plants will be sourced from Sonoma County or adjacent counties. Plants from more distant sources will require pre-approval by a qualified biologist.
- In limited instances, non-invasive, non-persistent grass species (e.g., sterile wheat) may be used in conjunction with native species to provide fast-establishing, temporary cover for erosion control.
- Before purchasing any nursery stock for restoration plantings, it will be confirmed that the nursery follows current Best Management Practices for preventing the spread of SOD (consult the California Oak Mortality Task Force, www.suddenoakdeath.org, for current standards) and other plant pathogens. All plant materials will be inspected for symptoms of SOD before delivered onto the property.
- Native plant species with high wildlife and/or pollinator values will be used to the extent feasible.
- Planting will occur as soon as possible after construction. When timing does not coincide with suitable planting windows for permanent vegetation, a temporary cover (e.g., weed-free mulch or weed-free straw) will be used to protect soil until permanent vegetation can be established.
- The introduction and spread of invasive species during revegetation will be prevented. See Vegetation Management BMPs.
- Soil amendments are typically not needed for establishment of native vegetation in intact native soils. If soils have been disturbed and require additional organic matter or nutrients to support native plants, limited organic, weed-free amendments may be used to help establish restoration vegetation. Organic fertilizers may be used only above the normal high water mark of any adjacent waterways. No chemical fertilizers will be used.
- The species palette should be similar to that of native vegetation in the project area.

- For projects that have removed native vegetation, post-construction revegetation success will be based on individual site conditions, but will generally be based on the following: 1) establishment of native trees and shrubs at a ratio of 1:2 living after five years (or the ratio mandated by regulatory permits), 2) establishment of herbaceous cover equal to that of adjacent undisturbed ground within three years, and 3) no increase in invasive species populations (or no greater cover of invasive species than that of adjacent undisturbed ground).
- If needed, an irrigation system will be installed to ensure establishment of vegetation; when vegetation is sufficiently established, irrigation materials will be removed.

2.10.3 General Program Conditions for Vegetation Management

- Disturbance of native shrubs and woody perennials or removal of trees from streambanks or stream channels will be avoided where possible and minimized where avoidance is not feasible. If native riparian vegetation will be disturbed, it will be replaced with similar native species.
- Outside of riparian areas and other sensitive habitats, native vegetation may be removed only if replanting with native vegetation is completed at the site. If trees over six inches dbh (diameter at breast height) are cut, they will be replaced by native species appropriate to the site at a ratio of 3:1. Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.
- No more than 0.10 acre of native riparian trees, shrubs, or woody perennials will be removed from a stream area. Where the area contains a mix of native and invasive species, no more than 0.25 acre of vegetation will be removed from a streambank or stream channel. If the area is exclusively nonnative plants, up to 5 acres of riparian vegetation may be removed, except in areas with potential habitat for sensitive biological resources.
- Hand labor will be used to trim vegetation within the channel or on a streambank. Use of handheld motorized equipment, such as string trimmers and chainsaws, is authorized.
- The spread or introduction of exotic plant species will be avoided to the maximum extent possible by protecting areas with established native vegetation, implementing preventive measures during construction, restoring disturbed areas with native species where appropriate, and performing post-project monitoring and control of exotic species.
- Existing infestations of noxious weeds will be identified and measures implemented to prevent any spreading during construction.
- All landscape or road materials brought on site (e.g., seed, straw, compost, mulch, soil, and gravel) will be certified weed-free or inspected by the project biologist or a project manager prior to installation.
- Construction vehicles and other landscaping equipment will be cleaned of seed and soil from other sites or on-site areas infested with noxious weeds before entering new areas.
- Removal of invasive species will be done in preparation for establishment of native plantings primarily using manual or mechanical methods, such as hand pulling, weed wrenches, chainsaws, string trimmers, and, for large infestations of perennial species, limited use of excavation or mowing machinery. To the extent possible, revegetation will be implemented at

the same time that removal of exotic vegetation occurs. See Post-Construction Erosion and Sediment Control BMPs for soil protection measures.

- All invasive plant materials with potential to germinate (e.g., seeds, rhizomes, stem fragments for stoloniferous species) will be removed from the site and burned or disposed of in a landfill.
- Exotic trees that are causing habitat damage or hazardous situations may be removed with approval of the project biologist. Any exotic trees removed will be replaced with appropriate natives at a minimum 1:1 ratio.
- No pesticides, with the exception of herbicide application to control established stands of exotics or to control the invasion of exotics into restoration plantings, will be allowed.
- Where it is necessary to use herbicides to control established stands of exotics or to control the invasion of exotics into restoration plantings, application will be compliant with the California Department of Pesticide Use regulations in accordance with Material Safety Data Sheets.
- A safety plan will be developed prior to chemical use. The plan will include telephone numbers and addresses of emergency treatment centers and the telephone number for the nearest poison control center.
- In riparian environments, an herbicide (without a surfactant) that has been registered for use in an aquatic environment will be used. Targeted, spot application will be used.
- No herbicides or fertilizers will be used in areas where special-status species or sensitive habitats occur or within a 50-foot buffer around those areas.
- Records will be maintained for two years after herbicide application.

3 Existing Conditions

Sonoma RCD's LandSmart Program area encompasses approximately 762,564 acres or 1,191 square miles. The Program area covers the Gualala River and north coastal drainages, the Russian River and its tributaries, Russian Gulch, Stemple Creek, Chileno Creek, Petaluma River, and Sonoma Creek. Figure 1 illustrates the overall Program area.

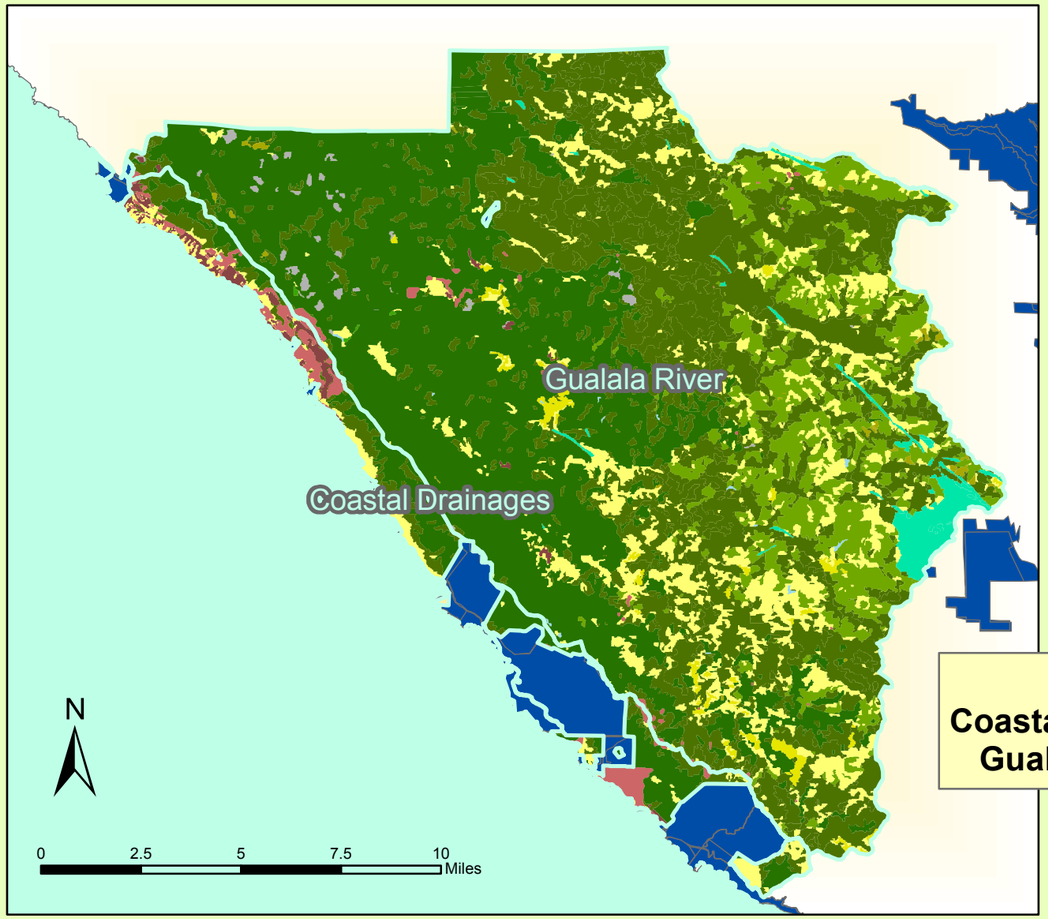
3.1 Gualala River Watershed and North Coastal Drainages

The Gualala River watershed runs parallel to the coast of southern Mendocino and northern Sonoma counties. In Sonoma County, the watershed is bounded on the west by the North Coast watershed and drains approximately 269 square miles. Redwood forests occupy the northwestern portion of the watershed, especially in fog influenced bottomland areas, while Douglas fir dominates in central and mid-slope locations more distant from the coast, especially on north facing slopes. Further inland in the eastern portion of the watershed, Douglas fir forests are fragmented by oak woodland and large prairie grasslands. About 99 percent of the watershed is rural. Logging and grazing began in the watershed during the mid-1800s. Logging continues today in some areas; however, grazing has declined since the about the 1980s. The watershed has high amounts of sedimentation and siltation due to habitat modification and erosion of unpaved roads throughout the watershed. The North Coast Regional Water Quality Control Board has characterized the Gualala River as an impaired water body due to excessive sedimentation and siltation of local waterways and elevated temperatures and aluminum levels. (Sonoma County 2007)

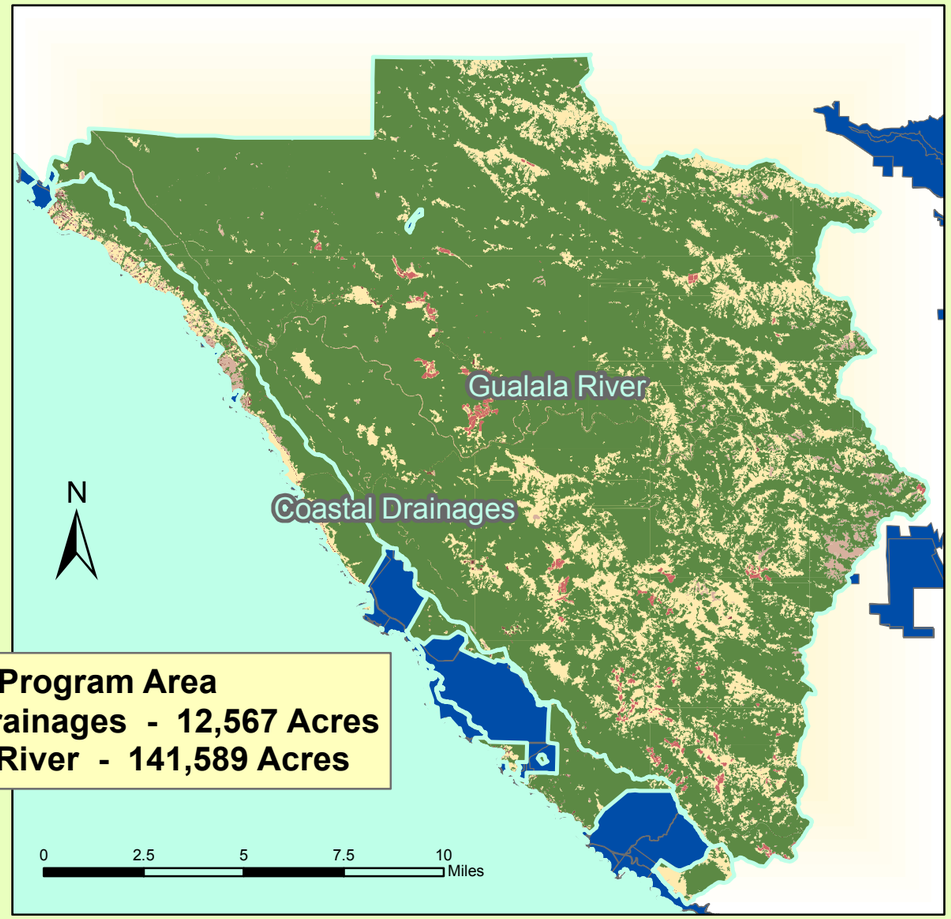
The north coastal drainages area is comprised of coastal areas in north-western Sonoma County. It consists of a number of smaller watersheds containing small creeks that drain directly to the Pacific Ocean. Vegetation is dominated by nonnative grassland and closed cone pine forest (Bishop pine, Monterey cypress). Coastal redwood forest with Douglas fir and tan oak occur in the eastern portion of the watershed, approximately ½ mile inland. Most the land in the north coastal drainage is rural (70 percent) and used predominantly for grazing and timber production. Some rural residential developments and unincorporated communities are present. The watersheds have upland gully erosion and streambank failure.

The Gualala River supports salmonids with tributaries that support spawning and juvenile fish rearing areas. The forested areas in the Gualala and the north coastal drainages provide habitat for northern spotted owls and the Sonoma tree vole. Forestland in the Gualala watershed also supports habitat for the pallid, Townsend's big-eared, and Yuma myotis bat, and the Sonoma vole.

Vegetation Categories



Land-Use Categories



Program Area
Coastal Drainages - 12,567 Acres
Gualala River - 141,589 Acres

Gualala & North Coast Vegetation Categories	Coastal Drainages	Gualala River
Agriculture - Cultivated	<1	1
Barren/Rock	0	0
Chaparral and Scrub	0	0
Cypress (special-status)	<1	0
Oak Woodland	0	10
Other Forest	24	39
Grasslands	15	11
Redwood Forest	38	36
Riparian Forest	<1	0
Rural Residential	13	0
Serpentine Habitats	<1	2
Urban	8	0
Water	0	0
Uncharacterized	2	1
Total Acres	**100**	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Cypress
- Serpentine Habitats
- Water
- Barren/ Rock
- AreasNotInProgram

Gualala & North Coast Land Use Categories	Coastal Drainages	Gualala River
Developed	4	0
Agriculture	<1	1
Rangelands & Other Grasslands	20	15
Forest Lands	71	83
Other Uses	5	1
Total Percentage	**100**	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- AreasNotInPr...

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD LandSmart Program

Gualala River & North Coast

Map Date: Dec. 21, 2015
Analyst: Laura Saunders
CS: NAD83
CA State Plane II

Figure 2

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Riparian areas in both watersheds support habitat for foothill yellow-legged and California red-legged frogs and northern western pond turtles. Resident and migratory birds use the area for nesting at various times during the year. Rare plant species also occupy some habitats in the watershed.

3.2 Russian River Watershed

The Russian River watershed is the largest in terms of area, runoff volume, number of cities and population in Sonoma County. The North Coast Regional Water Quality Control Board has characterized the Russian River as an impaired water body due to sedimentation/siltation, temperature, bacteria, diazinon, metals, phosphorus, and other water quality indicators.

Due to the large size of the Russian River watershed and the complexity of the coastal watersheds, the watersheds were divided and grouped into subbasin units whose size and boundaries were determined by several common traits including runoff patterns, geology, topography, vegetation, and land use. Characteristics of the 12 subbasins are discussed below. Each subbasin is presented on a figure that illustrates the vegetation and land uses and the percentages of each across the watershed. The description of each subbasin addresses the hydrologic issues and key special-species plant and wildlife commonly found in the area.

3.2.1 Dry Creek and Warm Springs

Dry Creek is a major tributary to the Russian River. It drains an area approximately 175 square miles in north central Sonoma County. Major streams and tributaries in the subbasin include Cherry Creek, Galloway Creek, Smith Creek, Warm Springs Creek, Pena Creek, Mill Creek, and Wallace Creek. Lake Sonoma, artificially created by the Warm Springs Dam at the confluence of Dry Creek, is the largest water body in the subbasin. Vegetation in the Dry Creek subbasin consists mostly of oak woodland with areas of Douglas fir forest with patches of chaparral, coast redwood, nonnative grassland, agricultural land. Land use in the subbasin consists of rural; agricultural, mainly vineyards and orchards; and recreational land uses. Watershed management problems include, but are not limited to, upland erosion along secondary roads and from vineyards and orchards, creek bank instability, depleted summer streamflows in tributaries, simplified habitat conditions, and the loss of riparian habitat. (Sonoma County 2007)

Dry Creek and its tributaries provide habitat for salmonids, including steelhead trout, coho salmon, and Chinook salmon. Forests provide habitat for northern spotted owls, bats, and tree voles. Riparian habitats support foothill yellow-legged frogs and pond turtles. Resident and migratory birds use the area for nesting at various times during the year. Rare plant species also occupy some habitats in the watershed.

3.2.2 Alexander Valley

The Alexander Valley is located on the northern edge of Sonoma County, just east of the Warm Springs and Dry Creek watersheds. The Russian River flows through the center of the valley, draining an area of approximately 122 square miles. About 30 percent of the watershed is in agricultural production,

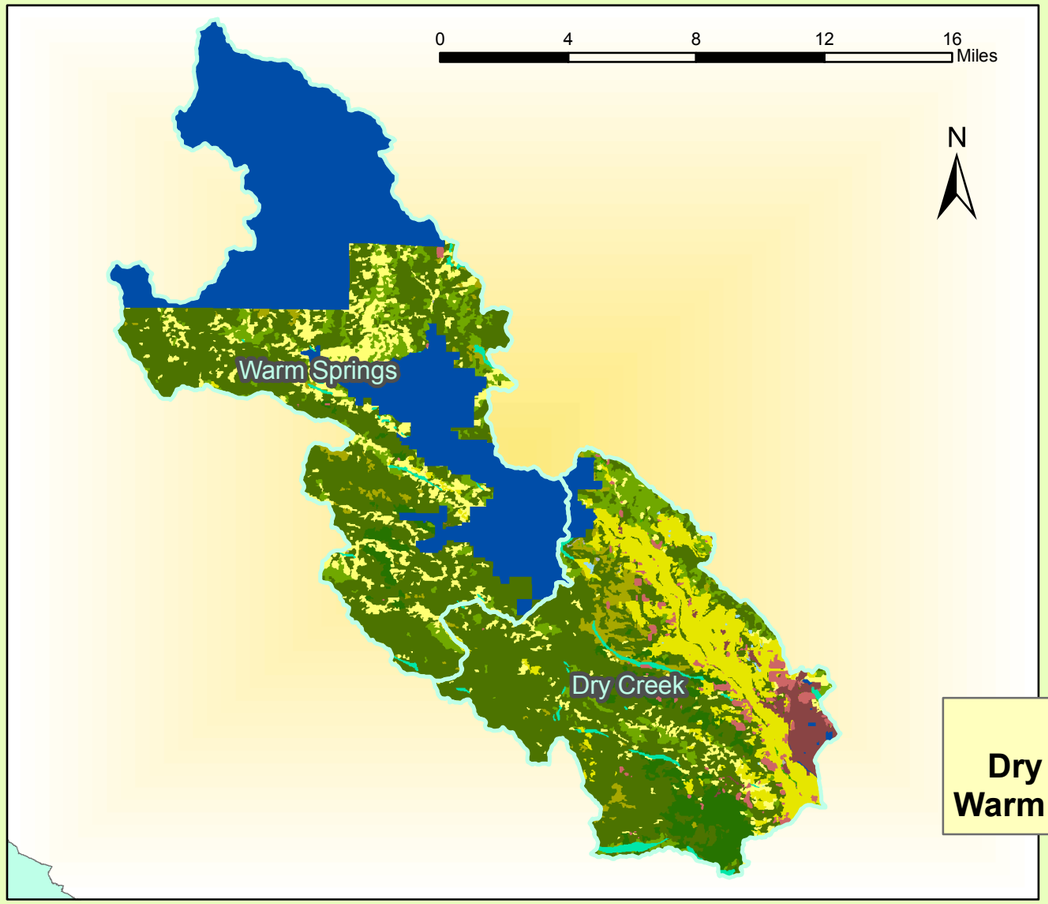
primarily vineyards. Vegetation in the watershed includes oak woodland and other forestland, grasslands, and chaparral and scrub. There are areas in the watershed that support a variety of serpentine habitats. Major watershed management challenges in this watershed include but are not limited to flooding, and significant bank erosion and streambed downcutting, especially in the upper reaches of the river. Habitats in the watershed support multiple sensitive species of bats, frogs, turtles, insects, and plants. The Russian River and its Alexander Valley tributaries also support habitat for salmonids. Resident and migratory birds use the area for nesting at various times during the year. Rare plant species also occupy some habitats in the watershed.

3.2.3 Maacama Creek and Sulphur Creek

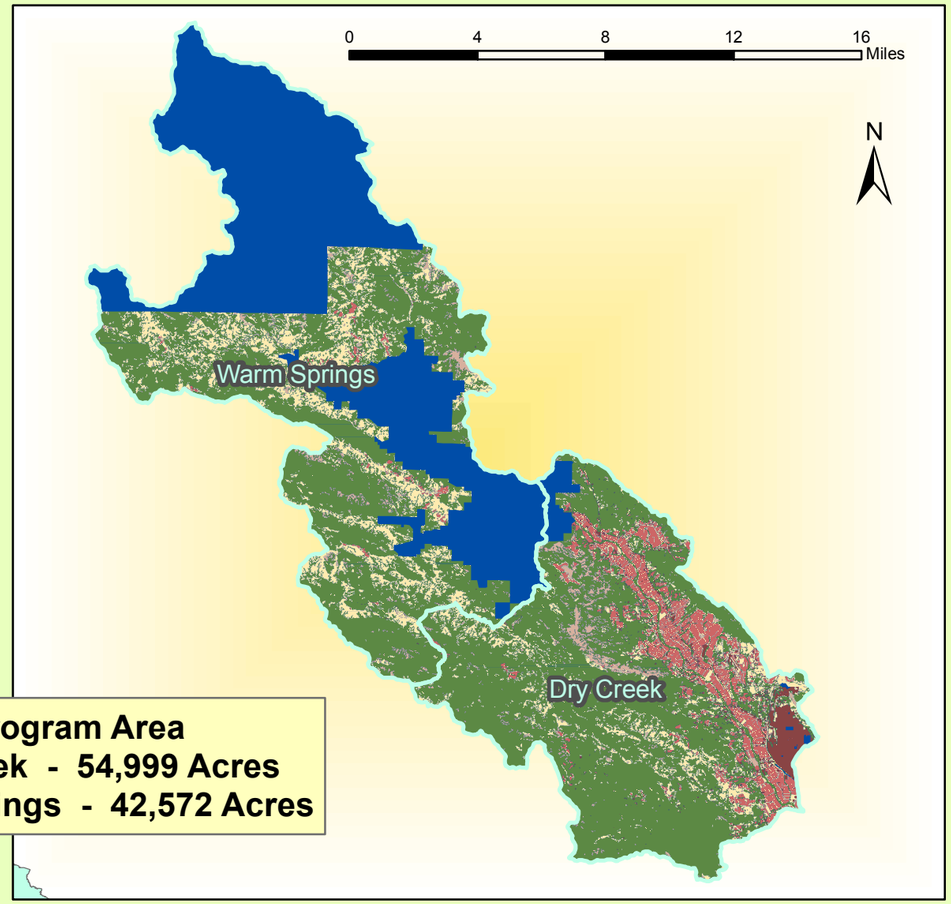
Maacama and Sulphur Creeks are both major tributaries to the Russian River located in the northeastern portion of Sonoma County. Maacama Creek flows to the Russian River where the main stem river enters the Brooks Creek area. The watershed is about 70 square miles composed of rural and agricultural lands, native forest, herbaceous vegetation, and shrubs. Sulphur Creek is in a geologically active area. The watershed is 82 square miles, with a small amount of development and agricultural uses (CalWater 2.2.1 in NAD83). More than half the watershed is native forest, with shrub and herbaceous areas. The Geysers Steamfield is located partially in the Sulphur Creek watershed. Erosion along unpaved roads and erosion after wildfires pose challenges in both watersheds.

Maacama and Sulphur Creeks both provide habitat for salmonids. Maacama Creek supports California freshwater shrimp, and the habitats throughout both watersheds support for the northern spotted owl, frogs, salamanders, turtles, and bats. Resident and migratory birds use the area for nesting at various times during the year. Serpentine soils support unique habitats that include rare plants and insects not commonly found in other areas of Sonoma County.

Vegetation Categories



Land-Use Categories



Program Area
Dry Creek - 54,999 Acres
Warm Springs - 42,572 Acres

Dry Creek & Warm Springs Vegetation Categories	Dry Creek	Warm Springs
Urban	4	<1
Rural Residential	3	0
Agriculture - Cultivated	19	1
Grasslands	4	19
Chaparral and Scrub	4	2
Riparian Forest	0	<1
Redwood Forest	8	2
Other Forest	48	64
Oak Woodland	7	11
Serpentine Habitats	2	1
Water	0	<1
Barren/ Rock	0	<1
Total	**100**	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Water
- Barren/ Rock
- Areas Not in the Program

Dry Creek & Warm Springs Dam Area Land Uses	Dry Creek	Warm Springs
Developed	4	0
Agriculture	13	1
Rangelands & Other Grasslands	11	24
Forest Lands	69	72
Other Uses	4	3
Total Percentage	**100**	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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LandSmart Program

Dry Creek & Warm Springs

Map Date:
Dec. 6, 2015
Analyst:
Laura Saunders
CS:NAD83
CA State Plane II

Figure 3

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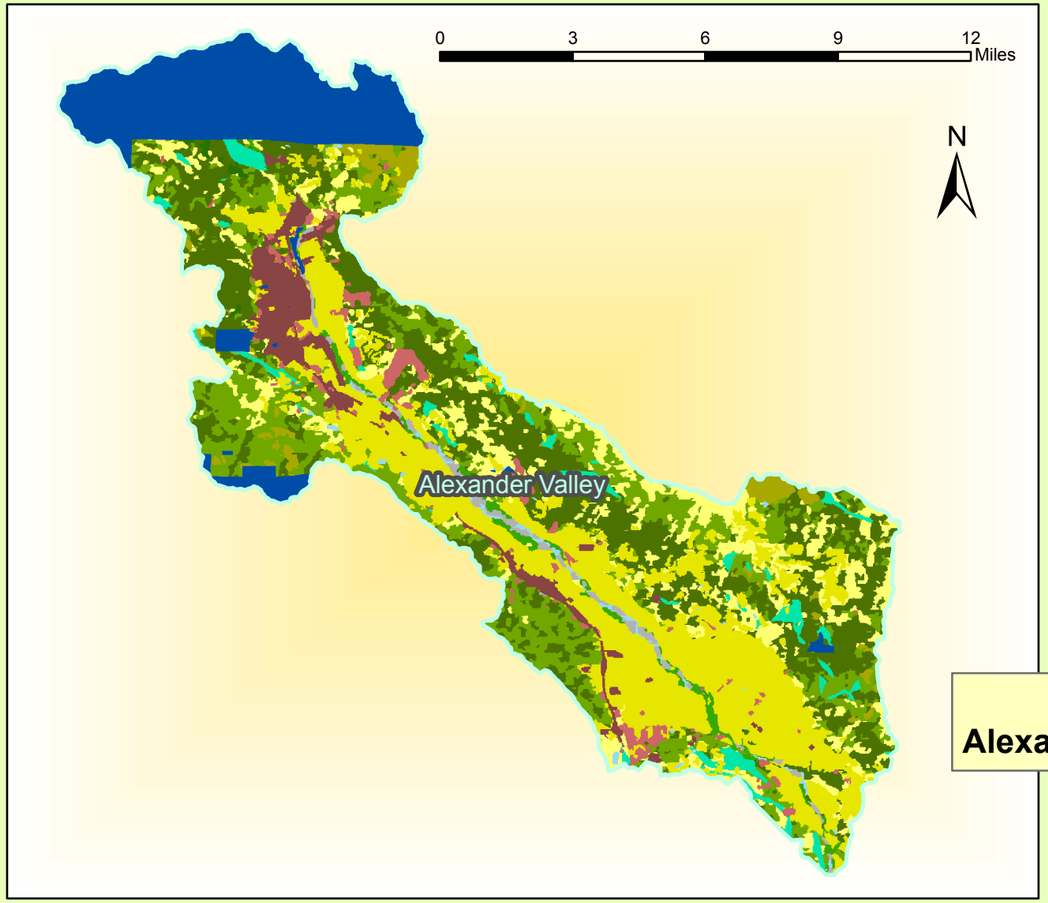
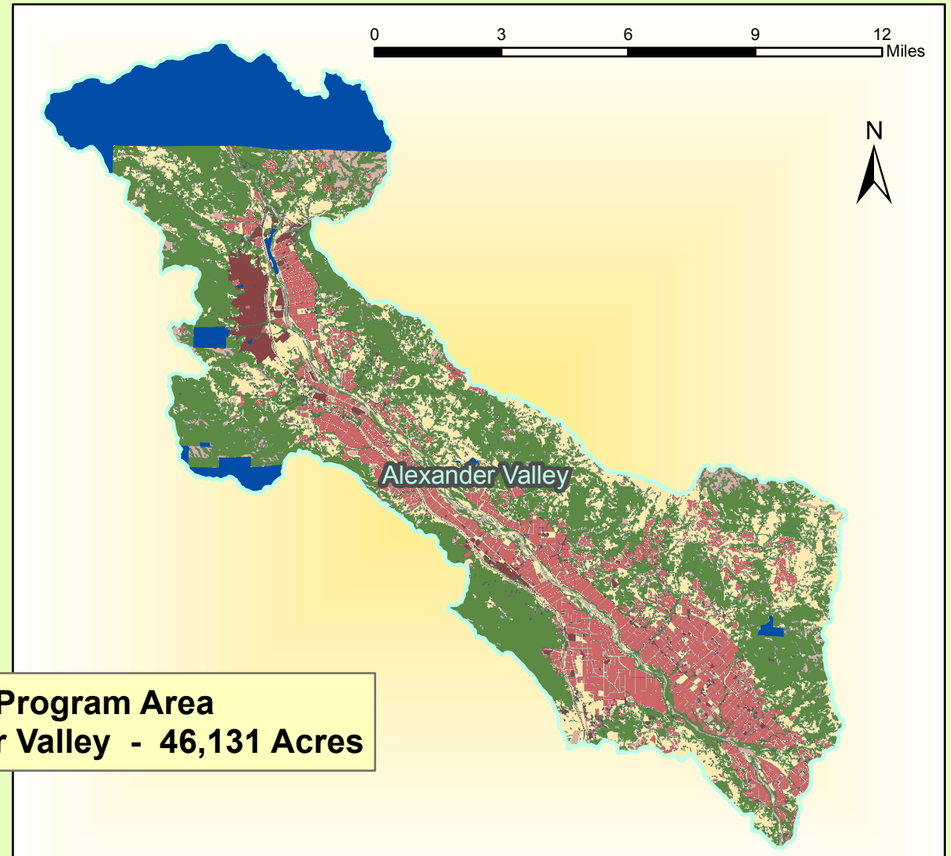
Vegetation Categories



Land-Use Categories



Program Area
Alexander Valley - 46,131 Acres

Alexander Valley Vegetation Categories	Percent
Urban	5
Rural Residential	3
Agriculture - Cultivated	28
Grasslands	13
Chaparral and Scrub	3
Riparian Forest	1
Redwood Forest	0
Other Forest	25
Oak Woodland	18
Serpentine Habitats	3
Water	1
Barren/ Rock	1
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Water
- Barren/ Rock
- Areas Not in the Program

Alexander Valley Land Uses	Percent
Developed	4
Agriculture	20
Rangelands & Other Grasslands	24
Forest Lands	48
Other Uses	4
Total Percentage	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Alexander Valley

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Analyst:
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CA State Plane II

Figure 4

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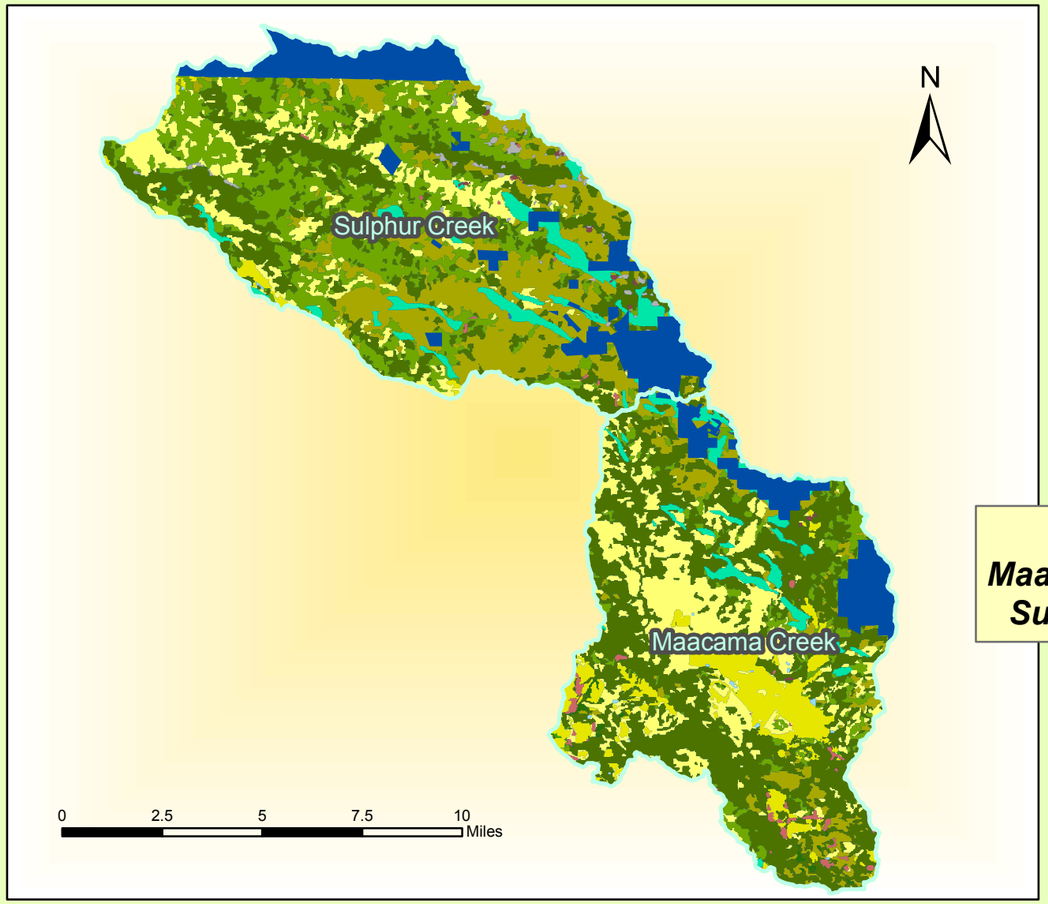
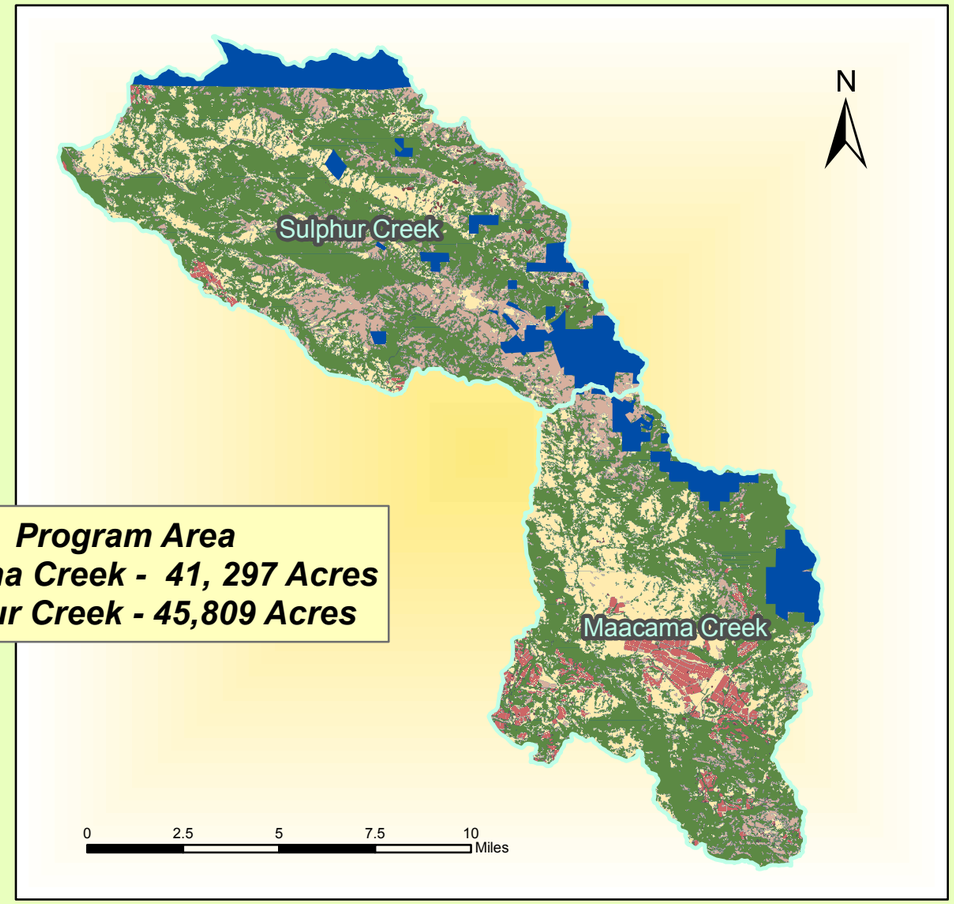
Vegetation Categories



Land-Use Categories



Program Area
Maacama Creek - 41, 297 Acres
Sulphur Creek - 45,809 Acres

Mayacamas Mountains Vegetation Categories	Maacama Creek	Sulphur Creek
Urban	0	0
Rural Residential	1	0
Agriculture - Cultivated	11	1
Grasslands	23	13
Chaparral and Scrub	7	25
Riparian Forest	0	<1
Redwood Forest	0	<1
Other Forest	47	26
Oak Woodland	6	28
Cypress	<1	0
Serpentine Habitats	4	5
Water	0	0
Barren/ Rock	0	1
Total Percentage	**100**	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Cypress
- Serpentine Habitats
- Water
- Barren/ Rock
- Areas Not in the Program

Mayacamas Mountains Tributaries Land Use	Maacama Creek	Sulphur Creek
Developed	1	1
Agriculture	8	1
Rangelands & Other Grasslands	27	19
Forest Lands	58	62
Other Uses	7	18
Total Percentage	**100**	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Mayacamas Mountain Tributaries

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Analyst:
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CS:NAD83
CA State Plane II

Figure 5

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3.2.4 Russian Gulch

Russian Gulch is a 15-square-mile coastal watershed that flows directly to the Pacific Ocean (CalWater 2.2.1 in NAD83). The watershed is relatively undeveloped and supports native forests and grasslands. Russian Gulch provides habitat for salmonids. The forest and grasslands provide habitat for northern spotted owls, Sonoma tree vole, foothill yellow-legged frogs, and butterflies. Resident and migratory birds use the area for nesting at various times during the year. The main watershed management issues are sea cliff or bluff retreat, upland gully erosion of historically intensively grazed rangeland areas, erosion following large wildfires of brush land and forested areas, and streambank failure along the many intermittent creeks along the coast. (Sonoma County 2007)

3.2.5 Jenner Gulch/Sheephouse Creek

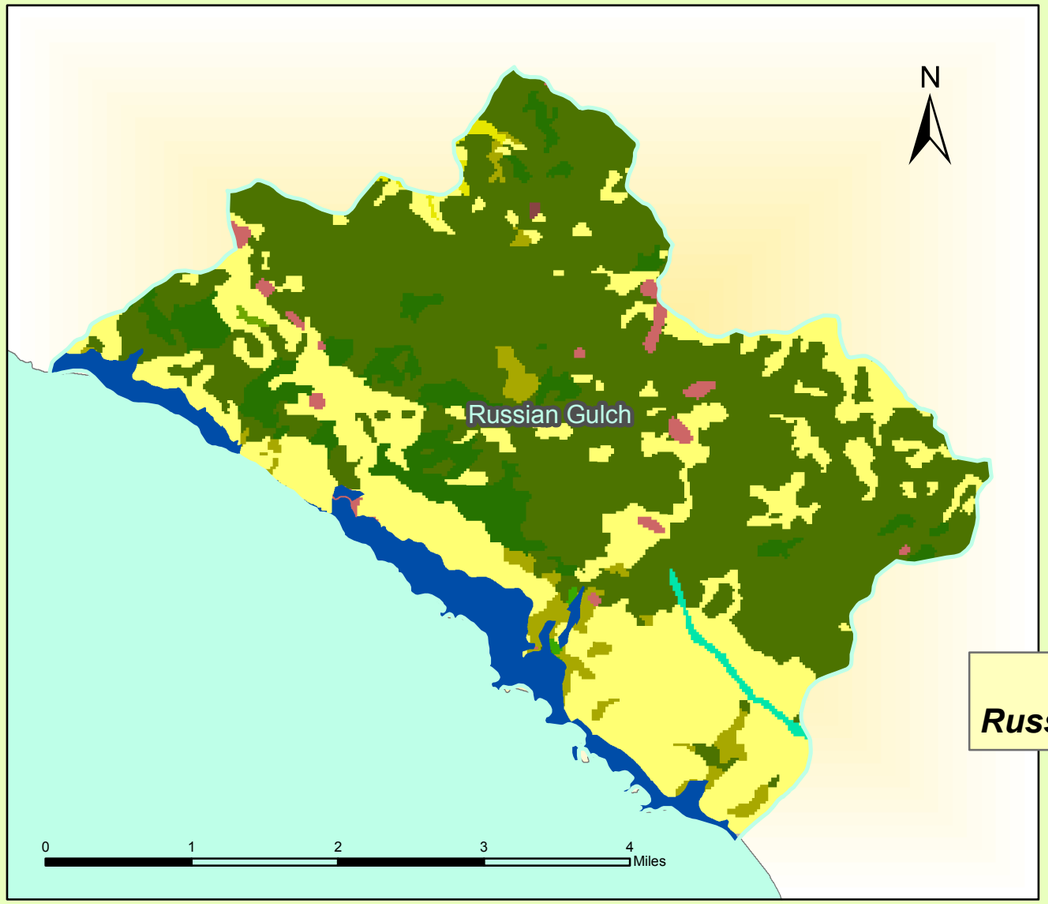
Jenner Gulch and Sheephouse Creek are located on the north side of the Russian River as it enters the Pacific Ocean. Combined, they drain 10 square miles and include the unincorporated community of Jenner (CalWater 2.2.1 in NAD83). Jenner Gulch has limited development and practically no vineyards. It is mostly composed of native forest and grasslands. The grasslands are grazed. Like other coastal watersheds, the main watershed management issues are upland gully erosion of historically intensively grazed rangeland areas, erosion following large wildfires of brush land and forested areas, and streambank failure in the many intermittent creeks along the coast. (Sonoma County 2007)

Sheephouse Creek and Jenner Gulch provide habitat for salmonids. The forest and grasslands provide habitat for northern spotted owls, Sonoma tree vole, foothill yellow-legged and California red-legged frogs, turtles, badgers, and resident and migratory birds. Rare plants can be found in some areas of the watershed. Resident and migratory birds use the area for nesting at various times during the year.

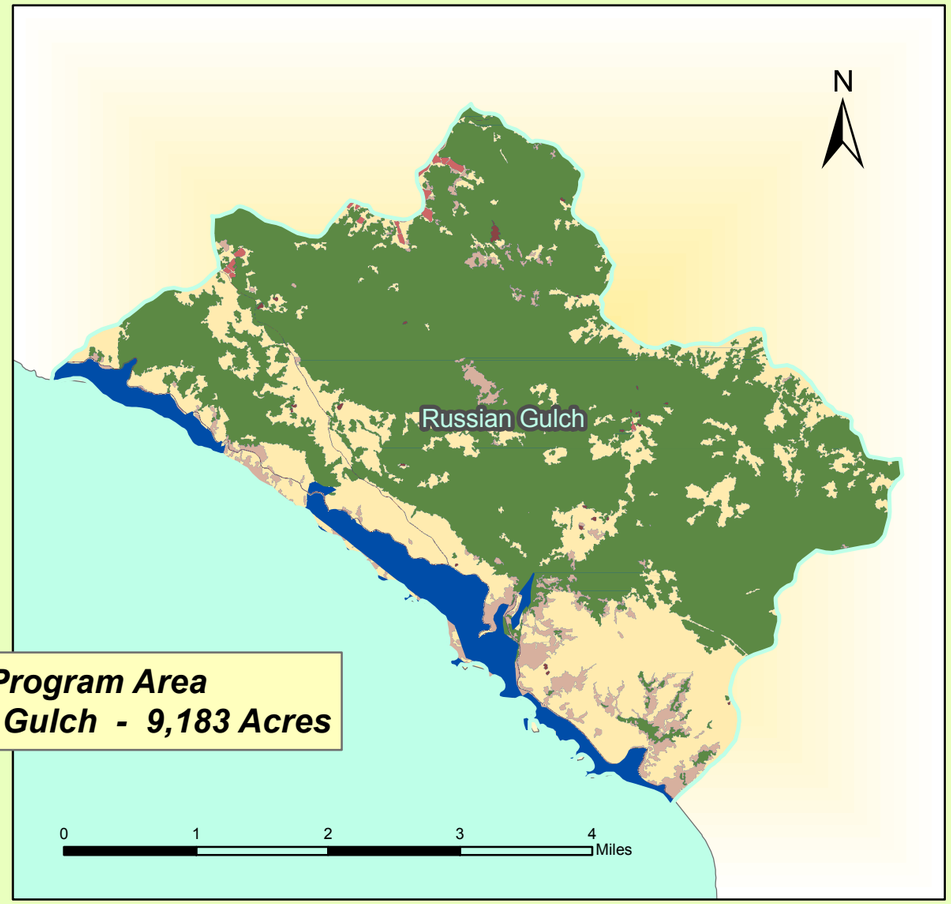
3.2.6 Austin Creek

Austin Creek is the third largest tributary to the Russian River. The watershed is 70 square miles and contains the highest rainfall area in Sonoma County at the unincorporated community of Cazadero. The primary water quality problem is the result of erosion along roads. The vegetation is mostly native forest and a wide range of grasslands, chaparral, and serpentine habitats. The creek provides habitat for salmonids and California freshwater shrimp. The surrounding forests provide habitat for northern spotted owl and several other forest-dependent wildlife species, foothill yellow-legged frogs, and western pond turtles. Resident and migratory birds use the area for nesting at various times during the year. The watershed includes The Cedars, an area of very high mineral content supporting several unique plant species.

Vegetation Categories



Land-Use Categories



Program Area
Russian Gulch - 9,183 Acres

Russian Gulch Vegetation Categories	Percent
Urban	0
Rural Residential	1
Agriculture - Cultivated	0
Grasslands	30
Chaparral and Scrub	3
Riparian Forest	0
Redwood Forest	8
Other Forest	58
Oak Woodland	0
Serpentine Habitats	1
Barren/ Rock	0
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Barren/ Rock
- Areas Not in the Program

Russian Gulch Land Uses	Percent
Developed	0
Agriculture	0
Rangelands & Other Grasslands	26
Forest Lands	69
Other Uses	4
Total Percentage	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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LandSmart Program

Russian Gulch

Map Date:
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Analyst:
Laura Saunders
CS:NAD83
CA State Plane II

Figure 6

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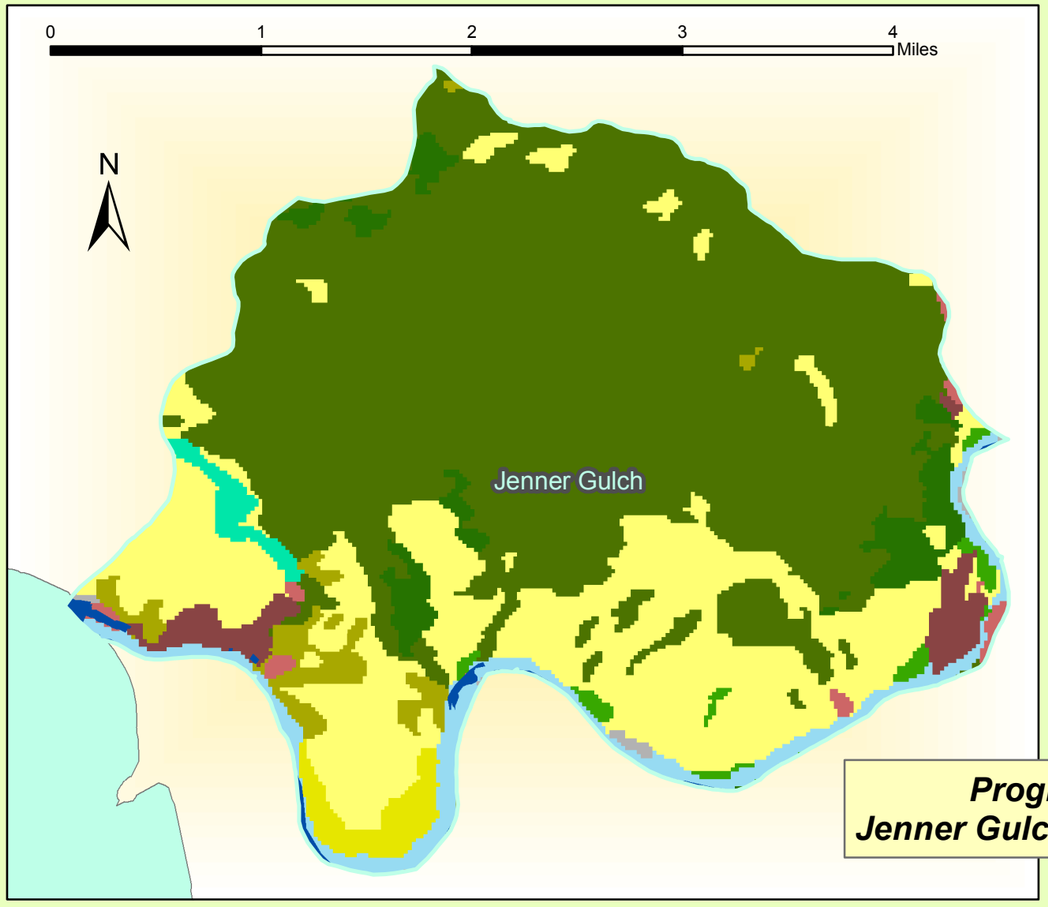
Vegetation Categories

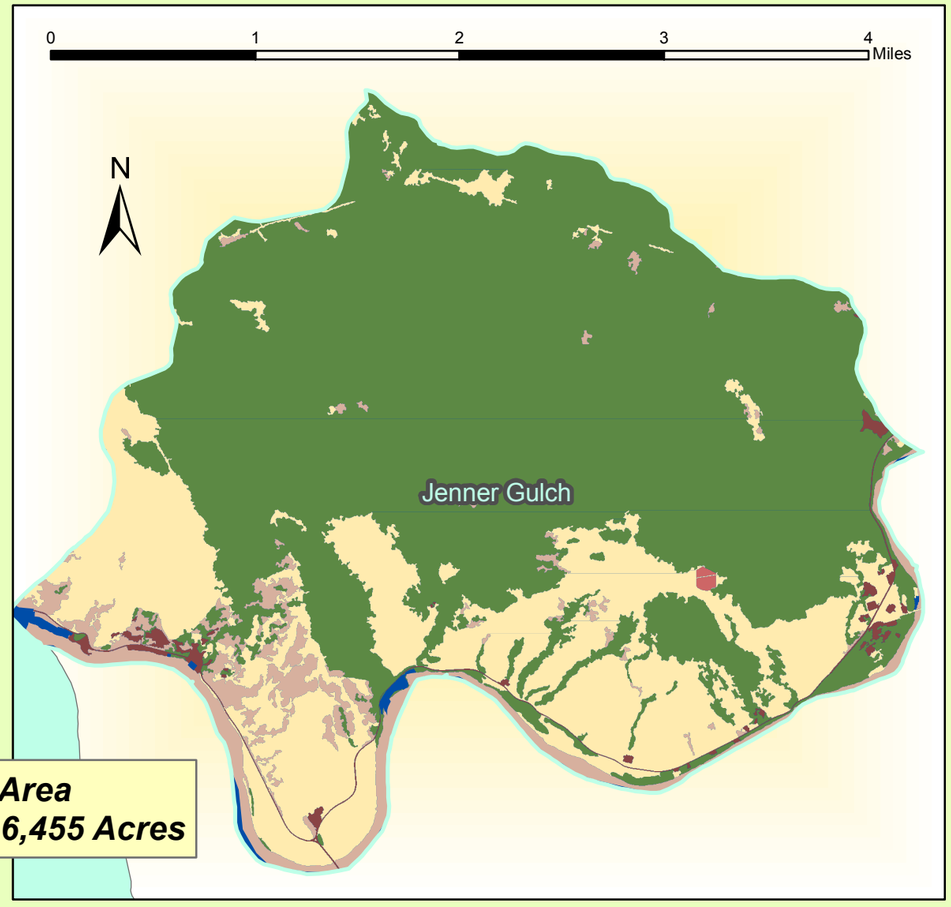


Jenner Gulch & Sheephouse Creek Vegetation Categories	Percent
Urban	2
Rural Residential	1
Agriculture - Cultivated	2
Grasslands	24
Chaparral and Scrub	2
Riparian Forest	1
Redwood Forest	4
Other Forest	60
Serpentine Habitats	1
Water	4
Barren/ Rock	0
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Serpentine Habitats
- Water
- Barren/ Rock
- Areas Not in the Program

Land-Use Categories



Jenner Gulch & Sheephouse Creek Land Uses	Percent
Developed	1
Agriculture	0
Rangelands & Other Grasslands	25
Forest Lands	68
Other Uses	6
Total Percentage	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Jenner Gulch & Sheephouse Creek

Map Date: Dec. 6, 2015
Analyst: Laura Saunders
CS:NAD83
CA State Plane II

Figure 7

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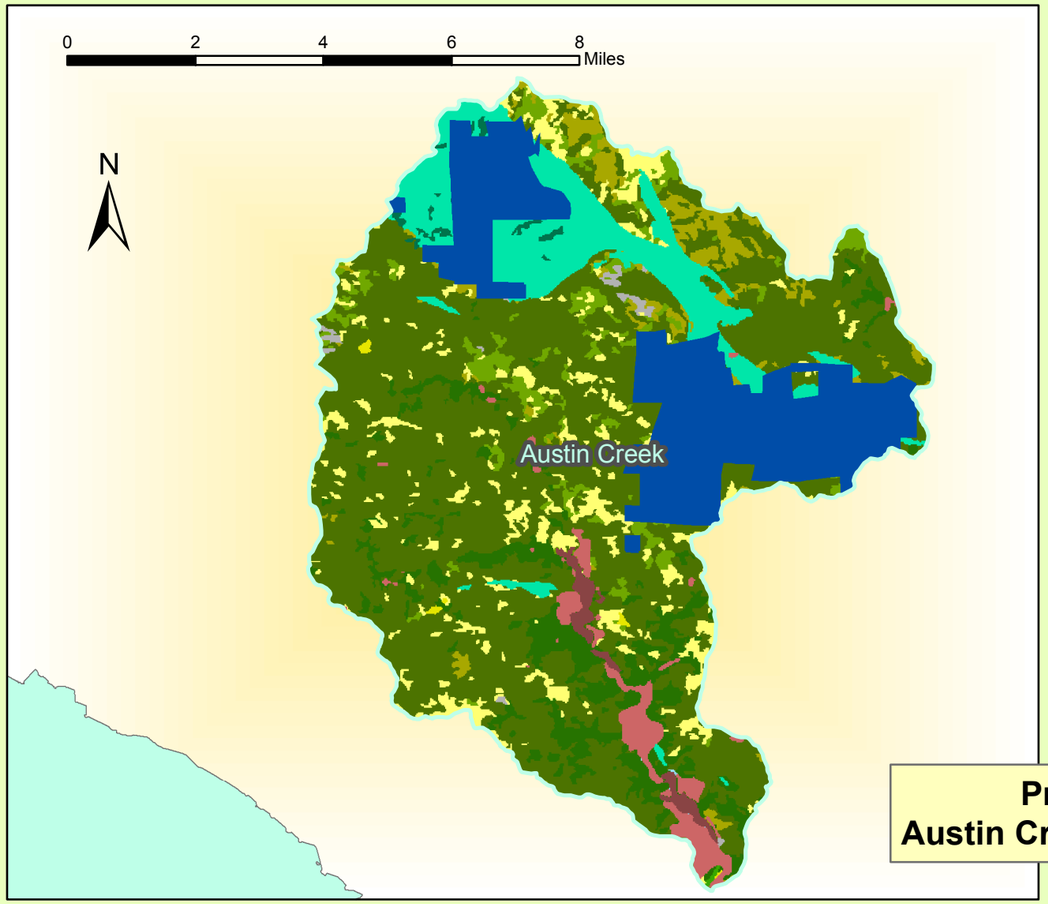
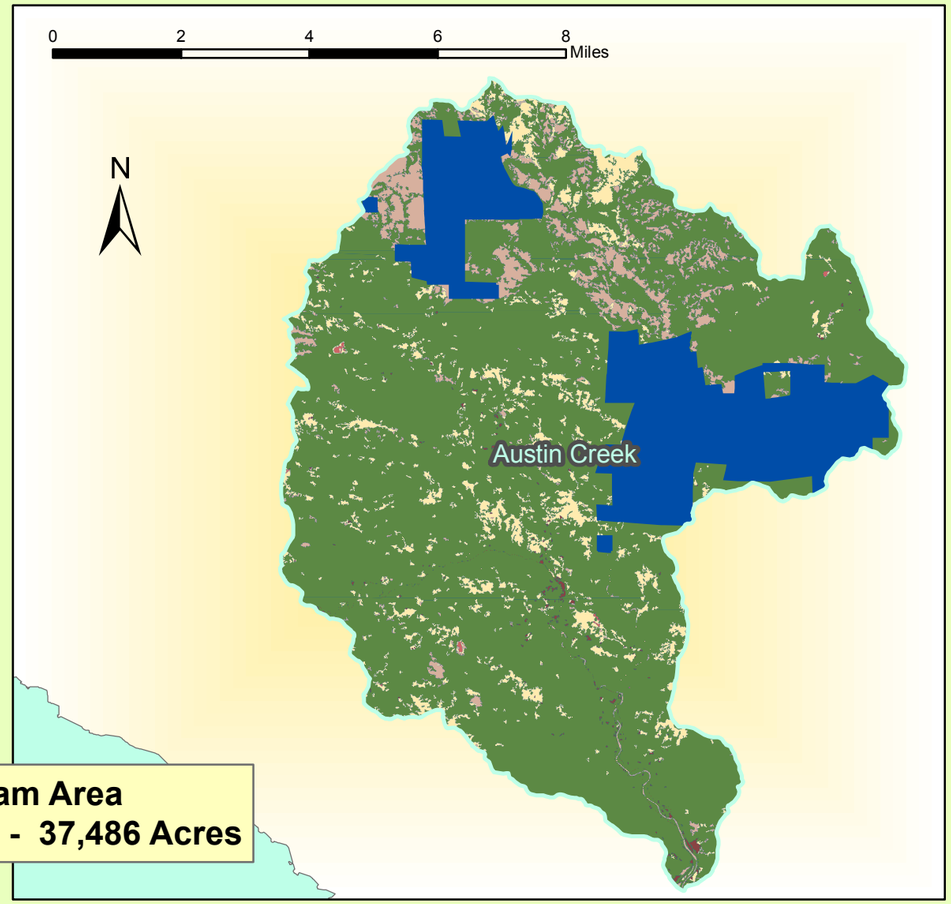
Vegetation Categories



Land-Use Categories



Program Area
Austin Creek - 37,486 Acres

Austin Creek Vegetation Categories	Percent
Urban	1
Rural Residential	3
Agriculture - Cultivated	0
Grasslands	8
Chaparral and Scrub	4
Riparian Forest	0
Redwood Forest	9
Other Forest	61
Oak Woodland	4
Cypress	0
Serpentine Habitats	10
Water	0
Barren/ Rock	0
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Cypress
- Serpentine Habitats
- Water
- Barren/ Rock
- Areas Not in the Program

Austin Creek Land Uses	Percent
Developed	0
Agriculture	0
Rangelands & Other Grasslands	8
Forest Lands	86
Other Uses	6
Total Percentage	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD
LandSmart Program

Austin Creek

Map Date:
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Analyst:
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Figure 8

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3.2.7 Interior Russian River

The interior Russian River area includes Guerneville North, Middle Russian, and Brooks Creek watersheds. The Guerneville North watershed follows the main stem Russian River for 18 miles, and the watershed is 37 square miles. The watershed contains the unincorporated community of Rio Nido, and the north side of Guerneville and Monte Rio. Almost the entire watershed is native forest – specifically redwood forest. The Middle Russian River watershed covers an area of 23 square miles. The Brooks Creek watershed is on the main stem Russian River just south of Dry Creek and Maacama Creek. The primary water quality issues stem from sedimentation and siltation due to grazing, agriculture, road construction and habitat modification. (Sonoma County 2007)

Forest lands, rangelands, and vineyards dominate the interior Russian River area. The river and its tributaries provide habitat for salmonids, and the riparian areas provide habitat for frogs, turtles, and birds. The forests provide habitat for northern spotted owls, bats and voles. Resident and migratory birds use the area for nesting at various times during the year.

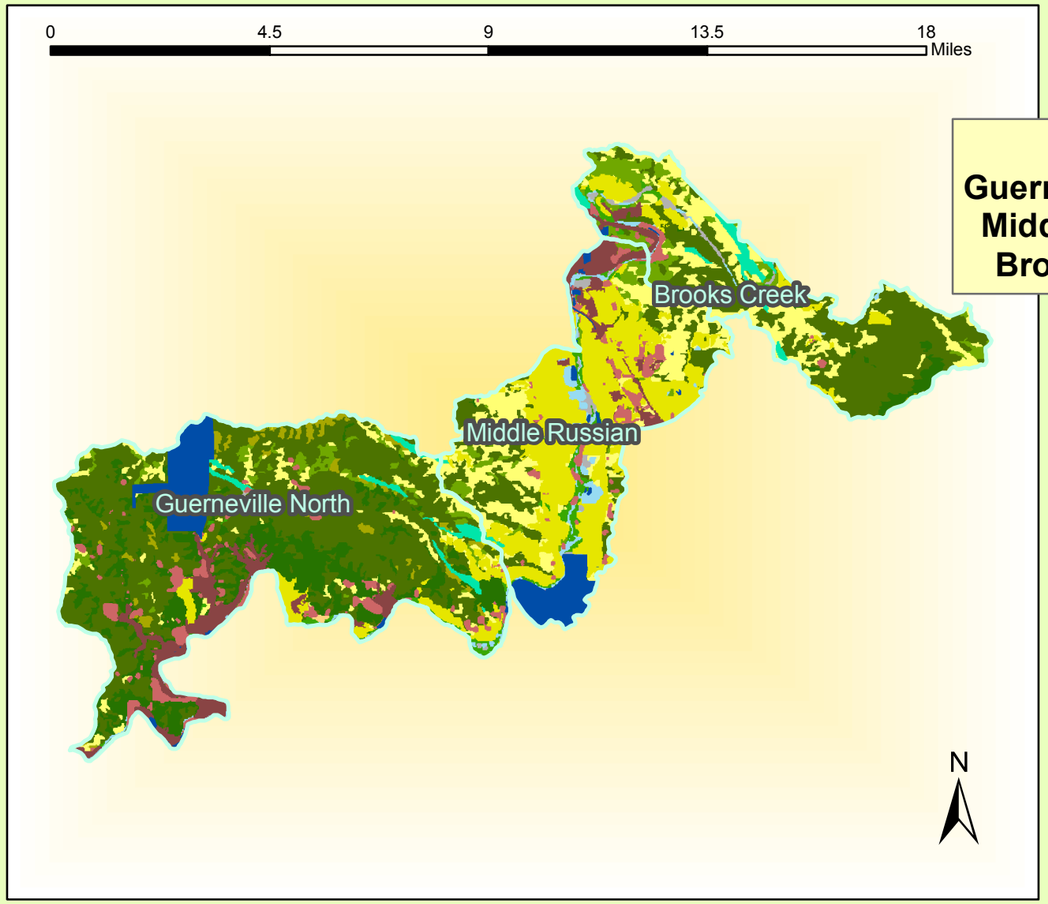
3.2.8 Laguna de Santa Rosa and Mark West Creek

The Laguna de Santa Rosa drains an area of 170 square miles in south-central Sonoma County. In the upper portions of the watershed are the cities of Santa Rosa, Rohnert Park, and Cotati, as well as Sonoma State University. The city of Sebastopol is located in the lower part of the Laguna subbasin. In the northern part of the subbasin, Laguna de Santa Rosa converges with Mark West Creek prior to flowing to the Russian River. A portion of the Laguna de Santa Rosa watershed has been urbanized or is in agricultural production. Rural residential land uses make up about 35 percent of the watershed. Vegetation in the rural areas includes oak woodlands on Sonoma Mountain, pasture and oat hay lands, and grazing lands in the valley bottoms and lower slopes, and along the mountain slopes in the northwest edge of the subbasin, mixed Douglas fir forest and oak woodland. One of the more significant watershed management problems is the siltation and shallowing of the Laguna. The loss of floodplain storage and the reduction of channel flood conveyance capacity due to siltation from sediment sources higher in the watershed are of major concerns. Water quality, including elevated levels of nutrients, sediment, pathogens, and temperature and reduced levels of dissolved oxygen, is also a big concern for the Laguna. (Sonoma County 2007)

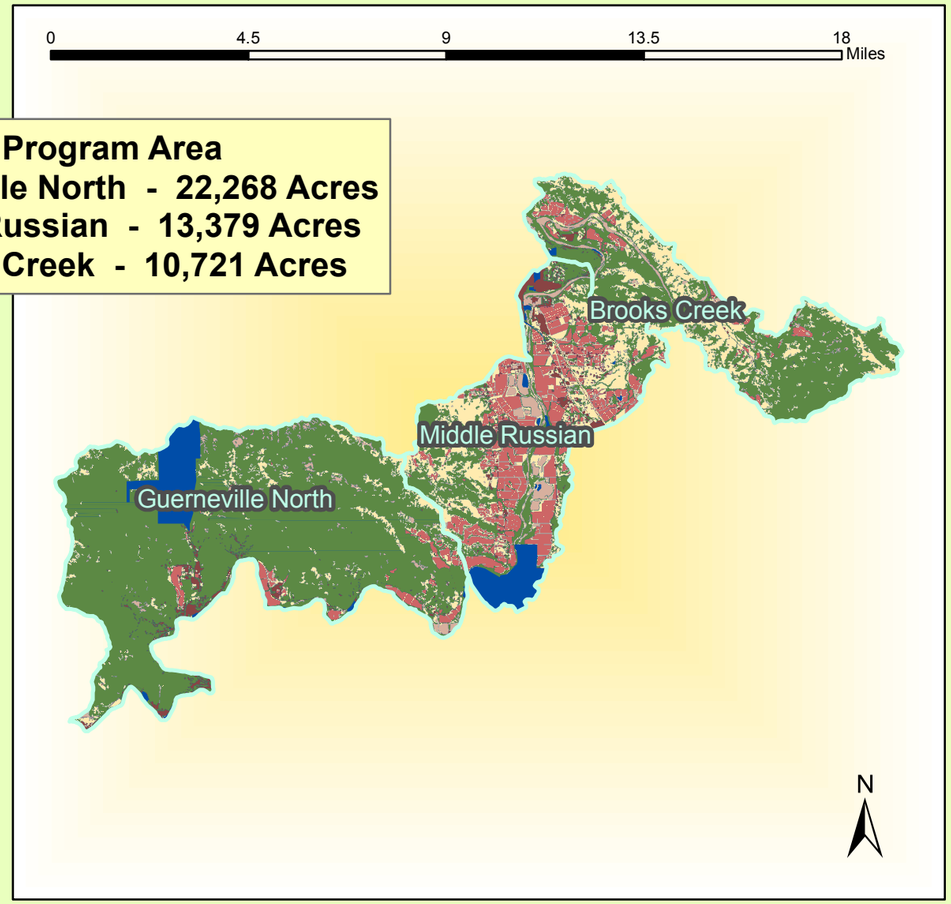
The Mark West Creek watershed is in central Sonoma County. Mark West Creek is a tributary to the Russian River. It flows across the Santa Rosa Plain, draining an area of 84 square miles. The town of Windsor is located in the watershed. The watershed is about half native forest, but also includes areas of grasslands, development, and vineyards. Low gradients in the lower reaches of Windsor, Poole, and Mark West Creeks cause water from the Russian River to backup and flood some portions of the western subbasin during high-intensity, short-duration storm events. (Sonoma County 2007)

The Laguna and Mark West Creek provide habitat for a wide variety of aquatic and riparian species, including salmonids. There are vernal pools in the Laguna, and these areas support a variety of rare plants as well as breeding habitat for the California tiger salamander. Mark West Creek supports salmonids and riparian dependent frogs and turtles. Forested areas in both watersheds provide habitat for the northern spotted owl and bats. Resident and migratory birds use the area for nesting at various times during the year.

Vegetation Categories



Land-Use Categories



Program Area
Guerneville North - 22,268 Acres
Middle Russian - 13,379 Acres
Brooks Creek - 10,721 Acres

Interior Russian River Vegetation Categories	Guerneville North	Middle Russian	Brooks Creek
Urban	7	6	2
Rural Residential	5	5	2
Agriculture - Cultivated	4	44	7
Grasslands	6	20	21
Chaparral and Scrub	3	3	0
Riparian Forest	1	0	1
Redwood Forest	18	14	0
Other Forest	51	4	3
Oak Woodland	3	0	46
Serpentine Habitats	2	3	10
Water	1	1	4
Barren/ Rock	0	0	1
Non-native Vegetation	0	0	1
Total Percentage	**100**	**100**	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Water
- Barren/ Rock
- Non-native Vegetation
- Areas Not in the Program

Interior Russian River Land Uses	Guerneville North	Middle Russian	Brooks Creek
Developed	3	6	1
Agriculture	3	31	5
Rangelands & Other Grasslands	6	28	26
Forest Lands	86	29	63
Other Uses	3	5	4
Total Percentage	**100**	**100**	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD
LandSmart Program

Interior Russian River

Map Date: Dec. 6, 2015
Analyst: Laura Saunders
CS:NAD83
CA State Plane II

Figure 9

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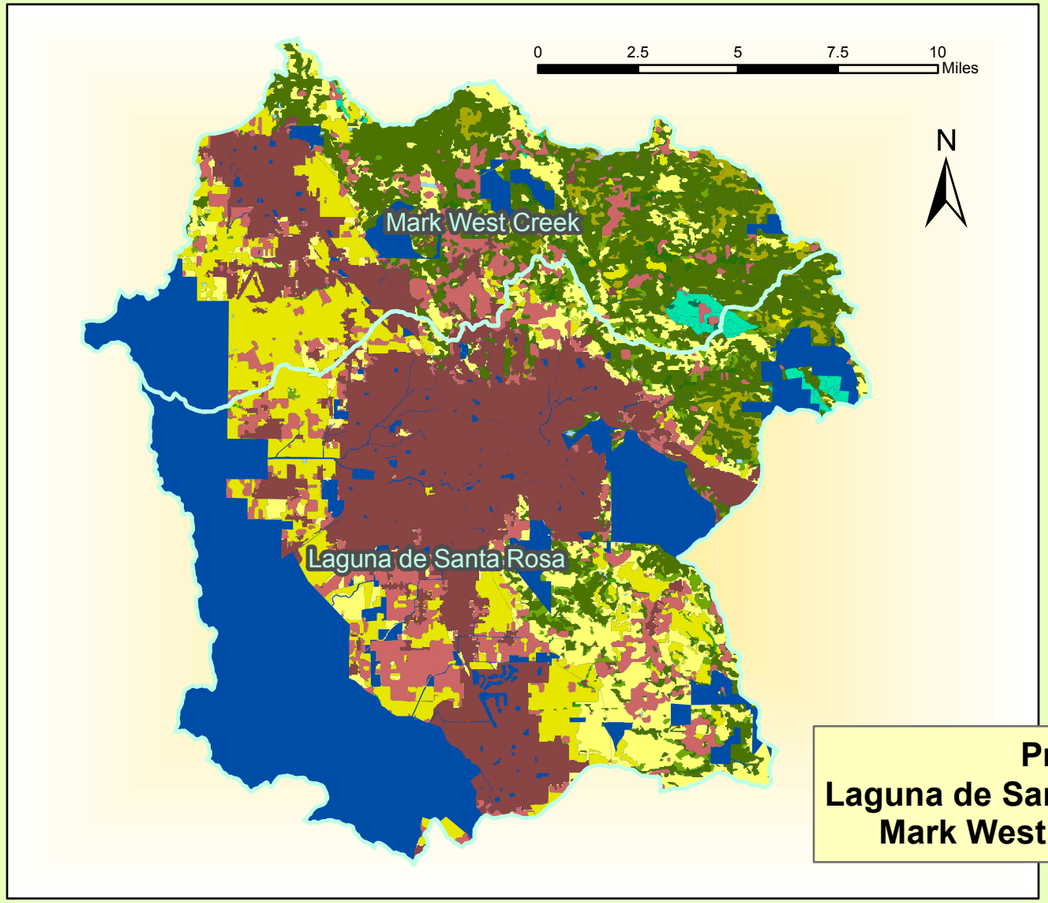
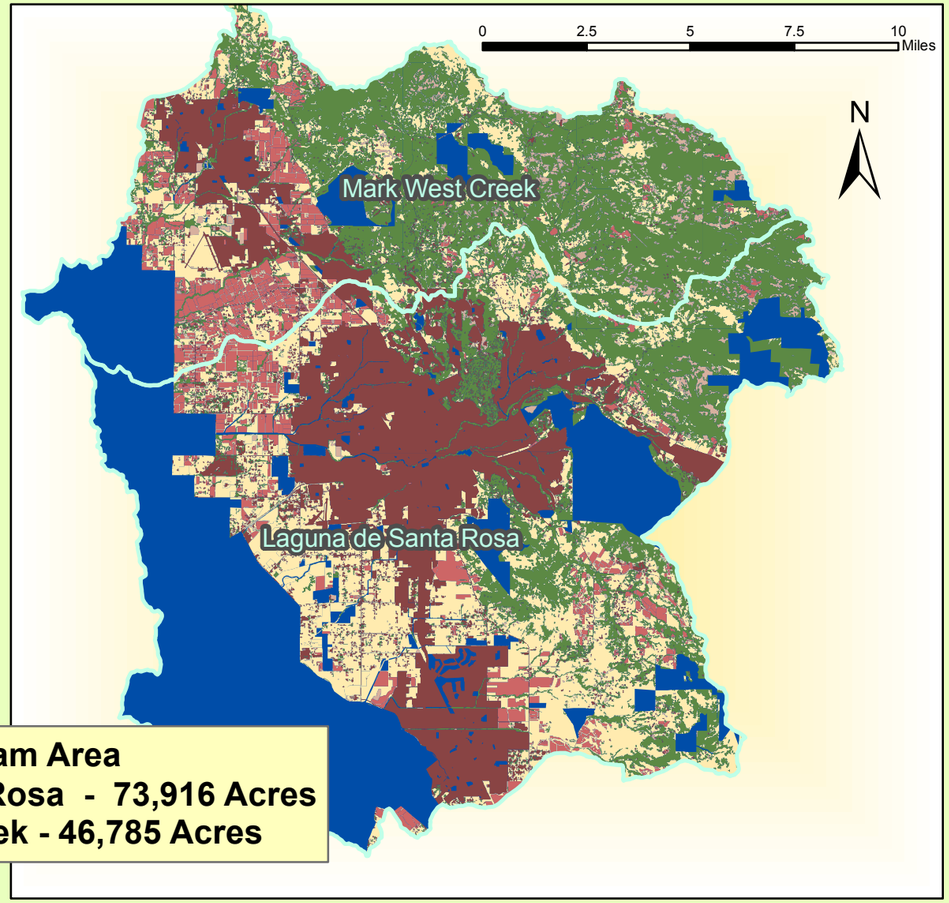
Vegetation Categories



Land-Use Categories



Program Area
Laguna de Santa Rosa - 73,916 Acres
Mark West Creek - 46,785 Acres

Laguna de Santa Rosa with Mark West Creek Vegetation Categories	Laguna de Santa Rosa	Mark West Creek
Urban	40	15
Rural Residential	13	11
Agriculture - Cultivated	14	16
Grasslands	15	12
Chaparral and Scrub	2	4
Redwood Forest	0	1
Riparian Forest	0	0
Oak Woodland	3	2
Other Forest	13	37
Cypress	0	0
Serpentine Habitats	1	1
Water	0	0
Barren/Rock	0	0
Non-native Vegetation	0	0
Total Percentage	**100**	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Oak Woodland
- Redwood Forest
- Riparian Forest
- Other Forest
- Cypress
- Serpentine Habitats
- Water
- Barren/Rock
- Non-native Vegetation
- **Areas Not in the Program**

Laguna de Santa Rosa with Mark West Creek Land Use Categories	Laguna de Santa Rosa	Mark West Creek
Developed	36	14
Agriculture	7	11
Rangelands & Other Grasslands	31	21
Forest Lands	24	50
Other Uses	2	4
Total Percentage	**100**	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- **Areas Not in the Program**

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Laguna de Santa Rosa with Mark West Creek

Map Date:
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Analyst:
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CS:NAD83
CA State Plane II

Figure 10

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3.3 Stemple Creek and Chileno Creek Headwaters

Stemple Creek is a tributary to the Estero Americano watershed. It is located in both Sonoma and Marin counties. The subbasin begins just west of the City of Petaluma and empties into the Pacific Ocean through the Estero de San Antonio in Marin County. The creek drains approximately 22 square miles of southern Sonoma County for the portion of Stemple Creek that is within the Sonoma RCD LandSmart area (CalWater 2.2.1 in NAD83). Nearly the entire watershed is in non-intensive agricultural production, including dairies and sheep/livestock ranches. Stemple Creek has high nutrient and sediment levels, and is identified as an impaired waterbody by the North Coast Regional Water Quality Control Board. Nutrients are primarily a result of the intensive use of pasture land and dairy manure lagoon management practices. (Sonoma County 2007)

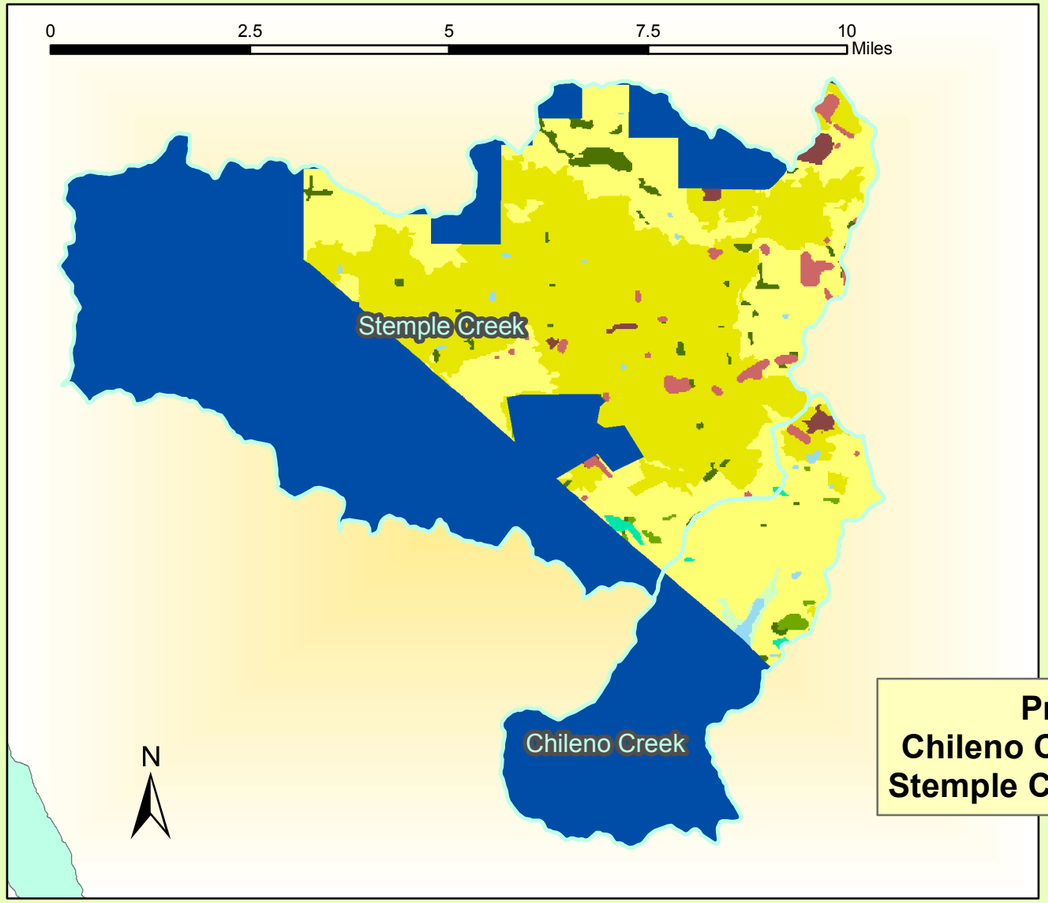
Stemple Creek supports habitat for the California red-legged frog, the California tiger salamander, and the northern western pond turtle. Rare plants are also found in the watershed. Resident and migratory birds use the area for nesting at various times during the year.

3.4 Petaluma River

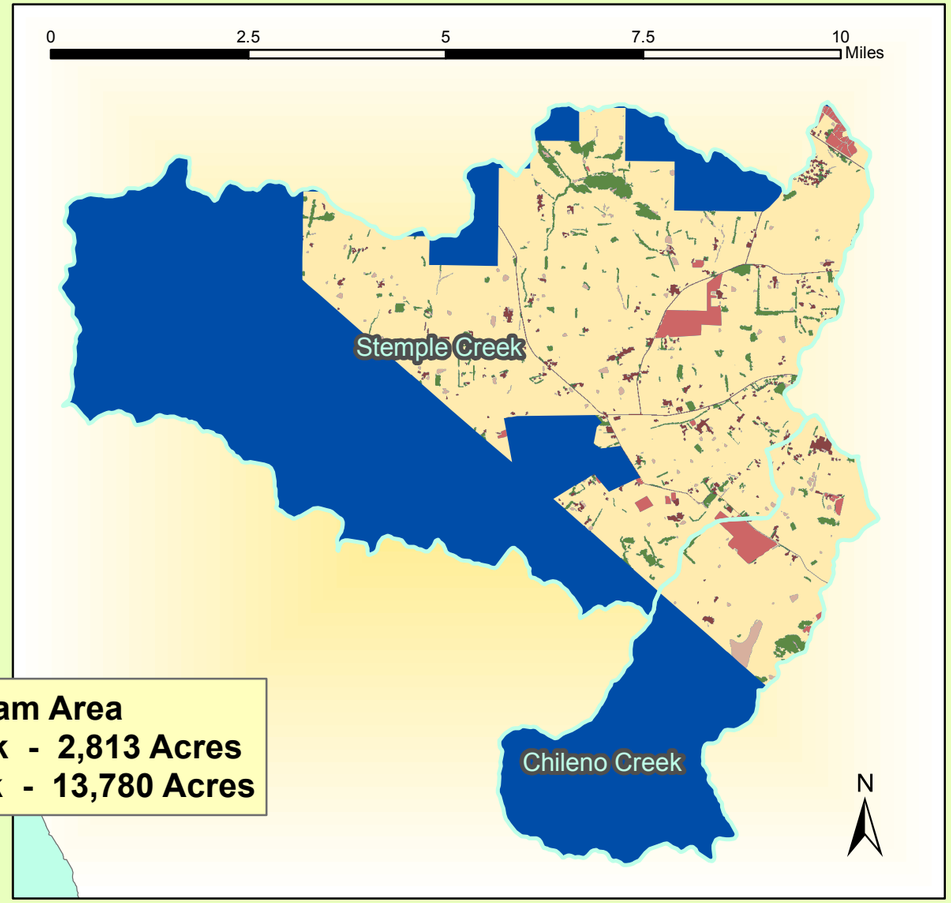
The Petaluma River watershed is located in southern Sonoma and northern Marin Counties. Approximately 112 square miles of the 146 square mile watershed are located in Sonoma County. The City of Petaluma and the unincorporated community of Penngrove are located in this watershed. A total of 17 square miles are urban and developed. The majority of the Petaluma River watershed is in agricultural production, including large areas of oat hay production and dairy cattle and sheep grazing lands. Irrigated hay and pasture lands (irrigated with reclaimed water from the City of Petaluma treatment plant) occur to the southeast of the city, along Lakeville Highway. Flooding in the Petaluma River watershed is highly influenced by tidal action in the San Pablo Bay, particularly in the lower and middle river reaches. The San Francisco Bay Regional Water Quality Control Board has classified the Petaluma River as an impaired water body due to sedimentation/siltation, diazinon, trash, and high levels of nutrients and pathogens. High nutrient levels can be attributed to dairy farms, equine facilities, and livestock producers. Sedimentation problems in tributaries are generally associated with new development and agricultural land use practices, and pathogen problems are generally attributed to agriculture and urban runoff. (Sonoma County 2007)

The Petaluma River supports salmonids and a wide variety of salt marsh habitat-dependent species including California black and California clapper rails and the salt marsh harvest mouse. The watershed also supports habitat for burrowing owls and American badgers, bats, turtles, California red-legged frogs and California tiger salamander. Resident and migratory birds use the area for nesting at various times during the year.

Vegetation Categories



Land-Use Categories



Program Area
Chileno Creek - 2,813 Acres
Stemple Creek - 13,780 Acres

Stemple & Chileno Creek Vegetation Categories	Chileno Creek	Stemple Creek
Urban	2	1
Rural Residential	1	2
Agriculture - Cultivated	8	59
Grasslands	81	35
Other Forest	1	2
Oak Woodland	2	0
Serpentine Habitats	1	0
Wet Meadows	3	0
Water	3	0
Total	**100**	**100**

Vegetation
- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Wet Meadows
- Water
- Areas Not in the Program

Stemple & Chileno Creek Headwaters Land Use	Chileno Creek	Stemple Creek
Developed	2	3
Agriculture	6	2
Rangelands & Other Grasslands	85	89
Forest Lands	4	5
Other Uses	3	1
Total Percentage	**100**	**100**

Land Use
- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD LandSmart Program

Stemple & Chileno Creek Headwaters

Map Date: Dec. 6, 2015
Analyst: Laura Saunders
CS:NAD83
CA State Plane II

Figure 11

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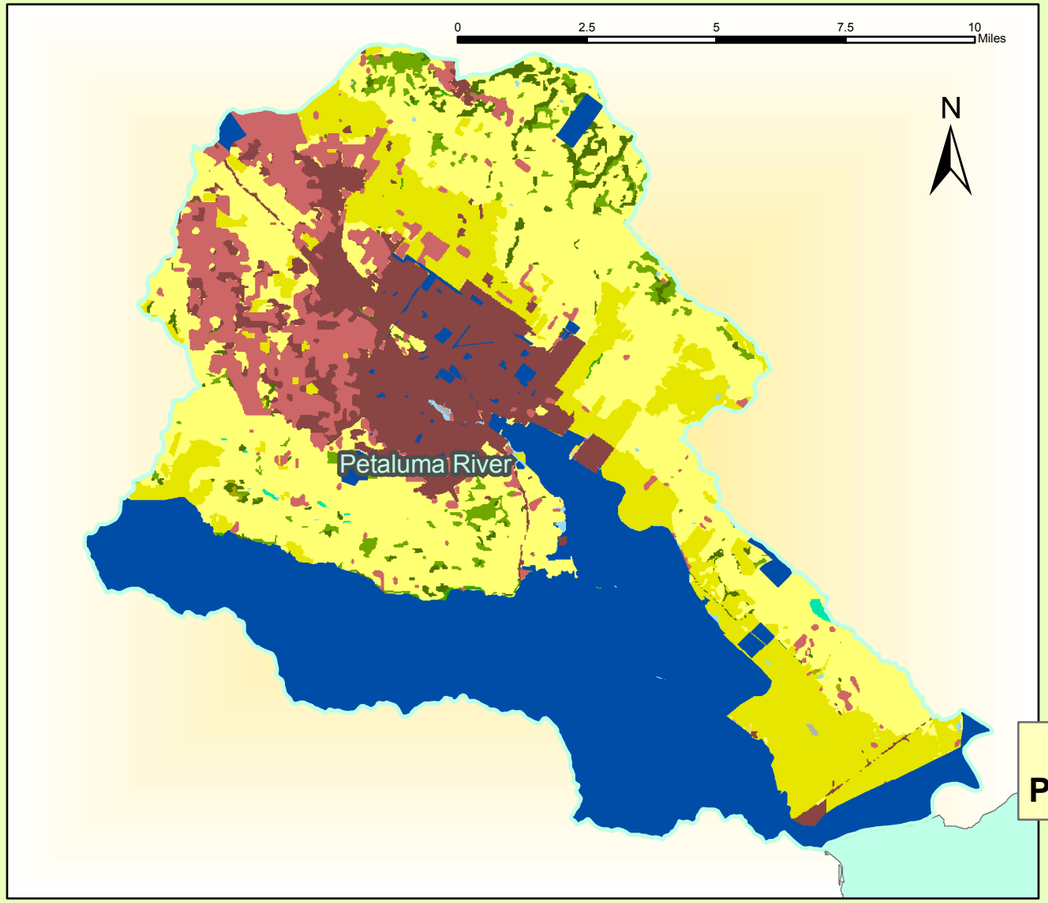
Vegetation Categories

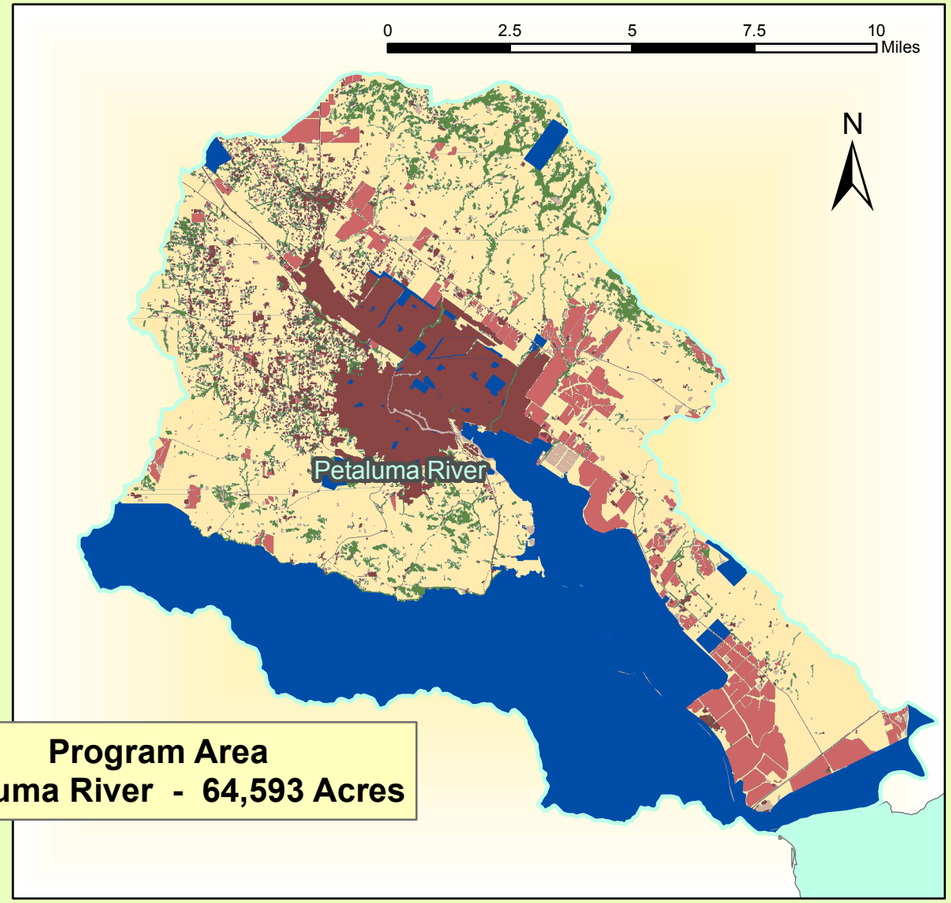


Petaluma River Vegetation Categories	Percent
Urban	16
Rural Residential	12
Agriculture - Cultivated	20
Grasslands	46
Chaparral and Scrub	0
Riparian Forest	0
Other Forest	2
Oak Woodland	3
Serpentine Habitats	0
Water	0
Barren/ Rock	0
Non-native Vegetation	0
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Water
- Barren/ Rock
- Non-native Vegetation
- Areas Not in the Program

Land-Use Categories



Program Area
Petaluma River - 64,593 Acres

Petaluma River Land Uses	Percent
Developed	17
Agriculture	11
Rangelands & Other Grasslands	63
Forest Lands	9
Other Uses	1
Total Percentage	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD
LandSmart Program

Petaluma River

Map Date:
Dec. 6, 2015
Analyst:
Laura Saunders
CS:NAD83
CA State Plane II

Figure 12

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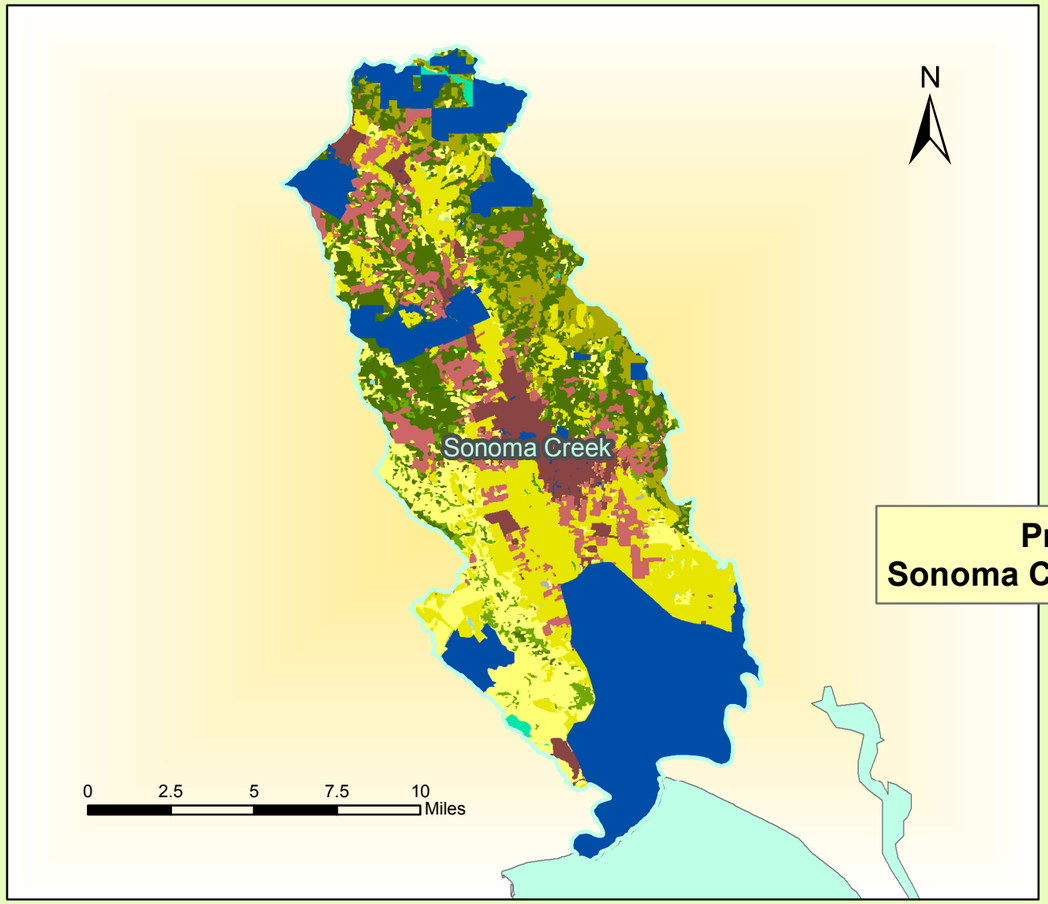
3.5 Sonoma Creek

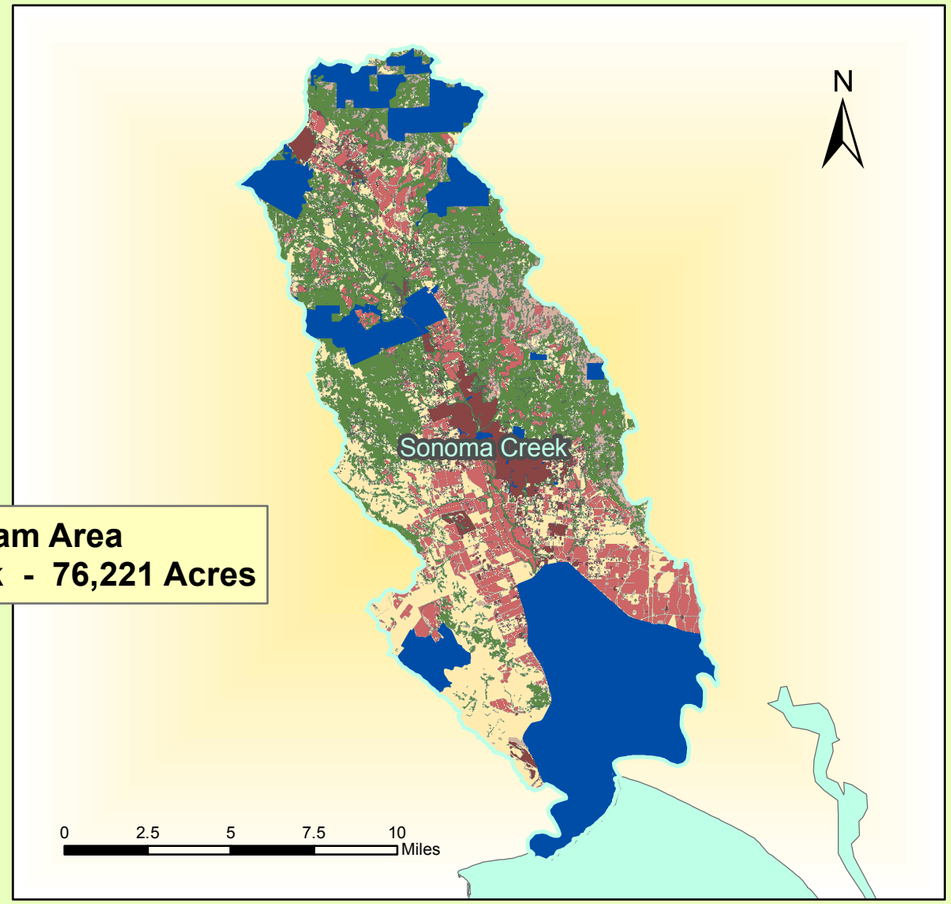
The Sonoma Creek watershed is located in the southeastern corner of Sonoma County. The City of Sonoma and the unincorporated communities of Boyes Hot Springs, Agua Caliente, Fetters Hot Springs, and Glen Ellen are all located on the valley floor near the center of the elongated watershed, with the community of Schellville in the lower or southern portion, near the edge of San Pablo Bay, and Kenwood in the upper or north end. The watershed consists of approximately 170 square miles. Challenges in the Sonoma Creek watershed include flooding, streambank erosion, riparian and fisheries habitats, water diversions and groundwater pumping. The San Francisco Regional Water Quality Control Board identified Sonoma Creek as an impaired water body due to sedimentation, nutrients, and pathogens. (Sonoma County 2007)

The central part of the Sonoma Creek watershed on the valley bottom is mostly urbanized, while the lower creek valley is mostly in agricultural production. The vegetative cover of the hill slopes of the watershed is mostly oak woodland and Douglas fir forests. Vineyards dominate the landscape. Ten square miles have been developed or are urban, and there are 35 square miles of vineyards and intensively managed hayfields. Sonoma Creek supports habitat for salmonids, and the watershed also has many listed vernal pool species and supports habitat for California red-legged frog, California yellow-legged frog, western pond turtle, and burrowing owls. Resident and migratory birds use the area for nesting at various times during the year.

Vegetation Categories



Land-Use Categories



Program Area
Sonoma Creek - 76,221 Acres

Petaluma River Vegetation Categories	Percent
Urban	16
Rural Residential	12
Agriculture - Cultivated	20
Grasslands	46
Chaparral and Scrub	<1
Riparian Forest	<1
Other Forest	2
Oak Woodland	3
Serpentine Habitats	<1
Water	<1
Barren/ Rock	<1
Non-native Vegetation	<1
Total Percentage	**100**

Vegetation

- Urban
- Rural Residential
- Agriculture - Cultivated
- Grasslands
- Chaparral and Scrub
- Riparian Forest
- Redwood Forest
- Other Forest
- Oak Woodland
- Serpentine Habitats
- Permanent Freshwater Marsh
- Wet Meadows
- Water
- Barren/ Rock
- Non-native Vegetation
- Areas Not in the Program

Sonoma Creek Land Uses	Percent
Developed	9
Agriculture	19
Rangelands & Other Grasslands	28
Forest Lands	39
Other Uses	5
Total	**100**

Land Use

- Developed
- Agriculture
- Rangelands & Other Grasslands
- Forest Lands
- Other Uses
- Areas Not in the Program

Data Sourcres: SonomaVegMap supported by NASA Grant NNX13AP69G, the University of Maryland, and the Sonoma Vegetation Mapping and LiDAR Program;Bay Area Open Space Council -Conservation Lands Network; Sonoma County Resource Management and Permit Department, and the National Atlas.

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Sonoma RCD
LandSmart Program

Sonoma Creek

Map Date:
Dec. 6, 2015
Analyst:
Laura Saunders
CS:NAD83
CA State Plane II

Figure 13

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4 Determination

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Kara Heckert — Signature

2/16/16 — Date

Signature

Date

5 Environmental Effects of the Project

5.1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
I. Aesthetics: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Visual characteristics of Sonoma County range from the relatively flat valley floors where vineyards dominate the landscape to the mountain ranges in the northwest and eastern portions of the County. Redwood forests and coastal mountain ranges are prominent in the western portions; rolling foothills and grazing lands dominate the landscape in the southern part (Sonoma County 2008). The Sonoma County General Plan (2008) identifies 15 Scenic Landscape Units within the County and an extensive network of Scenic Corridors and Scenic Highways.

Portions of Highway 12 and Highway 116 in Sonoma County are officially designated State Scenic Highways by the California Department of Transportation (Caltrans). Valley of the Moon Highway (part of Highway 12) from Danielli Avenue east of Santa Rosa to London Way near Agua Caliente in the Sonoma Valley is the officially designated portion (Caltrans 2015). The 12-mile segment offers views of wineries, vineyards, and oak groves. Highway 116 from State Route 1 east to the Sebastopol city limit (28 miles) is the designated portion of the highway; it passes through an historic resort and logging area along the Russian River. Second growth redwood forests and eucalyptus groves form a canopy over the highway through portions of the scenic stretch (Caltrans 2015).

Sonoma County has designated a network of Scenic Corridors that includes roadways throughout the unincorporated areas of the County. They include State Highways 1, 12, 37, 101, 116, 121, and 128. County roadways with Scenic Corridor designation include Skaggs Springs Road, River Road, Chalk Hill Road, Lakeville Highway, Bennett Valley Road, Dry Creek Road, Mark West Springs Road, Arnold Drive, Petaluma Hill Road, Bodega Avenue, Fulton Road, and many more (Sonoma County 2008).

I.a, b, c) Adverse Effect on a Scenic Vista, Scenic Resources, or Visual Character – Less than Significant

Projects implemented under the LandSmart Program may result in temporary adverse effects on the visual setting of individual project areas during implementation due to the presence of construction equipment and disturbed soils and vegetation. Projects may be visible within any of the Scenic Landscape Units or from many of the Scenic Corridors and State- or County-designated Scenic Highways. Construction of new buildings or other structures is not included as part of the LandSmart Program, and therefore, projects will not result in a permanent change in the overall landscape. Construction activities associated with the projects included in the LandSmart Program will be temporary, and construction activities and vehicles will be visible for a short time period. Additionally, projects will occur primarily on private agricultural properties, and it is anticipated that only a small number of people would be affected by these temporary impacts on the visual character of a site.

As described in the General Program Conditions Section 2.10, participation in the LandSmart Program requires that the limits of disturbance and removal of vegetation be confined to only the areas necessary for project construction. Projects will include revegetation of disturbed areas to protect against erosion, and revegetation will occur immediately following construction in most instances. Revegetation efforts will reduce the overall time that a project will be visible. Therefore, the visual impacts on a scenic vista or on the visual character of a project site, resulting from the temporary construction time period and the relatively small number of potential viewers, will be less than significant. No mitigation will be required.

Individual projects are expected to improve an area's aesthetics by enhancing and restoring vegetation along riparian corridors, reducing the presence of eroding and failing areas on agricultural properties, and improving the aesthetic characteristics of streams. The change in visual character could be beneficial in these locations.

I.d) New Source of Light or Glare – No Impact

Projects implemented under the LandSmart Program will not include installation of a new light source; no buildings will be constructed under the Program. Therefore, no new sources of daytime glare or nighttime lighting will result from implementation of individual projects, and no impact will occur.

5.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
II. Agriculture and Forest Resources: 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in PRC §12220(g)), timberland (PRC §4526), or timberland zoned Timberland Production (Government Code §51104(g))?	☐	☐	☐	☒
d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

Open space and agricultural lands account for a great majority of Sonoma County's acreage (Sonoma County 2015). As of 2002, Sonoma County had approximately 583,274 acres of agricultural land (57 percent of the County), as determined by the State (Sonoma County 2008). In 2002, 421,126 acres (41 percent) were designated as grazing land, and 162,148 acres (about 16 percent of the County) were classified as important farmlands (using California Department of Conservation [CDC] definitions). Grazing land represents an area where existing vegetation is suitable for grazing or browsing, whether grown naturally or through management.

Today, approximately 61 percent of the 1 million acres of land and water in Sonoma County is in agricultural use, including active and inactive agricultural lands, agricultural reserves, and open space contracts (Sonoma County 2015). Most LandSmart Program projects will occur on properties that are grazed or are classified as important farmlands. Important farmland categories represent the agricultural lands most suitable for cultivating crops; they include Prime Farmland, Farmland of

Statewide Importance, Unique Farmland, and Farmland of Local Importance. Prime Farmlands are lands with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. The other farmland categories include lands that are important for growing agricultural crops in California. Grazing lands are properties with at least 40 acres on which the existing vegetation is suited to the grazing of livestock. The first three categories (Prime, Statewide, and Unique Farmlands) are considered "important farmland" and also meet the definition of agricultural land under CEQA (PRC Section 21060.1).

In 2002, it was estimated that about 300,000 acres of agricultural land in Sonoma County were under Williamson Act contract. Using easements or fee title, the Sonoma County Agricultural Preservation and Open Space District also protects agricultural lands, and the Sonoma Land Trust protects both agricultural and sustainable forestry lands.

II.a,b) Convert Farmland to Non-agricultural Uses or Cancel Williamson Act Contract – No Impact

The practices included in the LandSmart Program were selected to protect land and water from erosion, sedimentation, and water quality degradation and to improve conditions where soil erosion currently is occurring. The practices will protect important farmland from losses due to soil erosion and streambank failures. Projects designed to upgrade roadways or decommission roadways that are no longer needed will reduce erosion from concentrated runoff, which could allow for farm or grazing land to be placed back into production. In-channel stabilization structures, such as practices designed to stabilize a streambank, could stop future losses of farmland resulting from erosion. Installation of pipelines will also help reduce erosion and loss of farmlands through introduction of water management and erosion control. Farming and grazing operations will continue after completion of the projects.

The LandSmart practices comply with the Sonoma County Agricultural Commissioner's Office BMPs for Agricultural Erosion and Sediment Control (2013) and the Sonoma County BMPs for Agricultural Cultivation within the Riparian Corridor (2014). All practices will comply with the allowable activities within agriculture zoning. No conflicts with existing zoning for agricultural use will occur.

The LandSmart practices will not result in a change in important farmland status, cause a cancellation of a Williamson Act contract, or result in a conflict with zoning for agricultural use. Therefore, there will be no impact.

II.c,d,e) Conflict with Zoning, Result in the loss of Forest Land, or Cause Changes to Non-timberland Uses – No Impact

The practices included in the LandSmart Program could be implemented in a forestland setting. The projects will be designed to reduce erosion and protect water quality. Use of the General Project Conditions discussed in Section 2.10 will protect resources and allow removal of only the minimum amount of vegetation necessary to meet the project objective. The size and nature of the projects will not result in a conflict with forestland zoning or require rezoning of forestlands. Stream restoration and habitat improvement projects and in-channel stabilization structures may require a zoning variance to allow the restoration work to occur in the stream channel; however, the overall zoning for the property will not change as a result of any LandSmart project.

5.3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
III. Air Quality: Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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 standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

The following air quality analysis utilizes the impact assessment methodologies presented in the Bay Area Air Quality Management District CEQA Air Quality Guidelines (BAAQMD 2012). The BAAQMD CEQA thresholds were challenged in trial court and appealed to the California Supreme Court. Results of the appeal are still pending; however, the lower court ruling remains in place pending final resolution of the case. The trial court invalidated the BAAQMD CEQA thresholds because BAAQMD did not complete a CEQA evaluation of the thresholds. The court did not rule on or question the adequacy of the BAAQMD CEQA Air Quality Guidelines, including the impact assessment methodologies or the evidentiary basis supporting the thresholds. The Sonoma RCD, as Lead Agency, has the discretion to use the BAAQMD CEQA Air Quality Guidelines and methodology for calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures.

Sonoma County falls within two air quality management districts. The northern portion of the County is within the Northern Sonoma Air Pollution Control District (NSCAPCD) and the rest of the County falls within the jurisdiction of BAAQMD (Sonoma County 2015). The NSCAPCD boundary covers the northern and coastal regions of Sonoma County. The dividing line begins just west of Valley Ford and goes north past the east end of the Occidental area. It then runs northeast between Graton and Forestville and cuts

across the northwest corner of the Windsor Town Limit. It then runs due east to the east edge of Sonoma County.

Construction equipment typically produces carbon monoxide, nitrogen oxides, and sulfur oxides; these chemicals in turn produce ozone. Construction equipment also emits particulate matter, although the majority of coarse particulate matter emitted from construction is a result of the creation of dust. Particulate matter is measured as particles less than 10 microns wide (PM_{10}) and particles less than 2.5 microns wide ($PM_{2.5}$). Together ozone, carbon monoxide, nitrogen oxides, sulfur oxides, particulate matter as $PM_{2.5}$ and PM_{10}, and lead comprise a set of "Criteria Pollutants" identified in the Clean Air Act. Except for lead, these pollutants are common and widespread. The most serious health concerns are the result of ozone and particulate matter (EPA 2010a).

III.a) Conflict with or Obstruct Applicable Air Quality Plan – No Impact

BAAQMD's Bay Area 2010 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the LandSmart Program's geographic area (BAAQMD 2010). It provides comprehensive guidelines to protect air quality, public health, and the climate. Per BAAQMD's Air Quality CEQA Guidelines, BAAQMD considers a project consistent with the Clean Air Plan if it: 1) can be concluded that a project supports the primary goals of the Plan (by showing that the project would not result in significant and unavoidable air quality impacts); 2) includes applicable control measures from the Plan; and 3) does not disrupt or hinder implementation of any Plan control measure.

Because implementation of the LandSmart Program will not result in a significant and unavoidable air quality impact (refer to Impact III.b,c) below), the Program will not conflict with the primary goals of the 2010 Clean Air Plan, which include 55 control measures in five categories: stationary and area source; mobile source; transportation control; land use and local impact; and energy and climate. The LandSmart Program does not include new stationary sources or new permanent mobile sources, does not introduce a new land use, and will not use a substantial amount of energy. In addition, the magnitude and nature of individual projects implemented as part of the LandSmart Program are too small to affect air quality or hinder implementation of control measures. The Program will not conflict with or obstruct the air quality plan; therefore, there will be no impact.

III.b,c) Violate any Air Quality Standard or Result in Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Region is in Non-Attainment – Less than Significant

The federal and State governments have set standards for ambient air quality. Monitoring is performed at a variety of locations to check whether those standards are attained. Criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, lead, and fine ($PM_{2.5}$) and coarse (PM_{10}) particulate matter. When the measured pollutant is less than the allowable limit, the area is defined as being in "attainment" for that compound.

NSAPCD is currently in attainment of all federal and State standards (CAPCOA 2015). The District's primary concern is residential and agricultural wood smoke, which is regulated through open burn permitting and an enforcement program.

The southern portion of Sonoma County is located within the San Francisco Air Basin (SF Air Basin), which is currently designated as a nonattainment area for suspended particulate matter ($PM_{2.5}$ and PM_{10}) and ozone precursors, including reactive organic gases (ROG) and nitrous oxides (NO_x). The SF Air Basin is in attainment (or unclassified) for all other air pollutants (BAAQMD 2015).

BAAQMD has numerous monitoring stations across the Bay Area. Many pollutants are measured at every station, but some are measured at only a few. In Sonoma County, air quality is measured at the Sebastopol monitoring station. Air pollutants measured in Sebastopol include ozone, carbon monoxide, nitrogen dioxide, PM_{10}, and $PM_{2.5}$. Sonoma County, as measured in Sebastopol, is below air quality limits for all criteria pollutants, as shown in Table 3 (BAAQMD 2015).

Table 4. Existing Air Quality (measured in Sebastopol)

Criteria Pollutant	National Attainment Standard	California Attainment Standard	Bay Area Status[(a)]	Sebastopol Site Maximum	Annual Average
Ozone (1 hour-ppb)[(b)]	---	90	N	61	---
Ozone (8 hour-ppb)	75	70	N	67	61
Carbon Monoxide (1 hour-ppm)	35	20	A	1.4	---
Carbon Monoxide (8 hour-ppm)	9	9	A	0.9	---
Nitrogen Dioxide (1 hour-ppb)	100/53[(d)]	180/30[(d)]	A	44	4
Coarse Particulate Matter as PM_{10} (24-hour-µg/m^3)[(c)]	150	50/20	N	41	14.1

Notes:

(a) N=non-attainment, A=attainment
(b) Parts per billion
(c) Micrograms per cubic meter
(d) 1 hour/annual

There will be approximately 30 LandSmart projects per year throughout Sonoma County. The maximum project size presented for each LandSmart practice will range from far less than an acre for smaller projects such as installation of a pipeline to individual projects with disturbance of approximately two acres. Projects may occur throughout the LandSmart area and will not be concentrated in close proximity to one another.

Construction activities will generate fugitive dust, primarily due to grading, vehicle exhaust, and vehicles traveling on paved and unpaved surfaces. Dust emissions associated with implementation of LandSmart practices will not violate an air quality standard because their characteristics, which include:

- Small size,
- Short duration of construction, and
- Remote nature of most project locations.
- Soil excavation from a site is generally not stockpiled but reused nearby (e.g., as fill to repair gully erosion).
- Exposed soil will not be left unprotected; exposed sites will be planted immediately with species from an approved plant list, or other approved erosion control techniques will be put in place.

Although implementation of practices included in the LandSmart Program will not exceed applicable thresholds, the BAAQMD CEQA Guidelines recommend use of basic construction measures to meet the BMP threshold for projects in the region to control fugitive dust. Therefore, implementation of the recommended basic construction measures to reduce fugitive dust are included in the Program's Project Description as General Construction Measures, see Section 2.10. Implementation of the LandSmart Program practices will have a less-than-significant impact on air quality.

III.d) Expose Sensitive Receptors to Substantial Pollution Concentrations – No Impact

Implementation of the practices in the LandSmart Program will generate small quantities of diesel particulate matter from vehicles used in construction. However, given the short time frame needed to implement the LandSmart practices, the Program activities will not result in substantial pollutant concentrations. Most projects will be constructed using a limited number of diesel-fueled vehicles, and most projects will be completed in a matter of days for smaller projects and up to a few weeks for larger, more complicated projects. Additionally, the rural nature of the LandSmart Program area does not support sensitive land uses, such as hospitals and schools, or uses that are subject to the adverse effects of pollution concentrations; therefore, there will be no impacts on sensitive receptors.

III.e) Create Objectionable Odors – Less than Significant

The projects will not create objectionable odors. Although construction equipment may generate odors, work will generally occur on rural and agricultural lands, away from public access. Therefore, any impact will be less than significant.

5.4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
IV. Biological Resources: 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Implementation and maintenance of the LandSmart Program may result in temporary and minor impacts on biological resources. Program activities that have potential to result in short-term impacts include soil excavation, grading, preparation of the ground for seeding and mulching, grade and stream

stabilization, channel excavation, construction of earthen embankments, placement of fill, vegetation removal, herbicide application, and burial, trampling or crushing of vegetation from equipment and foot traffic.

On a long-term basis, the LandSmart Program will provide improved aquatic, riparian, and upland habitat and decreased sedimentation in waterbodies to benefit fish, amphibians, reptiles, resident and migratory birds, and many other species. For example, the channel bed stabilization practice will result in an increased number of deep pools that aquatic animals, including California red-legged frogs (CRLF) and salmonids, require to survive the long, dry California summers. Practices that enhance riparian vegetation and development of habitat values, including planting native species, filter strips, fish stream improvement, channel bed stabilization, and streambank protection, will provide shelter from predators, and breeding, rearing, foraging, and basking sites for special-status species known to occur in the watersheds.

Control of erosion and polluted runoff will improve the quantity and quality of freshwater input into the creeks, streams, and ponds. Removal and control of nonnative plant species will reduce the extent to which exotics invade habitat and displace native flora. The net biological benefits that will result from implementation and maintenance of the conservation practices for species include high quality aquatic, riparian, and upland habitat values, reduced habitat fragmentation and increased connectivity, maintaining or increasing species populations, and buffering sensitive areas.

IV.a) Impacts on Special-status Species – Less than Significant with Mitigation

The biological evaluation of the LandSmart Program area identifies the presence of potential habitat for special-status plant and wildlife species, including nesting birds covered under the Migratory Bird Treaty Act (MBTA). Information about special-status species and habitat types within the LandSmart Program area was obtained from the following sources, and the results are shown in Table 5:

- California Natural Diversity Database (CNDDB 2015),
- California Wildlife Habitat Relationships (CDFW 2015),
- California Native Plant Society Online Inventory of Rare and Endangered Plants (CNPS 2015),
- National Marine Fisheries Service , and
- U.S. Fish and Wildlife Services (USFWS 2015) online database for federal threatened and endangered species.

Table 5. Special-status Plants with the Potential to Occur in the LandSmart Program Area

Common Name	Scientific Name	Federal Listing	State Listing	Other Conservation Status
Special-status Plant species				
Sonoma alopecurus	*Alopecurus aequalis var. sonomomensis*	E	--	CNPS 1B.1
Sonoma sunshine	*Blennosperma bakeri*	E	E	CNPS 1B.1

Table 5. Special-status Plants with the Potential to Occur in the LandSmart Program Area

Common Name	Scientific Name	Federal Listing	State Listing	Other Conservation Status
Sebastopol meadowfoam	*Limnanthes vinculans*	E	E	CNPS 1B.1
Burke's goldfields	*Lasthenia burkei*	E	E	CNPS 1B.2
Clara Hunt's milk vetch	*Astragalus claranus*	E	T	CNPS 1B.1
Vine Hill clarkia	*Clarkia imbricata*	E	E	CNPS 1B.1
Many-flowered navarretia	*Navarretia leucocephala ssp. plieantha*	E	E	CNPS 1B.2
Loch Lomond button-celery	*Eryngium constancei*	E	E	CNPS 1B.1
Contra Costa goldfields	*Lasthenia conjugens*	E	--	CNPS 1B.1
Golden larkspur	*Delphinium luteum*	E	R	CNPS 1B.1
Baker's larkspur	*Delphinium bakeri*	E	E	CNPS 1B.1
Two-forked clover	*Trifolium amoenum*	E		CNPS 1B.1
Pennell's bird's beak	*Cordylanthus tenuis ssp. capillaris*	E		CNPS 1B.2
Geysers panicum	*Panicum acuminatum var. thermale*		E	CNPS 1B.2
North Coast semaphore grass	*Pleuropogon hooverianus*		T	CNPS 1B.1
Boggs Lake hedge-hyssop	*Gratiola heterosepala*		E	CNPS 1B.2
Sonoma spineflower	*Chorizanthe valida*	E	E	CNPS 1B.1
Kenwood Marsh checkerbloom	*Sidalcea oregana ssp. valida*	E	E	CNPS 1B.1
Other special-status plant species designated by CNPS				

Note: Species data from the CNDDB, retrieved December 2015. Habitat associations for animals are from the California Wildlife Habitat Relationship Database. Habitat associations for plants are from the CNPS Inventory of Rare and Endangered Vascular Plants.

Abbreviations used in the tables: E-endangered, T-threatened, R-rare, FP-State of California fully-protected species, SSC-California species of special concern

Special-status Plants

Special-status plants are those listed as endangered or threatened by USFWS or listed as endangered, threatened, a species-of-special concern, or rare by the State and CDFW. USFWS provides an online service that lists special-status plants and wildlife species for Sonoma County. CDFW provides a similar system known as the CNDDB, which also provides information regarding the locations where special-status species have been observed. CNPS also has an inventory of rare and endangered plants and has a ranking system to categorize the degrees of concern for each plant in its inventory. In summary, plants are ranked as follows:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants that are rare, threatened, or endangered in California and elsewhere;
- Rank 2: Plants that are rare, threatened, or endangered in California but more common elsewhere;
- Rank 3: Plants about which more information is needed; and
- Rank 4: Plants of limited distribution.

The lands within the LandSmart Program area support a wide variety of special-status plant species, including state- and federally endangered vernal pool plant species, such as Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei)*, Sebastopol meadowfoam (*Limnanthes vinculans*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

Plant communities throughout the County include oak woodlands, chaparral, mixed evergreen forests, riparian, wetland, riverine, native and nonnative grasslands, and ruderal areas. A total of 103 special-status plant species from federal, State, and CNPS databases are recorded in the watersheds throughout the LandSmart Program area; see Appendix A for a species listing. Numerous special-status plant species are found in coastal salt marsh, coastal bluff scrub, coastal scrub, and coastal dunes in Sonoma County; however, these coastal habitats are not included in the LandSmart Program area, and, therefore, are not analyzed in this document. (See Section 2.8, Areas Not in the LandSmart Program.)

The LandSmart Program will be implemented on rural and agricultural properties within any of the plant communities listed above. Individual project sites could be located in highly disturbed areas, in areas routinely maintained by mowing or clearing, in grazed areas, or in areas with native vegetation. Sonoma RCD staff with expertise in sensitive habitats and special-status species will determine whether sensitive habitats are present within the disturbance area for each proposed project; see Project Description General Measures to Avoid Impacts on Biological Resources. If habitat for State or federally listed or CNPS List 1B plants is not identified during the surveys, no further evaluation for potential impacts will be completed. If LandSmart projects are constructed in or near occupied or potentially occupied habitat for special-status plants, impacts could occur, and the impacts could be significant.

Implementation of Mitigation Measure BIO-1 will reduce potential impacts on special-status plants to a less-than-significant level by requiring preconstruction surveys prior to work in applicable habitats to determine whether special-status plant species are present at or near construction areas and by requiring measures to avoid loss of those species and compensate for losses.

Mitigation Measure BIO-1a, Avoid Loss of Listed or CNPS 1B Plants and their Habitats

Sonoma RCD shall avoid loss of State and federally listed or proposed plant species, State candidates for listing, CNPS List 1B species, and occupied or critical habitat for these species to the extent feasible. Where avoidance of individuals or habitat is infeasible, Sonoma RCD will compensate for loss as required by USFWS or CDFW.

- Where indicated by the RCD's initial site review, reconnaissance-level surveys shall be performed by a qualified biologist to determine whether suitable habitat for special-status plants is present within the project area. If habitat for listed or CNPS List 1B plants is not

identified during surveys, no further mitigation for impacts on target species is necessary under this measure.

- If suitable habitat is identified, focused surveys will be performed to determine presence or absence of target species wherever habitats for these species will be impacted. Any special-status species found will be documented. The suitable habitat will be avoided through project design, where feasible, and a buffer zone of 50 feet will be established around any special-status plant populations to prevent entry and disturbance during work activities. A qualified biologist will designate the buffer zone if the zone will be less than 50 feet, and the buffer zone distance will be based on the target species and proposed work. The buffer zone will be clearly demarcated with construction fencing and avoided by all construction personnel and equipment.
- If suitable habitat cannot be avoided, project-specific protection measures will be developed with concurrence by USFWS or CDFW. The following are examples of measures that may be required:
    - Where project activities would result in impacts on vernal pool habitats, conservation measures described in the Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Project that may Affect Four Endangered Plant Species on the Santa Rosa Plain, California (Corps Files #22342N) may need to be implemented.
    - Listed or List 1B plants within the project footprint may need to be transplanted to a mitigation site approved by CDFW and USFWS. Seed from plants unavoidably impacted may need to be collected and preserved for planting on an approved mitigation site.
    - Where construction activities unavoidably affect a listed of List 1B plant species, pipeline corridor widths may need to limited to a maximum 5 feet through plant habitat.
- Focused surveys for the federally listed Sonoma sunshine, Sebastopol meadowfoam, Burke's goldfields, and the many-flowered navarretia will be conducted in accordance with USFWS protocols developed for federally listed plants on the Santa Rosa Plain: Guidelines and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain (USFWS 1996). The project botanist will report special-status plant occurrences to the CNDDB.
- Any herbicide application to treat noxious non-native weeds will ensure that no native plants are affected.
- No fertilizers or irrigation will be used within the buffer zone around a special-status plant population.

Special-status Wildlife

Special-status wildlife are those species listed as endangered or threatened by USFWS or by NOAA's National Marine Fisheries Service (NMFS); and wildlife that is listed as endangered, threatened, a species-of-special concern, or rare by the State and CDFW. USFWS and CDFW provide databases for wildlife similar to those described for plants in the section above.

Evaluation of lands within the LandSmart Program area identified the presence of potential habitat for special-status wildlife species. These species include fish and other aquatic species, reptiles, amphibians, mammals, and birds. Special-status wildlife species from the federal and State databases and NMFS

websites were reviewed for wildlife in all the watersheds included in the LandSmart Program area. Table 5 summarizes the special-status wildlife species that have the potential to occur.

Table 6. Special-Status Wildlife Species with Potential to Occur in the LandSmart Program Area

Common Name	Scientific Name	Federal Listing	State Listing	Other Conservation Status
Aquatic Species				
Steelhead, central California coast DPS	*Oncorhynchus mykiss*	T	--	--
Coho salmon, central California coast ESU	*Oncorhynchus kisutch*	E	E	--
Chinook salmon, California coastal ESU	*Oncorhynchus tshawytscha*	T	--	--
Tidewater goby[(b)]	*Eucyclogobius newberryi*	E	--	SSC
California freshwater shrimp	*Syncaris pacifica*	E	E	--
California tiger salamander[(a)]	*Ambystoma californiense*	E	T	SSC
California red-legged frog	*Rana draytonii*	T	--	SSC
foothill yellow-legged frog	*Rana boylii*	--	--	SSC
western pond turtle	*Emys marmorata*	--	--	SSC
Terrestrial Species				
Callippe silverspot butterfly	*Speyeria callippe callippe*	E	--	--
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	E	--	--
Northern spotted owl	*Strix occidentalis caurina*	T	C	SSC
western snowy plover[(b)]	*Charadrius alexandrinus nivosus*	T	--	SSC
California clapper rail[(b)]	*Rallus longirostris obsoletus*	E	E	--
California black rail[(b)]	*Laterallus jamaicensis coturniculus*	--	T	FP
bank swallow	*Riparia riparia*	--	T	
tricolored blackbird	*Agelaius tricolor*	--	--	SSC
Townsend's big-eared bat	*Corynorhinus townsendii*	C	--	SSC
White-tailed kite	*Elanus leucurus*		--	FP
Pallid bat	*Antrozous pallidus*	--	--	SSC
American badger	*Taxidea taxus*	--	--	SSC
Burrowing owl	*Athene cunicularia*	--	--	SSC
Sonoma tree vole	*Arborimus pomo*	--	--	SSC

Table 6. Special-Status Wildlife Species with Potential to Occur in the LandSmart Program Area

Common Name	Scientific Name	Federal Listing	State Listing	Other Conservation Status
Migratory and special-status birds		--	--	

Note: Species data from the California Natural Diversity Database, retrieved December 2015. Habitat associations for animals are from the California Wildlife Habitat Relationship Database. Abbreviations used in the tables: E-endangered, T-threatened, R-rare, FP-State of California fully-protected species, SSC- California species of special concern

(a) Across its range, California tiger salamander is federally listed as threatened. However, the Santa Rosa Plain DPS and Santa Barbara DPS are listed as endangered.

*(b) These species occur in the overall Program area, but habitats in which they occur are specifically excluded from the program. (See **Areas not Included in the Program**.)*

Fish, Invertebrates, Amphibians, and Reptiles

The precise locations of the LandSmart practices will be determined on an annual basis; however, because the practices will be constructed on rural properties, they could be located in areas that have habitat for special-status wildlife. These species include California freshwater shrimp, California tiger salamander, California red-legged frog, foothill yellow-legged frog, western pond turtle, steelhead, coho salmon, and Chinook salmon.

The LandSmart Program includes several General Measures to avoid impacts on biological resources, and these measures are required as part of all LandSmart practices. The General Measures are presented in the Project Description under Section 2.10 and include such requirements as the need for a site-specific evaluation of all impact areas to determine whether any natural resources (e.g., sensitive habitat types, special-status species habitat) are present and to identify additional site evaluation requirements based on the site characteristics and the proposed LandSmart activity. The General Measures also include time restrictions to avoid impacts on biological resources. Although the General Measures to avoid impacts on special-status species will be applied to all LandSmart projects, impacts on special-status invertebrates, amphibians, reptiles, and fish could still occur during implementation depending on the location of the project and the type of LandSmart practice proposed. The impacts could be significant.

As discussed in the Project Description, it is possible that LandSmart practices will be constructed in upland and riparian areas that support habitat for the species listed above. Road improvements, road decommissioning, and stream crossing projects will be designed to reduce concentrated stormwater runoff, to reduce erosion, and to improve aquatic and riparian habitat. These road improvements will often occur in sensitive habitats. LandSmart activities associated with stream habitat improvement and in-channel stabilization will occur in areas that support sensitive habitats, and construction-related impacts on species and habitat could result in significant impacts.

It is possible that pipelines could require crossing streams and riparian areas, and these areas could also support habitat for special-status species. Pipeline installation will require vegetation removal and trenching in upland areas and potentially through the riparian corridor and across a stream channel.

Creek crossings would require temporary disturbance to the bed and banks of the channel and could have a significant impact on special-status species. Pipelines would also require construction of a stable outlet, which may be constructed in sensitive habitat areas. Depending on the pipeline location, the need for pipelines to cross a channel, and the location of the pipeline outlet, impacts on special-status species may occur in habitats across the LandSmart Program area. The impacts could be significant.

Vegetation management activities would include removal of invasive riparian plants and establishment of native vegetation. Mechanical methods and herbicides could be used in locations that support habitat for special-status species. The impact could be significant.

Implementation of Mitigation Measure BIO-1b through BIO-1h will reduce impacts on special-status fish, invertebrates, amphibians, and reptiles to less-than-significant levels by requiring preconstruction surveys by a qualified biologist prior to work in applicable habitats to determine whether special-status species are present at or near LandSmart practice sites. These mitigation measures also provide measures to avoid take of species, as well as a minimum level of compensation for loss of habitat for special-status wildlife species. Where required, a qualified and permitted biologist will relocate listed wildlife to areas that have been predetermined to provide suitable habitat.

Mitigation Measure BIO-1b, Avoid Listed Special-status Wildlife Species

Sonoma RCD shall avoid loss of habitat or individuals of federally and State-listed species, to the extent feasible. Where avoidance of individuals or habitat is infeasible given the location of the LandSmart practice, Sonoma RCD shall ensure that a qualified biologist oversees implementation of the following measures. The qualified biologist shall obtain approval from CDFW, USFWS, and NMFS, as needed, to capture, handle, and release all species described in this mitigation measure. The qualified biologist shall have all the necessary permits and experience as determined by the regulatory agencies to work with the target fish and wildlife species. This shall include a current CDFW Scientific Collecting Permit and USFWS Recovery Permits, as needed, and field experience identifying the target species and their habitats and capturing and relocating species.

Preconstruction Surveys for Biological Resources and Species Relocations

The project biologist shall assess the likelihood for sensitive biological resources to be present in the project area and perform a preconstruction survey(s) immediately prior to the onset of construction activities (on the day preceding work, ahead of the construction crew, or during the appropriate window for the target species) depending on the nature of the work and the target species. The focus of the preconstruction surveys shall include identifying the presence of target species and suitable relocation sites. With approval from the regulatory agencies, all fish and wildlife species shall be relocated outside of the area of impact in habitats suitable for the target species. A complete record of all fish and wildlife species observed during the preconstruction survey(s) and relocation process shall be kept by the project biologist and provided to CDFW, USFWS, NMFS, and other regulatory agencies as required.

Preconstruction Training and Biological Oversight Measures during Construction,

Preconstruction Crew Training Program

The project biologist shall provide a preconstruction training session for construction personnel about the potential presence of sensitive biological resources within the Work Area. Topics will include how to identify life history characteristics and habitats requirements for target special-status species, measures to avoid impacts, project boundaries, penalties for non-compliance, and biological conditions outlined in the project's permits and CEQA-required BMPs. All attendees shall be given handouts to assist with the identification of target species and protection measures summarized. Personnel who miss the first training session or are hired later in the season shall attend a make-up session before participating in on-the-ground activities. All attendees shall be required to sign an attendance sign-up sheet that will be maintained for the duration of the project.

Wildlife Exclusion

For project areas located within habitats with known presence of special-status species or critical wildlife corridors, temporary wildlife exclusion shall be installed around the project perimeter. Exclusion fencing shall be highly visible, and installation shall be overseen by the project biologist. Openings shall be restricted to areas of construction site access. The purpose of the temporary fencing is to preclude animals from entering the Work Area and prevent debris and workers from entering adjacent habitats.

Biological Monitoring during Construction Activities

On-going biological oversight shall occur as needed during construction to ensure that biological resources are not being adversely impacted by construction activities. Projects that require relocation of special-status fish and wildlife species shall be visited at least weekly by the project biologist following completion of the relocation activities and exclusion fencing installation. The project biologist shall also train a biological monitor from the construction crew to check the site daily for special-status species and report back to the project biologist on adherence to the biological resource protection measures. If a special-status species enters the Work Area, the construction crew supervisor or biological monitor shall contact the project biologist or designee for further guidance. Special-status species shall not be captured or handled by the supervisor or field crew unless directed by the project biologist or regulatory agency personnel.

Mitigation Measure BIO-1c, Measures to Protect Listed Salmonids[2]

Sonoma RCD shall ensure that the following protection measures for listed salmonids are implemented for LandSmart practices in streams that support salmonid habitat:

[2] Steelhead, coho salmon, and Chinook salmon are collectively referred to as "listed salmonids" herein.

General Conditions for Work in Salmonid Habitat

- The general work period for listed salmonids is June 15 through October 31 annually. Work outside this timeframe must be authorized by NMFS
- If water is present in the construction area at the time of construction, the project biologist shall prepare a project-specific aquatic species protection and dewatering plan and submit it to regulators for approval.
- Immediately prior to the beginning of construction work, the project biologist shall determine if any vertebrate aquatic species are present in the project vicinity. The assessment of presence shall follow protocols described in the CDFW California Salmonid Stream Habitat Restoration Manual (Flosi et al. 1998) and shall utilize visual streambank and underwater observations and seine net surveys. The entire project area shall be assessed, including all pools, riffles, and runs, as well as upstream and downstream of the site.
- If no aquatic species are detected following the preconstruction assessment, capture and relocation measures shall not be implemented. However, the project biologist shall survey the site periodically and be available on-call during the construction process to ensure no aquatic species have moved into the construction area. If listed salmonids are observed after construction commences, the project biologist shall have the authority to halt work until appropriate protection measures are taken.
- Salmonids shall be relocated in accordance with Procedures for Relocating Fish and Other Aquatic Species below and protected in accordance with the Corps Biological Opinion for Permitting of Fisheries Restoration Project within the Geographic Boundaries of the NMFS' Santa Rosa, California, Field Office (NMFS 2006) or as updated.
- Riparian vegetation that extends over or into the water or that has roots extending into the water shall be preserved in streams occupied by listed salmonids. Vegetation that does not provide shade or shelter for fish may be trimmed or removed, subject to measures stipulated in the project permits. The amount disturbed shall be the minimum necessary to complete the project.
- Severely trimmed or removed vegetation shall be replaced at a 1:1 ratio in-place or at a 2:1 ratio, or as required by regulatory agencies, elsewhere within the watershed where these species historically occurred and where the likelihood of reestablishing populations is greatest. Restoration shall be accomplished using native vegetation.
- If unforeseen circumstances arise in project implementation that may lead to adverse impacts on steelhead, coho salmon, Chinook salmon, or their habitat, the project biologist shall have the authority to immediately halt work activities until measures for avoiding adverse effects are in effect.

Temporary Stream Diversion and Dewatering in Salmonid Streams

- In salmonid-bearing streams, water shall be diverted into a cofferdam and around the work site by a gravity-fed diversion pipe when possible; however, if the slope is not adequate, a pump may be required. Pumps shall be screened in accordance with Juvenile Fish Screen Criteria for Pump Intakes developed by NMFS (1996) and shall consist of 3/32" screen mesh.

The pump shall be placed in a large basin with holes to allow water to be drawn into the pump. Both the outside of the basin and the pump shall be screened with 3/32" mesh to ensure aquatic species do not get sucked into the pumps.

- Optimum placement for a cofferdam is in a pool tail out or glide, leaving 2/3 or 3/4 of the pool volume upstream of the cofferdam for aquatic habitat. Cofferdams located at riffle crests are typically not advisable as water tends to flow subsurface, and the dam and backwater head it creates push water through the gravel crest at a faster rate. If the cofferdam is located at a riffle crest, an excavated sump is usually required directly downstream.
- An exclusion screen shall be placed immediately upstream of the inlet and downstream of the outlet of the diversion pipe. Appropriate materials for the exclusion screen include 3/16" Vexar, hardware cloth, and similar materials. The exclusion screen shall be of adequate height and securely fastened to the stream bottom, stakes, and both banks to prevent a breach if surface flow increases (i.e., due to rain or water backing up behind the cofferdam). The screen may also be reinforced with welded wire. The diversion pipe can be left open, without a screen, if the exclusion screens are completely secure, and the habitat units immediately up- and downstream of the inlet and outlet pipes have been cleared of all vertebrate aquatic species.
- The project biologist shall be on site during dewatering, stream diversion, and removal or decommissioning of the temporary diversion facilities, and as needed at other times to protect fish, other aquatic species, and water quality during construction activities.

Procedures for Relocating Fish and Other Aquatic Species

- If fish and other vertebrate species (e.g., frogs, salamanders) are present within the project area that requires dewatering, fish and other aquatic species shall be relocated up- or downstream prior to construction by the project biologist. Species shall be encouraged to move down from the upstream end of the site with the aid of weighted seines operated by the project biologist with assistants as needed or other industry approved techniques. D-frame nets shall be used for aquatic invertebrates (i.e., freshwater shrimp). Once they have been guided to the downstream end of the work area, barrier seines/fencing shall be placed across the creek at both the up- and downstream ends to prevent re-entry.
- Once the barriers are in place and aquatic species have been encouraged downstream, cofferdams or similar water diversion structures shall be constructed immediately downstream of the upstream barrier and immediately upstream of the downstream barrier. When the cofferdams are in place and the construction area is sealed off, the biologist shall make his/her best effort to relocate aquatic species remaining within the work site as the water surface elevation drops.
- Aquatic species shall be relocated to suitable habitat up- or downstream of the construction area. Release sites shall contain suitable cover and foraging habitat and natural barriers present that are likely to preclude species from traveling back upstream or downstream into the work area.
- Electrofishing may be used as an alternative fish capture method in accordance with *Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered*

Species Act (NMFS 2000). If electrofishing is utilized, the project biologist overseeing the aquatic species relocation shall have the appropriate training and experience.

- Throughout project construction, the project biologist shall make weekly visits to the site to ensure that no fish or other aquatic species are being impacted by construction activities. If fish and other aquatic species are observed in the work area after construction commences, work shall be stopped and appropriate actions taken to remove the species to a safe location.

Mitigation Measure BIO-1d, Measures to Protect California Freshwater Shrimp

Sonoma RCD shall ensure that the following protection measures for California freshwater shrimp (CFS) are implemented for LandSmart practices in California freshwater shrimp (CFS) habitat:

- For all projects where work will occur within the stream channel or banks in a watershed occupied by CFS, and where water is present in the construction area at the time of construction, the project biologist shall survey all areas within and adjacent to streams to ensure shrimp are not present within the work site or 300 feet downstream. The project biologist shall prepare a project-specific aquatic species protection and dewatering plan and submit it to regulators for approval if dewatering and shrimp relocation is deemed necessary. See Procedures for Relocating Fish and Aquatic Vertebrate Species above.
- No activities shall be conducted in channels with flowing or standing water within potential CFS habitat without site-specific permits from USFWS and CDFW. If required, an agency-approved biologist shall monitor all construction activity within 300 feet of CFS habitat and have the authority to halt work if adverse impacts may occur.
- No rock structures or bank stabilization measures shall be constructed in channel bottoms that may interfere with CFS migration between in-channel pools.
- Overhanging banks and riparian vegetation that extends over or into the water or that has roots extending into the water shall be preserved in a stream occupied by CFS. Riparian vegetation that does not provide cover or foraging areas for shrimp may be trimmed or removed. The amount disturbed shall be restricted to the minimum necessary to complete the project. Severely trimmed or removed vegetation shall be replaced at a 1:1 ratio in place or at a 2:1 ratio, or as required by resources agencies, elsewhere within the watershed where CFS historically occurred and where the likelihood of reestablishing populations is greatest. Replacement shall be with native vegetation.
- All temporarily impacted habitat shall be restored to pre-project conditions or better upon completion of construction activities.

Mitigation Measure BIO-1e, Measures to Protect California Tiger Salamander

Sonoma RCD shall ensure that the following protection measures for California tiger salamander (CTS) are implemented for LandSmart practices in or near CTS habitat:

- Potential habitat for CTS is defined as land designated by the Santa Rosa Plain Conservation Strategy Map, as revised by USFWS on April 17, 2007, or any subsequent prevailing

documents as requiring mitigation for impacts on salamanders. Potential habitat is also identified outside the Santa Rosa Plain, including areas in west Petaluma.

- For all projects in areas of suitable habitat within the Santa Rosa Plain and west Petaluma, a formal CTS site assessment of habitats potentially suitable for use by CTS for breeding, aestivation, and migration and determination of a site's proximity to current CTS occurrences shall be completed. If the project falls within the potential range of CTS and suitable habitat is present, Sonoma County, CDFW, and USFWS shall be consulted to determine if focused surveys or formal consultation is warranted.
- Mitigation for impacts on CTS habitat shall be as stipulated in the Santa Rosa Plain Conservation Strategy (USFWS 2005) or any subsequent guidance adopted by USFWS. Such documents included the Draft Recovery Plan for the Santa Rosa Plain (USFWS 2014) and Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (USFWS 2007) or as updated. Mitigation lands shall be located within the watershed where the impact occurs. A conservation easement shall be placed on the mitigation site to preserve the site in perpetuity as wildlife habitat, or as guided by USFWS.
- Minimization measures contained in Section 5.2 (Minimization Measures) of the Santa Rosa Plain Conservation Strategy or any subsequent guidance adopted by the USFWS shall be implemented during work within areas where CTS may occur.
- Initial ground disturbance during construction activities in habitat shall be limited to the dry season (June through October) when salamanders are not moving between terrestrial habitat and aquatic breeding habitat.
- All temporarily impacted habitat shall be restored to pre-project conditions or better upon completion of construction activities.

Mitigation Measure BIO-1f, Protect California Red-legged Frog

Sonoma RCD shall ensure that the following protection measures for California red-legged frog (CRLF) are implemented for LandSmart practices in or near CRLF habitat:

- Projects within potential CRLF habitat shall be designed to minimize disturbance to vegetation near or in permanent and seasonal pools of streams, marshes, ponds, or shorelines with extensive emergent or weedy vegetation.
- If a project site occurs in potential CRLF habitat, the project biologist shall conduct a preconstruction survey of all aquatic areas and immediately adjacent uplands with suitable vegetation cover that is potential habitat for CRLF no more than 48 hours before the start of construction activities. The biologist shall look for individual frogs, evaluate the likelihood of usage, and determine if additional biological monitoring is needed during construction to ensure that individuals present shall be removed or avoided.
- The project biologist shall monitor initial ground-disturbing activities within 300 feet of CRLF habitat and shall have the authority to halt work activities that may adversely affect CRLF until

they no longer occupy the project area. Relocation of CRLF shall be performed only by individuals approved in advance by CDFW and USFWS.

- If suitable CRLF breeding habitat is present, project activities shall occur between July 1 and October 15 to avoid impacts on breeding CRLF or egg masses.

Mitigation Measure BIO-1g, Protect Foothill Yellow-legged Frog

Sonoma RCD shall ensure that the following protection measures for foothill yellow-legged frog are implemented for LandSmart practices in or near its habitat:

- A preconstruction survey shall occur prior to beginning work within stream channels with water present. The survey shall be conducted within 24 hours prior to the start of construction activities. If found, the project biologist shall move foothill yellow-legged frogs to a safe location outside of the project area, temporary exclusionary fencing shall be installed, as appropriate, and ongoing monitoring shall occur during construction to ensure that no frogs have reentered the site.
- If potential habitat for the frog is identified and cannot be avoided, construction activities shall be scheduled so that they do not interfere with the reproductive cycles of the foothill yellow-legged frog by restricting work in the riparian zone to the period from June 15 to October 15. Work periods shall be timed to avoid the breeding season for the frogs, as well as the majority of the incubation period of frog eggs.
- For vegetation maintenance activities where breeding and foraging areas for foothill yellow-legged frogs have been identified, these areas shall be demarcated by the project biologist and avoided by maintenance crews.

Mitigation Measure BIO-1h, Protect Northern Western Pond Turtle

Sonoma RCD shall ensure that the following protection measures for northern western pond turtles are implemented for LandSmart practices in or near its habitat:

- A preconstruction survey for adult northern western pond turtles and nest sites shall occur prior to beginning work for all projects within or near streams and other permanent water bodies. Any adults found within the work area shall be relocated to suitable off-site habitat. Nest sites discovered during the preconstruction survey or anytime during construction shall be avoided until vacated, as determined by the project biologist. Ongoing monitoring shall occur during construction to ensure no turtles have moved back into the area.

Special-status Birds, Migratory Birds, and Raptors

Trees and shrubs in the LandSmart Program area provide potential habitat for special-status bird species, including Northern spotted owl, white-tailed kite, burrowing owl, bank swallow, and tricolored blackbird, as well as nesting raptors and migratory birds. Construction of the LandSmart practices could result in tree removal or trimming, which could result in impacts on nesting special-status birds if present in and near the Work Area for individual practices. Construction noise could also disturb nesting birds in trees near construction sites. Potential impacts on special-status and migratory bird nests could

result from destruction of eggs or occupied nests, mortality of young, and abandonment of nests with eggs or young birds prior to fledging. Such potential impacts on nesting special-status and migratory birds could be significant.

Implementation of Mitigation Measures BIO-1i and j will mitigate potential impacts on nesting birds and northern spotted owls (NSO) to less-than-significant levels by requiring preconstruction surveys by a qualified biologist to determine if nesting birds or NSO are present at or near LandSmart project sites and by identifying exclusionary zones around the nests or delaying work until the breeding season is over or nesting is complete.

Mitigation Measure BIO-1i, Protect Nesting Birds during Construction

Sonoma RCD shall ensure that the following protection measures for nesting birds are implemented for LandSmart practices:

- Preconstruction breeding bird surveys shall be completed for projects occurring from mid-March through mid-August for special-status birds, migratory birds, and raptors. The surveys shall be conducted within two weeks prior to initiation of vegetation clearing, tree removal and trimming, or other construction activities. If the biologist finds no active nesting or breeding activity, work can proceed without restrictions, except in areas with suitable habitat for bank swallows.
- In areas with suitable habitat for bank swallows, the biologist shall assess the suitability of the habitat for nesting bank swallows and determine if bank swallows could occupy the habitat during the nesting period. If the habitat is determined to be unsuitable for bank swallow nesting, no additional construction measures are necessary. However, if the habitat has become suitable, the Sonoma RCD shall be responsible for installing netting along the bank prior to bank swallows arriving in the area (i.e., during the first week of March) and under the supervision of a qualified biologist. The netting shall consist of a plastic net or poultry wire with a mesh size of about 3/4 to 1 inch. The netting shall remain in place until construction activities commence, and it can be removed once construction starts. A qualified biologist shall monitor the netting weekly between the time it is installed and construction commences and conduct a survey the day prior to the start of construction to ensure no bank swallows have occupied the habitat.
- If active raptor or owl nests are identified within 100 feet of the construction area or active nests of other special-status birds (e.g., passerines, woodpeckers, hummingbirds, etc.) are identified within 50 feet of the construction area, a qualified biologist shall determine whether or not construction activities may impact the active nest or disrupt reproductive behavior. If it is determined that construction would not affect an active nest or disrupt breeding behavior, construction can proceed without restrictions. The determination of disruption shall be based on the species' sensitivity to disturbance, which can vary among species; the level of noise or construction disturbance; and the line of sight between the nest and the disturbance.

- If the project biologist determines that construction activities would likely disrupt breeding or nesting activities, a no-disturbance buffer shall be placed around the nesting location. The buffer shall include the active nest or breeding areas plus a 50-foot buffer for small songbirds and a 100-foot buffer for larger birds (e.g., owls, raptors). Construction activities in the no-disturbance buffers shall be avoided until the nests have been vacated.
- If the site is left unattended for more than one week following the initial surveys, additional surveys shall be completed. Ongoing construction monitoring shall occur to ensure no nesting activity is disturbed. If State and/or federally listed birds are found breeding within the area, activities shall be halted, and consultation with the CDFW and USFWS shall occur.

Mitigation Measure BIO-1j, Protect Northern Spotted Owl

- Breeding northern spotted owls (NSO) shall be protected in accordance with the *Measures to Protect Nesting Birds* above. Protection shall include focused breeding owl surveys for projects occurring from March 1 through August 31 in areas of suitable forested and woodland habitat and within 1 mile of a documented owl occurrence (USFWS 2011).
- If NSO are determined to be present during the breeding season within 0.5 miles of the Work Area, no work shall occur between March 1 and August 31 or until nesting completion has been verified by the project biologist.
- If the absence of NSO cannot be verified, the species shall be assumed to be present and either: 1) the work shall be performed after August 31, or 2) sound reduction measures shall be implemented in consultation with the project biologist, CDFW, and USFWS to ensure activities do not significantly raise noise above ambient levels.
- No trees or understory vegetation shall be removed within 500 feet of a documented active breeding location for NSO (either through previously confirmed sightings or project-specific verification by the project biologist).
- For projects proposed during the non-breeding season in suitable habitat, construction activities shall be overseen by the project biologist to ensure roosting and foraging birds are not being impacted.

Special-status Bats

Trees, bridges, and culverts in the LandSmart Program area could provide potential habitat for special-status bat species, including pallid and Townsend's big-eared bats. The pallid bat is listed as a species of special concern by CDFW, and Townsend's big-eared bat is a species of special concern and a candidate for a threatened listing under the California Endangered Species Act. These bats can be found in a wide variety of habitats that may be present in the LandSmart Program area: forest and woodlands, riparian forests, mixed forests, grasslands, prairies, and agricultural land. Impacts on bats could result from removal or trimming of trees and removal of bridges and large culverts. Potential impacts on special-status bats could be significant.

Implementation of Mitigation Measure BIO-1k will reduce impacts on special-status bat species to less-than-significant levels by requiring preconstruction surveys and avoidance of disturbance on roosting bats.

Mitigation Measure BIO-1k, Protect Special-status Bats

Sonoma RCD shall ensure that the following protection measures for bats are implemented for LandSmart practices:

- The project biologist shall survey for bats in all habitats with trees greater than 6 inches diameter at breast height (DBH) and at sites with bridge crossings or other man-made structures capable of supporting roosting bats prior to any disturbance. If occupied roosting habitat is identified, disturbance shall not be allowed until the roost is abandoned, unoccupied, and/or CDFW has been consulted and recommendations implemented.
- For all tree removal, trees shall be taken down in a two-step process – limb removal on day one shall be followed by bole removal on day two. This approach will allow bats an opportunity to move out of the area prior to completing removal of the trees. No trees supporting special-status bats shall be removed without prior consultation with CDFW.
- If work is postponed or interrupted for more than two weeks from the date of the initial bat survey, the preconstruction survey shall be repeated.
- Construction shall be limited to daylight hours to avoid interference with the foraging abilities of bats.

Special-status Butterflies

Special-status butterfly species, including the Myrtle's silverspot butterfly and the Callippe silverspot butterfly, are known to inhabit areas where LandSmart practices could be implemented. These butterflies utilize grassland and pasture lands for habitat. Myrtle's silverspots utilize sand dune habitat where a suitable violet host plant occurs. The LandSmart Program does not include projects in the coastal sand dune areas; therefore, impacts will not occur in those locations. However, both species may use habitat in the grasslands within the Program area, and impacts on these species could be significant if they are present during construction activities.

Implementation of Mitigation Measure BIO-1l will reduce impacts on special-status butterflies through identification and protection of host plants during construction activities.

Mitigation Measure BIO-1l, Protect Special-status Butterflies

Sonoma RCD shall ensure that the following protection measures for butterflies are implemented for LandSmart practices that occur in or near suitable grassland habitat:

- Reconnaissance-level surveys shall be performed by the project biologist to determine whether suitable habitat for Myrtle's or Callippe silverspot butterflies is present in the project area. If larval host or nectar plants for listed butterflies are present and the target species is documented within the project vicinity (e.g., Callippe silverspot near Sonoma Raceway), the project biologist shall perform a survey to determine presence or absence utilizing widely accepted scientific protocols.
- If suitable habitat for listed butterflies is present, project work shall be carried out with minimum soil compaction and disturbance. Wherever possible, work shall be performed with

hand tools. No herbicides or fertilizers shall be used in habitat that supports special-status butterflies.

- Host plants for listed butterflies, including broadleaf stonecrop and *Viola adunca*, shall be protected with a clearly demarcated 20-foot buffer zone.

American Badger

The American badger is listed as a State species of special concern by CDFW. Construction of LandSmart projects could impact this species if burrows are encountered and damaged during ground-disturbing activities. American badger burrows may be located in grasslands and low-growing vegetation habitats throughout the LandSmart Program area. Impacts on this species could be significant.

Implementation of Mitigation Measure BIO-1m will reduce impacts on badger burrows to less-than-significant levels by requiring preconstruction surveys and implementation of buffers to protect burrows during construction activities.

Mitigation Measure BIO-1m, Protect American Badger

Sonoma RCD shall ensure that the following protection measures for American badgers are implemented for LandSmart practices:

- For all projects requiring disturbance to open grasslands or low-growing vegetation habitats, a preconstruction survey for American badger shall occur prior to beginning work. If any badgers are documented within the project area or within 500 feet of it, buffer zones shall be established and maintained until the badgers have vacated the area. No work shall occur within the buffer zone until the area is cleared by the project biologist. Additional protection measures may be required and shall be developed in consultation with CDFW; they may include larger buffer zones or relocations, as appropriate.

Sonoma Tree Vole

The Sonoma tree vole is listed as a State species of special concern by CDFW. Construction of LandSmart projects could affect this species if trees within mature Douglas-fir forests are impacted as part of Program implementation. Since LandSmart projects can be implemented in forestlands, impacts on Sonoma tree vole could occur, and the impact could be significant.

Implementation of Mitigation Measure BIO-1n will reduce impacts on Sonoma tree voles to less-than-significant levels by requiring preconstruction surveys and implementation of buffers to protect nests during construction activities.

Mitigation Measure BIO-1n, Protect Sonoma Tree Vole

Sonoma RCD shall ensure that the following measures for the protection of Sonoma tree vole are implemented for LandSmart practices impacting trees in Douglas fir forestland:

- For all projects requiring removal of Douglas-fir trees, a preconstruction survey for Sonoma tree vole shall occur prior to beginning work.

- If occupied trees or nests are identified within 100 feet of the Work Area, the project biologist shall determine whether or not construction activities may impact the voles. If it is determined that construction would not affect tree voles, construction can proceed without restrictions. The determination of disruption shall be based on the level of noise or construction disturbance and the line of sight between the tree and the disturbance.
- If the project biologist determines that construction activities would likely disrupt tree voles, a no-disturbance buffer shall be placed around the occupied tree locations. The no-disturbance buffer shall include the occupied tree plus a 50-foot buffer. Construction activities in the no-disturbance buffer shall be avoided until the tree is unoccupied as determined by the project biologist.

IV.b) Impacts on Riparian or Sensitive Natural Communities – Less than Significant

Sensitive natural communities within the LandSmart Program area include riparian areas, oak woodland, native grasslands, mixed evergreen forests, and chaparral.

LandSmart practices could be implemented throughout Sonoma County and would range in size depending on the individual practice and site conditions; see the Project Description for project sizing limitations. A number of LandSmart practices, including many of the stream habitat improvement practices, pipelines, etc., could temporarily impact sensitive natural communities. Although the exact location of LandSmart projects will be determined on an annual basis as discussed in the Project Description, construction could require tree removal or trimming within riparian habitat.

LandSmart practices could impact vernal pools. These impacts and the mitigation measure to reduce impacts are presented under Checklist Question IV.a) above. LandSmart practices could also impact wetlands, and these impacts are addressed under Checklist Question IV.c) below.

BMPs, including the requirement to replant areas affected during construction of LandSmart practices, are included as part of the LandSmart Program and presented in the Project Description. The Vegetation Management measures and Post-construction Erosion and Sedimentation Control requirements include limitations on the amount and total area of native riparian shrubs and woody perennials removed for each LandSmart project. Strict adherence to the Vegetation Management requirements will keep potential impacts on riparian communities to less than significant during construction of LandSmart practices by limiting the disturbance and requiring revegetation with appropriate native plantings following construction activities.

IV.c) Impacts on Waters of the U.S. or Jurisdictional Wetlands – Less than Significant with Mitigation

Sonoma County and both State and federal regulations require conservation of wetlands and compliance with a no-net loss policy through avoidance of sensitive habitats and compensatory mitigation such as restoration or creation.

LandSmart practices could be implemented throughout Sonoma County and would range in size depending on the individual practice and the site conditions; see Project Description for project sizing limitations. The location of LandSmart practices will be determined annually by Sonoma RCD, and some

LandSmart practices could potentially result in temporary or permanent fill of federally and State-protected wetlands or waters of the U.S that may be present within LandSmart project areas. By their nature, stream habitat restoration, streambank stabilization, in-channel stabilization, and roadway improvements will be located in or near waters of the U.S. and could impact adjacent wetlands depending on the site and the LandSmart practice. Pipelines could be installed across streams or within the riparian corridor. Pipelines installed in those locations would temporarily impact jurisdictional waters or wetlands, and the impact could be significant.

Implementation of Mitigation Measure BIO-2 will reduce impacts to a less-than-significant level through implementation of a compensatory mitigation program for impacts on wetlands that cannot be avoided.

Mitigation Measure BIO-2, Protect Wetlands and Waters

Sonoma RCD shall conduct a wetlands survey for areas that would be permanently or temporarily disturbed to confirm the location, extent, and regulatory status of wetland and water features within the LandSmart practice area. Sites that are entirely paved, compacted, or maintained as landscaped areas are not subject to this measure. Sonoma RCD shall ensure that project impacts on wetlands and waters are avoided where feasible. If jurisdictional wetlands cannot be avoided, the project shall require a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers and a Section 401 permit from Regional Water Quality Control Board; all permit requirements shall be implemented.

In addition, compensation for impacts on wetlands and waters shall follow the requirements in the CWA Section 404/401 permits. Compensatory mitigation may consist of the following:

- Providing compensatory mitigation through aquatic resource restoration, establishment, enhancement, and/or preservation.
- Obtaining credits from a mitigation bank.

IV.d) Impacts on the Movement of Fish or Wildlife Species – Less than Significant with Mitigation

Sonoma County directs the preservation and restoration of elements of wildlife habitats and corridors through the County. The individual LandSmart practices will not be large enough to substantially interfere with the movement of any terrestrial wildlife species or to block terrestrial wildlife corridors. As discussed in the Project Description, LandSmart projects will require work in stream channels to improve habitat conditions, provide for fish passage, stabilize channel banks, remove culverts, construct new crossings, and install pipelines for livestock irrigation and waste management. Construction could have a significant impact on wildlife movement.

Implementation of Mitigation measures BIO-1b through BIO-1n above will reduce impacts on native resident and migratory fish or wildlife species through selection of work timeframes to avoid migration periods and by providing bypass and/or relocation of special-status aquatic species during construction activities.

IV.e) Conflict with Local Policies or Ordinances – Less than Significant

The Sonoma County General Plan 2020 contains numerous goals, policies, and action items to protect biological resources. The policies require conservation of wetlands and waterways so that there is no net loss of wetlands, preservation of significant vegetation and trees, and specific measures for construction in and adjacent to sensitive habitats, such as stream channels. Implementation of the LandSmart practices could conflict with applicable County policies protecting biological resources, as identified in the previous impact discussions regarding special-status species, riparian vegetation, and wetlands. However, the mitigation measures identified in the impacts analysis above will ensure that LandSmart practices comply with County policies, and the impact will be less than significant.

IV.f) Conflict with a Habitat Conservation Plan or Natural Community Conservation Plan – Less than Significant with Mitigation

USFWS has issued several Low Effect Habitat Conservation Plans for Sonoma County development projects in CTS and CRLF habitats and has adopted the Santa Rosa Plain Conservation Strategy, which is based on biological goals and objectives to achieve conservation of CTS and listed plants that provide their habitat. The strategy's goals and objectives are based on available information on the distribution, ecology, and genetics of CTS and listed plants. The strategy identifies eight conservation areas for CTS, one CTS and listed plant preserve system, and one listed plant conservation area. These conservation areas identify lands where mitigation for project-related impacts on listed species will be directed.

The goal of LandSmart projects is to improve water quality and native habitats, and these goals are in line with the habitat conservation plans in Sonoma County. LandSmart projects implemented within a conservation plan area will abide by its requirements. However, should an individual LandSmart project not follow the requirements of the habitat conservation plan, the impact could be significant.

Implementation of Mitigation Measure BIO-3 will ensure compliance with the existing requirements in local habitat conservation plans, which will remove potential for a LandSmart practice to conflict with the plan. After implementation of Mitigation Measure BIO-3, the impact will be less than significant.

> **Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans**
>
> The Sonoma RCD shall determine if individual properties have an active habitat conservation plan or fall within the Santa Rosa Plain Conservation Strategy Area. Where a LandSmart practice is located within an area or on a property with an active habitat conservation plan, Sonoma RCD shall require that the design and implementation of the practice be in full compliance with the biological goals, objectives, and requirements in the plan. The requirements may include specific surveys, preservation requirements, mitigation needs, and potential translocation requirements.

5.5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
V. Cultural Resources: Would the project:				
a) Cause a substantial adverse change in the significance of a historic resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code §21074?	☐	☒	☐	☐

This section is summarized from the Sonoma County General Plan 2020 Draft Environmental Impact Report (Sonoma County 2007).

Paleontology is the study of the forms of life existing in prehistoric or geologic times as represented by the fossils of plants, animals, and other organisms. Paleontological remains in Sonoma County include plants, invertebrates and vertebrates ranging in age from approximately 140 million years to less than 8,000 years before the present. Within the County, paleontological remains have been primarily recovered from the following geologic formations:

- Franciscan complex – The Franciscan formation largely covers the northern part of the County, except for Alexander Valley and the northern Santa Rosa Plain;
- Wilson Grove – Paleontological resources are common in the Wilson Grove formation that is located in the western part of the County;
- Ohlson Ranch and Petaluma – Resources are also commonly located in the Ohlson Ranch and Petaluma formations in the vicinity of Occidental, Sebastopol, and the coast and at the base of Sonoma Mountain; and
- Sonoma Volcanics – The Sonoma Volcanics formation is found in the Sonoma Mountains and the Sonoma/Napa Mountains that form the eastern border of the County.

Archaeology is the systematic study of past human life and culture through recovery and examination of remaining material evidence, such as graves, buildings, tools, and pottery. In Sonoma County, archaeological research generally involves study of the Native American inhabitants of the land from roughly 8,000 years ago to the early 1800s when the County was settled by American, Russian, Spanish, and Mexican colonists, and most Native Americans were brought into the mission system.

The Pomo/Kashaya, Wappo, Coast Miwok, and Patwin Native American tribes settled in village communities throughout Sonoma County centuries before Europeans arrived. At the time of European contact, the region was occupied by peoples representing four language groups: Southern Pomo, Southwestern Pomo, Coast Miwok, and Wappo. Each group was made up of a number of autonomous village communities that held a specific tract of land. Groups speaking the Pomoan languages held most of the area that became Sonoma County. Southern Pomo held the Russian River drainage south of the Mendocino/Sonoma County line except for the mouth of the river. The Coast Miwok territory included all of present-day Marin County and extended north to that of the Southern Pomo. It included the Petaluma River basin and, during the post-mission period, the Cotati area. It is also believed that the Coast Miwok inhabited Sonoma Valley. The Wappo held the area in Napa County north of the Coast Miwok. Their territory extended to Middletown in Lake County, east to the divide separating the Napa Valley from the Berryessa Valley, west to include portions of the Geysers, and south to the headwaters of Sonoma Creek and the Upper Napa River. The Alexander Valley between Healdsburg and Geyserville was taken from the Southern Pomo by the Wappo around 1830.

Historic resources, as distinguished from archaeological resources, include antiques, buildings, structures, and sites generally from the past two centuries, marking the successive eras of Russian, Mexican, and North American occupation. Historic resources are found throughout Sonoma County.

There are several state and federal regulations regarding treatment of historic resources, including the California Register of Historic Resources and National Register of Historic Places. Historic resources are currently regulated by the County through use of the Historic Combining District (HD) zoning. The HD zoning requires that any exterior alteration, repair, or addition to a structure on a site zoned HD, which requires a building permit, is subject to review and approval by the Landmarks Commission.

All federally funded projects implemented under the LandSmart Program will be subject to NRCS assessment to ensure potential impacts on cultural resources are avoided or minimized. NRCS has a Programmatic Agreement (PA) with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation for federally funded projects. The PA creates a process for assessing potential impacts; reviewing local, state and national records and literature; and consulting with tribal authorities, historic societies, and other interested parties. The policy also dictates the NRCS process for dealing with the discovery of human remains and previously unknown cultural resources.

IV.a) Cause Adverse Impacts on Historic Resources – Less than Significant with Mitigation

Sonoma County historic resources are designated on local, State, and national lists. There are also undesignated potential resources in the County, and undesignated resources could be located in the LandSmart Program area. LandSmart projects will not include alterations of buildings, and most projects

will have no potential to impact historic resources. However, potential impacts on historic resources could occur if LandSmart projects result in disturbance to, or are located immediately adjacent to, historic structures. Siting of LandSmart practices could affect historic resources if construction activities alter the resource or its immediate surroundings such that the significance of the historic resource would be impaired. Therefore, the potential impact of LandSmart projects could be significant. In addition, LandSmart projects could affect historic resources by siting on or near an historic resource or by encountering subsurface historic-era artifacts. These impacts could be significant.

LandSmart activities allowed for stream habitat improvement and improvements to stream crossings could impact historic resources through the removal of and removal and replacement of a known historic bridge, in-channel dam, or a bridge or dam that is potentially eligible for the State or national historic register. Any impact that would cause an adverse change to an historic resource would be significant.

However, Mitigation Measure CR-1, Identify and Avoid or Minimize Impacts on Historic Resources, will be implemented to mitigate the potential impacts from construction of LandSmart projects. Implementation of this mitigation measure will minimize the potential construction impacts on the historic resource to less-than-significant levels by requiring the RCD and individual property owners and managers to implement measures to protect elements of an historic resource during construction. Therefore, this potential impact on historic resources will be less than significant with mitigation.

Mitigation Measure CR-1, Identify and Avoid or Minimize Impacts on Historic Resources

Prior to ground-disturbing activities, a literature and archival records search shall be conducted by the Sonoma RCD or their representative for any practices with ground disturbance to identify known historic resources within or near the project area. If potentially historic resources or buildings older than 45 years are located within 100 feet of the project area, a qualified historian or archaeologist shall be retained to perform an evaluation of the potential historic resource and determine whether the project would impact the resource. If the resource is determined to qualify as historic under CEQA Guidelines Section 15064.5(a), and the LandSmart practice would impair the resource, such impacts on the resource shall be avoided. The LandSmart practice shall be designed and constructed to avoid impairment of the historic resources. Measures to protect historic resources may include, for example, temporary protective barriers, construction worker training, movement of the facility or practice site, and landscape screening.

Should the historic resource survey identify significant resources that cannot be avoided, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* shall be followed. A qualified historic preservation professional shall be retained to develop a treatment plan. Such professionals may include architects, architectural historians, historians, historic engineers, archaeologists, and others who have experience in working with historic structures. Mitigation measures recommended by the qualified historic preservation professional shall be implemented. These measures could include, but not necessarily be limited to:

- Avoidance of significant historic resources;

- Graphic documentation (photographs, drawings, etc.); and/or
- Restoration, stabilization, repair, and reconstruction.

If subsurface historic materials are encountered during construction activities, the piece of equipment or crew member that encountered the materials shall stop and the find inspected by a qualified historian/archaeologist. Project personnel shall not collect historic materials. If the historian/archaeologist determines that the find qualifies as a unique historic resource for the purposes of CEQA (Guidelines Section 15064.5(c)), all work shall be stopped in the immediate vicinity to allow the archaeologist to evaluate the find and recommend appropriate treatment. Such treatment and resolution shall include either modifying the project to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment is protection and preservation.

IV.b,d) Cause a Substantial Change to Archaeological Resources or Human Remains – Less than Significant with Mitigation

As discussed above, archaeological sites are found in many locations across the County, including within the LandSmart Program area. Construction of LandSmart projects will require ground disturbance and excavation (e.g., grading, pipeline trenching, stream habitat improvements, and diversion/stabilization structures), and archaeological resources or human remains could be encountered during these activities. Therefore, the potential impact on archaeological resources and human remains is considered significant, given the potential for damage to such resources during ground-disturbing construction activities.

Mitigation Measure CR-2 will reduce any impact on archaeological resources that may be encountered during construction by identifying, protecting, preserving, or recovering significant resources. Mitigation Measure CR-3 will reduce the impact from discovery of human remains by providing standard procedures in the event that human remains are encountered and by adhering to Public Resources Code (PRC) Section 5097.98 that requires Native American tribal notification. The impact on potentially unknown archaeological resources or human remains following mitigation will be less than significant.

Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts on Archaeological Resources

Prior to ground-disturbing activities, the Sonoma RCD or their representative shall be conduct a literature and archival records search to identify known archaeological resources within the disturbance area for individual LandSmart project implementation. If archaeological resources are located within the project site, a qualified archaeologist shall be retained to perform an evaluation of the potential resource. If the resource is determined to qualify as an archaeological resource for the purposes of CEQA (Guidelines Section 15064.5(c)), and project construction would adversely affect the resource, such impacts shall be avoided. The LandSmart practice shall be designed, constructed, and operated to avoid damage to the resource. Measures may include, for example, temporary protective barriers, construction worker training, or relocation of the project itself.

If previously unknown archaeological materials are encountered during construction, the piece of equipment or crew member that encountered the materials shall stop, and the find shall be

inspected by a qualified archaeologist. Project personnel shall not collect archaeological materials. If the archaeologist determines that the find potentially qualifies as a unique archaeological resource for the purposes of CEQA (Guidelines Section 15064.5(c)), all work shall be stopped in the immediate vicinity to allow the archaeologist to evaluate the find and recommend appropriate treatment. Such treatment and resolution shall include either project modification to allow the materials to be left in place or undertaking data recovery of the materials in accordance with standard archaeological methods. The preferred treatment is protection and preservation.

Mitigation Measure CR-3, Procedures for Encountering Human Remains

The treatment of any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities shall comply with applicable State laws. If human graves are encountered, Sonoma RCD and private landowners and managers shall ensure that all work stops in the vicinity and the Sonoma County Coroner is notified. A qualified archaeologist shall evaluate the remains. If human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of identification, pursuant to PRC Section 5097.98. NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, Sonoma RCD, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. If the MLD and the other parties cannot not agree on the reburial method, Sonoma RCD shall follow PRC Section 5097.98(b), which states that "the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

IV.c) Cause a Substantial Change to a Paleontological or Unique Geological Resource – Less than Significant with Mitigation

Sonoma County has paleontologically rich formations, including in the LandSmart Program area. Ground-disturbing construction activities (e.g., grading, trenching, probe installation) have the potential to encounter paleontological resources, and there is a chance that implementation of LandSmart practices could impact a previously unknown unique paleontological resource or site or impact a unique geologic feature. The potential impact on paleontological resources is considered significant.

Mitigation Measure CR-4 will reduce the potential impact on paleontological resources by requiring evaluation and salvage of any paleontological resources found during construction. The impact on paleontological resources will be less than significant.

Mitigation Measure CR-4, Avoid or Document Paleontological Resources

If a paleontological resource is discovered during construction, all ground-disturbing activities within 50 feet of the find shall be temporarily halted but may be diverted to areas beyond 50 feet

from the discovery and continue working. Sonoma RCD shall notify a qualified paleontologist who will document the discovery, evaluate the potential resource, and assess the nature and significance of the find. Based on scientific value or uniqueness, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the material. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices.

IV.e) Cause a Substantial Change to a Tribal Resource – Less than Significant with Mitigation

As defined in Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

As discussed above, at the time of European contact, the region was occupied by peoples representing four language groups: Southern Pomo, Southwestern Pomo, Coast Miwok, and Wappo. Each group was made up of a number of autonomous village communities in specific tracts of lands throughout Sonoma County, including the LandSmart Program area.

Individual LandSmart project locations will be determined on an annual basis as described in the Project Description; however, most LandSmart projects will be located within existing ranches, dairies, and vineyards. Although the majority of LandSmart projects will be located within actively managed areas with existing infrastructure, LandSmart projects could be located in areas that contain previously unknown buried artifacts. Ground-disturbing construction activities associated with LandSmart projects (e.g., grading, trenching) could disturb tribal resources if the resources are located in the construction area and if construction activities reach a depth where subsurface artifacts are located. Therefore, the potential impact on tribal resources is considered potentially significant if a resource is present and disturbed during construction.

However, Mitigation Measure CR-5, Identify and Avoid or Minimize Impacts on Tribal Resources, will be implemented to reduce the potential impacts from construction of LandSmart projects. Implementation of this mitigation measure will require consultation with interested tribes about annually to convey information about the District's proposed LandSmart projects and to gather information from the tribes about the sensitivity of the individual project area in terms of the potential presence of tribal resources. The District will then use the information provided by the tribes to develop projects that avoid or preserve resources and develop protocol for treatment of resources should any be discovered during implementation of a LandSmart project. Therefore, the potential impact on tribal resources will be less than significant with mitigation.

Mitigation Measure CR-5, Identify and Avoid or Minimize Impacts on Tribal Resources

The District shall consult annually with representatives from interested tribes following the Sonoma RCD Board of Director's selection of the year's LandSmart projects, to identify known tribal resources within the disturbance area for individual LandSmart project implementation.

If the annual review of LandSmart projects identifies that a project may cause substantial adverse change to a tribal cultural resource then the Sonoma RCD shall avoid or minimize adverse impacts in one of the following ways:

1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context.

2) Treatment of the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

   - Protecting the cultural character and integrity of the resource.
   - Protecting the traditional use of the resource.
   - Protecting the confidentiality of the resource.

5.6 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
VI. 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?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
VI. Geology and Soils: Would the project:				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

The topography in Sonoma County is varied and includes several mountain ranges, distinctive valleys, and coastal terraces. The geology of Sonoma County is a result of the past tectonic, volcanic, erosional, and sedimentation processes of the California Coast Range geomorphic province. The two most important geologic features for purposes of planning for seismic impacts in Sonoma County are the San Andreas and Rodgers Creek faults (Sonoma County 2008).

Seismic ground shaking can result in damaging impacts on both close to and at great distances from the source of the earthquake. The most susceptible areas are the silty "Bay muds" south of Petaluma and Sonoma and near Bodega Bay. Unconsolidated alluvium with fairly uniform grain size is also susceptible to liquefaction; therefore, alluvial basins within Sonoma County have a greater potential for liquefaction in winter and spring when the groundwater table is high.

The most frequent and widespread type of ground failure in Sonoma County is landsliding. Areas prone to landsliding in the County include locations of past landslides and hillsides where clay and silt-rich soils absorb water and where rock strata are parallel to surface slopes.

There are 259 soil types mapped within Sonoma County. The Sonoma County Soils Survey (1990) contains detailed information on individual soil series. Soil characteristics can greatly influence land-use activities. Important soil characteristics include the properties related to agricultural and natural habitat resources, as well as those properties related to land development projects. Site-specific soil properties vary widely throughout Sonoma County and require site-specific investigation to develop LandSmart projects. Within Sonoma County, there are soils susceptible to seasonal shrink and swell, soils that are corrosive to certain materials, soils that may liquefy during seismic shaking, and soils that are susceptible to erosion.

V.ai-iv,c,d) Expose People or Structures to Potential Substantial Adverse Effects, including Risk of Loss, Injury, or Death Involving Fault Rupture, Strong Ground Shaking, and Seismic-Related Ground Failure – Less than Significant

The LandSmart Program is designed to prevent erosion and sedimentation on rural lands, agricultural lands, and riparian areas and to decrease sedimentation to downstream locations. Buildings and large structures are not a component of the LandSmart Program.

All conservation practices that are part of the LandSmart Program include conditions, limitations, and protection measures that guide design of the practices. These conditions and limitations are discussed in the Project Description and are included in the requirements for each LandSmart practice. The risk of slope failure, liquefaction, or structural failure is also addressed during the Sonoma RCD planning process. Sonoma RCD planners will assess the soil type and condition, including soil erosion potential, soil slippage, landslides, subsidence, compaction, etc., by referencing landslide and geology maps during project planning to assess what the optimal solution will be for a particular site. The site-specific information about the physical factors on site will be used in project selection and design.

The main lines of the San Andreas and the Rodgers Creek faults run through the LandSmart Program area; however, the Program will not create structures that add to the hazards of a rupture along the fault line.

In the event of a serious earthquake on the San Andreas Fault or Rodgers Creek Fault, the LandSmart Program area is expected to undergo strong to very violent shaking intensity (ABAG 2015). Installation of small-scale erosion control and water management structures, plantings, and minor grading will not change the local impacts of the shaking.

However, pipelines installed as part of the LandSmart Program may be susceptible to the effects of rupture, strong ground shaking, and seismic-related ground failure. As discussed above and in the Project Description, project planners and designers will assess the site-specific characteristics of the project area and design projects and select materials based on the need to withstand rupture hazards and strong seismic ground shaking where necessary. The design elements will account for the specific site conditions, and the impacts from rupture of an earthquake fault or strong ground shaking would be less than significant.

The LandSmart Program area has significant portions categorized as “many landslides” (ABAG 2015). As described above, the project selection and planning process will take soil hazard conditions into consideration. In no case will project activities exacerbate these situations, and in some cases the area may be more stable than before project implementation. The streambank protection practices will tend to stabilize the earth against minor movement by increasing the depth and density of major root systems but will likely have no effect on major slides or slides in motion because of a strong earthquake. Access road upgrades will improve drainage from roadways and reduce concentrated runoff during rainstorms. Improved drainage in areas prone to landslides will reduce the impact of landslides and enhance local conditions.

Erosion and sedimentation control measures will be utilized during construction to prevent soil loss and polluted runoff as discussed in the project description. These standard requirements will be utilized during construction of LandSmart conservation practices. For example, when implementing or maintaining plantings above the high water line, a filter-fabric fence, fiber rolls, or straw bales will be utilized, if needed, to keep sediment from moving into the adjacent waterbody.

V.b) Result in Substantial Soil Erosion or loss of Topsoil – Less than Significant

Projects to be implemented under the LandSmart Program have the stated purpose of reducing or eliminating soil erosion. Soil conservation practices covered by this Program have been determined by Sonoma RCD to have a net environmental benefit observable in the first year after construction. Thus, any contributions of sediment from construction are offset within the first year by the functioning of the conservation practice.

The conservation projects are designed to minimize impacts during construction. BMPs will be utilized during construction to prevent soil loss and polluted runoff; these standard requirements are described in the Project Description. For example, construction-period erosion and sedimentation control measures require development and implementation of a stormwater pollution prevention plan (SWPPP), or a similar document, for all projects that involve grading or work within or adjacent to a watercourse to prevent soil loss. Required measures in the SWPPP will include scheduling to sequence construction activities with the installation of erosion and sedimentation control measures, preserving existing vegetation as an effective form of erosion control, and installing silt fencing, sand bag barriers, and other erosion control measures. Therefore, the impact on soil erosion will be less than significant.

V.e) Have Soils Incapable of Adequately Supporting Use of Septic Tanks – No Impact

Sewers and septic systems are not part of the LandSmart Program.

5.7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
VII. Greenhouse Gas Emissions: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion

Planning to reduce greenhouse gas (GHG) concentrations has become ubiquitous throughout California. Plans are prepared and implemented by local land-use, air quality, and other agencies with resource-specific responsibilities that can be adversely affected by climate change. There are two areas of focus for reducing the amount of GHGs in the atmosphere: cutting emissions and increasing sequestration (the process by which atmospheric GHGs are stably incorporated into non-mobile forms such as trees and soil).

The most common GHGs, and the ones most affected by the LandSmart Program, are: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other potent GHGs are important but not likely to be generated or sequestered by Program activities. Generally, GHGs are measured by the amount of change they make in atmospheric heat retention (forcing) compared to the most common GHG – carbon dioxide - equivalent (CO_2E).

VII.a) Generate Greenhouse Gas Emissions that May Have a Significant Impact on the Environment – Less than Significant

LandSmart Program activities have the potential to affect GHG emissions in a number of ways. The two primary potential effects are construction-related emissions and on-going, beneficial carbon sequestration from planting new vegetation. In addition, many of the practices designed for more efficient agricultural processes have the co-benefit of generating less CH_4 or N_2O.

The LandSmart Program will generate small levels of GHG emissions from construction equipment during construction of up to 30 projects per year. Implementation of each project may take a few days to several weeks. Work will utilize a combination of hand tools and heavy equipment, depending on the practices to be installed. Installation of LandSmart practices will require smaller crews and fewer construction vehicles than most construction projects. Roughly estimated, the Program will generate

150 tonnes CO_2E per year.[3] This is equivalent to adding approximately 30 passenger vehicles to the road or powering 3 homes for a year (EPA 2010b). Total Sonoma County GHG emissions in 2014 were 3.6 million tons, so the LandSmart Program would constitute 0.005% of total County emissions. Although GHGs are definitely having a cumulative impact on the environment, this Program would not have a cumulatively considerable contribution, even without calculating the offsetting effect of Program's revegetation requirements.

Many LandSmart projects will include planting native species. Vegetation may be planted as part of riparian restoration, road decommissioning, and other habitat stabilization activities. Sequestration varies more than emissions by the type of project being conducted, so without details on the mix of projects and sizes, it is not possible to estimate the GHGs sequestered; however, trees planted will continue to sequester carbon for 200 to 300 years. Over an 80-year period, one acre of riparian forest will sequester about 250 tonnes CO_2E/acre (USFWS 2014). The LandSmart Program on average is likely to result in planting of up to ½ acre of vegetation per year. In addition, Program practices improve nutrient management, soil organic matter, and soil nitrogen retention, reducing GHG emissions from normal agricultural operations. It is reasonable to expect that, over the life of the projects, they will have a positive impact on GHG levels; therefore, the impact of the project is less than significant.

VII.b) Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing Greenhouse Gas Emissions – No Impact

GHG plans and policies in effect in the Program area are generated by Sonoma County, NSCAPCD, BAAQMD, and the California Air Resources Board (CARB). Sonoma County is in the process of developing the Climate Action Plan 2020. The Sonoma County General Plan 2020 currently addresses climate change in the energy and transportation elements. These sectors are not part of the LandSmart Program; however, the energy element does identify agricultural operations as one of the good opportunities for implementing wind power. The air quality districts are focused on stationary sources and the transportation sector, which are not part of this program. BAAQMD does provide guidelines for assessment and mitigation of GHG emissions. No part of the LandSmart Program will conflict with these measures or cause Program participants to be challenged to comply.

California has enacted three significant pieces of climate change legislation:

[3] The estimate uses EPA emission factors (each gallon of diesel produces 22.2 pounds of CO_2. Heavy equipment such as backhoes and tractors can use up to 2 gallons diesel/hour) and presumes 30 projects, average 3 weeks duration, using 2 pieces of heavy equipment. The emissions were calculated as:

$$\left(\frac{2\ gallons\ diesel}{equipment-hour}\right)\left(\frac{22.2\ pounds\ CO2E}{gallon\ diesel}\right)\left(\frac{16\ equipment\ hours}{day}\right)\left(\frac{5\ days}{week}\right)\left(\frac{3\ weeks}{project}\right)\left(\frac{30\ projects}{year}\right)\left(\frac{1\ tonne\ CO2E}{2200\ poundsCO2E}\right)=\left(\frac{145\ tonnes\ CO2E}{year}\right)$$

Most projects will be substantially less than this, so the estimate of emissions is higher than actually anticipated from Program implementation.

- AB 32, the Global Warming Solutions Act, addresses total GHG emissions across the State and throughout the different sectors of California's economy.
- SB 375 requires reduction of emissions from automobiles and light trucks.
- SB 97 requires consideration of climate change in all environmental assessments under CEQA, regardless of the specific source of GHGs or other climate change effects.

Of these, only AB 32 directly applies to agricultural practices. CARB has been tasked with developing a scoping plan for implementation of AB 32. The first Scoping Plan Update (2014) identifies agriculture as one of the major sectors that must be addressed to reduce GHG emissions; however, there are no measures that are incompatible with the LandSmart Program. In fact, some of the planned financial incentives for efficient farming may provide a funding opportunity for Program implementation.

The LandSmart Program will not hinder any GHG emissions plan compliance. There is no impact.

5.8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
VIII. 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☒	☐	☐
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?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
VIII. Hazards and Hazardous Materials: Would the project:				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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 or where residences are intermixed with wildlands?	☐	☒	☐	☐

VIII.a,b) Hazardous Materials and Accidental Spill Conditions – Less than Significant

Construction activities could include the use of hazardous materials such as fuels, lubricants, and solvents. Routine transport of hazardous materials to and from the LandSmart project sites during construction could result in an incremental increase in the potential for accidents. However, both the State of California and Sonoma County have policies and laws that relate to the storage, transport, use, and disposal of hazardous materials. Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Worker safety regulations cover hazards related to the prevention of exposure to hazardous materials and a release to the environment from hazardous materials use. Regulations and criteria for the disposal of hazardous materials mandate disposal at an appropriate landfill. Cal-OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Additionally, use of herbicides for LandSmart Program vegetation management activities could lead to potential for an accidental release of hazardous or toxic materials. As discussed in the Project Description's Post-construction Water Quality Protection and Erosion and Sediment Control Measures section regarding Measures for Use of Herbicides, protection strategies will be integrated into the LandSmart Program to place strict parameters on the use of herbicides. These requirements and application of herbicides in accordance with all local agency or manufacturer usage restrictions will reduce the risk of accidental release into the environment to a less-than-significant level.

VIII.c) Emit Hazardous Materials within One-quarter Mile of a School – Less than Significant

Depending on the location of the LandSmart practice area, hazardous materials could be used or stored within a ¼-mile of a school during construction. Project construction activities are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials as discussed in Impact VIII.a,b) above. Although construction activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials and the small quantities that would be used. Therefore, the impact will be less than significant.

VIII.d) Included on a List of Hazardous Materials Sites – Less than Significant with Mitigation

The online data resources that provide information on the location of hazardous materials release sites pursuant to Section 65962.5 of the Government Code indicate that there are numerous leaking underground storage tanks and other contaminated soil and groundwater sites located throughout Sonoma County and within the LandSmart Program area. In the event that a LandSmart practice was located on or adjacent to a contaminated site, contaminated soil or groundwater could be encountered during construction, posing a threat to workers, or the material could be mobilized. The LandSmart practices that involve excavation, trenching, or drilling could result in adverse impacts if the work is completed on or near a contaminated site, and the impact could be significant.

Implementation of Mitigation Measure HAZ-1 will require site-specific preconstruction assessments to identify hazardous material sites and, if present, the project will be moved to an uncontaminated location or a site health and safety plan to protect construction workers and the environment will be prepared. With implementation of the mitigation measure, the LandSmart Program's potential impact related to hazardous materials will be reduced to a less-than-significant level.

Mitigation Measure HAZ-1, Avoid Release of Contaminated Soils

During project planning, Sonoma RCD shall determine whether a known hazardous material site is located within 200 feet of a LandSmart practice if the work would require excavation, trenching, or drilling. If the practice is located near a hazardous site, Sonoma RCD shall require the property owner or manager to move the project to a location greater than 200 feet away from the contaminated site or require the property owner or manager to implement control measures to protect human health and the environment during construction, including, but not limited to, the following:

- Prepare and implement a site-specific health and safety plan in accordance with federal Occupational Safety and Health Administration (OSHA) and Cal-OSHA regulations to address worker health and safety issues during construction. The health and safety plan shall identify the potentially present chemicals, health and safety hazards associated with those chemicals, all required measures to protect construction workers from exposure to harmful levels of any chemicals identified at the site. The health and safety plan shall also specify the

method for handling and disposal of both chemical products and hazardous materials used in construction and contaminated soil, should any be encountered during construction.

VIII.e,f) Safety Hazard for People Residing or Working within Two Miles of an Airport – No Impact

There are six public use airports in Sonoma County: Cloverdale Municipal Airport, Healdsburg Municipal Airport, Charles M. Schulz-Sonoma County Airport, Sonoma Skypark Airport, Petaluma Municipal Airport, and Sonoma Valley Airport. Each is addressed in the Comprehensive Airport Land Use Plan for Sonoma County (CALUP) (Sonoma County 2001). The CALUP defines the area around each airport within which noise, airspace, or safety factors may affect land-use compatibility. LandSmart Program practices may be constructed within airport compatibility boundaries. However, the LandSmart Program does not include construction of facilities that would be incompatible with the airport-related height limitations or noise restrictions. Therefore, there will be no new potential hazards to people residing or working within two miles of an airport.

VIII.g) Impair or Interfere with an Adopted Emergency Response/Evacuation Plan – No Impact

Although the location for individual projects in the LandSmart Program area is unknown, the size and nature of the individual practices will not require the closure of public roadways. Construction activities will not impair the use of evacuation routes or evacuation sites within the County. Therefore, there will be no impact on emergency response or evacuation plans.

VIII.h) Increase Exposure to Wildfires – Less than Significant with Mitigation

According to California Department of Forestry and Fire Protection (CalFire) mapping, properties within the LandSmart Program area are designated as very high fire hazard severity zone (CalFire 2008). In the event that a LandSmart practice is constructed within an area designated as a very high fire hazard severity zone, the potential for impacts from wildland fires during construction could be significant.

Implementation of Mitigation Measure HAZ-2 will require the use of construction techniques that will reduce the likelihood of wildland fires during construction of LandSmart practices that may be located in high wildland fire hazard zones. Implementation of the measure will reduce the impact to a less-than-significant level.

Mitigation Measure HAZ-2, Reduce Wildland Fire Hazards during Construction

Where a LandSmart practice is located within a very high fire hazard severity zone as shown on the latest CalFire Fire and Resource Assessment Program Map for Sonoma County, Sonoma RCD shall require property owners to remove and clear away dry, combustible vegetation from the construction site with specific focus on the staging areas for heavy equipment. Grass and other vegetation less than 18 inches in height shall be maintained where necessary to stabilize the soil and prevent erosion. Vehicles shall not be parked in areas where exhaust systems can contact combustible materials. Fire extinguishers shall be available on the site when working in high fire hazard areas.

5.9 Hydrology

IX. Hydrology and Water Quality: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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 that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
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 that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
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 a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☒	☐

IX. Hydrology and Water Quality: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant 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?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

Design criteria, implementation, and maintenance requirements for the LandSmart conservation practices discussed in Section 2.6, Activities Included in the Program, will be tailored to the hydrologic conditions of the watershed in which the project will occur. The practices will be designed to stem and resolve erosion and sedimentation problems; to minimize polluted runoff from agriculture, including nutrients, fertilizers, and pesticides/herbicides; and to be installed in such a manner that there will be low to no risk of causing adverse environmental impacts. Water quality protection and erosion and sedimentation control measures will be utilized both during construction and in permanent erosion control features to avoid impacts on adjacent watercourses, hydrology, and water quality. The measures are described in detail in the Programmatic Avoidance and Minimization Measures and General Program Conditions in Section 2.10. The following impact analyses are based on the implementation requirements associated with these water quality and erosion and sedimentation control measures as part of each LandSmart practice.

IX.a,e,f) Violate Water Quality Standards or Degrade Water Quality – Less than Significant

Construction activities will temporarily disturb soils and, if not properly managed, could result in localized areas of soil erosion or siltation that could degrade water quality. However, all construction activities included in the LandSmart Program will incorporate construction-period control measures that will limit disturbance to only the areas required to complete the project, minimize access to actual work area, require erosion and sedimentation control, and preserve vegetation as an effective form of erosion control. If needed, temporary soil stabilizing and erosion and sedimentation reduction methods, such as silt fences and sand bag or straw barriers, will be installed. Post-construction erosion and sedimentation control measures are also required for all LandSmart practices that include restoration of disturbed areas to preconstruction conditions or better with native vegetation, mulch, and seeding. Because each project will include implementation of construction-period and post-construction water quality and soil erosion protection measures, impacts on water quality will be less than significant.

Many of the LandSmart Program activities, including road upgrade and decommissioning, in-channel stabilization, pipelines, and diversion, will require an energy dissipater to be installed at an outlet or where concentrated drainage may cause erosion and sedimentation. These conditions will be required as part of these practices to protect water quality.

Occasionally, heavy equipment will be used in stream channels to install some practices. The LandSmart Program requires best management measures for use of petroleum-powered equipment in and near waterways. These measures include monitoring equipment for leaks, storing equipment away from waterways, and having spill and containment materials on hand. These measures, coupled with the detailed guidelines for installation and removal of stream diversion and dewatering, will protect water quality during construction of the LandSmart practices that will be constructed in waterways. No mitigation measures will be required.

Revegetation efforts are also required as part of most LandSmart Program activities. Some of the revegetation efforts may include the removal of invasive species in riparian areas and near waterways in preparation for establishment of native plantings. Removal will primarily be completed using manual or mechanical methods; however, use of herbicides may be needed in some locations. The requirements for use of herbicides are presented in the Vegetation Management practices in the project description. Herbicides will be applied in ways compliant with the California Department of Pesticides Use regulations. Only herbicides registered for use in aquatic environments will be applied in riparian environments; no broadcast spraying will occur. Implementation of the Vegetation Measures as part of LandSmart practices will protect water quality and keep impacts to less-than-significant levels. No mitigation measures will be required.

IX.b) Substantially Deplete Groundwater Supply or Interfere with Groundwater Recharge – Less than Significant

The LandSmart Program will not result in depletion of groundwater. Some conservation and restoration activities, such as installation of grade stabilization structures, in-stream and channel restoration work, channel bed stabilization, restoration relating to road stream crossings, and water control structures, may result in minor, short-term changes in the course and direction of surface water movement during construction. However, these changes would last only the length of a temporary dewatering structure and will have no adverse effect on groundwater recharge. The impact will be less than significant.

IX. c) Substantially Alter Drainage Patterns Resulting in Erosion or Siltation – Less than Significant

Three of the seven LandSmart Program activities are designed to alter stormwater in ways that reduce erosion and sediment-laden runoff. The road upgrade and decommissioning activities, in-channel stabilization activities (grade stabilization, lined waterway), and diversion practice are designed to alter stormwater in ways that will reduce erosion and silt-laden runoff. Road improvements will involve a range of measures to reduce the amount and velocity of stormwater runoff from existing roadways. The improvements will include re-grading roadway surfaces to reduce stormwater concentration, installation of water bars and rolling dips, installation of culverts with stable outlets, and other stormwater management features. The grade stabilization structure practice involves reduction of stream velocity above and below the structure to control grade. Lined waterways slow and redirect stormwater to reduce erosion and increase upland deposition of silt. Implementation of the LandSmart Program will not alter drainage patterns in ways that will cause erosion or result in sedimentation. The impact will be less than significant.

IX.d) Alter Drainage Patterns Resulting in Increased Flooding – Less than Significant

Rainfall and irrigation runoff and downstream flooding will be reduced as a result of implementation and maintenance of the LandSmart practices, which are designed to reduce runoff to the natural background level that would have occurred on the property prior to development of agricultural operations or impervious surfaces. These design objectives will be achieved either through improved infiltration or through detention of peak flows. Infiltration will be improved through the use of increased vegetative cover on bare soils with grassed diversions and improved agricultural soil and crop management.

Work along watercourses covered by this Program will promote the use of biotechnical streambank protection. These practices increase the bank's roughness, thereby slowing the rate of discharge into downstream watercourses. Localized flooding associated with slower discharge will be avoided by increasing the cross-sectional area of the channel or providing for a flood flow terrace as part of the design. Channel bed stabilization that involves sediment removal will increase the capacity of the channel, thereby reducing localized flooding. The potential flooding impacts will be less than significant.

IX.g) Place Housing in the Floodplain – No Impact

No housing construction is authorized as part of the LandSmart Program. No impact will occur.

IX. h) Place Structures in the 100-year Flood Hazard Area that Impedes or Redirects Flood Flows – Less than Significant

The LandSmart Program will place vegetative or rock structures designed to stabilize erosion in 100-year flood hazard areas. Most of these structures will run parallel to watercourses and, therefore, will not pose a risk of redirecting flows. In addition, structures for water control, such as culverts, may be installed as part of the program. These structures will replace existing structures and will usually be larger, allowing more passage of flood flows. Placement of structures that would impede flood flows is not allowable under the LandSmart Program. The impact will be less than significant.

IX.i) Increase Hazards from Inundation by Seiche, Tsunami, or Mudflow – No Impact

The conservation and restoration projects of the LandSmart Program will not increase hazards from inundation by seiche, tsunami, or mudflow. The practices themselves will not be prone to impacts from seiches, tsunamis, or mudflows. There will be no impact.

IX.j) Expose People or Structures to a Significant Risk of Involving Flooding – Less than Significant

Failure of structures included in the LandSmart Program poses little to no risk to life and property due to their small size and placement in rural, agricultural areas. No significant amounts of water will be impounded, and, therefore, the impact will be less than significant.

5.10 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
X. Land Use and Planning: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

X.a) Divide a Community – No Impact

As described in the Project Description, LandSmart practices will consist of small water control or erosion control structures, removal of fish barriers, repair of eroding streambanks and other areas, installation of pipelines for irrigation and waste management purposes, and weed and vegetation management. By nature, the LandSmart practices will not be large enough to physically divide an established community. Therefore, there will be no impact.

X.b) Conflict with Applicable Land Use Plans, Policies, or Regulations – Less than Significant

The LandSmart Program will be implemented primarily on rural, agricultural land for conservation purposes, and implementation of the Program will not alter existing land uses. The suite of LandSmart practices can be implemented within all the land-use designations on the properties in the LandSmart Program area, although habitat restoration activities will require a zoning variance with setback requirements for work in the riparian corridor. Therefore, implementation of individual projects in Program will have less-than-significant impacts related to potential conflicts with land use.

X.c) Conflict with Applicable Habitat Conservation Plans – Less than Significant with Mitigation

USFWS has issued several Low Effect Habitat Conservation Plans for Sonoma County development projects in California tiger salamander (CTS) and California red-legged frog (CRLF) habitat. USFWS also has an adopted the Santa Rosa Plain Conservation Strategy, which is based on biological goals and objectives to achieve conservation of CTS and listed plants that provide their habitat. The strategy's

goals and objectives are based on available information on the distribution, ecology and genetics of CTS and listed plants. The strategy identifies eight conservation areas for CTS, one CTS and listed plant preserve system, and one listed plant conservation area. These conservation areas identify lands where mitigation for project-related impacts on listed species will be directed. Designation of an individual property as being within a conservation area does not change that property's land-use designation or zoning, or otherwise restrict the use of that property.

The goal of LandSmart projects is to improve water quality and native habitats, and these goals are in line with the habitat conservation plans in Sonoma County. LandSmart projects implemented within a conservation plan area must abide by its requirements. Should an individual LandSmart project not follow the requirements of the habitat conservation plan, the impact could be significant.

Implementation of Mitigation Measure BIO-3 (see Biology Section 5.4) will ensure compliance with the existing requirements in local habitat conservation plans, which will remove potential for a LandSmart practice to conflict with the plan. After implementation of Mitigation Measure BIO-3, the impact will be less than significant.

Mitigation Measure BIO-3, Identify and Implement Requirements in Existing Habitat Conservation Plans

The Sonoma RCD shall determine if individual properties have an active habitat conservation plan or falls within the Santa Rosa Plain Conservation Strategy Area. Where a LandSmart practice is located within an area or on a property with an active habitat conservation plan, the Sonoma RCD shall require that the design and implementation of the practice be in full compliance with the biological goals, objectives, and requirements in the plan. The requirements may include specific surveys, preservation requirements, mitigation needs, and potential translocation requirements.

5.11 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
XI. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

XI.a,b) Result in the Loss of Availability of Mineral Resources – Less than Significant

According to the regional mapping of mineral resources in Sonoma County (CDC, California Geological Survey 2005 and 2013), there are mineral resource zones and active aggregate mines mapped throughout the County, including locations within the LandSmart Program area. Mineral Resource Zones (MRZs) and mines are found along the middle reach of the Russian River, Austin Creek, Mark West Creek, Gualala River, West Roblar Road, as well as within several coastal watersheds and elsewhere countywide.

Although the locations for individual projects in the LandSmart Program area are unknown, practices could be installed on property in an MRZ. However, the nature and small scale of the individual practices included in the LandSmart Program, implementation will not result in the loss of availability of mineral resources or interfere with the extraction of minerals or aggregate. Therefore, there will be no impact.

5.12 Noise

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
XII. Noise: Would the project result in:				
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?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

XII.a,b,c,d) Exposure to Noise Levels in Excess of Standards, Substantial Increase in Ambient Noise Levels, and Increase in Ground-borne Vibration – Less than Significant

Temporary ambient noise levels in the project vicinity will not exceed existing noise generated by common agricultural management activities. Many ranchers use earthmoving equipment to retrieve eroded soil, smooth eroded landscape features, and conduct routine agricultural cultivation. The

LandSmart practices will utilize the same equipment types, and, therefore, noise impacts will be less than significant.

XII.e,f) Excessive Noise Impacts within Two Miles of an Airport – No Impact

There are six public use airports in Sonoma County. Although LandSmart Program practices may be constructed within two miles of an airport, the practices do not include measures that would increase noise or expose people residing or working in or near the project area to excessive noise levels.

5.13 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
XIII. 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIII.a,b,c) Induce Population Growth, Displace People or Displace Housing – No Impact

The LandSmart projects will occur primarily in rural, agricultural areas. The practices may improve roadway drainage; however, implementation will not result in roads for future development. The practices are designed to improve natural habitats, support agricultural sustainability, and reduce erosion and sedimentation to improve water quality. The LandSmart Program will not induce population growth, and implementation of the conservation practices will not displace people or housing. Therefore, there will be no impact.

5.14 Public Services

XIV. Public Services: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a) 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 ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

XIV.a) Create Adverse Physical Impacts from Development of New or Expanded Governmental Facilities – No Impact

The LandSmart Program will be implemented primarily on rural, agricultural lands for conservation purposes, often near or adjacent to streams and other waterbodies. None of the LandSmart practices will create the need for additional public services. Therefore, there will be no impact.

5.15 Recreation

XV. Recreation: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a) 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?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

XV.a) Create Adverse Physical Impacts from Increased Park Usage– No Impact

LandSmart practices will be implemented primarily on rural, agricultural lands and near or adjacent to streams and other water bodies. None of the LandSmart practices will increase the use of parks or other recreational facilities. Therefore, there will be no impact.

XV.b) Create Adverse Environmental Impacts from Construction or Expansion of Recreational Facilities – Less than Significant

Where improvements in recreational facilities support Program goals of improved water quality and wildlife habitat, such improvements may be conducted as part of the LandSmart Program (e.g., rerouting a trail to avoid sensitive habitat or changing a stream crossing to a bridge to keep livestock and humans out). These changes will improve environmental conditions in the area but will not increase recreational capacity or use, so impacts will be less than significant.

5.16 Transportation/Traffic

XVI. Transportation and Traffic: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
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?	☐	☐	☐	☒

XVI.a,b,f) Conflict with Plans, Ordinances, Policies, or Programs Regarding Circulation Performance, Congestion Management, or Public Transit– No Impact

Construction traffic for LandSmart projects will result in a short-term increase in construction-related vehicle trips on local rural roadways in the County due to construction worker commutes, trucks and equipment deliveries. However, these small-scale projects will not employ enough workers or generate enough truck traffic to change the existing traffic load in a noticeable way. Temporary public road

closures are not expected with implementation of the LandSmart Program. Therefore, neither implementation of individual LandSmart practices nor the overall LandSmart Program will conflict with plans, ordinances, policies, or programs regarding circulation or transit performance along county roadways.

The Sonoma County Transportation Authority (SCTA) is designated as the Congestion Management Agency for Sonoma County; however Sonoma County does not have an adopted Congestion Management Program. Therefore, no conflict with an applicable congestion management program will occur.

XVI.c) Result in a Change in Air Traffic Patterns – No Impact

There are six publically used airports in Sonoma County, and LandSmart projects may be implemented near the airports; however, none of the LandSmart practices will use or influence air traffic patterns. No impacts will occur.

XVI.d) Substantially Increase Hazards due to a Design Feature or Incompatible Land Use – No Impact

The LandSmart Program includes construction activities on rural properties. The proposed conservation activities will reduce or eliminate many threats to traffic safety, such as sediment on roads, plugging of road culverts, and associated localized flooding. The practices will not result in design features or incompatible land uses, and no impact will occur.

XVI.e) Result in Inadequate Emergency Access – No Impact

LandSmart practices will result in a minor increase in vehicle trips on local roadways during construction; however, no roadways will be blocked or otherwise become impassible due to project activities. Therefore, emergency access will not be impeded, and no impact will occur.

5.17 Utilities and Service Systems

XVII. Utilities and Service Systems: Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

XVII.a,b,e) Exceed Applicable Wastewater Treatment Requirements or Capacity or Require Construction of New or Expanded Wastewater Treatment Facilities – No Impact

The LandSmart Program will not involve any flows to wastewater treatment facilities or storm drains. It will not require additional capacity of water systems or expansion of sources. There will be some water used during construction and during the establishment period of plantings, but it will be a small portion of existing water uses on each property and will not require any expansion of existing sources. No impact will occur.

XVII.c) Require Construction of New or Expanded Stormwater Facilities – No Impact

LandSmart practices are designed to alter and improve hydrologic flows by improving channel configuration, increasing riparian vegetation to retain and slow stormwater, and detaining or rerouting stormwater to reduce erosion and runoff. Stormwater retention features in the designs may include increased sinuosity, step pools to work down steep slopes, outsloping and placement of rolling dips, inclusion of in-channel floodplains, and creation of grassy swales. These features will all be above-ground management of stormflow. Now new stormwater facilities or expansion of existing facilities will be required, and no impact will occur.

XVII.d) Require Expanded Water Entitlements - No Impact

The LandSmart Program will not require any change in public water systems. The suite of pipeline practices in the LandSmart Program involves piping of water from areas with existing riparian water rights to upland areas where it will be available in troughs to improve water quality by keeping livestock out of the creek. Planting practices may require the short-term use of irrigation water to increase the survival of newly planted areas. The temporary nature of the water use and the overall amount of water use will not require an extension of water entitlements.

XVII.f,g) Sufficient Landfill Capacity and Comply with Statues Related to Solid Waste – Less than Significant

Construction of LandSmart practices may include site excavation, grading, and vegetation clearing. Soil may be excavated for installation of pipelines and other conservation practices. Excavated soils will be used for backfill around pipelines and small structures, used as fill elsewhere on the property, or hauled off-site for recycling or disposal as required by County regulations. Non-hazardous materials will be taken to an approved local disposal area. Although not anticipated, any excavated materials and construction debris found to contain unacceptable levels of hazardous materials will be hauled to a licensed disposal site.

The amount of material disposal required for implementation of individual LandSmart practices will be minimal, and most will occur on site. There are three landfills in the region that have capacity to accept waste material. Therefore, solid waste generated from the LandSmart practices will not exceed landfill capacity, and impacts will be less than significant

6 Mandatory Findings of Significance

XVIII. Mandatory Findings of Significance:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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, substantially 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?	☐	☒	☐	☐
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, current, and probable future projects.)	☐	☒	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

XVII.a, c) Degrade Environment or Harm Humans– Less than Significant with Mitigation

With implementation of the mitigation measures, the LandSmart Program does not have the potential degrade the quality of the environment, including fish or wildlife species or their habitat, plant or animal communities, important examples of the major periods of California history or prehistory, or adverse effects on human beings.

XVII.b) Cause Cumulatively Considerable Impacts – Less than Significant with Mitigation

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This IS/Proposed MND utilizes the “plan” approach, per CEQA Guidelines Section 15130(d), to determine if the LandSmart Program as a whole makes a considerable contribution to a significant cumulative impact. Cumulative impacts have been identified using the summary of impacts in the Sonoma County General Plan 2020 Draft and Final EIR (Sonoma County 2008).

The General Plan 2020 Final EIR identified significant cumulative impacts related to land use/population/housing, transportation, air quality, biological resources, noise, water quality/hydrology, agriculture, soils/geology, and public services. Each of these cumulative impacts is summarized in more detail below.

Transportation Impacts

Significant and unavoidable transportation impacts were identified in the General Plan EIR related to increased traffic volumes, delay, and decreases in LOS along major highways in the county. Implementation of the LandSmart Program would not contribute to congestion identified in the General Plan EIR. The LOS standards regulate long-term impacts due to future development and do not apply to temporary, construction-related traffic. As described in the Project Description, the sizes of LandSmart projects are small and will require a minimal number of vehicles to construct. Most projects will not change operations on the properties involved and will not change traffic levels. Therefore, the LandSmart Program as a whole will not contribute to the county's cumulative traffic impact.

Cultural Resources Impact

Significant and unavoidable impacts to cultural resources were identified in the General Plan EIR related to increased development throughout the county. Implementation of the LandSmart Program will not contribute to impacts to cultural resources identified in the General Plan EIR. Implementation of Mitigation Measure CR-1, Identify and Avoid or Minimize Impacts on Historic Resources; Mitigation Measure CR-2, Identify and Avoid or Minimize Impacts on Archaeological Resources; and Mitigation Measure CR-3, Procedures for Encountering Human Remains require protection of the archaeological resources through identification of known resources in the area for all LandSmart projects prior to construction, and through a process to protect resources if found during construction. Therefore, the LandSmart Program as a whole would not contribute to cumulative impacts on cultural resources.

Air Quality Impacts

Significant and unavoidable air quality impacts were identified in the General Plan EIR related to related to the emission of ozone precursors, odors / toxic air contaminants, and diesel emissions. Growth in the cities and the cumulative projects would contribute to all of these impacts, resulting in a significant cumulative impact on air quality, particularly for those impacts related to automobile traffic. The LandSmart Program does not include increases in traffic, and therefore, the project will not contribute to the cumulative air quality impacts

Biological Resources Impacts

Significant biological resources impacts were identified in the General Plan EIR related to special-status species, the loss of sensitive natural communities, and reduction in migration. With implementation Mitigation Measure BIO-1a, Avoid Loss of Listed or CNPS 1B Plants and their Habitats, Mitigation Measure BIO-1b, Avoid Listed Special-status Wildlife Species; Mitigation Measure BIO-1c, Measures to Protect Listed Salmonids; Mitigation Measure BIO-1d, Measures to Protect California Freshwater

Shrimp; Mitigation Measure BIO-1e, Measures to Protect California Tiger Salamander; Mitigation Measure BIO-1f, Protect California Red-legged Frog; Mitigation Measure BIO-1g, Protect Foothill Yellow-legged Frog; Mitigation Measure BIO-1h, Protect Northern Western Pond Turtle; Mitigation Measure BIO-1i, Protect Nesting Birds during Construction; Mitigation Measure BIO1j to Protect Northern Spotted Owl; Mitigation Measure BIO-1k, Protect Special-status Bats; Mitigation Measure BIO-1l, Protect Special-status Butterflies; Mitigation Measure BIO-1m, Protect American Badger; and Mitigation Measure BIO-1n, Protect Sonoma Tree Vole, require protection of the listed species through preconstruction surveys and protection during construction. Therefore, the LandSmart Program as a whole would not contribute to cumulative impacts on special-status species.

No other significant cumulative impacts were identified for the LandSmart Program. Therefore, the program will not contribute to any significant cumulative impacts.

Water Quality and Hydrology Impacts

Significant water quality and hydrologic impacts were identified in the General Plan EIR related to groundwater consumption, well interference, streambank erosion, and erosion from redirected flood flows. The LandSmart Program will have no impacts or less than significant impacts related to water quality and hydrology. Some program practices will improve water quality and reduce streambank erosion. Therefore, the program will not contribute to any significant cumulative impacts.

Geology and Soils

Significant geologic impacts were identified in the General Plan EIR related to geologic hazards associated with planned infrastructure expansion. No geologic impacts were identified for the LandSmart Program; therefore, the program will not contribute to any significant cumulative impacts.

Public Services

Significant impacts associated with the demand for and expansion of public services was identified in the General Plan EIR. Public services will not be affected with implementation of the LandSmart Program. Therefore, the program will not contribute to any significant cumulative impacts.

7 Preparers

The following Sonoma RCD team members reviewed this Initial Study/Proposed Mitigated Negative Declaration.

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8.2 GIS Data Sources

California Digital Atlas

Highways (SC_st_hwys_NAD83_SPII.shp) Data: From State of California and the Resources Agency. The ST_HWY coverage is a line coverage representing the California Department of Transportation (Caltrans) State Highway routes. The original dataset 'ST_HWY' was dissolved and classified on the 'RSYS' field for display purposes on the Digital Conservation Atlas.

Ocean Mask (ocean_mask_Nad83) Data: California Digital Conservation Atlas created by Greeninfo.

California Coastal Zone (CoastalZone.png)
http://atlas.resources.ca.gov/arcgis/rest/services/Boundaries/Coastal_Conservancy/MapServer, credited to Coastal Commission 2007 and digitized.

County of Sonoma GIS Central

Digital imagery (Rasters_ORTHO_2013.lyr) Credit: USDA. NAIP/California_2014_1m URL: http://gis.apfo.usda.gov/arcgis/services/NAIP/California_2014_1m/ImageServer

Sonoma County Watershed Boundaries (Sonoma_Co_wtrshd_bndrys.shp)

Sonoma County Rivers and Streams (SonomaLargeRiverStream.shp) Compiled by Sonoma County GIS group. Polyline layer only. The base line work is compiled from the CDF FRAP (California Department of Forestry Fire and Resource Assessment Program) Russian River and Gualala River Watersheds (River Basins) data sets which include; 1:24000 Forest Service Cartographic Feature Files and 1:24000 USGS (United States Geological Survey) DLG-3 files, Sonoma Creek Watershed data provided by Sonoma Ecology Center, watersheds that include part of Sonoma County not included in the above data are derived from USGS DLG-3 files.

Sonoma Resource Conservation District Boundaries (SonomaRCD_LAFCO_Boundary.shp) - This data is intended to show the boundary of the Sonoma RCD as approved by LAFCO by Resolution No. 011213, on March 6, 2013. Credits: County of Sonoma GIS Central.

Sonoma County Veg Map

Sonoma_County_Lifeform.gdb

Croplands (Sonoma_County_Croplands) Sonoma County Croplands 2013 (v. 10/15) (shapefiles) – Credits: Sonoma Veg Map, Sonoma County Water Agency, Sonoma County Agricultural Preservation and Open Space District, University of California, Berkeley, Sonoma County Winegrape Commission, the Sonoma Land Trust, the Laguna Foundation and the University of California Cooperative Extension

CartographicBuildingFootprints.gdb

California Department of Forestry and Fire Protection

Watershed Boundaries (Calwater221.shp) Credits: California Interagency Watershed Mapping Committee: California Department of Water Resources (DWR), California Department of Forestry and Fire Protection (CDF), California Department of Fish and Game (DFG), California State Water Resources Control Board (SWRCB), USDA Forest Service (USFS) Pacific Southwest Region (R5), USDA Natural Resources Conservation Service (NRCS), U.S. Geologic Survey (USGS), USDI Bureau of Reclamation (USBR), USDI Bureau of Land Management (BLM), U.S. Environmental Protection Agency (USEPA) Region IX, Stephen P. Teale Data Center (Teale GIS Solutions Group).

9 Acronyms

BAAQMD	Bay Area Air Quality Management District
Cal-OSHA	California Department of Industrial Relations Division of Occupational Safety and Health
CalFire	California Department of Forestry and Fire Protection
CALUP	Comprehensive Airport Land Use Plan for Sonoma County
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CHP	California Highway Patrol
CH_4	methane
CO_2	carbon dioxide
CO_2E	carbon dioxide equivalent
CRLF	California red-legged frog
CTS	California tiger salamander
dbh	diameter at breast height
EPA	Environmental Protection Agency
HD	Historic Combining District
MBTA	Migratory Bird Treaty Act
MRZ	Mineral Resource Zone
NAHC	Native American Heritage Commission
NMFS	NOAA's National Marine Fisheries Service
NO_x	nitrous oxides
NRCS	USDA Natural Resources Conservation Service
NSCAPCD	Northern Sonoma Air Pollution Control District
OSHA	Occupational Safety and Health Administration
N_2O	nitrous oxide
PA	Programmatic Agreement
PM_{10}	Particulate matter less than 10 microns wide
$PM_{2.5}$	Particulate matter less than 2.5 microns wide
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
RCD	Resource Conservation District
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SCTA	Sonoma County Transportation Authority
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service

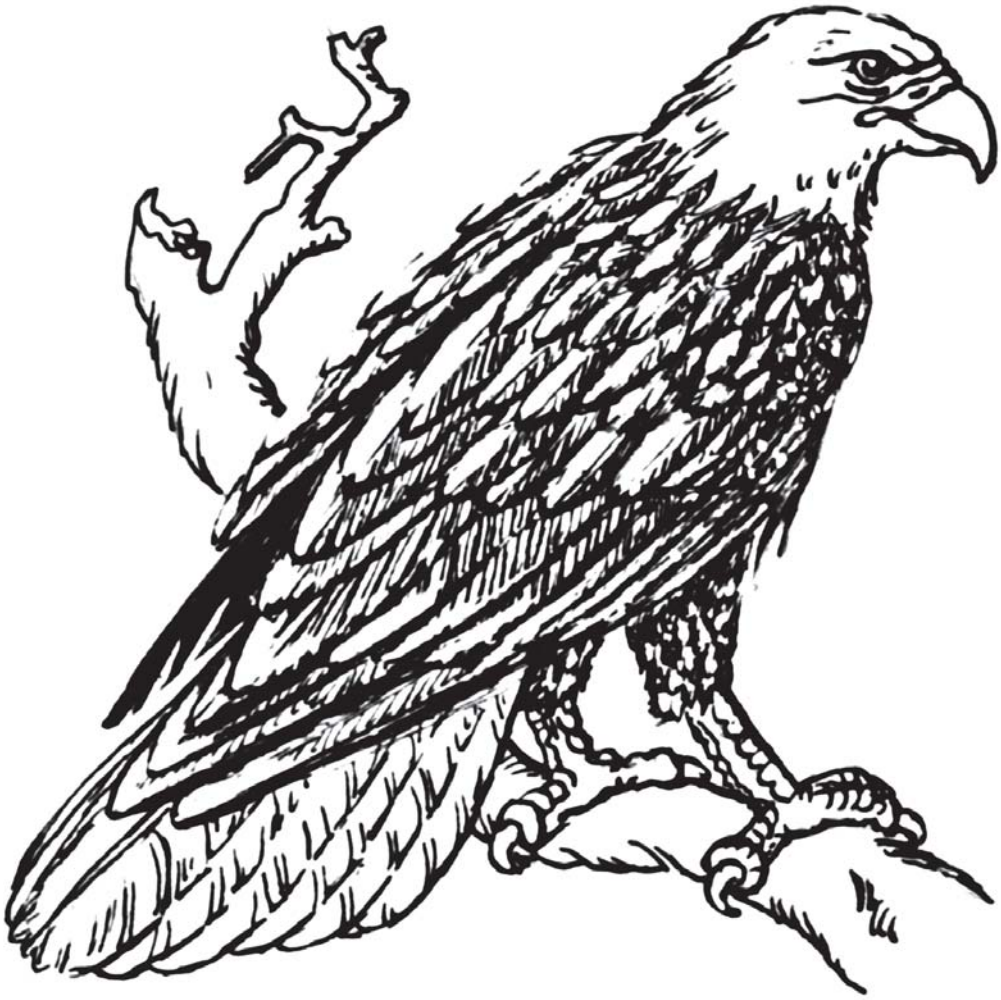
Appendix A – Biological Resources

U.S. Fish & Wildlife Service

Sonoma Resource Conservation District - Land Smart Project

IPaC Trust Resource Report

Generated September 01, 2015 12:42 PM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

Sonoma Resource Conservation District - Land Smart Project

PROJECT CODE

K6AXE-AHOYZ-DX7DL-DSNAL-BIIEWQ

LOCATION

Sonoma County, California

DESCRIPTION

No description provided

U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Sacramento Fish And Wildlife Office
Federal Building
2800 COTTAGE WAY, ROOM W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Amphibians

California Red-legged Frog Rana draytonii — Threatened

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D

California Tiger Salamander Ambystoma californiense — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T

California Tiger Salamander Ambystoma californiense — Threatened

MANAGED BY
Arcata Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T

Birds

California Clapper Rail Rallus longirostris obsoletus — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B04A

California Least Tern Sterna antillarum browni — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B03X

Marbled Murrelet Brachyramphus marmoratus — Threatened

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08C

Northern Spotted Owl Strix occidentalis caurina — Threatened

MANAGED BY
Arcata Fish And Wildlife Office
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B

Short-tailed Albatross Phoebastria (=Diomedea) albatrus — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B00Y

Western Snowy Plover Charadrius alexandrinus nivosus — Threatened

MANAGED BY
Arcata Fish And Wildlife Office
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B07C

Yellow-billed Cuckoo Coccyzus americanus — **Threatened**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R

Crustaceans

California Freshwater Shrimp Syncaris pacifica — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K01W

Conservancy Fairy Shrimp Branchinecta conservatio — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03D

Vernal Pool Fairy Shrimp Branchinecta lynchi — **Threatened**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03G

Fishes

Delta Smelt Hypomesus transpacificus

Threatened

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E070

Steelhead Oncorhynchus (=Salmo) mykiss

Threatened

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E08D

Tidewater Goby Eucyclogobius newberryi

Endangered

MANAGED BY
Arcata Fish And Wildlife Office
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E071

Flowering Plants

Baker's Larkspur Delphinium bakeri — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0LZ

Burke's Goldfields Lasthenia burkei — Endangered

MANAGED BY
Arcata Fish And Wildlife Office
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1XU

Calistoga Allocarya Plagiobothrys strictus — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1HV

Clara Hunt's Milk-vetch Astragalus clarianus — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q05J

Clover Lupine Lupinus tidestromii — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2DD

Contra Costa Goldfields Lasthenia conjugens — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q122

Few-flowered Navarretia Navarretia leucocephala ssp. pauciflora (=N. pauciflora) **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q19A

Kenwood Marsh Checker-mallow Sidalcea oregana ssp. valida **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1OU

Lake County Stonecrop Parvisedum leiocarpum **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1C2

Loch Lomond Coyote Thistle Eryngium constancei **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q29S

Many-flowered Navarretia Navarretia leucocephala ssp. plieantha **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q19B

Marin Dwarf-flax Hesperolinon congestum **Threatened**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1X6

Napa Bluegrass Poa napensis **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1ID

Pennell's Bird's-beak Cordylanthus tenuis ssp. capillaris — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2O8

Pitkin Marsh Lily Lilium pardalinum ssp. pitkinense — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q141

Sebastopol Meadowfoam Limnanthes vinculans — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1Y1

Showy Indian Clover Trifolium amoenum — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q238

Slender Orcutt Grass Orcuttia tenuis — Threatened

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1AZ

Sonoma Alopecurus Alopecurus aequalis var. sonomensis — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q01F

Sonoma Spineflower Chorizanthe valida — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1UF

Sonoma Sunshine Blennosperma bakeri — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1TO

Vine Hill Clarkia Clarkia imbricata — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0FO

White Sedge Carex albida — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0BL

Yellow Larkspur Delphinium luteum — **Endangered**

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0M2

Insects

Behren's Silverspot Butterfly Speyeria zerene behrensii — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I031

Callippe Silverspot Butterfly Speyeria callippe callippe — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I019

Myrtle's Silverspot Butterfly Speyeria zerene myrtleae — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I00N

San Bruno Elfin Butterfly Callophrys mossii bayensis — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I00Q

Mammals

Point Arena Mountain Beaver Aplodontia rufa nigra — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office
Arcata Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0BJ

Salt Marsh Harvest Mouse Reithrodontomys raviventris — Endangered

MANAGED BY
Sacramento Fish And Wildlife Office

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A03Y

Reptiles

Leatherback Sea Turtle Dermochelys coriacea **Endangered**

MANAGED BY
Arcata Fish And Wildlife Office

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00F

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

Baker's Larkspur Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0LZ#crithab

California Red-legged Frog Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D#crithab

California Tiger Salamander Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D01T#crithab

Chinook Salmon Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E06D#crithab

Marbled Murrelet Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08C#crithab

Northern Spotted Owl Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B#crithab

Steelhead Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E08D#crithab

Steelhead Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E08D#crithab

Tidewater Goby Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E071#crithab

Yellow Larkspur Critical Habitat Final designated
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0M2#crithab

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Allen's Hummingbird Selasphorus sasin — **Bird of conservation concern**
Season: Breeding

Ashy Storm-petrel Oceanodroma homochroa — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AV

Bald Eagle Haliaeetus leucocephalus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Bell's Sparrow Amphispiza belli — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HE

Black Oystercatcher Haematopus bachmani — **Bird of conservation concern**
Year-round

Black Rail Laterallus jamaicensis — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09A

Black-chinned Sparrow Spizella atrogularis — **Bird of conservation concern**
Season: Breeding

Black-vented Shearwater Puffinus opisthomelas — **Bird of conservation concern**
Season: Wintering

Burrowing Owl Athene cunicularia — **Bird of conservation concern**
Year-round

Cassin's Auklet Ptychoramphus aleuticus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FP

Common Yellowthroat Geothlypis trichas sinuosa — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B080

Costa's Hummingbird Calypte costae — **Bird of conservation concern**
Season: Breeding

Flammulated Owl Otus flammeolus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DK

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Least Bittern Ixobrychus exilis — Bird of conservation concern
Season: Breeding

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa — Bird of conservation concern
Season: Wintering

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Year-round

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Year-round

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Pink-footed Shearwater Puffinus creatopus — Bird of conservation concern
Year-round

Purple Finch Carpodacus purpureus — Bird of conservation concern
Year-round

Short-billed Dowitcher Limnodromus griseus — Bird of conservation concern
Season: Wintering

Short-eared Owl Asio flammeus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Song Sparrow Melospiza melodia samuelis — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08Q

Swainson's Hawk Buteo swainsoni — Bird of conservation concern
Seasons: Wintering, Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070

Tricolored Blackbird Agelaius tricolor — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06P

Western Grebe aechmophorus occidentalis **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EA

Whimbrel Numenius phaeopus **Bird of conservation concern**
Season: Wintering

Willow Flycatcher Empidonax traillii **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6

Yellow Rail Coturnicops noveboracensis **Bird of conservation concern**
Season: Wintering

Yellow Warbler dendroica petechia ssp. brewsteri **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EN

Red Knot Calidris canutus ssp. roselaari **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

San Pablo Bay National Wildlife Refuge

35,668.86 acres

PHONE (707) 769-4200

ADDRESS
2100 Highway 37
Petaluma, CA 94954

http://www.fws.gov/refuges/profiles/index.cfm?id=81644

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: County is (Sonoma)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali milk-vetch *Astragalus tener var. tener*	PDFAB0F8R1	None	None	G2T2	S2	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
angel's hair lichen *Ramalina thrausta*	NLLEC3S340	None	None	G5	S2?	2B.1
Baker's goldfields *Lasthenia californica ssp. bakeri*	PDAST5L0C4	None	None	G3TH	SH	1B.2
Baker's larkspur *Delphinium bakeri*	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Baker's manzanita *Arctostaphylos bakeri ssp. bakeri*	PDERI04221	None	Rare	G2T1	S1	1B.1
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	PDPLM0C0E1	None	None	G4T2	S2	1B.1
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S2	
Barr's amphipod *Stygobromus cherylae*	ICMAL05D60	None	None	G1	S1	
beaked tracyina *Tracyina rostrata*	PDAST9D010	None	None	G1	S1	1B.2
Behren's silverspot butterfly *Speyeria zerene behrensii*	IILEPJ6088	Endangered	None	G5T1	S1	
bent-flowered fiddleneck *Amsinckia lunaris*	PDBOR01070	None	None	G2?	S2?	1B.2
big-scale balsamroot *Balsamorhiza macrolepis*	PDAST11061	None	None	G2	S2	1B.2
black swift *Cypseloides niger*	ABNUA01010	None	None	G4	S2	SSC
Blasdale's bent grass *Agrostis blasdalei*	PMPOA04060	None	None	G2	S2	1B.2
Blennosperma vernal pool andrenid bee *Andrena blennospermatis*	IIHYM35030	None	None	G2	S2	
blue coast gilia *Gilia capitata ssp. chamissonis*	PDPLM040B3	None	None	G5T2	S2	1B.1
bluff wallflower *Erysimum concinnum*	PDBRA160E3	None	None	G3	S3	1B.2
Boggs Lake hedge-hyssop *Gratiola heterosepala*	PDSCR0R060	None	Endangered	G2	S2	1B.2
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
brownish beaked-rush *Rhynchospora capitellata*	PMCYP0N080	None	None	G5	S1	2B.2
bumblebee scarab beetle *Lichnanthe ursina*	IICOL67020	None	None	G2	S2	
Burke's goldfields *Lasthenia burkei*	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California beaked-rush *Rhynchospora californica*	PMCYP0N060	None	None	G1	S1	1B.1
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3G4T1	S1	FP
California clapper rail *Rallus longirostris obsoletus*	ABNME05016	Endangered	Endangered	G5T1	S1	FP
California freshwater shrimp *Syncaris pacifica*	ICMAL27010	Endangered	Endangered	G1	S1	
California giant salamander *Dicamptodon ensatus*	AAAAH01020	None	None	G3	S2S3	
California horned lark *Eremophila alpestris actia*	ABPAT02011	None	None	G5T3Q	S3	WL
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Calistoga ceanothus *Ceanothus divergens*	PDRHA04240	None	None	G2	S2	1B.2
Clara Hunt's milk-vetch *Astragalus claranus*	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
coast lily *Lilium maritimum*	PMLIL1A0C0	None	None	G2	S2	1B.1
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
coastal bluff morning-glory *Calystegia purpurata ssp. saxicola*	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Coastal Brackish Marsh *Coastal Brackish Marsh*	CTT52200CA	None	None	G2	S2.1	
Coastal Terrace Prairie *Coastal Terrace Prairie*	CTT41100CA	None	None	G2	S2.1	
coastal triquetrella *Triquetrella californica*	NBMUS7S010	None	None	G2	S2	1B.2

Selected Elements by Common Name

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California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cobb Mountain lupine *Lupinus sericatus*	PDFAB2B3J0	None	None	G2	S2	1B.2
coho salmon - central California coast ESU *Oncorhynchus kisutch*	AFCHA02034	Endangered	Endangered	G4	S2?	
Colusa layia *Layia septentrionalis*	PDAST5N0F0	None	None	G2	S2	1B.2
congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	PDAST4R065	None	None	G5T1T2	S1S2	1B.2
Contra Costa goldfields *Lasthenia conjugens*	PDAST5L040	Endangered	None	G1	S1	1B.1
Crystal Springs lessingia *Lessingia arachnoidea*	PDAST5S0C0	None	None	G1	S1	1B.2
Cunningham Marsh cinquefoil *Potentilla uliginosa*	PDROS1B4A0	None	None	GH	SH	1A
dark-eyed gilia *Gilia millefoliata*	PDPLM04130	None	None	G2	S2	1B.2
deceiving sedge *Carex saliniformis*	PMCYP03BY0	None	None	G2	S2	1B.2
Delta tule pea *Lathyrus jepsonii var. jepsonii*	PDFAB250D2	None	None	G5T2	S2	1B.2
Dorr's Cabin jewelflower *Streptanthus morrisonii ssp. hirtiflorus*	PDBRA2G0S2	None	None	G2T1	S1	1B.2
double-crested cormorant *Phalacrocorax auritus*	ABNFD01020	None	None	G5	S4	WL
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
dwarf soaproot *Chlorogalum pomeridianum var. minus*	PMLIL0G042	None	None	G5T2T3	S2S3	1B.2
ferruginous hawk *Buteo regalis*	ABNKC19120	None	None	G4	S3S4	WL
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	None	G3	S3	SSC
fragrant fritillary *Fritillaria liliacea*	PMLIL0V0C0	None	None	G2	S2	1B.2
Franciscan onion *Allium peninsulare var. franciscanum*	PMLIL021R1	None	None	G5T1	S1	1B.2
Franciscan thistle *Cirsium andrewsii*	PDAST2E050	None	None	G3	S3	1B.2
Freed's jewelflower *Streptanthus brachiatus ssp. hoffmanii*	PDBRA2G071	None	None	G2T2	S2	1B.2
fringed myotis *Myotis thysanodes*	AMACC01090	None	None	G4	S3	

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Geysers panicum *Panicum acuminatum var. thermale*	PMPOA24028	None	Endangered	G5T2Q	S2	1B.2
Giuliani's dubiraphian riffle beetle *Dubiraphia giulianii*	IICOL5A020	None	None	G1G3	S1S3	
globose dune beetle *Coelus globosus*	IICOL4A010	None	None	G1G2	S1S2	
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
golden larkspur *Delphinium luteum*	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
grasshopper sparrow *Ammodramus savannarum*	ABPBXA0020	None	None	G5	S3	SSC
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
Greene's narrow-leaved daisy *Erigeron greenei*	PDAST3M5G0	None	None	G2	S2	1B.2
Gualala roach *Lavinia symmetricus parvipinnis*	AFCJB19025	None	None	G4T1T2	S1S2	SSC
hardhead *Mylopharodon conocephalus*	AFCJB25010	None	None	G3	S3	SSC
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
Hoffman's bristly jewelflower *Streptanthus glandulosus ssp. hoffmanii*	PDBRA2G0J4	None	None	G4T2	S2	1B.3
holly-leaved ceanothus *Ceanothus purpureus*	PDRHA04160	None	None	G2	S2	1B.2
Jepson's leptosiphon *Leptosiphon jepsonii*	PDPLM09140	None	None	G3	S3	1B.2
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	PDFAB0F7E1	None	None	G4T3	S3	1B.2
Kenwood Marsh checkerbloom *Sidalcea oregana ssp. valida*	PDMAL110K5	Endangered	Endangered	G5T1	S1	1B.1
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	PDERI04271	None	None	G5T3	S3	1B.3
Leech's skyline diving beetle *Hydroporus leechi*	IICOL55040	None	None	G1?	S1?	
legenere *Legenere limosa*	PDCAM0C010	None	None	G2	S2	1B.1
Loch Lomond button-celery *Eryngium constancei*	PDAPI0Z0W0	Endangered	Endangered	G1	S1	1B.1
long-eared myotis *Myotis evotis*	AMACC01070	None	None	G5	S3	

Selected Elements by Common Name

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California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
longfin smelt *Spirinchus thaleichthys*	AFCHB03010	Candidate	Threatened	G5	S1	SSC
long-legged myotis *Myotis volans*	AMACC01110	None	None	G5	S3	
many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	PDPLM0C0E5	Endangered	Endangered	G4T1	S1	1B.2
maple-leaved checkerbloom *Sidalcea malachroides*	PDMAL110E0	None	None	G3	S3	4.2
Marin checkerbloom *Sidalcea hickmanii ssp. viridis*	PDMAL110A4	None	None	G3T1T2	S1S2	1B.3
Marin knotweed *Polygonum marinense*	PDPGN0L1C0	None	None	G2Q	S2	3.1
marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	PDMAL110K2	None	None	G5T3	S3	1B.2
marsh microseris *Microseris paludosa*	PDAST6E0D0	None	None	G2	S2	1B.2
Mendocino Coast paintbrush *Castilleja mendocinensis*	PDSCR0D3N0	None	None	G2	S2	1B.2
Mendocino dodder *Cuscuta pacifica var. papillata*	PDCUS011A2	None	None	G5T1	S1	1B.2
Mendocino Pygmy Cypress Forest *Mendocino Pygmy Cypress Forest*	CTT83161CA	None	None	G2	S2.1	
Methuselah's beard lichen *Usnea longissima*	NLLEC5P420	None	None	G4	S4	4.2
mimic tryonia (=California brackishwater snail) *Tryonia imitator*	IMGASJ7040	None	None	G2	S2	
minute pocket moss *Fissidens pauperculus*	NBMUS2W0U0	None	None	G3?	S2	1B.2
monarch - California overwintering population *Danaus plexippus pop. 1*	IILEPP2012	None	None	G4T2T3	S2S3	
Morrison's jewelflower *Streptanthus morrisonii ssp. morrisonii*	PDBRA2G0S3	None	None	G2T2	S2	1B.2
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	PDCON04032	None	None	G4T3	S3	4.2
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	IILEPJ608C	Endangered	None	G5T1	S1	
Napa checkerbloom *Sidalcea hickmanii ssp. napensis*	PDMAL110A6	None	None	G3T1	S1	1B.1
Napa false indigo *Amorpha californica var. napensis*	PDFAB08012	None	None	G4T2	S2	1B.2
narrow-anthered brodiaea *Brodiaea leptandra*	PMLIL0C022	None	None	G3?	S3?	1B.2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Navarro roach *Lavinia symmetricus navarroensis*	AFCJB19023	None	None	G4T1T2	S1S2	SSC
North Coast semaphore grass *Pleuropogon hooverianus*	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Northern Coastal Salt Marsh *Northern Coastal Salt Marsh*	CTT52110CA	None	None	G3	S3.2	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
Northern Vernal Pool *Northern Vernal Pool*	CTT44100CA	None	None	G2	S2.1	
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G4?	S1S2	
Opler's longhorn moth *Adela oplerella*	IILEE0G040	None	None	G2	S2	
Oregon polemonium *Polemonium carneum*	PDPLM0E050	None	None	G3G4	S2	2B.2
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
oval-leaved viburnum *Viburnum ellipticum*	PDCPR07080	None	None	G4G5	S3?	2B.3
Pacific gilia *Gilia capitata ssp. pacifica*	PDPLM040B6	None	None	G5T3T4	S2	1B.2
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
pappose tarplant *Centromadia parryi ssp. parryi*	PDAST4R0P2	None	None	G3T2	S2	1B.2
Pennell's bird's-beak *Cordylanthus tenuis ssp. capillaris*	PDSCR0J0S2	Endangered	Rare	G4G5T1	S1	1B.2
perennial goldfields *Lasthenia californica ssp. macrantha*	PDAST5L0C5	None	None	G3T2	S2	1B.2
Peruvian dodder *Cuscuta obtusiflora var. glandulosa*	PDCUS01111	None	None	G5T4T5	SH	2B.2
Petaluma popcornflower *Plagiobothrys mollis var. vestitus*	PDBOR0V0Q2	None	None	G4?TX	SX	1A
pink sand-verbena *Abronia umbellata var. breviflora*	PDNYC010N4	None	None	G4G5T2	S1	1B.1
Pitkin Marsh lily *Lilium pardalinum ssp. pitkinense*	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Pitkin Marsh paintbrush *Castilleja uliginosa*	PDSCR0D380	None	Endangered	GXQ	SX	1A
Point Reyes checkerbloom *Sidalcea calycosa ssp. rhizomata*	PDMAL11012	None	None	G5T2	S2	1B.2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

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Point Reyes horkelia *Horkelia marinensis*	PDROS0W0B0	None	None	G2	S2	1B.2
Point Reyes salty bird's-beak *Chloropyron maritimum ssp. palustre*	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
purple martin *Progne subis*	ABPAU01010	None	None	G5	S3	SSC
purple-stemmed checkerbloom *Sidalcea malviflora ssp. purpurea*	PDMAL110FL	None	None	G5T1	S1	1B.2
pygmy cypress *Hesperocyparis pygmaea*	PGCUP04032	None	None	G1	S1	1B.2
rhinoceros auklet *Cerorhinca monocerata*	ABNNN11010	None	None	G5	S3	WL
Ricksecker's water scavenger beetle *Hydrochara ricksecker*i	IICOL5V010	None	None	G2?	S2?	
Rincon Ridge ceanothus *Ceanothus confusus*	PDRHA04220	None	None	G1	S1	1B.1
Rincon Ridge manzanita *Arctostaphylos stanfordiana ssp. decumbens*	PDERI041G4	None	None	G3T1	S1	1B.1
Roderick's fritillary *Fritillaria roderickii*	PMLIL0V0M0	None	Endangered	G1Q	S1	1B.1
rose leptosiphon *Leptosiphon rosaceus*	PDPLM09180	None	None	G1	S1	1B.1
round-headed beaked-rush *Rhynchospora globularis*	PMCYP0N0W0	None	None	G4	S1	2B.1
round-leaved filaree *California macrophylla*	PDGER01070	None	None	G3?	S3?	1B.2
running-pine *Lycopodium clavatum*	PPLYC01080	None	None	G5	S3	4.1
Russian River tule perch *Hysterocarpus traski pomo*	AFCQK02011	None	None	G5T4	S4	SSC
Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020	None	None	GNR	S3	SSC
saline clover *Trifolium hydrophilum*	PDFAB400R5	None	None	G2	S2	1B.2
saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	ABPBX1201A	None	None	G5T3	S3	SSC
salt-marsh harvest mouse *Reithrodontomys raviventris*	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	PDPGN04081	None	None	G2T1	S1	1B.2
San Pablo song sparrow *Melospiza melodia samuelis*	ABPBXA301W	None	None	G5T2?	S2?	SSC

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Santa Cruz clover *Trifolium buckwestiorum*	PDFAB402W0	None	None	G2	S2	1B.1
Sebastopol meadowfoam *Limnanthes vinculans*	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
serpentine cryptantha *Cryptantha dissita*	PDBOR0A0H2	None	None	G2	S2	1B.2
serpentine cypress wood-boring beetle *Trachykele hartmani*	IICOLX6010	None	None	G1	S1	
serpentine daisy *Erigeron serpentinus*	PDAST3M5M0	None	None	G2	S2	1B.3
short-leaved evax *Hesperevax sparsiflora var. brevifolia*	PDASTE5011	None	None	G4T3	S2	1B.2
slender silver moss *Anomobryum julaceum*	NBMUS80010	None	None	G4G5	S2	4.2
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	PMPOT03091	None	None	G5T5	S3	2B.2
Snow Mountain buckwheat *Eriogonum nervulosum*	PDPGN08440	None	None	G2	S2	1B.2
Socrates Mine jewelflower *Streptanthus brachiatus ssp. brachiatus*	PDBRA2G072	None	None	G2T1	S1	1B.2
soft salty bird's-beak *Chloropyron molle ssp. molle*	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Sonoma alopecurus *Alopecurus aequalis var. sonomensis*	PMPOA07012	Endangered	None	G5T1Q	S1	1B.1
Sonoma arctic skipper *Carterocephalus palaemon magnus*	IILEP42012	None	None	G5T5	S1	
Sonoma beardtongue *Penstemon newberryi var. sonomensis*	PDSCR1L483	None	None	G4T1	S2	1B.3
Sonoma ceanothus *Ceanothus sonomensis*	PDRHA04420	None	None	G2	S2	1B.2
Sonoma spineflower *Chorizanthe valida*	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Sonoma sunshine *Blennosperma bakeri*	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Sonoma tree vole *Arborimus pomo*	AMAFF23030	None	None	G3	S3	SSC
Sonoma zerene fritillary *Speyeria zerene sonomensis*	IILEPJ6083	None	None	G5T1	S1	
steelhead - central California coast DPS *Oncorhynchus mykiss irideus*	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Suisun shrew *Sorex ornatus sinuosus*	AMABA01103	None	None	G5T1T2Q	S1S2	SSC

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supple daisy *Erigeron supplex*	PDAST3M3Z0	None	None	G2	S2	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
swamp harebell *Campanula californica*	PDCAM02060	None	None	G3	S3	1B.2
The Cedars buckwheat *Eriogonum cedrorum*	PDPGN087A0	None	None	G1	S1	1B.3
The Cedars fairy-lantern *Calochortus raichei*	PMLIL0D1L0	None	None	G2	S2	1B.2
The Cedars manzanita *Arctostaphylos bakeri ssp. sublaevis*	PDERI04222	None	Rare	G2T2	S2	1B.2
thin-lobed horkelia *Horkelia tenuiloba*	PDROS0W0E0	None	None	G2	S2	1B.2
Thurber's reed grass *Calamagrostis crassiglumis*	PMPOA17070	None	None	G3Q	S2?	2B.1
Tidestrom's lupine *Lupinus tidestromii*	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
tidewater goby *Eucyclogobius newberryi*	AFCQN04010	Endangered	None	G3	S3	SSC
Tomales isopod *Caecidotea tomalensis*	ICMAL01220	None	None	G2	S2	
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	None	G2G3	S1S2	SSC
two-carpellate western flax *Hesperolinon bicarpellatum*	PDLIN01020	None	None	G3	S3	1B.2
two-fork clover *Trifolium amoenum*	PDFAB40040	Endangered	None	G1	S1	1B.1
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
Vine Hill ceanothus *Ceanothus foliosus var. vineatus*	PDRHA040D6	None	None	G3T1	S1	1B.1
Vine Hill clarkia *Clarkia imbricata*	PDONA050K0	Endangered	Endangered	G1	S1	1B.1
Vine Hill manzanita *Arctostaphylos densiflora*	PDERI040C0	None	Endangered	G1	S1	1B.1
western leatherwood *Dirca occidentalis*	PDTHY03010	None	None	G2	S2	1B.2
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western red bat *Lasiurus blossevillii*	AMACC05060	None	None	G5	S3	SSC
western snowy plover *Charadrius alexandrinus nivosus*	ABNNB03031	Threatened	None	G3T3	S2	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T3Q	S1	
white beaked-rush *Rhynchospora alba*	PMCYP0N010	None	None	G5	S2	2B.2
white-flowered rein orchid *Piperia candida*	PMORC1X050	None	None	G3	S3	1B.2
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
woolly-headed gilia *Gilia capitata ssp. tomentosa*	PDPLM040B9	None	None	G5T2	S2	1B.1
woolly-headed spineflower *Chorizanthe cuspidata var. villosa*	PDPGN04082	None	None	G2T2	S2	1B.2
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 197

DRAFT

CEQA Mitigation Monitoring and Reporting Plan
LandSmart On-the-Ground for Sonoma Creek Vineyards

Sonoma Resource Conservation District
May 2016

Format of This Plan

The MMRP summarizes the impacts and mitigation measures identified and described in the Programmatic LandSmart IS/MND that apply to the proposed projects encompassed in the LandSmart On-the-Ground for Sonoma Creek Vineyards grant proposal. Each of the impacts discussed within this MMRP is numbered based on the sequence in which they are discussed in the IS/MND. The monitoring action, the party responsible for monitoring, and timeframe are identified for each mitigation measure.

GENERAL PROGRAM AND ENVIRONMENTAL PROTECTION MEASURES	Monitoring Action	Implementation Responsibility	Monitoring Responsibility	Timeframe
Ground disturbance will be limited to the "Work Area", defined as anywhere subject to disturbance from access, vegetation management, grading, and other construction-related activities. The area of disturbance will be minimized as much as possible and any sensitive areas that should be avoided will be identified.	Define Work Areas on project map. Ensure any contractor is aware of work limits and any sensitive areas in vicinity.	Contractor	Sonoma RCD	Before and during construction
Ground disturbance within the riparian area shall be minimized and shall occur as far from the riparian vegetation as feasible. The edge of the allowable construction area shall be clearly delineated with exclusion fencing to reduce the potential for disturbance in the riparian area by construction vehicles and construction personnel.	Ensure that protections are in place.	Contractor	Sonoma RCD	Before and during construction

GENERAL PROGRAM AND ENVIRONMENTAL PROTECTION MEASURES	Monitoring Action	Implementation Responsibility	Monitoring Responsibility	Timeframe
Proper erosion control and other water quality Best Management Practices (BMPs) shall be implemented to avoid sedimentation, discharge of untreated water, and disturbance to riparian and aquatic habitats. When project activities involve grading or work within or adjacent to a stream or waterway, a Stormwater Pollution Prevention Plan (SWPPP) or similar document will be prepared, approved by the project manager, and implemented during construction activities.	Complete and approve spill prevention plan. Ensure that measures are implemented during construction.	Contractor	Sonoma RCD	Before and during construction
All staging, maintenance, fueling, and storage of construction equipment shall be conducted in a location and manner that would prevent potential runoff of petroleum products into on-site waterways and any adjacent aquatic habitats.	Ensure that measures are implemented and spill containment materials are on-site during construction.	Contractor	Sonoma RCD	During construction
Construction equipment shall be kept on-site as much as feasible, when not in operation to minimize exhaust emissions or dust from vehicles traveling to and from the project site.	Ensure that measures are implemented during construction.	Contractor	Sonoma RCD	During construction
During construction, water trucks shall be used around areas of ground disturbance as needed to prevent excessive dust.	Ensure that measures are implemented during construction.	Contractor	Sonoma RCD	During construction
All landscape and road materials (seed, straw, mulch, gravel, etc.) brought on site shall be certified weed-free or inspected by the project biologist or project manager before use.	Ensure measures are being followed.	Contractor	Sonoma RCD OR project biologist	During construction
Construction vehicles and other landscaping equipment shall be cleaned of seed and soil from other sites before entering this project area.	Ensure measures are being followed.	Contractor	Sonoma RCD	During construction

GENERAL PROGRAM AND ENVIRONMENTAL PROTECTION MEASURES	Monitoring Action	Implementation Responsibility	Monitoring Responsibility	Timeframe
When feasible, work within the Root Protection Zone (RPZ) shall be limited and no soil stockpiling will occur within the RPZ. The outer extent of the RPZ shall be clearly delineated with exclusion fencing during construction to keep construction vehicles and construction activities away from tree roots. If work must occur within the RPZ, additional protection measures will be followed. If native trees are lost as a result of construction, mitigation may be required by the resource agencies. The RPZ is defined as 1.5 times the drip line radius, measured from trunk.	Ensure that protections are in place prior to onset of construction activities.	Contractor AND Sonoma RCD	Sonoma RCD	Before and during construction
All disturbed areas will be stabilized upon completion of work. Erosion and sediment control measures, such as permanent native vegetation, weed-free mulch, erosion control fabrics, rock, and biotechnical treatments, will be incorporated into the project design and implementation. Erosion and sediment control and water quality protection measures will be inspected regularly by the RCD or a designee, to ensure they are functioning properly.	Erosion and sediment control measures defined as part of project design. Ensure that measures are implemented during construction.	Contractor	Sonoma RCD	During construction
Any area cleared of vegetation will be revegetated promptly after disturbance, using native Sonoma County species, wherever feasible. When timing does not coincide with suitable planting windows for permanent vegetation, a temporary cover (ex. weed-free mulch/straw) will be used. Permanent revegetation must occur prior to completion of project.	Ensure permanent revegetation has occurred upon completion of construction project.	Contractor	Sonoma RCD AND landowner	After construction
Avoid the use of pesticides and minimize the use of fertilizers in construction areas adjacent to waterways. No herbicides/fertilizers will be used in areas with sensitive species/habitats or within a 50-foot buffer around those areas during construction.	Ensure that pesticides are avoided and use of fertilizers is minimized.	Contractor	Sonoma RCD AND landowner	During construction

GENERAL PROGRAM AND ENVIRONMENTAL PROTECTION MEASURES	Monitoring Action	Implementation Responsibility	Monitoring Responsibility	Timeframe
A safety plan will be developed prior to chemical use that will include emergency telephone numbers and treatment center addresses.	Ensure plan is in place prior to chemical use.	Contractor	Sonoma RCD	Before and during construction
During project development, a natural resources evaluation will be conducted by reviewing current California Natural Diversity Database (CNDDB) records and performing a site visit to identify if any sensitive species or habitats may be present in or near the project areas. If potential for sensitive species or habitats are identified at or near the project area, RCD will consult with project biologist to determine appropriate mitigation measures.	Ensure project areas are surveyed and findings documented. Consultation and additional surveys by project biologist, where necessary.	Contractor AND project biologist (if required)	Sonoma RCD AND project biologist (if required)	Before construction
When required, permit applications will be submitted to regulatory agencies. If additional conditions beyond those described here are specified by regulators, the more stringent conditions will be followed.	Ensure any permit conditions are identified and discussed with project team.	Contractor	Sonoma RCD	Before and during construction
Practices that involve grading or other earth moving activities, and work within a channel or along a streambank, will be implemented in the period between June 1 and October 15, unless site- or project-specific recommendations from the project biologist suggest an alternate work window. Planting may occur year-round under suitable conditions and adequate site access.	Ensure grading work occurs within calendar days defined for work window.	Contractor	Sonoma RCD OR project biologist (if required)	Before, during, and after construction

MITIGATION MEASURES				
5.4 BIOLOGICAL RESOURCES	**Monitoring Action**	**Implementation Responsibility**	**Monitoring Responsibility**	**Timeframe**
If any natural resources (ex. sensitive habitats, special-status species) may be present and require further assessment by a project biologist, those assessments will be initiated and potential impacts and applicable mitigation measures will be defined (from mitigation measures described in BIO 1a through BIO 1n of the MND).	Ensure surveys are completed and any additional mitigation measures are defined.	Contractor OR project biologist	Sonoma RCD OR project biologist	Before and during construction
Work areas shall be surveyed periodically during construction to ensure that no terrestrial species are being impacted by construction activities.	Ensure surveys are completed	Contractor OR Sonoma RCD	Sonoma RCD OR project biologist	During construction
5.5 CULTURAL RESOURCES	**Monitoring Action**	**Implementation Responsibility**	**Monitoring Responsibility**	**Timeframe**
Perform literature/archival records search for known historic resources.	Ensure a records search is completed.	Sonoma RCD	Sonoma RCD	Prior to construction
If archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Mitigation Measure CR-4 will be followed. Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).	Cultural resources report detailing findings will be submitted to regulatory agencies by qualified archaeologist, if remains uncovered.	Qualified archaeologist	Sonoma RCD OR qualified archaeologist	Upon discovery of cultural resources during construction

5.5 CULTURAL RESOURCES	Monitoring Action	Implementation Responsibility	Monitoring Responsibility	Timeframe
If human remains are encountered, the following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and by Mitigation Measure CR-3, pertaining to the discovery of human remains: excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.	Cultural resources report detailing findings will be submitted to regulatory agencies by qualified archaeologist; consultations as specified.	Sonoma RCD OR Contractor	Sonoma RCD OR qualified archaeologist	Upon discovery of cultural resources during construction
5.8 HAZARDOUS MATERIALS	**Monitoring Action**	**Implementation Responsibility**	**Monitoring Responsibility**	**Timeframe**
If project area falls into an area designated as having a HIGH fire risk, vegetation in work area will be mowed and kept low to prevent accidental brush fires. Fire-suppression equipment will be reviewed by the project manager before construction begins and will be available on-site at all times for all projects.	Ensure vegetation is mowed and fire-suppression equipment is available on site prior to start of construction activities.	Contractor	Sonoma RCD	Before and during construction

Implementation Responsibility - who will physically perform the required protection or mitigation measure

Monitoring Responsibility - who will monitor that required protection or mitigation measure has been implemented