United States Army Corps of Engineers

PLACER VINEYARDS SPECIFIC PLAN

Draft Environmental Impact Statement

USACE Action ID: SPK-1999-00737

Volume III - Appendix 3.4 through 3.14

U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922
(916) 557-6605

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Prepared for:

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Placer Vineyards Specific Plan EIR Mitigation Measures

MITIGATION MEASURES

The following mitigation measures from the Placer Vineyards Specific Plan EIR were incorporated into the PVSP project by Placer County.

Land Use

4.1.6 A minimum 100-foot setback shall be maintained between structures intended for permanent residential habitation and the 115kV utility lines (as measured from the nearest utility line). Similarly, a setback of 150 feet shall be maintained for the substation and 230kV utility lines.

4.1-13a Comply with all applicable mitigation measures set forth in the Environmental Impact Report, City of Lincoln Wastewater Treatment and Reclamation Facility, certified by the City of Lincoln City Council on March 9, 1999 during construction and operation of the recycled water facility.

4.1-13b Prior to construction of any facilities not within the area assessed by the Environmental Impact Report, City of Lincoln Wastewater Treatment and Reclamation Facility, such as potential future downstream diversion structures, perform an initial study in accordance with CEQA to determine subsequent environmental assessment needs. This should include consideration of site-specific biological, wetland and cultural resource assessments.

4.1-13c Compliance with mitigation measures set forth in this Revised Draft EIR or similar measures proposed by the City of Lincoln designed to reduce impacts to visual quality, water quality, biological resources, soils, cultural resources, air quality, and the noise environment, including Mitigation Measures 4.2-6a, 4.2-6b, 4.3.4-1c, 4.3.4-2a, 4.3.4- 2b, 4.3.4-2c, 4.3.4-3a, 4.3.4-3b, 4.4-1a, 4.4-1b, 4.4-1c, 4.4-1d, 4.4-1e, 4.4-1f, 4.4-1g, 4.4-1h, 4.4-1i, 4.4-14, 4.4-15, 4.4-16, 4.4-17, 4.4-18, 4.4-20, 4.4-21, 4.4-22, 4.4-23, 4.4-24, 4.4-26, 4.4-27, 4.4-29, 4.4-30, 4.5-1a, 4.5-2, 4.5-4a, 4.4-5b, 4.6-2a, 4.6-2b, 4.6- 2c, 4.6-2d, 4.6-2e, 4.6-2f, 4.6-2g, 4-6-2h, 4.6-3a, 4.6-3b, 4.8-1a, 4.8-1b, 4.8-1c, 4.8-1d, 4.8-1e, 4.9-2, and 4.9-3.

4.1-14 Implement Mitigation Measure 4.4-1a as it pertains to open space.

Aesthetics

4.2-3 Water storage tanks shall be subject to review and approval pursuant to the County's Design Review process. In concert with Design Review, a landscaping plan that softens the visual appearance of the tanks from open space areas shall be submitted, and shall conform to the standards contained in the Placer County Landscape Design Guidelines Manual.

4.2-6a All areas containing natural vegetation or landscape material that are disturbed during utility line and roadway construction shall be revegetated upon completion of work utilizing plant materials similar to those disturbed. Revegetated areas shall be actively maintained until fully established, in accordance with the standards and provisions contained in the County's Landscape Design Guidelines.

4.2-6b All permanent utility line-related structures extending above ground shall be screened where feasible using a combination of berms, mounds, landscape material, decorative fencing/ walls, or other screening feature approved by the Placer County Development Review Committee, consistent with the Placer County Design Guidelines and the Placer County

Landscape Design Guidelines. In addition, any proposed roadway and utility pump station lighting shall be directed downward using cut-off fixtures to minimize lighting effects on adjacent areas and the night sky.

Hydrology, Water Resources, and Water Quality

4.3.2-1a New development applications shall be accompanied by a site-specific project drainage report that is consistent with the approved Master Project Drainage Study. The project drainage report shall be reviewed and approved by the Placer County Public Works Department during the Subsequent Conformity Review Process and prior to improvement plan approval for new development. The drainage report shall be prepared by a Registered Civil Engineer and shall be in conformance with the Placer County Storm Water Management Manual and Placer County Code. The project applicant shall be financially responsible for all stormwater drainage facility maintenance requirements. The project drainage report shall include, at a minimum, written text addressing existing conditions, the effects of project improvements, all appropriate calculations, a watershed map, potential increases in downstream flows and volumes, proposed on-site improvements, and drainage easements, if necessary, to accommodate flows from the site. The drainage report shall demonstrate compliance with all mitigation measures included in this Revised Draft EIR.

4.3.2-1b New development within the Specific Plan area shall reduce post-development stormwater runoff peak flows and volumes to pre-development levels for the 2-, 10-, 25- and 100-year storm events through the construction of regional retention and detention facilities for the Curry Creek and Steelhead Creek watersheds. Retention/detention facilities in the Steelhead Creek watershed shall incorporate gates, as described in the Master Project Drainage Study, to control flows during a Sankey Gap spill. A protocol shall be established by Placer County in cooperation with the Sacramento Area Flood Control District for monitoring of the Sankey Gap spill and for operation of the gates. Responsibility for the operation and maintenance of the gates shall be assumed by the County Service Area that will serve the Specific Plan area. Construction of regional retention and detention facilities shall be prior to or concurrent with the initial development of the Specific Plan area. Runoff from development within the Dry Creek watershed shall not be detained or retained. Retention and detention facilities shall be designed in accordance with the requirements of the Placer County Storm Water Management Manual that are in effect at the time of submittal, and to the satisfaction of the Department of Public Works. Retention and detention facilities shall be designed to be consistent with the Master Project Drainage Study for the Specific Plan.

4.3.2-1c Drainage facilities, for purposes of collecting runoff on individual lots, shall be designed in accordance with the requirements of the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the satisfaction of the Department of Public Works. These facilities shall be constructed with subdivision improvements, and easements provided as required by the Department of Public Works. Maintenance of these facilities shall be provided by a new County Service Area (CSA), an expanded CSA #28, or other responsible entity.

4.3.2-1d The location, size and ownership of any canals in the Specific Plan area shall be described in the project drainage report and shown on improvement plans. The Department of Public Works shall be provided with a letter from the agency controlling the canal describing any restrictions, requirements, easements, etc. relative to project construction. Said letter shall be provided to the Department of Public Works prior to the approval of improvement plans.

4.3.2-1e New development in the Specific Plan area within the Dry Creek watershed shall be subject to the one-time payment of drainage improvement and flood control fees pursuant to the Dry Creek Watershed Interim Drainage Improvement Ordinance (Ref. Article 15.32, formerly Chapter 4, Subchapter 20, Placer County Code). The actual fees to be paid will be those in effect at the time the payment occurs.

4.3.2-1f New development in the Specific Plan area within the Dry Creek Watershed shall be subject to payment of annual drainage improvement and flood control fees pursuant to the Dry Creek Watershed Interim Drainage Improvement Ordinance (Ref. Article 15.32, formerly Chapter 4, Subchapter 20, Placer County Code). The applicant shall cause the subject property to become a participant in the existing Dry Creek Watershed County Service Area for purposes of collecting these annual special assessments.

4.3.2-1g New development shall not alter the post-development mitigated drainage shed boundaries identified in the Master Project Drainage Study in a way that would increase the peak flow runoff or runoff volume.

4.3.2-1h Prior to any improvement plan approval (including plans for backbone infrastructure), the Master Project Drainage Study shall be submitted to the Placer County Department of Public Works for review and approval. The Master Project Drainage Study shall be in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of submittal. The report shall be prepared by a Registered Civil Engineer and shall include all drainage elements outlined in this Revised Draft EIR. The drainage facilities shall be designed for future, fullydeveloped, unmitigated flows from upstream development. Regional detention and retention basis, regional water quality basins, as well as regional drainage channel improvements shall be incorporated with appropriate design information along with appropriate phasing information.

4.3.2-1i New development in the Specific Plan area within the Steelhead Creek (NEMDC) tributary shall be subject to payment of fair share stormwater volume mitigation fees to the County of Sacramento. The current fees range from $325.00 to $629.00 per acre. (Fee Schedule for Zone 11C) and are adjusted annually. The actual fees to be paid will be those in effect at the time the payment occurs. Prior to improvement plan approval, the applicant shall provide evidence to the Placer County Department of Public Works that the fees have been paid to Sacramento County.

4.3.2-2a New development applications shall be accompanied by a site-specific project drainage report that is consistent with the approved Master Project Drainage Study. The project drainage report shall be reviewed and approved by the Placer County Public Works Department during the Subsequent Conformity Review Process and prior to improvement plan approval for new development. The drainage report shall be prepared by a Registered Civil Engineer and shall be in conformance with the Placer County Storm Water Management Manual and Placer County Code. The project applicant shall be financially responsible for all stormwater drainage facility maintenance requirements. The project drainage report shall include, at a minimum, written text addressing existing conditions, the effects of project improvements, all appropriate calculations, a watershed map, potential increases in downstream flows and volumes, proposed on-site improvements, and drainage easements, if necessary, to accommodate flows from the site. The drainage report shall

demonstrate compliance with all mitigation measures included in this Revised Draft EIR and adopted by the Board of Supervisors.

4.3.2-2b New development within the Specific Plan area shall upsize any existing undersized culverts within the Specific Plan area conveying increased flows from the proposed development. All existing culverts conveying development flow shall be identified with pre- and post-development flow quantities and capacities. All culvert analysis (existing and upsized) shall be designed in conformance with the Placer County Storm Water Management Manual to accommodate the 2-, 10-, 25- and 100-year storms. Flow consideration for debris clogging and sediment transport shall be provided. In addition to the 100-year event, 200-year events shall be evaluated for potential impacts to collector roadways, detention pond failure and other life-safety impacts.

4.3.2-3a No grading or other disturbance shall occur within the post-project 100-year floodplain limit as identified in the Master Project Drainage Study except, as necessary to construct and maintain drainage improvements. The post-project 100- year floodplain shall be designated as a development setback line on improvement plans and final subdivision maps unless greater setbacks are required by other mitigation measures or conditions of approval.

4.3.2-3b New development applications shall be accompanied by a site-specific project drainage report that is consistent with the approved Master Project Drainage Study. The project drainage report shall be reviewed and approved by the Placer County Public Works Department during the Subsequent Conformity Review Process and prior to improvement plan approval for new development. The drainage report shall be prepared by a Registered Civil Engineer and shall be in conformance with the Placer County Storm Water Management Manual and Placer County Code. The project applicant shall be financially responsible for all stormwater drainage facility maintenance requirements. The project drainage report shall include, at a minimum, written text addressing existing conditions, the effects of project improvements, all appropriate calculations, a watershed map, potential increases in downstream flows and volumes, proposed on-site improvements, and drainage easements, if necessary, to accommodate flows from the site. The drainage report shall demonstrate compliance with all mitigation measures included in this Revised Draft EIR.

4.3.2-3c New development applications within the Specific Plan area shall identify the limits of existing and proposed floodplains in the site-specific project drainage report. Channel/swale construction and/or improvements with new development shall be designed in accordance with the Placer County Storm Water Management Manual and provide sufficient freeboard for the 100-year event and shall be identified with floodplain delineations.

4.3.2-3d The developer shall construct flood warning devices (e.g., rain gauges, stream gauges with radio transmitters) within floodplains as indicated in the Placer County Storm Water Management Manual and Placer County Code. The flood warning devices shall be shown on the improvement plans.

4.3.2-3e The Master Project Drainage Study shall demonstrate that the proposed development will not increase the 100-year floodplain water surface elevation.

4.3.2-3f The low dam, intake structure, pump and pipeline withdrawing water from Dry Creek shall be removed in its entirety, and the streambed returned to a natural condition, at the time irrigation of existing pasture land located within Property Group #5 of the Specific Plan area ceases. Upon removal of the dam, an effective combination of erosion and sediment control

shall be implemented which may include measures such as covering exposed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding. In addition, best management practices (BMPs) shall be implemented during construction to reduce or eliminate sedimentation and reduce erosion in result of dam removal activities. BMPs may include sediment control practices such as filtration devices and barriers (e.g. fiber rolls, straw bale barriers and gravel inlet filters) and/or settling devices (e.g. sediment traps or basins). BMPs shall be developed in accordance with applicable federal, State and local agencies. Additionally, the dam removal shall be done in accord with all applicable federal, State and local requirements and/or permit conditions existing at the time of removal. Prior to removal of the structure, a drainage report shall be prepared demonstrating that the removal of the structure will not adversely increase flows downstream.

4.3.2-11a Prior to any development pursuant to the Specific Plan within the Dry Creek Drainage Shed, the developer shall submit to the Placer County Department of Public Works project-specific drainage reports, calculations and plans addressing up-gradient and project flows within the Dry Creek drainage shed for review and approval. Placer County Storm Water Management Manual and the Placer County Code require developments to not cause adverse impacts to upstream or downstream properties.

4.3.2-11b The Master Project Drainage Study and project-specific drainage reports shall design for conveyance of future, fully-developed, unmitigated flows from upstream development outside of the Specific Plan area.

4.3.3-8a Municipal wells constructed for purposes of a backup groundwater supply for development under the Specific Plan shall not be constructed within 800 feet of any existing private well.

4.3.3-8b Prior to operation of any municipal wells constructed for purposes of a backup groundwater supply for development under the Placer Vineyards Specific Plan, the developer/applicant shall construct groundwater monitoring wells to monitor the impacts of the operation of the municipal wells on local groundwater elevations and any groundwater contaminant movement. The number, location and design of said monitoring wells shall be subject to the approval of PCWA.

4.3.3-8c To address potential scenarios in which, despite best efforts to avoid well failure, any of the existing wells in the area fails as a result of the pumping for development under the Specific Plan, the owners of failed wells, upon submission of proof of such failure, shall be compensated through a well insurance program funded through development within the Specific Plan area. No small lot tentative map shall be approved until the developer, working with PCWA, puts in place a legal and financial mechanism for funding a Placer Vineyards Well Insurance Program, to be administered by PCWA, to insure against failure for up to an estimated replacement cost to be determined. Said Well Insurance Program shall include payment of a fee at the issuance of a building permit. Such fee shall be determined based on the number of private wells eligible for the program (existing wells within a two-mile radius of each municipal well to be constructed) multiplied by the cost of a typical residential well construction (to be determined) and divided by the total number of equivalent dwelling units (edu) in the Specific Plan area. Additional components of the Well Insurance Program will be developed prior to approval of the first small lot tentative subdivision map.

4.3.3-9 Prior to installation of any municipal wells for purposes of a backup groundwater supply for development under the Specific Plan, the County, in consultation with PCWA and CDFG,

shall determine the appropriate separation distances between wells and nearby surface water bodies. In no case shall these municipal wells be constructed within 800 feet of the Dry Creek riparian corridor, or any other on-site area where established riparian vegetation is observed.

4.3.3-10 Pumps required for any municipal wells for purposes of a backup groundwater supply for development under the Specific Plan shall be located within soundattenuating acoustical shelters to reduce generated noise levels below noise thresholds established by the Placer County General Plan Noise Element for the affected sensitive receptors.

4.3.4-1a Prior to submission of applications for new development within the Specific Plan area, the precise location and preliminary design of the regional water quality detention/sedimentation basins, as described in the Master Project Drainage Study shall be submitted to Placer County for review and approval. This plan shall also include the method or methods for funding the long-term maintenance of regional water quality maintenance measures. Finally, the plan shall also include sanctions available to enforce the implementation and maintenance of measures, should measures fail or not be maintained over time.

4.3.4-1b Plans for construction of backbone infrastructure shall include construction of regional basins in sequence and location determined by the Master Project Drainage Study required by Mitigation Measure 4.3.4-1a.

4.3.4-1c Plans for construction of backbone infrastructure shall include SWPP plans prepared in conformance with the requirements of Mitigation Measure 4.5-4b.

4.3.4-1d Prior to improvement plan approval for new development other than that for backbone improvements, each applicant shall include site specific plans for accomplishment of long-term reductions in water quality impacts. The applicant shall also propose a method of financing the long-term maintenance of such facilities, such as a County Service Area or the expansion of CSA #28, in conformance with Mitigation Measure 4.3.4-1a. Such plans shall conform to all mitigation measures set forth in this Revised Draft EIR and adopted by the Board of Supervisors.

4.3.4-1e New development shall submit a site-specific BMP plan showing the on-site locations and effectiveness of the BMP facilities proposed for long-term water quality impact reduction during the Subsequent Conformity Review process and prior to improvement plan approval. Storm drain inlet cleaning shall occur semi-annually (at a minimum) and parking lots shall include the installation of oil/sand/grit separators or as otherwise approved by the Placer County Department of Public Works. The plan shall include a method for financing the long-term maintenance of the proposed facilities and BMPs. The plan shall conform to the Master Project Drainage Study required by Mitigation Measure 4.3.4-1a and the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the Department of Public Works). BMPs shall reflect improvements in techniques and opportunities made available over time and shall also reflect site-specific limitations. The County shall make the final determination as to the appropriate BMPS for each project.

4.3.4-1f Storm drainage from all new development impervious surfaces (including roadways) shall be collected and routed through specially designed catch basins, vaults, filters, etc. for entrapment of sediment, debris and oils/greases as approved by the Placer County Department of Public Works. Maintenance of these facilities shall be provided by the project

owners/permittees unless and until a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming and catch basin cleaning program shall be provided to the Placer County Department of Public Works upon request. Prior to improvement plan or final subdivision map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

4.3.4-1g New development (including roadways) within the Specific Plan area shall design water quality treatment facilities (BMPs) such that the treatment of runoff occurs, at a minimum, before discharge into any receiving waters, or as otherwise determined by the Placer County Department of Public Works.

4.3.4-2a Projects with ground disturbance exceeding one acre that are subject to construction stormwater quality permits of the NPDES program shall obtain such permits from the SRWQCB and shall provide the Placer County Department of Public Works evidence of a State-issued Waste Discharge Identification (WDID) number of filing of a Notice of Intent and fees prior to start of construction.

4.3.4-2b During the Subsequent Conformity Review Process and prior to improvement plan approval, new development projects shall submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance (reference pages 4-3-9 through 4-3-12). The erosion control plan shall indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan shall address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities shall be constructed to County specifications. BMPs shall be implemented throughout the construction process.

4.3.4-2c All BMPs for water quality protection, source control, and treatment control shall be developed in accordance with the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the Department of Public Works) for the applicable type of development and/or improvement. Provisions shall be included for long-term maintenance of BMPs.

4.3.4-3a New development applications shall be accompanied by a site-specific project drainage report that is consistent with the approved Master Project Drainage Study. The project drainage report shall be reviewed and approved by the Placer County Department of Public Works during the Subsequent Conformity Review Process and prior to improvement plan approval for new development. The drainage report shall be prepared by a Registered Civil Engineer and shall be in conformance with the Placer County Storm Water Management Manual and Placer County Code. The project applicant shall be financially responsible for all stormwater drainage facility maintenance requirements. The project drainage report shall include, at a minimum, written text addressing existing conditions, the effects of project improvements, all appropriate calculations, a watershed map, potential increases in downstream flows and volumes, proposed on-site improvements, and drainage easements, if necessary, to accommodate flows from the site. The drainage report shall demonstrate compliance with all mitigation measures included in this Revised Draft EIR.

4.3.4-3b New development shall submit a revegetation plan for disturbed swale and channel areas and banks to the Placer County Department of Public Works for review and approval. The revegetation plan shall be designed to minimize erosion potential while emphasizing use of native or endemic species. The plan shall include provision for regular watering between April 1 and October 1 to ensure continuous coverage of 95% of disturbed areas and survival of species during the first year.

4.3.4-4 All existing groundwater wells within the Specific Plan area shall be abandoned and sealed in accordance with Placer County Environmental Health Division standards upon abandonment of use, prior to any project-related construction activity within one hundred feet of any affected well. Wells that will remain within the SPA or other adjoining areas that are within 100 feet of active development within the Specific Plan area shall, where landowner permission is granted, be inspected and, if found to be improperly sealed, properly sealed, or destroyed and replaced, in accordance with Placer County Environmental Health Division Standards. Seals, inspections, and well destruction and construction shall be at the expense of the Specific Plan area developer.

4.3.4-7a Prior to approval of improvement plans for improvement projects of one acre or greater, the developer/project proponent shall submit a Storm Water Pollution Prevention Plan (SWPP), obtain from the SWRCB a General Construction Activity Stormwater Permit under the NPDES and comply with all requirements of the permit to minimize pollution of stormwater discharges during construction activities.

4.3.4-7b Prior to construction of any off-site infrastructure within Placer County, the project developer/project proponent shall submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance (reference pages 4-3-9 through 4- 3-12). The erosion control plan shall indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan shall address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities shall be constructed to Placer County specifications. BMPs shall be implemented throughout the construction process. The developer shall comply with all similar requirements within other affected jurisdictions.

4.3.4-7c BMPs for construction shall be developed in accordance with the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the County Department of Public Works.

4.3.4-9a Install advanced treatment facilities (DCWWTP Master Plan EIR Mitigation Measure 7-2).

4.3.4-9b Institute metals source controls/pre-treatment (DCWWTP Master Plan EIR Mitigation Measure 7-3).

4.3.4-9c Install cooling towers if necessary (DCWWTP Master Plan EIR Mitigation Measure 7-4).

Biological Resources

4.4-1a The following criteria shall be applied in accordance with the Mitigation Strategy to the conversion of open space, including cultivated agricultural land, to urban uses within the Specific Plan area. This measure shall not apply to the Special Planning Area (SPA) where no urban development is proposed:

Open Space/Agricultural Land Mitigation: One acre of open space will be preserved within Placer County for each acre of open space impacted within the Specific Plan area. This is to be accomplished through the approval and implementation of a series of Open Space Mitigation and Management Plans that address the management of a specific property to be preserved for mitigation of lost open space, agricultural land, and habitat (each, a "mitigation property" or "preserve site" and collectively, "mitigation lands" or "preserve lands"). Open Space Mitigation and Management Plans for individual preserve sites shall accompany each proposed development project, or group of projects, within the Specific Plan area. For the purposes of assessing impacts associated with a specific development project, "open space" impacts shall include all land proposed to be developed for urban uses. For purposes of mitigation for the specific development project, the term "open space" shall include any and all undeveloped land proposed to be preserved or otherwise required by any governmental agency to be preserved for any reason, specifically including all lands preserved for habitat or agricultural mitigation as set forth below and lands in agricultural use. No additional agricultural mitigation is required beyond the 1:1 open space requirement noted above, as long as a substantial portion, as determined by the Planning Director, in consultation with the County Agricultural Commissioner, of the mitigation lands acquired are: (1) in agricultural production, or have the potential to support agriculture, (2) are undeveloped and have an NRCS soils classification of the same or greater value than lands being affected within the Specific Plan property at issue, , or (3) are undeveloped and have the same or higher value CDC categorization than lands being affected within the Specific Plan property at issue. In-kind mitigation is not required for agricultural land developed within the Specific Plan area.

Initial Core Preserve Area: To address the fragmentation of open space in the Specific Plan area, the applicant shall establish a core preserve area of approximately one thousand acres, or minimum 200-acre areas will be added to an existing preserve that is at least one thousand acres. This initial core preserve area shall be established with approval of the first final map (excluding large-lot final maps that do not result in any disturbance of existing natural conditions), and shall include acreage to mitigate loss due to backbone infrastructure installation. The establishment of a core preserve area will partially mitigate for fragmentation of the Specific Plan area and loss of agricultural land and biological function and value associated with the installation of infrastructure and site development. To the extent feasible and appropriate, the core preserve shall be surrounded by lands designated as Agriculture within the Placer County General Plan. Preserve lands shall be suitable for mitigation of project impacts and shall be evaluated for this purpose by Placer County. Each proposal for a preserve project pursuant to the Specific Plan shall provide sufficient detail to allow for adequate County review of site characteristics, potential values and the long-term integrity of each proposed mitigation site. The County shall also consider the terms of any existing or proposed conservation easements on properties within the proposed preserve areas. Proposals for preserve lands to be encumbered with easements or purchased in fee shall include adaptive management strategies allowing for appropriate management modifications and access for monitoring.

Subsequent Projects: Subsequent Specific Plan projects (not including backbone infrastructure) shall mitigate through the establishment of preserve areas that, to the extent feasible and appropriate, are located adjacent to the core preserve or are associated with other existing preserve sites currently under easement or fee title for purposes of wildlife conservation and are surrounded by lands designated as Agriculture within the Placer

County General Plan or are in areas deemed acceptable by the County Board of Supervisors. Future preserve sites, if not contiguous to an existing designated open space area or a preserve 200 acres or greater in size, shall be a minimum of 200 acres or greater in size. After the establishment of the core preserve area, such land dedication need not include more land than is necessary to mitigate for open space and habitat impacts associated with entitlements being sought at that time. In determining whether it is feasible and appropriate to require that mitigation lands for subsequent Specific Plan projects be consistent with the criteria stated above, the County shall take into consideration both the overall objectives of the proposed PCCP and the realities of the agricultural real estate market in south Placer County. Habitat and open space areas available in the real estate market for purchase, either in fee or through conservation easements, do not necessarily occur in contiguous pieces. Existing high quality habitat and open space areas themselves are not always contiguous with each other, as they have often been separated and disrupted by long-standing agricultural practices or roads and other structures or landscape features.

4.4-1b Habitat Mitigation: Applicants for projects developed under the Specific Plan shall obtain applicable permits from the state and federal resource agencies, as needed. Land preserved to meet the habitat mitigation requirements of this Mitigation Measure and/or any additional habitat mitigation that is required by any governmental agency for any development project undertaken pursuant to the Specific Plan shall be counted towards the required "open space" mitigation set forth in Mitigation Measure 4.4-1, provided that the mitigation land is within Placer County. Preservation of mitigation land may occur through a permanent conservation easement, fee title, or purchase of mitigation credits satisfactory to Placer County.

Applicants for projects developed under the Specific Plan are required to satisfy the Placer County General Plan "no net loss of wetlands" standard in connection with proposed development that impacts aquatic resources. To satisfy the "no net loss of wetlands" standard, the applicants shall include a preservation component and a variety of wetland enhancement, restoration and creation activities that are to be conducted on lands preserved. The measures that follow describe ratios to be achieved to provide for preservation, restoration, creation, and enhancement to offset impacts to wetland (nonvernal pool) impacts, vernal pool impacts, and riparian impacts as shown in Table 4.4- 12.

Wetland (Non-Vernal Pool) Impacts: Impacts to "waters of the United States" (not including vernal pools) and other non-jurisdictional wetlands identified in the Placer County General Plan will be mitigated to provide "no net loss" through avoidance, minimization and/or compensatory mitigation techniques. Buffers of such off-site mitigation lands will be consistent with requirements of the PCCP as ultimately adopted by the County to the extent that the PCCP is adopted prior to the acquisition of preserve sites and to the extent feasible. Both the wetland and upland components of all wetland mitigation lands shall be credited towards open space mitigation requirements and uplands shall count as wetland buffers when appropriate. To minimize indirect effects to the preserve site, the County may impose measures such as controlling and redirecting runoff from adjoining properties or the construction or removal of fences.

Vernal Pool Habitat Impacts: Impacts to vernal pool (fairy shrimp and tadpole shrimp) habitat will be mitigated through preservation or restoration of acreage based on each acre directly impacted (see Table 4.4-12 for mitigation ratios). In this context, restoration is intended to be construction of vernal pools at densities within the range of historical levels as identified on 1937 aerial photos, or other valid historical evidence, for the proposed preserve

site to be restored. Required ratios are set forth in Table 4.4- 12. Buffers of such off-site mitigation lands will be consistent with requirements of the PCCP as ultimately adopted by the County to the extent that the PCCP is adopted prior to the acquisition of preserve sites, and to the extent feasible. Both the wetland and upland components of all wetland mitigation lands shall be credited towards open space mitigation requirements and uplands shall count as wetland buffers when appropriate. To minimize indirect effects to the preserve site, the County may impose measures such as controlling and redirecting runoff from adjoining properties or the construction or removal of fences.

The re-creation/restoration of pools must include adequate upland areas to maintain the value of the vernal pools. Additional acreage may be required to address impacts to non-vernal pool type wetlands that function as habitat for federally-listed species, and indirect impacts to similar avoided habitat. The total required acreage shall be determined by the County, except for determinations regarding purely federal obligations, which shall be made by federal agencies working with project applicants. As an alternative, once the Placer County Conservation Plan (PCCP) is adopted, project applicants may participate in the PCCP, which is intended to provide for adequate mitigation of vernal pool habitat.

Riparian Impacts: For each riparian tree removed, one 15-gallon tree, one deepot-40 seedling for each inch, and three 1-gallon shrubs will be planted within existing riparian or improved drainage corridors in the Specific Plan area.

Oak Tree Impacts: For each oak tree greater than six inches DBH that is removed, one 15-gallon planting, one deepot-40 seedling for each inch removed and three 1-gallon shrubs will be planted. De minimus impacts to areas containing oak trees, not including actual tree removal, associated with passive trail use shall not be considered an impact requiring mitigation.

Swainson's Hawk Foraging Impacts: Swainson's hawk foraging habitat shall be mitigated according to California Department of Fish and Game Guidelines: one acre for each acre lost within one mile of a nest, 0.75 acre for each acre lost within one to five miles of a nest, and 0.5 acre lost within five to ten miles of a nest, unless otherwise addressed through the PCCP. Additionally, the applicant shall be required to obtain a CESA take permit for any nest tree that may be removed as part of any proposed construction under the Specific Plan. Additional mitigation measures for the loss of active nest trees shall include planting of suitable nest trees at a 15:1 ratio on suitable foraging habitat areas within west Placer County.

4.4-1c Out-of-County Habitat Mitigation: Out-of-County habitat mitigation shall only be used when, as determined by the County, such lands are of equal or of higher value than those in the Specific Plan area.

4.4-1d "Out-of-Kind" Habitat Mitigation: "Out-of-kind" habitat mitigation shall only be used as mitigation for loss of a particular habitat type after approval by the County. "Out-of-kind" mitigation may be appropriate where the mitigation lands include areas with a mosaic of riparian habitat, creek corridors, flood plains and upland areas, where an assemblage of vernal pool complexes in fallow or grazed lands is in close proximity to such riparian habitat, or where the County deems that the "out-of-kind" mitigation lands contain other unique or desirable characteristics that provide a comparable level of open space and habitat mitigation. Any "out-of-kind" mitigation that is allowed by the County shall be described in an approved Open Space Mitigation and Management Plan.

4.4-1e Funding for Mitigation Land Acquisition (or Easement Establishment) and Monitoring and Maintenance: Funding for mitigation land acquisition (or easement establishment) and monitoring and maintenance may be financed, if acceptable to the County, through a Mello-Roos CFD or other funding mechanism similar to the funding mechanism used to fund Specific Plan infrastructure construction. The specific funding plan, including a method for preserve acquisitions and for long-term preserve management, shall be described in an approved Open Space Mitigation and Management Plan.

4.4-1f Excess Open Space and/or Habitat: Excess open space and/or habitat (after taking into account habitat mitigation requirements stated above) within mitigation lands acquired for the mitigation of impacts associated with an approved development project within the Specific Plan area may be used to mitigate for subsequent development projects within the Specific Plan area. Transfer of excess open space and habitat shall be accomplished through a private cost sharing agreement.

4.4-1g Phasing of Mitigation: Implementation of Open Space Mitigation and Management Plans shall occur commensurate with each development project or set of projects developed under the Specific Plan. In order to ensure that Open Space Mitigation and Management Plans are fully implemented, the applicant shall demonstrate compliance to the County prior to improvement plan approval, recordation of a final subdivision map, (not including a large-lot final map that results in no disturbance of any existing natural condition), or as a condition of issuance of a project-level discretionary approval for non-residential land uses that do not require a tentative subdivision map, as well as prior to development of any off-site infrastructure project associated with the Specific Plan. Each Open Space Mitigation and Management Plan shall identify the specific mitigation lands that will be necessary to fully mitigate impacts to habitat and special status species, and shall demonstrate control of said property by option, fee title, permanent conservation easement or mitigation credits to the satisfaction of the County and state and federal agencies to the extent required by applicable state or federal permits. The Plan shall also identify the necessary funding mechanism for the long-term maintenance and management of the mitigation lands or acquisition of required habitat credits shall be identified in the Open Space Mitigation and Management Plans, and a specific maintenance and management plan shall be included for perpetual conservation of the mitigation lands, along with provisions for adaptive management.

4.4-1h Dedication of Mitigation Lands for Placer Vineyards Specific Plan Projects: The mitigation lands necessary to mitigate for the impacts of developing a project within the Specific Plan area, as well as developing an off-site infrastructure project associated with the Specific Plan, shall be dedicated to the County (or other County approved entity) prior to approval of improvement plans, recordation of the first final map (excluding large-lot final subdivision maps that do not result in any disturbance of existing natural condition), or as a condition of issuance of a project-level discretionary approval for non-residential land uses that do not require a tentative subdivision map. The administering entity shall hold, as grantee, all conservation easements acquired for the mitigation lands or fee title for those lands acquired in fee.

4.4-1i Placer County Conservation Plan: As previously described, at the time of the release of this Revised Draft EIR, Placer County was preparing a Natural Community Conservation Plan, a Habitat Conservation Plan Programmatic Section 404/401 Compliance and a Master Streambed Alteration Agreement to comply with the state and federal Endangered Species Acts. Collectively, this planning effort is known as the Placer County Conservation Plan

(PCCP). Once the approved PCCP is in place, open space and biological resource mitigation measures shall be implemented in such a manner as to be consistent with the PCCP.

4.4-1j Preserves for Agricultural or Open Space Mitigation Only: As an alternative to the establishment of preserves that mitigate for one or more biological resources in addition to mitigating for lost open space and agricultural lands, applicants for individual projects within the Specific Plan area may instead establish preserves intended only to mitigate for loss of open space or agricultural lands without a complementary wetland, Swainson's hawk or other significant biological mitigation purpose. In such cases, the preserve may occur in any portion of western Placer County so long as the preserve is within an area designated for agricultural or open space use on the Placer County General Plan. Such preserves are only required to meet the minimum 80 acre parcel size requirement for parcels in the Agricultural/Open Space land use category of the General Plan. In lieu of the above described measures, the Specific Plan or subsequent phases of the Specific Plan may fulfill mitigation requirements by compliance with the terms of the adopted PCCP. Such compliance, as determined by Placer County, shall constitute sufficient mitigation that will obviate the need to comply with this mitigation measure, to the extent that an affected agricultural and/or biological resource is addressed in the PCCP.

4.4-1k As a component of any Open Space Mitigation and Management Plan involving the enhancement, creation, or restoration of wetlands, including vernal pools, the applicant shall submit a wetland mitigation strategy that includes all of the following components:

- The location of the proposed wetland habitat restoration/creation site(s) and a detailed map showing the acreage, distribution, and location of the proposed wetland habitat restoration/creation site(s) and a detailed map showing the acreage, distribution, and type of wetlands to be created to ensure no net loss in wetland habitat acreage, values, and functions. The compensation wetlands shall be designed, at minimum, to meet or exceed the hydrophytic conditions and operating functions of the existing wetlands proposed for impact.
- A monitoring plan to assess whether the compensation wetlands are functioning as intended. Specific standards for assessing the performance of hydrologic, floral, and faunal parameters shall be proposed to determine success of the created wetlands. The monitoring plan shall specify the corrective measures/modifications to be implemented in the event that monitoring indicates that the performance standards are not being met.
- A maintenance plan for the wetland preservation/mitigation areas describing the measures to be implemented to assure that they are maintained as wetland habitat in perpetuity.
- During active construction periods, the installation of fencing around all existing wetlands that are within fifty feet of any haul route, spoil zone, stockpile zone, creation zone, or other construction area. The fencing shall be of high visibility material and limit access to the project site. Unless construction of specific structures requires it, fencing shall be placed no closer than 10 feet to the delineated, verified perimeter of existing wetlands.
- A qualified biological resources monitor, approved by the County, who shall monitor the sites daily to ensure compliance with identified mitigation for the duration of all the proposed activities.

- A survey of the wetland habitat restoration/creation site prepared by a qualified biologist no more than 30 days prior to the onset of construction to determine the presence or absence of nesting site for raptors or any federally-listed or state-listed endangered or threatened birds, unless it is determined that construction will occur outside of the breeding season for all species that are likely to occur on site or have been observed to be present. If active nesting sites are observed to be present, all state and federal guidelines pertaining to active nesting sites shall be strictly adhered to in consultation with a qualified biologist.
- Provision by the applicant of full access to the wetland habitat restoration/creation site to the County for the monitoring of construction activities and mitigation compliance. Access shall be granted during all construction activities and the County monitor may issue stop work orders if mitigation non-compliance is identified.
- Specified measures for the reuse or disposal of excavated material suitable for use at the project site. The plan shall minimize the elapsed time between excavation and reuse and should provide adequate stockpile coverage and protection from wind and water erosion during the entire storage period. If excavated material is unsuitable for reuse at the project site, the plan shall include specific information regarding the eventual reuse or disposal site, transportation method(s) for hauling material to such a site, disposal reuse management strategies, and a schedule for accomplishing reuse or disposal.
- A spill prevention and response plan prepared to the satisfaction of the County.
- A strategy for the revegetation of all disturbed areas, using the following methods: hydroseeding, drill seeding, or spreading of upland seed bearing soil. The method of revegetation shall be approved by a qualified wetland specialist and shall be prepared to the satisfaction of the County.
- The use of non-toxic soil stabilizers according to manufacturer's specifications to stabilize inactive construction area during the rainy season (October through April).
- Idling time restrictions for all construction vehicles of a maximum of 10 minutes. Additionally, the County may reduce or curtail construction during high ambient pollutant concentrations, including but not limited to, ceasing construction during peak-hour vehicular traffic on adjacent or nearby roadways. Additionally, all land clearing, grading, earth moving or excavation activities shall be suspended when winds exceed 20 mph.
- The covering of all inactive storage/stock piles.
- The covering, or the maintenance of two feet of freeboard, of all trucks hauling dirt, sand, soil, or other loose materials.
- An archaeologist and (if available) a representative of the United Auburn Indian Community of the Auburn Rancheria shall participate in the preconstruction meeting(s) to inform the participants of the sensitivity and location of any California Register-eligible sites in the vicinity of the grading or construction (Mitigation Measure 4.6-2e).
- In the event of the accidental discovery or recognition of human remains, there shall be no further grading, excavation or disturbance of the site or any nearby area reasonably expected to overlie adjacent human remains, until compliance with the provisions of

Section 15064.5(e)(1) and (2) of the CEQA Guidelines has occurred (Mitigation Measure 4.6-2a).

- If any artifacts or other indications of cultural resources 45 years old or older are found once ground-disturbing activities are underway, the find shall be immediately evaluated by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available, as provided in Section 15064.5 of the CEQA Guidelines. Work may continue on other parts of the site while historical or unique archaeological resource mitigation takes place (Mitigation Measure 4.6-2c).

4.4-2 Implement Mitigation Measure 4.4-1 as it pertains to vernal pools. Additional steps shall be taken as may be required through the state and federal permitting process for properties requiring more detailed resource identification prior to development, including: wetlands delineated and submitted to the USACE, habitat types mapped, and special-status species determined to be or potentially be within the Specific Plan area with protocol surveys conducted if required.

4.4-3 Prior to approval of grading/engineering plans for any property within the Specific Plan area, a focused survey for elderberry shrubs shall be conducted to determine the presence/absence of the shrubs. The survey shall be completed by a qualified biologist anytime throughout the year. If elderberry shrubs are found, locations of these occurrences shall be mapped. If these resources can be avoided, no further studies are required. However, if projects within the Plan area will likely adversely affect these shrubs, then a detailed mitigation/conservation plan that includes long-term strategies to ensure no net loss of VELB habitat shall be developed.

The replacement of elderberry shrubs required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for elderberry shrubs and VELB.

4.4-4 Construction shall be designed to avoid impacts to potential habitat for western pond turtle, if feasible. If construction is required in areas of potential habitat, then a focused survey for this species shall be conducted prior to approval of engineering plans. The survey is required to determine the presence or absence of this species on the properties surveyed. If pond turtles are found on the properties surveyed, locations of these occurrences shall be mapped.

A detailed mitigation/conservation plan that provides for "no net loss" of individuals of the species or its habitat shall be developed upon confirming the presence of this species on the properties surveyed. If this species is not found on the properties surveyed, no further studies are necessary.

The replacement of western pond turtle habitat required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for western pond turtle.

4.4-5 When construction is proposed during the burrowing owl breeding season (April-September), a focused survey for burrows shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify any active burrows. If active nests are found, no construction activities shall take place within five hundred feet of the nest until the young have fledged. Burrows that must be removed as a

result of Specific Plan implementation shall be removed during the non-breeding season (October to March). If no active nests are found during the focused survey, no further mitigation will be required.

If burrows are removed as a result of implementation and there is suitable habitat onsite, on-site passive relocation shall be required. Owls will be encouraged to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 meters from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls. Relocation of owls should only be implemented during the non-breeding season. On-site habitat shall be preserved in a conservation easement and managed to promote burrowing owl use of the site.

If there is not suitable habitat on-site, off-site passive relocation shall be required. Offsite habitat must provide suitable burrowing owl habitat. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation shall use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.6 (9.75) acres per pair or single bird.
2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.
3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

The replacement of burrowing owl habitat required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for burrowing owl.

4.4-6 Implement Mitigation Measure 4.4-1 as it pertains to Swainson's hawk foraging habitat and nesting trees.

4.4-7 Prior to construction activities, a focused survey for non-raptor special status bird nests and/or nesting colonies shall be conducted by a qualified biologist within 30 days prior to the beginning of construction activities in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within five hundred feet of the nest and/or nesting colony until the young have fledged. The biologist shall consult with the CDFG, particularly with respect to vegetation removal as a result of project construction. If no active nests and/or nesting colonies are found during the focused survey, no further mitigation will be required.

This measure would ensure that nests and/or nesting colonies are avoided when active, so that eggs and young would be protected. Once the young have fledged their nests, the nests can be removed without harm to the birds.

4.4-8 When construction is proposed during the raptor breeding season (March to early September), a focused survey for raptor nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on-site. If active nests are found, no construction activities shall take place within five hundred feet of the nest until the young have fledged. Trees containing nests shall be removed during the non-breeding season (late September to March). If no active nests are found during the focused survey, no further mitigation will be required. This measure will

ensure that active nests are not moved or substantially disturbed during the breeding season, so that raptor eggs and young are not destroyed or abandoned as a result of construction.

4.4-9 Prior to construction, a qualified biologist shall survey any affected structures for evidence of bat roosts (e.g., bat guano). If roosts are found, they shall be removed in April, September or October in order to avoid the hibernation and maternity seasons. Appropriate exclusion methods will be used, as needed, during habitat removal.

The initial assessment will involve looking for bats or bat signs such as guano, urine staining, and culled food parts, and will identify those specific locations that represent potential habitat (i.e., which specific buildings, trees, bridges could support roosting bats). If no potential habitat is identified or no potential habitat will be affected (i.e., removed), no further measures are required.

Bat habitat can be removed with minimal impact to the resident bat population if it is done outside of the hibernation season (November through March) and outside of the maternity season (May through August). During the removal period, a roost exit survey shall be conducted prior to habitat removal. If bats are detected, standard humane exclusion methods shall be implemented (e.g., placing plastic over roost entrance areas such that bats can exit the roost but not return). Exclusion shall be conducted for two nights prior to habitat removal and habitat removal shall occur immediately following implementation of these exclusion measures. If there is a delay, then the exclusion measures shall be repeated. During the maternity season (May through August), habitat removal may occur following a roost exit survey that confirms no bats are present; however, if bats are detected they may not be excluded until the end of the maternity season. During the hibernation season (November through March), bats do not exit the roost, so exit surveys cannot be used to assess presence and removal shall be delayed to the end of this time period.

If bats must be excluded, the project proponent shall work with a qualified biologist to determine if any additional steps (such as installation of alternative roost habitat in the form of bat boxes) are appropriate for the particular habitat. Determination of these additional measures will depend on the species present and their specific ecological preferences/requirements. Other steps could include improvement of other avoided bat habitat or design of new project elements such as bridges to be "bat-friendly."

4.4-10a Implement Mitigation Measure 4.4-1 as it pertains to oak trees.

4.4-10b Trees that are not planned for removal shall be preserved and protected. These oak trees shall be preserved and avoided by implementation of the following measures:

- Trees that are not proposed for removal and that are within two hundred feet of grading activities shall be protectively fenced five feet beyond the dripline and root zone of each oak tree (as determined by a certified arborist). This fence, which is meant to prevent activities that result in soil compaction beneath the canopies or over the root zone, shall be maintained until all construction activities are completed. No vehicles, construction equipment, mobile offices, or materials shall be placed within this fenced area.
- Grade changes shall be minimized to the extent feasible within or adjacent to the drip line of existing trees. No soil surface removal greater than one foot in depth shall occur within the drip lines of oak trees to be preserved. No cuts shall occur within five feet of their trunks. No earthen fill greater than one foot deep shall be placed within the drip lines of preserved oak trees, or within five feet of their trunks.

- Paving shall not be placed in the drip lines of oak trees to be preserved.
- Underground utility line trenching shall be not be placed within the drip lines of oak trees to be preserved. If it is absolutely necessary to install underground utilities within the drip lines of oak trees, the trench shall either be bored or drilled, but not within five feet of the trunk.
- For trees that will be removed, the project applicant shall submit a tree survey map of oaks to be removed or disturbed during project construction. Within these impact areas, an inventory of the location, number and health of oaks shall be prepared by a certified arborist. A certified arborist shall also prepare a monitoring and management plan for each project disturbing or removing oak trees. The plan shall address planting techniques, proposed mitigation sites, monitoring requirements, management recommendations, and minimization and avoidance measures.
- Annual monitoring shall be included to ensure that an 80% survival rate is achieved over a five-year period. During monitoring, the following information shall be evaluated: average tree height, percent canopy cover, and percent survival. An oak tree mitigation and monitoring plan shall be submitted that includes a description of irrigation methods that will be used to ensure that saplings survive the first several years of growth. During the revegetation process, tree survival shall be maximized by using gopher cages, deer screens, regular maintenance, and replanting as needed. Monitoring reports shall be submitted to Placer County on an annual basis.

4.4-11a Since all potential jurisdictional waters of the U.S. will not be avoided in the Specific Plan design, the wetland delineation shall be finalized and the results shall be mapped and submitted to the Corps for verification through the section 404 permit process. Completion of the delineation will ensure precise acreage of various wetland types occurring in within properties surveyed.

4.4-11b Implement Mitigation Measure 4.4-1 as it pertains to non-vernal pool wetlands. For every acre of non-vernal pool wetland (jurisdictional or non-jurisdictional) lost directly to development, Mitigation Measure 4.4-1 requires replacement, re-creation, or restoration of the appropriate amount of acreage necessary to meet the no net loss standard. Assuming that the project will result in the direct loss of 29.7 acres of nonvernal pool complex habitat-type wetlands, Mitigation Measure 4.4-1 would require the preservation and/or replacement, re-creation or restoration of similar wetlands. Mitigation acreage amounts are reflected in Table 4.4-12 based on typical mitigation bank ratios. The total required acreage shall be determined by the County.

Additional steps shall be taken for properties that require more detailed resource identification prior to development, including: wetlands delineated and submitted to the USACE, habitat types mapped, and special-status species determined to be or potentially be within the Specific Plan area with protocol surveys conducted if required to the extent that development is proposed on these properties that may be subject to 404 permit and FESA requirements.

4.4-12a Prior to the issuance of a grading permit, a Streambed Alteration Agreement shall be obtained from CDFG, pursuant to Section 1600 et seq. of the California Fish and Game Code, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of the stream. If required, the project applicant shall coordinate with

CDFG in developing appropriate mitigation, and shall abide by the conditions of any executed agreements. All stream crossings shall be performed using a "jack and bore" construction technique, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction shall be included in all related construction contracts.

4.4-12b Implement Mitigation Measure 4.4-1 as it pertains to riparian habitat. Mitigation Measure 4.4-1 requires replacement of all riparian trees removed to accommodate development. New trees and shrubs must be planted within existing riparian areas or improved drainage corridors. The replacement ratios exceed 1:1 in order to ensure that over the long-term the value of new riparian habitat equals or exceeds the value of the habitat that was lost. As an alternative, once the Placer County Conservation Plan is adopted, project applicants may participate in the PCCP, to the extent that it provided adequate mitigation for impacts on riparian areas.

Additional steps shall be taken for properties that require more detailed resource identification prior to development, including: wetlands delineated and submitted to the USACE, habitat types mapped, and special-status species determined to be or potentially be within the Plan area with protocol surveys conducted if required.

4.4-13 If construction activities are proposed during the Loggerhead shrike breeding season (March to July), a focused survey for nesting pairs shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within five hundred feet of the nesting colony until the young have fledged. Vegetation that must be removed as a result of construction shall be removed during the non-breeding season (March to July). If no active nests are found during the focused survey, no further mitigation will be required.

This measure would ensure that Loggerhead shrike nests are avoided when active, so that eggs and young would be protected. Once the birds have fledged, their nests can be removed without harm to the birds.

4.4-15 Installation of infrastructure within off-site infrastructure areas shall be designed to avoid impacts to potential special-status plant species habitat, if feasible. If special-status plant habitat cannot be avoided, then a mitigation/conservation plan shall be prepared and implemented. The plan shall include measures to ensure "no net loss" of special-status plant species habitat.

If installation of infrastructure is required in areas of potential habitat, then a focused rare plant survey for these species shall be conducted prior to approval of grading/engineering plans. The survey is required to determine the presence or absence of these species in these areas. The survey shall be completed by a qualified botanist during the appropriate peak blooming period for these species. If special-status plants are found, locations of these occurrences shall be mapped. A detailed mitigation/conservation plan that includes long-term strategies for the conservation of the species shall be developed upon confirming the presence of these species. The plan shall provide for preservation and restoration at ratios that would ensure "no net loss" of the affected plant habitat. If these species are not found, no further studies will be necessary.

The mitigation acreage required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes vernal pools that provide equal or greater habitat value for the affected special-status species plants.

Avoidance and/or loss of habitat for special-status plants outside of Placer County would be regulated by the USACE, CDFG, Sutter County, Sacramento County, and/or the City of Roseville, depending on the location of such plants and whether they are federal or state listed species. These jurisdictions can and should implement similar measures to ensure "no net loss" of special-status plant habitat.

4.4-16 Installation of off-site infrastructure shall be designed to avoid vernal pools, if feasible. If pools will be filled or degraded by off-site infrastructure areas, implement Mitigation Measure 4.4-2.

Under this mitigation, vernal pools in Placer County will need to be delineated if they fall within the off-site infrastructure areas and cannot be avoided. Consideration shall also be given to degradation of vernal pools that would be avoided, but that could be degraded due to construction and other activities (due to, for example, contaminants in runoff if a road is placed over the utility line). For vernal pools that would be filled or adversely affected, preservation, re-creation, replacement and/or restoration would be required at ratios that would ensure there would be "no net loss" of vernal pool habitat. See Mitigation Measure 4.4-2 for a more detailed discussion of the specific ratios.

The mitigation acreage required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes vernal pools similar in type and equal or greater in habitat value to those pools lost to the offsite infrastructure areas.

Avoidance and/or fill of vernal pools outside of Placer County will be regulated by the USACE, Sutter County, Sacramento County, and/or the City of Roseville, depending on the location and type of vernal pools that would be affected. Both federal policy (for jurisdictional wetlands), Sacramento County policy and Sutter County policy all call for "no net loss" of wetlands. These jurisdictions can and should implement measures similar to those provided in Mitigation Measure 4.4-1 to ensure "no net loss" of vernal pools.

4.4-17 Prior to approval of grading/engineering plans, a focused survey for elderberry shrubs shall be conducted to determine the presence/absence of the shrubs. The survey shall be completed by a qualified biologist anytime throughout the year. If elderberry shrubs are found, locations of these occurrences shall be mapped. If these resources can be avoided, no further studies are required. However, if projects within the off-site infrastructure areas will likely adversely affect these shrubs, then a detailed mitigation/conservation plan that includes long-term strategies to ensure "no net loss" of VELB habitat shall be developed.

The replacement of elderberry shrubs required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for elderberry shrubs and VELB.

This measure would ensure "no net loss" of VELB habitat within Placer County. If elderberry shrubs are present in off-site infrastructure areas in Sutter County, Sacramento County, and/or the City of Roseville, these jurisdictions could also require measures to ensure "no net loss" of VELB habitat.

4.4-18 Implement Mitigation Measure 4.4-4, which requires that construction be designed to avoid impacts to potential habitat for western pond turtle, if feasible. If installation is required in areas of potential habitat, then a focused survey for this species shall be conducted prior to approval of engineering plans. The survey is required to determine the presence or absence of this species in the off-site infrastructure areas. If pond turtles are found in the off-site infrastructure areas, locations of these occurrences shall be mapped.

A detailed mitigation/conservation plan that provides for "no net loss" of individuals of the species or its habitat shall be developed upon confirming the presence of this species in the off-site infrastructure areas. If this species is not found in the off-site infrastructure areas, no further studies are necessary.

The replacement of western pond turtle habitat, if necessary, could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for western pond turtle. If western pond turtle is present in off-site infrastructure areas in Sutter County, Sacramento County, and/or the City of Roseville, these jurisdictions could also require measures to ensure "no net loss" of its habitat.

4.4-19 Implement Mitigation Measure 4.4-5, which requires nesting surveys prior to construction, so if burrowing owls establish nests in the off-site infrastructure areas, they would be detected. This measure also prohibits construction activities within five hundred feet of a nest, so that nesting owls would not be disturbed. Once the young have fledged, the nests can be removed, because the owls would then establish nests in a new area. Therefore, with implementation of this measure, the impact on nesting burrowing owls would be less than significant. Similar measures could be implemented by Sutter County, Sacramento County, and/or the City of Roseville, if needed, to protect nesting burrowing owls.

4.4-21 If installation of infrastructure is proposed in areas where identified non-raptor special status bird species may occur, a focused survey for non-raptor special-status bird nests and/or nesting colonies shall be conducted by a qualified biologist within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify nests within the construction area. If active nests and/or nesting colonies are found, no construction activities shall take place within five hundred feet of the nest and/or nesting colony until the young have fledged and the biologist has consulted with the CDFG, particularly with respect to vegetation removal as a result of installation of project infrastructure. If no active nests are found during the focused survey, no further mitigation will be required. This measure would ensure that bird nests are avoided when active, so that eggs and young would be protected. Once the birds have left their nests, the nests can be removed without harm to the birds. Similar measures could be implemented by Sutter County, Sacramento County, and/or the City of Roseville, if needed, to protect nesting non-raptor special status bird species.

4.4-22 Implement Mitigation Measure 4.4-8, which requires nesting surveys prior to construction, so if raptor nests are present in the off-site infrastructure areas, they will be detected. This measure also prohibits construction activities within five hundred feet of a nest, so that nesting raptors will not be disturbed. Once the young have fledged, the nests can be removed, because the raptors would then establish nests in a new area. Therefore, with implementation of this measure, the impact on nesting raptors would be less than significant. Similar measures could be implemented by Sutter County, Sacramento County and/or the City of Roseville, if needed, to protect nesting raptors.

4.4-23 Installation of off-site infrastructure shall be designed to avoid impacts to potential habitat for California horned lizard, if feasible. If installation is required in areas of potential habitat, a focused survey for this species shall be conducted prior to approval of engineering plans. The survey is required to determine the presence or absence of this species in the off-site infrastructure areas. If horned lizards are found in the off-site infrastructure areas, locations of these occurrences shall be mapped.

A detailed mitigation/conservation plan that provides for "no net loss" of individuals of the species or its habitat shall be developed upon confirming the presence of this species in the off-site infrastructure areas. If this species is not found in the off-site infrastructure areas, no further studies are necessary.

This measure would protect the California horned lizard, if present, from harm. Surveys of proposed impact areas shall be conducted during the active season for the lizard (generally April to October). During the spring, lizards are typically active during midday. During summer, activity transitions to morning and late afternoon.

The replacement of habitat, if necessary, could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for the affected habitat. If California horned lizard is present in off-site infrastructure areas in Sutter County, Sacramento County and/or the City of Roseville, these jurisdictions could also require measures to ensure "no net loss" of its habitat.

4.4-24 Prior to construction, a qualified biologist shall survey any affected structures for evidence of bat roosts (e.g., bat guano). If roosts are found, they shall be removed in April, September or October in order to avoid the hibernation and maternity seasons. Appropriate exclusion methods will be used, as needed, during habitat removal.

The initial assessment will involve looking for bats or bat sign such as guano, urine staining, and culled food parts and will identify those specific locations that represent potential habitat (e.g., which specific buildings, trees, bridges could support roosting bats). If no potential habitat is identified or no potential habitat will be impacted (i.e., removed), no further measures are required.

Bat habitat can be removed with minimal impact to the resident bat population if it is done outside of the hibernation season (November through March) and outside of the maternity season (May through August). During the removal period, a roost exit survey shall be conducted prior to habitat removal. If bats are detected, standard humane exclusion methods shall be implemented (e.g., placing plastic over roost entrance areas such that bats can exit the roost but not return). Exclusion shall be conducted for two nights prior to habitat removal and habitat removal shall occur immediately following implementation of these exclusion measures. If there is a delay, then the exclusion measures shall be repeated. During the maternity season (May through August), habitat removal may occur following a roost exit survey that confirms no bats are present; however, if bats are detected they may not be excluded until the end of the maternity season. During the hibernation season (November through March), bats do not exit the roost, so exit surveys cannot be used to assess presence and removal shall be delayed to the end of this time period.

If bats must be excluded, the project proponent shall work with a qualified biologist to determine if any additional steps (such as installation of alternative roost habitat in the form of bat boxes) are appropriate for the particular habitat. Determination of these additional

measures will depend on the species present and their specific ecological preferences/requirements. Other steps could include improvement of other avoided bat habitat or design of new project elements such as bridges to be "bat-friendly." Similar measures to those described in this mitigation measure could be used by Sutter County, Sacramento County, and/or the City of Roseville.

4.4-25 Implement Mitigation Measures 4.4-10a and 4.4-10b. Mitigation Measure 4.4-10a requires implementation of Mitigation Measure 4.4-1 as it pertains to oak woodland communities and individual oak trees. The applicant is to provide a tree survey map of all trees that would be removed or disturbed during construction of the off-site infrastructure areas. These trees shall be replaced as specified in Mitigation Measure 4.4-1. Replacement trees shall be monitored annually to ensure that the new oaks and oak woodland are successful. Mitigation Measure 4.4-10b specifies measures to be taken to protect remaining trees from damage during construction. Similar measures could be implemented by Sutter County, Sacramento County, and/or the City of Roseville, if needed to protect oak woodland and individual trees.

4.4-26 Infrastructure installations shall be redesigned to avoid impacts to wetlands, and other waters of the U.S., if feasible. If wetlands cannot be feasibly avoided, implement Mitigation Measures 4.4-2, which requires delineation of all wetlands that could not be avoided. Mitigation Measures 4.4-2 and 4.4-11 require preservation, re-creation, replacement and/or restoration of vernal pools and other wetlands that would be filled due to construction of off-site infrastructure areas. Successful restoration of vernal pools and other wetlands under Mitigation Measures 4.4-2 and 4.4-11 would result in more wetland acreage than would be lost to development. Sutter County, Sacramento County and/or the City of Roseville could require similar measures to ensure "no net loss" of wetlands.

The mitigation acreage required by these measures could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes vernal pools similar in type and equal or greater in habitat value to those pools lost to the off-site infrastructure areas.

4.4-27 Implement Mitigation Measure 4.4-12, which requires a Streambed Alteration Agreement from CDFG whenever a road (bridge) or utility line would be constructed across a stream. The Agreement would include measures to protect the channel and bank of a stream from erosion and related effects of construction. The measure also requires that Mitigation Measure 4.4-1 be implemented as it pertains to riparian habitat. New trees and shrubs would be planted to replace those removed for development. The replacement ratios would exceed 1:1 in order to ensure that over the long-term the value of new riparian habitat equals or exceeds the value of the habitat that was lost. Any stream crossings proposed in Sutter County, Sacramento County, and/or the City of Roseville would also likely be required to obtain a Streambed Alteration Agreement.

4.4-28 All construction activity involving disturbance of habitat, shall be restricted to the period between May 1 and September 30. This is the active period for Giant Garter snake and direct mortality is lessened, because snakes are expected to actively move and avoid danger.

24-hours prior to construction activities, the project area shall be surveyed for Giant Garter snake. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined

that the snake will not be harmed. Any incidental take and any sightings shall be reported to the USFWS immediately.

Movement of heavy equipment shall be confined to existing roadways to minimize habitat disturbance.

Construction personnel shall (to the extent practical) receive USFWS-approved worker environmental awareness training. This training instructs workers to recognize Giant Garter snakes and their habitat(s), and what to do if a Giant Garter snake is encountered during construction activities.

No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic or rice habitat. Substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by the Wildlife Agencies.

Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat shall be completely dewatered, with no puddle water remaining, for at least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. Make sure dewatered habitat does not continue to support Giant Garter snake prey, which could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary.

Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided Giant Garter snake habitat within or adjacent to the project as Environmentally Sensitive Areas. This area shall be avoided by all construction personnel.

If a live Giant Garter snake is found during construction activities, immediately notify the USFWS and the project's manager. The manager shall do the following:

> <u>Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. A monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for Giant Garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a Giant Garter snake does not leave on its own within one working day, further consultation with USFWS is required.</u>

Fill or construction debris may be used by Giant Garter snake as an over-wintering site. Therefore, upon completion of construction activities, remove any temporary fill and construction debris. If this material is situated near undisturbed Giant Garter snake habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that Giant Garter snake are not using it as hibernaculae. Wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed.

4.4-29 If installation of infrastructure is proposed during the Loggerhead shrike breeding season (March to July), a focused survey for nesting pairs shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within five hundred feet of the nesting colony until the young have fledged. Vegetation that must be removed as a result of installation shall be removed during the non-breeding season (March to July). If no active nests are found during the focused survey, no further mitigation will be required.

This measure would ensure that Loggerhead shrike nests are avoided when active, so that eggs and young would be protected. Once the birds have left their nests, the nests can be removed without harm to the birds. Similar measures could be implemented by Sutter County, Sacramento County, and/or the City of Roseville, if needed, to protect nesting tricolored blackbirds.

4.4-30a Implement Mitigation Measures 4.4-12a and 4.4-12b.

4.4-30b A qualified fish biologist shall be present on-site during any dewatering activities at construction sites to minimize impacts to special-status species (i.e., prevent stranding of special-status species). Individual fish collected during dewatering shall be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

4.4-30c Chinook salmon and steelhead resources shall be protected from potential construction-related activities by adherence to a construction window, whereby construction activities would be precluded from October 15 through June 15. This window corresponds to the time when both adult and juvenile Chinook salmon and steelhead are expected to migrate through the area. Further measures to protect salmon resources include use of Best Management Practices (BMPs) to minimize and localize siltation and other water quality impacts and to provide for riparian restoration activities. Such BMPs may include the use of cofferdams and other structures during dewatering and construction activities. Water quality monitoring shall also be performed to ensure that state and federal water quality standards are met.

4.4-59 Implement Mitigation Measure 4.4-1 as well as Mitigation Measures 4.4-2, 4.4-4, 4.4-6, 4.4-10a, 4.4-11b, 4.4-11c, 4.4-12b, 4.4-14, 4.4-15, 4.4-17, 4.4-18, 4.4-19, 4.4-21, 4.4-22, 4.4-23, 4.4-24, 4.4-25, 4.4-26, 4.4-29, and 4.4-30.

Mitigation Measure 4.4-1 would reduce the magnitude of the Specific Plan contribution to the cumulative loss of biological habitat by requiring the off-site preservation of 3,520 acres of open space, most of which is likely to provide a mosaic of habitats similar to the Specific Plan area. The other measures identified above would further protect special-status plant and wildlife from harm by requiring appropriate habitat and/or nesting surveys, avoidance of habitat and/or nests, and compensation for loss of habitat. While individual members of special-status species would be protected from harm, and required off-site open space would not be developed, there would still be a net loss in land available for plant and wildlife habitat as a result of the Specific Plan. Therefore, this mitigation would reduce, but would not fully offset, the project's incremental contribution to the significant cumulative loss of biological habitat.

Geology, Soils, Minerals, and Paleontological Resources

4.5-1a New development within the Specific Plan area shall submit a geotechnical report prepared by a California Registered Civil or Geotechnical Engineer to the Department of Public Works for review prior to improvement plans approval. The report shall meet all relevant requirements of the most recently adopted version of the Uniform Building Code and make recommendations on the following:

- Road, pavement, and parking area design,
- Structural foundations, including retaining wall design (if applicable),
- Grading practices,

- Erosion/winterization,
- Special problems discovered on-site (i.e., groundwater, corrosiveness, expansive/unstable soils), and
- Slope stability.

If the geotechnical report indicates the presence of critically expansive or other soils problems which, if not corrected, would lead to structural defects, a certification of completion of the requirements of the report will be required for subdivisions and other entitlements, prior to issuance of building permits. The certification may be completed on a lot-by-lot basis, tract basis, or other defined project basis. This shall also be noted in the covenants, conditions and restrictions and on the information sheet filed with the final subdivision map(s). It shall be the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

4.5-1b For non-pad graded lots, prior to approval of improvement plans, a soil investigation of each lot in the subdivision produced by a California Registered Civil or Geotechnical Engineer shall be submitted to the Department of Public Works for review and approval (Sections 17953-17955 of the California Government Code). For pad-graded lots, prior to final acceptance of project improvements or consideration of early building permits, and after completion of pad grading for all lots, a soil investigation of each lot produced by a California Registered Civil or Geotechnical Engineer shall be submitted to the Department of Public Works for review and approval (Sections 17953-17955 of the Government Code).

The soil investigations shall include recommended corrective action to prevent structural damage to each proposed dwelling. In addition, any soil problems encountered on each specific lot, as well as the recommended corrective actions, shall be included in a Development Notebook.

4.5-4a New development within the Specific Plan area shall prepare and submit to the Department of Public Works a preliminary grading and erosion control (winterization)/ground instability plan prepared by a California Registered Civil Engineer. Erosion and ground instability mitigation measures shall include conformance to the Uniform Building Code and Placer County grading ordinances. The preliminary grading plan shall include methods to control soil erosion and ground instability.

4.5-4b A Notice of Intent (NOI) and supporting documents shall be submitted to the State Water Resources Control Board (SWRCB). A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared for inclusion with the construction plans and for regulation of construction activities. The SWPPP shall include Best Management Practices (BMPs) which address source reduction and sediment capture and retention. BMPs shall be developed in accordance with the California Stormwater Quality Association <u>Stormwater Best Management Practices Handbook for Construction and New Development/Redevelopment</u> (or other similar source).

Uncemented silty soils are prone to erosion. According to requirements, as set forth in Section 402 (p) of the Clean Water Act as amended in 1987, and as administered by the SWRCB, erosion control measures (appropriate Best Management Practices) shall be implemented during construction which conform to the National Pollutant Discharge Elimination System, Storm Drain Standards, and local standards, consistent with Best Management Practices contained in the California Stormwater Quality Association

Stormwater Best Management Practices Handbook for Construction and New Development/Redevelopment (or other similar source).

4.5-4c The applicant shall prepare and submit improvement plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the Department of Public Works for review and approval for each new development phase within the Specific Plan. The plans shall show all conditions for each phase, as well as pertinent topographical features both on/and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, that could be affected by planned construction, shall be shown in the plans. All landscaping and irrigation facilities within sight distance areas at intersections, shall be included in the improvement plans. The applicant shall pay plan check and inspection fees. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It shall be the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Design Review Committee review is required as a condition of approval for the project, said review process shall be completed prior to submittal of improvement plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the Department of Public Works prior to acceptance by the County of site improvements.

4.5-4d All proposed grading, drainage improvements, and vegetation and tree removal shall be shown on the improvement plans and all work shall conform to provisions if the Placer County Grading Ordinance (Ref. Article 15.48, formerly Chapter 29, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the improvement plans are approved and all temporary construction fencing has been installed and inspected by a member of the Design Review Committee. All cut/fill slopes shall be at 2:1 (horizontal:/vertical) unless a soils report supports a steeper slope and the Department of Public Works concurs with said recommendation.

The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project improvement plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization during project construction. Where soil stockpiling or borrow areas are to remain for more than one construction season, proper erosion control measures shall be applied as specified in the improvement plans/grading plans. Erosion control shall be provided where roadside drainage is off of the pavement, to the satisfaction of the Department of Public Works.

A letter of credit or cash deposit shall be submitted to the Department of Public Works in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to improvement plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the improvement plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the Design Review

Committee/Department of Public Works for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the Design Review Committee/Department of Public Works to make a determination of substantial conformance may serve as grounds for appropriate punitive action by the appropriate hearing body, including the revocation of a site-specific project approval in extreme circumstances. In determining what constitutes appropriate punitive action in this context, the hearing body shall be guided by the penalty options set forth in Article 15.48 and Article 17.62 of the Placer County Code.

4.5-4e Stockpiling and/or vehicle staging areas shall be identified prior to any discretionary entitlement and shown on improvement plans and located as far as practical from existing dwellings and protected resources in the area.

4.5-4f New development with ground disturbance exceeding one acre that is subject to construction stormwater quality permit requirements of the National Pollutant Discharge Elimination System (NPDES) program shall obtain such permit from the State Regional Water Quality Control Board (SRWQCB) and shall provide to the Department of Public Works evidence of a state-issued Waste Discharge Identification (WDID) number or filing of a Notice of Intent and fees prior to start of construction.

4.5-5a Restore ground surface and topography.

4.5-5b Require soil stockpiling and disposal standards.

4.5-5c Prepare erosion and sedimentation control plan.

4.5-5d Implement recommendations of geotechnical report.

4.5-5e For the SRWTP, consult Division of Oil and Gas records prior to excavation, for excavation depths greater than five feet below the surface.

Cultural Resources

4.6-1 Prior to any ground-disturbing activity within five hundred feet of historical resources and unique archaeological resources,, archaeological surface inspections shall be completed to determine if each respective site still exists and, if so, archaeological test excavations shall be conducted to the extent necessary to determine if further mitigation is necessary. If determined to be necessary, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the archaeological resources, shall be prepared by a qualified professional archaeologist and adopted by the County prior to any excavation. The data recovery plan shall be deposited with the California Historical Resources Regional Information Center.

4.6-2a In the event of the accidental discovery or recognition of any human remains, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains, until compliance with the provisions of Section 15064.5 (e)(1) and (2) of the CEQA Guidelines has occurred.

4.6-2b If any artifacts or other indications of cultural resources 45 years old or older are found once ground-disturbing activities are underway, the find shall be immediately evaluated by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available, as provided in Section

15064.5 of the CEQA Guidelines. Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place.

4.6-2c Prior to the issuance of any permits for construction, including demolition permits, for properties that have not been previously inspected by an archaeologist or previously inspected by an architectural historian, a qualified archaeologist and/or architectural historian, as appropriate, shall be retained to identify and evaluate any cultural resources, and determine if further mitigation, may be necessary, and recommend any such potential mitigation to the County for its consideration. The County will assess the feasibility of any proposed mitigation (e.g., avoidance of the historical resource) and impose the mitigation where feasible in light of Specific Plan policies and land use assumptions. The necessity of inspection by an architectural historian includes any buildings potentially eligible for the California Register of Historical Resources, but for which the identification and evaluation process (the filling out of Primary, Building and Location record forms distributed by the California Office of Historic Preservation) has not been completed.

4.6-2d An orange construction fencing shall be placed around the California Register-eligible sites located in open space, if construction, including trail and fire break building, is conducted within one hundred feet of the archaeological resource. Placement of the fencing must be done in consultation with an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric archaeology.

4.6-2e An archaeologist shall participate in the preconstruction meeting(s) to inform the participants of the sensitivity and location of any California Register-eligible sites in the vicinity of grading or construction.

4.6-2f Any California Register-eligible site located in the open space that will be within one hundred feet or closer to public access (e.g., road, trail or firebreak), public facility or private residence shall be enclosed with permanent fencing designed to help prevent trespass. Each enclosure shall be constructed with a locked gate. A sign at each enclosure shall explain site values, interpret site history (or prehistory), identify prohibited uses and warn of penalties for violations.

4.6-2g To help insure the long-term preservation of those California Register-eligible archaeological resources located in the open space, the CC&Rs shall include a clause that prohibits the collecting, digging or removal of any stone, artifact or other prehistoric or historic object from the open space.

4.6-2h If human remains are discovered, all work shall stop in the immediate vicinity of the find and the County Coroner must be notified, according to Section 7050.5 of the California Health and Safety Code. If the remains are Native American, the Coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains and any grave goods.

4.6-3a Should paleontological resources be identified at a particular site, the project manager shall cease operation until a qualified professional can provide an evaluation. Mitigation shall be conducted as follows: 1. Identify and evaluate paleontologic resource by intense field survey where impacts are considered high; 2. Assess effects on identified sites; 3. Consult with the institutional/academic paleontologists conducting research investigations within the geological formations that are slated to be impacted; 4. Obtain comments from the

researchers; 5. Comply with researchers' recommendations to address any significant adverse effects where determined by the County to be feasible pursuant to Mitigation Measure 4.6-3b.

4.6-3b In considering any suggested mitigation proposed by the consulting paleontologist, County Planning Department Staff shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, Specific Plan policies and land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

4.6-5 Prior to any ground disturbing or demolition work for intersection improvements, road widenings and utilities construction, an on-the-ground inspection shall be conducted of the areas outside existing public rights-of-way by a qualified archaeologist and/or architectural historian, as appropriate. Such inspections will at a minimum include a field inspection, the recording on forms distributed by the California Office of Historic Preservation of any cultural resources 45 years old or older, an assessment of eligibility for the California Register of Historical Resources and qualification as a "unique archaeological resource," and a technical report that follows California Office of Historic Preservation guidelines for contents and format. The report shall contain any feasible mitigation measures to be implemented by the applicant. In some cases, an updated records search by the appropriate information center of the California Historical Resources Information System may be necessary if the proposed routes change or if there is more than a year delay between the present study (2005) and said field inspection(s).

4.6-6 Placer County shall coordinate with Roseville Public Cemetery District to facilitate the reinterrment of any burials affected by the Watt Avenue road widening prior to any physical disturbance of Cemetery frontage. Project applicants shall fully compensate the Cemetery and County for any costs incurred during the grave site testing and reinterrment process. 4.6-10 If the Off-Site Gravity Sewer Alternative "A" is selected, then disturbance of the California Register-eligible segment of CA-PLA-946-H, the Sacramento Northern Railroad grade, shall be avoided by using jack and bore construction techniques under the railroad grade for placement of the sewer line.

4.6-13a Halt work if cultural resources are discovered. If concentrations of prehistoric or historic period cultural materials are encountered, all work in the vicinity of the find(s) should halt until a qualified archaeologist is retained, evaluates the material, and makes recommendations for further action.

4.6-13b Halt work if human remains are encountered. If human remains are encountered, all work should stop in the vicinity of the bone and the County Coroner should be notified immediately. The procedures outlined in the CEQA Guidelines Section 15064.5(e) should be followed, if human burials are judged to be Native American origin.

4.6-13c Should any cultural resources, such as structural features, unusual amounts of bone, shell, artifacts, human remains, or architectural remains be encountered during any development activities, work shall be suspended and the Department of Environmental Review and Assessment (DERA) shall be immediately notified. At that time, DERA shall coordinate any necessary investigation of the find with appropriate specialists as needed. The SRCSD shall be required to implement any mitigation deemed necessary by DERA for the protection of cultural resources. In the event of discovery of human remains, all work is to stop and the County Coroner shall be immediately notified pursuant to Section 5097.97 of the California

Public Resources Code and Section 70950.5 of the California Health and Safety Code. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

4.6-14 Prior to any ground disturbing or demolition work for intersection improvements, road widenings and utilities construction, an updated records search through the California Historical Resources Information System shall be performed and on-the-ground inspection will be conducted by a qualified archaeologist and/or architectural historian, as appropriate. Such inspections will at a minimum include a field inspection, the recording on forms distributed by the California Office of Historic Preservation of any cultural resources 45 years old or older, an assessment of eligibility for the California Register of Historical Resources and qualification as a "unique archaeological resource," and a technical report that follows California Office of Historic Preservation guidelines for contents and format. The report shall contain any feasible mitigation measures to be implemented by the applicant.

Traffic

4.7-1 Prepare and implement construction traffic management plans for on-site and off-site construction activities for all development projects, including coordination with appropriate agencies, and implement a community relations program during construction period. The purpose of the construction traffic management plan is to minimize adverse Level of Service or neighborhood traffic impacts during the various phases of construction.

4.7-2a Developers of property within the Placer Vineyards Specific Plan area shall be responsible for the project's fair share of all feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts, as identified in this traffic analysis, consistent with the policies and exceptions set forth in the Transportation and Circulation Element of the 1994 Placer County General Plan as amended. The project's contribution toward such improvements, which the County recognizes will not be sufficient to mitigate all transportation-related impacts to less than significant levels, may take any, or some combination, of the following forms:

1. Construction of roads and related facilities within and adjacent to the boundaries of the Specific Plan area, which may be subject to fee credits and/or reimbursement, coordinated by the County, from other fee-paying development projects with respect to roads or other facilities that would also serve fee-paying development projects other than Placer Vineyards;
2. Construction of roads and/or road improvements or other transportation facilities outside the boundaries of the Specific Plan area but within unincorporated Placer County, subject in some instances to future reimbursement, coordinated by the County, from other fee-paying development projects where the roads or improvements at issue would also serve fee-paying development projects other than Placer Vineyards;
3. The payment of impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation facilities to be built or improved within unincorporated Placer County, consistent with the County's CIP;
4. The payment of impact fees to the South Placer Regional Transportation Authority (SPRTA) in amounts that constitute the Project's fair share contribution to the construction of transportation facilities funded through fees collected by the SPRTA for Tier 1 and/or Tier 2 projects;

5. The payment of other adopted regional impact fees that would provide improvements to roadways, intersections and/or interchanges that are affected by multiple jurisdictions (e.g., Walerga/Fiddyment/Baseline);
6. The payment of impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation facilities and/or improvements within the City of Roseville, Sacramento County and/or Sutter County needed in whole or in part because of the Specific Plan, to be made available to the City of Roseville, Sacramento County, and/or Sutter County, if and when those jurisdictions and Placer County enter into an enforceable agreement consistent with Placer County General Plan Policy 3.A.15(c). At the time of issuance of building permits for individual development projects within the Specific Plan area, the County shall collect fair share fee payments for improvements or facilities addressed by its CIP as it exists at that time;
7. Developers of property within the Placer Vineyards Specific Plan area shall pay impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation facilities and/or improvements on federal or State highways or freeways needed in part because of the Specific Plan, to be made available to Caltrans if and when Caltrans and Placer County enter into an enforceable agreement consistent with State law and Placer County General Plan Policy 3.A.15; and
8. In pursuing a single agreement or multiple agreements with the City of Roseville, Sacramento County, Sutter County, and Caltrans, Placer County shall negotiate in good faith with these other jurisdictions to enter into fair and reasonable arrangements with the intention of achieving, within a reasonable time period after approval of the Placer Vineyards Specific Plan, commitments for the provision of adequate fair share mitigation payments from the Specific Plan for its out-of-jurisdiction traffic impacts and its impacts on federal and State freeways and highways.

4.7-2b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the widening of Walerga Road to four lanes from Baseline Road to PFE Road to provide LOS "A" (V/C 0.43).

4.7-3a Implement Mitigation Measure 4.7-2a.

4.7-3b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:

i. Construct a second through lane on the southbound approach, a right turn lane to the eastbound approach and construct a second left turn lane on both the eastbound and westbound approaches to improve the intersection of Fiddyment Road and Baseline Road to LOS "C" (V/C 0.80) in the p.m. peak hour.

ii. Convert the southbound right turn lane into a free right turn lane, to improve the intersection of Fiddyment Road and Baseline Road to LOS "D" (V/C 0.87) in the a.m. peak hour.

iii. Construct a second through lane on both the northbound and southbound approaches, to improve the intersection of Walerga Road and PFE Road to LOS "B" (V/C 0.66) in the a.m. peak hour and LOS "D" (V/C 0.80) in the p.m. peak.

4.7-4a Implement Mitigation Measure 4.7-2a.

4.7-4b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute fees toward the following improvements, which are part of the City of Roseville's 2020 CIP:

- A second through lane on the eastbound approach, to improve the intersection of Woodcreek Oaks Boulevard and Baseline Road to LOS "A" (V/C 0.57).
- A second left turn lane on both the northbound, southbound and westbound approaches, a third through lane to the northbound approach and fourth through lane to the southbound approach to improve the intersection of Foothills Boulevard and Baseline Road to LOS "C" (V/C 0.71).
- A second left turn lane on all of the approaches, a second through lane on both the northbound and southbound approaches, and a third through lane on the eastbound and westbound approaches to improve the intersection of Woodcreek Oaks Boulevard and Pleasant Grove Boulevard to LOS "A" (V/C 0.50).
- A second left turn lane on the westbound approach, a third left turn lane on the southbound approach, and second through lane on both the northbound and southbound approaches, to improve the intersection of Foothills Boulevard and Cirby Way to LOS "B" (V/C 0.70).
- Implement Mitigation Measure 4.7-3(b)(ii), which would result in LOS "C" (V/C 0.78) at the intersection of Fiddyment Road and Baseline Road using the Roseville methodology.

4.7-5a Implement Mitigation Measure 4.7-2a.

4.7-5b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:

1. Widen Watt Avenue to six lanes from the Placer County line to Elverta Road to provide LOS "D" (0.87).
2. Widen Watt Avenue to six lanes from Elverta Road to Antelope Road to provide LOS "C" (0.71).
3. Widen Watt Avenue to six lanes from Antelope Road to Elkhorn Boulevard to provide LOS "D" (0.90).
4. Widen Watt Avenue to six lanes from Elkhorn Boulevard to Don Julio Boulevard to provide LOS "D" (0.87).
5. Widen Elkhorn Boulevard to six lanes from Walerga Road to I-80 to provide LOS "E" (0.96)

4.7-6a Implement Mitigation Measure 4.7-2a.

4.7-6b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following intersection improvements in Sacramento County:

1. Install a traffic signal to improve the intersection of Elwyn Avenue and Elverta Road to LOS "C" (V/C 0.74) in the a.m. peak hour and LOS "D" (V/C 0.82) in the p.m. peak hour.
2. Install a traffic signal to improve the intersection of 16th Street and Elverta Road to LOS "E" (V/C 0.90) in the a.m. peak hour and LOS "D" (V/C 0.87) in the p.m. peak hour.

3. Construct a second exclusive left turn lane on the southbound approach to improve the intersection of Watt Avenue and Antelope Road to LOS "E" (V/C 0.93) in the p.m. peak hour.
4. Construct a second exclusive right turn lane on the westbound approach to improve the intersection of Walerga Road and Elkhorn Boulevard to LOS "D" (V/C 0.87) in the p.m. peak hour.
5. Construct a third northbound through lane to improve the intersection of Watt Avenue and Don Julio Boulevard to LOS "D" (V/C 0.87) in the p.m. peak hour.
6. Construct a third northbound through lane to improve the intersection of Watt Avenue and Air Base Drive to LOS "C" (V/C 0.80) in the a.m. peak hour and LOS "D" (V/C 0.86) in the p.m. peak hour.
7. Construct a second westbound left turn lane to improve the intersection of Watt Avenue and Roseville Road to LOS "E" (V/C 0.92) in the p.m. peak hour.

4.7-8a Implement Mitigation Measure 4.7-2a.

4.7-8b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:

1. Install a signal at the intersection of Riego Road and Natomas Road to provide LOS "A" (V/C ratio 0.60) in the a.m. peak and LOS "B" (V/C 0.62) in the p.m. peak.
2. Install a signal at the intersection of Riego Road and Pleasant Grove Road (North) to provide LOS "C" (V/C ratio 0.70) in the a.m. peak and LOS "B" (V/C 0.64) in the p.m. peak.
3. Install a signal at the intersection of Riego Road and Pleasant Grove Road (South) to provide LOS "C" (V/C ratio 0.77) in the a.m. peak and LOS "C" (V/C 0.74) in the p.m. peak.
4. At the intersection of Highway 99/77 and Riego Road, construct a third northbound and southbound through lane (2,000 to 3,000 feet long) to provide LOS "D" (V/C ration of 45.5 seconds) in the a.m. peak Or Construct the Highway 77/99 interchange at Riego Road.

4.7-9a Implement Mitigation Measure 4.7-2a.

4.7-9b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:

1. Widen Hwy 65 to six lanes from Blue Oak Boulevard to Galleria Boulevard.
2. Widen Interstate 80 to ten lanes from Antelope Road to Riverside Avenue.
3. Widen Interstate 80 to eight lanes from Riverside Avenue to Douglas Boulevard.
4. Widen Business 80 to eight lanes from Fulton Avenue to Watt Avenue.
5. Consider construction of additional lanes on Interstate 80 from Auburn Boulevard to Madison Avenue, or other improvements.

4.7-10a A Community Service Area (CSA) shall be established to fund the cost of transit services listed in this section, and any related capital costs for buses, passenger amenities, and facilities.

4.7-10b Bus shelters shall be placed along major roadways at one-half-mile intervals serving Medium-Density, High-Density, Commercial and Office land use designations.

4.7-12 Implement Mitigation Measure 4.7-2a.

4.7-13a Implement Mitigation Measure 4.7-2a.

4.7-13b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:

i. A third northbound and southbound through lane, a second eastbound and westbound through lane, a second northbound, an eastbound and westbound left turn lane and a free eastbound right turn lane to improve the intersection of Walerga Road and PFE Road to LOS "F" (V/C 1.19) in the p.m. peak hour.

ii. A third northbound and southbound through lane to improve the intersection of Walerga Road and Town Center Drive to LOS "B" (V/C ratio 0.61) in the a.m. peak hour and LOS "C" (V/C 0.73) in the p.m. peak hour

iii. Conversion of the northbound right turn lane into a free right turn lane to improve the intersection of Watt Avenue and Dyer Lane to LOS "E" (V/C 0.94) in the a.m. peak hour and LOS "F" (V/C 1.03) in the p.m. peak hour.

iv. Convert the northbound right turn lane into a free right turn lane to improve the intersection of East Dyer Lane and Baseline Road to LOS "E" (V/C 0.92) in the a.m. peak hour.

4.7-14a Implement Mitigation Measure 4.7-2a.

4.7-14b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward construction of a third southbound and northbound through lanes to the intersection of Fiddyment Road and Baseline Road to improve operations from LOS "E" to LOS "D." 4.7-14c Consistent with Mitigation Measure 4.7-2a, participate in the City of Roseville ITS/TDM program on a fair share basis as determined by the County in consultation with the City of Roseville.

4.7-15a Implement Mitigation Measure 4.7-2a.

4.7-15b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:

1. Widen Watt Avenue to six lanes from the Placer County line to Antelope Road, to reduce the V/C from 1.75 to 1.17 (LOS "F").
2. Widen Watt Avenue to eight lanes from Antelope Road to Elkhorn Blvd, to provide LOS "E."
3. Widen Sorento Road to four lanes from the Placer County line to Elverta Road, to provide LOS "A."
4. Widen Elwyn Avenue to four lanes from the Placer County line to Elverta Road, to provide LOS "A."
5. Widen 16th Street to four lanes from the Placer County line to Elverta Road, to provide LOS "B."

6. Widen Dry Creek Road to four lanes from the U Street to Ascot Avenue, to provide LOS "C."

4.7-16a Implement Mitigation Measure 4.7-2a.

4.7-16b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:

1. Construct a second left turn lane on the eastbound approach to improve the intersection of Sorento Road and Elverta Road to LOS "F" conditions (V/C 1.11) during the a.m. peak hour.
2. Construct a second left turn lane on the eastbound approach to improve the intersection of Elwyn Avenue and Elverta Road to LOS "E" conditions (V/C 0.94) during the p.m. peak hour.
3. Construct a second left turn lane on the eastbound approach to improve the intersection of Palladay Road and Elverta Road to LOS "F" conditions (V/C 1.07) during the p.m. peak hour.
4. Construct a second through lane on the northbound and southbound approaches, and a right turn lane on the eastbound and westbound approaches to improve the intersection of 16th Street and Elverta Road to LOS "B" conditions (V/C 0.66) during the a.m. peak hour and to LOS "C" conditions (V/C 0.77) during the p.m. peak hour.
5. Construct a third through lane on the eastbound and westbound approaches at the Watt Avenue and Elverta Road intersection to provide LOS "F" conditions (V/C 1.11) during the p.m. peak hour.
6. Construct a third through lane on the northbound and southbound approaches at the Walerga Road and Elverta Road intersection to provide LOS "F" conditions (V/C 1.16) during the a.m. peak hour.
7. Construct a third through lane on the northbound and southbound approaches, and second left turn lane on the westbound approach at the Watt Avenue and Antelope Road intersection to provide LOS "C" (V/C 0.80) conditions during the p.m. peak hour.
8. Construct a second through lane on the northbound approach at the Dry Creek Road and Elkhorn Boulevard intersection to provide LOS "E" conditions (V/C 0.99) during the p.m. peak hour.
9. Construct a fourth through lane on the northbound and southbound approaches at the Watt Avenue and Elkhorn Boulevard intersection to provide LOS "E" (V/C 0.94) in the a.m. peak hour and LOS "F" conditions (V/C 1.14) during the p.m. peak hour.
10. Construct a second left turn lane and a second right turn lane on the westbound approach at the Walerga Road and Elkhorn Boulevard intersection to provide LOS "E" conditions (V/C 0.94) during the p.m. peak hour.
11. Construct a third through lane on the northbound approach and a second westbound right turn lane at the Watt Avenue and Air Base Drive intersection to provide LOS "E" conditions (V/C 0.91) during the p.m. peak hour.

12. Construct a second left turn lane on the westbound approach at the Watt Avenue and Roseville Road intersection to provide LOS "F" conditions (V/C 1.24) during the p.m. peak hour.

4.7-17a Implement Mitigation Measure 4.7-2a.

4.7-17b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:

1. Widen Pleasant Grove Road to four lanes from Riego Road to the Sacramento County line.

4.7-18a Implement Mitigation Measure 4.7-2a.

4.7-18b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:

i. Construct a second left turn lane on the southbound approach, to improve the intersection of Pleasant Grove Road (North) and Riego Road to LOS "D" (VC ratio 0.83) in the a.m. peak LOS "D" conditions (V/C 0.87) in the p.m. peak.

ii. Construct a second left turn lane on the northbound and westbound approaches, to improve the intersection of Pleasant Grove Road (South) and Riego Road to LOS "C" (VC ratio 0.78) in the a.m. peak LOS "D" conditions (V/C 0.87) in the p.m. peak.

4.7-19a Implement Mitigation Measure 4.7-2a.

4.7-19b Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements on State highway.

1. Widen Hwy 70/99 to six lanes from Riego Road to Elkhorn Boulevard.
2. Widen Hwy 65 to six lanes from Blue Oak Boulevard to Galleria Boulevard.
3. Widen Interstate 80 to twelve lanes from Longview Drive to Watt Avenue.
4. Widen Interstate 80 to ten lanes from Antelope Road to Douglas Boulevard.
5. Consider construction of additional lanes on Interstate 80 from Auburn Boulevard to Madison Avenue or other improvements.

4.7-21 Placer County shall coordinate with the City of Roseville, Sacramento County, Sutter County and Caltrans to ensure that roadway improvements implemented in whole or in part as mitigation for the proposed project are designed to minimize impacts on existing and future roadways and intersections.

4.7-22 Implement the following or similar Mitigation Measures:

- 4.3.2-2a and b, which require site-specific drainage studies and measures to ensure that project flows can be accommodated by storm drainage infrastructure;
- 4.3.2-3e, which requires that new development demonstrate that there will be no increase in the water surface elevation of the 100-year flood plain;
- 4.4-15, -16, -17, -18, -20, -21, -22, -23, -24, -25, and -26, which require surveys for special status species and their habitat, habitat avoidance and compensation where needed, and protection of nesting raptors;

- 4.6-2a-h, requiring archaeological surveys and appropriate treatment of cultural resources encountered during construction;
- 4.9-3, which limits the hours during which noisy equipment can be used and requires effective mufflers;
- 4.9-4, which requires site-specific acoustical analyses during roadway design and noise attenuation features as needed; and
- 4.12-21a-f, which require Phase 1 Site Assessments to identify potential contamination, and specify how to handle potential hazards to minimize the risk of exposure.

6.7-15a Consistent with Mitigation Measure 4.7-2a, construct Watt Avenue to eight lanes (or a one-way couplet) from Antelope Road to Don Julio Boulevard, to provide LOS "D" (V/C 0.90).

Air Quality

4.8-1a Construction contractors shall be required to submit a construction emission/dust control plan for approval by the PCAPCD prior to any ground disturbance. At a minimum, this plan shall include the following measures:

- Water exposed earth surfaces as necessary to eliminate visible dust emissions (at least one water truck will be available for every three pieces of earthmoving equipment);
- Suspend grading operations when wind is sufficient to generate visible dust clouds;
- Pave, use gravel cover or spray a dust control agent on all haul roads;
- Wash down all earthmoving construction equipment daily, and wash down all haul trucks leaving the site;
- Cover all trucks delivering or exporting soil, sand, and other loose materials to ensure that all trucks hauling such materials maintain at least two feet of freeboard;
- Institute measures to reduce wind erosion when site preparation is completed;
- Install sandbags or other erosion control measures to prevent silt runoff onto public roadways;
- Provide graveled, paved or grass-covered areas for construction employee vehicle parking; and
- The site contractor shall retain a CARB certified individual to routinely perform Visible Emissions Evaluations (VEE) to ensure compliance with Rule 228, Fugitive Dust. Fugitive dust shall not exceed 40% opacity and shall not go beyond property boundaries at any time. The designee's duties shall include holiday and weekend periods when work may not be in progress.

Immediately following any mass grading phase, the following dust control measures shall be implemented:

- Apply soil stabilizers or commence reestablishing ground cover to construction areas within 96 hours of completing grading activities;
- Develop and implement a wind erosion monitoring program for areas which will remain inactive for extended periods; this program should at a minimum provide for weekly monitoring of inactive sites to assess the effectiveness of wind erosion controls.

4.8-1b Contractors shall be required to reduce NOx and ROG emissions by complying with the construction vehicle air pollutant control strategies developed by the PCAPCD. Contractors shall include in the construction contracts the following requirements or measures shown to equally effective:

- Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. Generally, vehicle idling should be kept below 10 minutes.
- Contractor's construction equipment shall be properly maintained and in good working condition.
- The site contractor shall retain a CARB certified individual to routinely evaluate project related off-road and heavy duty on-road equipment emissions for compliance with Rule 202, Visible Emissions.
- The prime contractor shall ensure that emissions from all off-road diesel powered equipment used in the Specific Plan area do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed the 40% opacity shall be repaired immediately, and the County of Placer and the PCAPCD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual results shall be submitted to the County of Placer and the PCAPCD throughout the duration of construction in the Specific Plan area, except that a monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The PCAPCD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other PCAPCD or state rules or regulations.
- The prime contractor shall submit to the PCAPCD a comprehensive inventory (i.e. make, model, year, emission rating) of all heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 hours or more for the construction project. PCAPCD personnel, with assistance from the California Air Resources Board, will conduct initial Visible Emissions Evaluations of all heavy duty equipment on the inventory list.

4.8-1c The project shall provide a plan, for approval by the Placer County Air Pollution Control District, demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used for any construction projects undertaken within the Specific Plan area over its planning lifetime, including owned, leased and subcontractor vehicles, will achieve a project-wide fleet-averaged 20% NOx reduction and 45% particulate reduction compared to the most recent annual CARB off-road construction fleet average for western Placer County. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure.

(See http://www.airquality.org/ceqa/Construction_Mitigation_Calculator.xls)

4.8-1d Construction contractors shall be required to use low-VOC architectural coatings and asphalt in compliance with District Rules and Regulations. Contractors shall also be required to fuel

stationary construction equipment with low-sulfur fuels, and use existing power sources (e.g., power poles) or clean fuel generators in place of temporary diesel power generators whenever feasible.

4.8-1e Construction contractors shall be required to provide management of construction traffic. Contractors shall include in the construction contracts the following requirements:

- Contractors shall provide temporary traffic control during all phases of construction activities to improve traffic flow (i.e. flag person);
- Contractors shall configure construction parking to minimize traffic interference;
- Contractors shall endeavor to schedule construction activities that affect traffic flow to off-peak hours (e.g. between 7:00 p.m. and 6:00 a.m. and between 10:00 a.m. and 3:00 p.m.);
- Contractors shall reroute construction traffic off congested streets; and
- Contractors shall provide dedicated turn lanes for movement of construction equipment on- and off-site.

4.8-3a The following guidelines shall be used by the County during review of future project-specific submittals for non-residential development within the Specific Plan area in order to reduce generation of air pollutants with intent that specified measures be required where feasible and appropriate:

- Include in all new parking lots tree plantings designed to result in 50% shading of parking lot surface areas within 15 years. Incorporated by reference in this measure are the City of Sacramento Parking Lot Tree Shading Design and Maintenance Guidelines dated June 17, 2003 (see EIR Appendix U). Also, see Specific Plan Policy 6.25;
- Equip HVAC units with a PremAir or similar catalyst system, if reasonably available and economically feasible at the time building permits are issued. Catalyst systems are considered feasible if the additional cost is less than 10% of the base HVAC unit cost;
- Install two 110/208 volt power outlets for every two loading docks;
- Promote passive solar building design and landscaping conducive to passive solar energy use (i.e., building orientation in a south to southwest direction where feasible, encouraging planting of deciduous trees on western sides of structures, landscaping with drought-resistant species, and including groundcovers rather than pavement to reduce heat reflection). Landscaping plans shall prohibit the use of liquidambar and eucalyptus trees that produce smog-forming compounds (high emission factors for isoprenes); and
- Implement the following, or equivalent measures, as determined by the County in consultation with the APCD:

  ◎ Establish building guidelines that encourage the use of low-absorptive coatings on all building surfaces and Energy Star roofing products on all roofs, if reasonably available and economically feasible, at the time building permits are issued;

  ◎ Establish paving guidelines that require businesses, if feasible, to pave all privately-owned parking areas with a substance with reflective attributes (albedo = 0.30 or better) similar to cement concrete. The use of a paving substance with reflective attributes

similar to concrete is considered feasible under this measure if the additional cost is less than 10% of the cost of applying a standard asphalt product; and

◎ Power all off-road equipment used at office, industrial, and commercial uses by the lowest-emission technology reasonably available at the time building permits are issued.

4.8-3b The following measures shall be used singularly or in combination to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of State of California Title 24:

- Use of air conditioning systems that that are more efficient than Title 24 requirements;
- Use of high-efficiency heating and other appliances, such as water heaters, cooking equipment, refrigerators, and furnaces;
- Installation of photovoltaic rooftop energy systems; and
- Establishment of tree-planting guidelines that require residents to plant trees to shade buildings primarily on the west and south sides of the buildings. Use of deciduous trees (to allow solar gain during the winter) and direct shading of air conditioning systems shall be included in the guidelines.

4.8-3c Promote a reduction in residential emissions through implementation of the following measure:

- Prohibit any wood-burning fireplaces, woodstoves, or similar wood-burning devices. Homes may be fitted with UL rated natural gas burning appliances if desired. This prohibition shall be included in any CC&Rs that are established.

4.8-3d For all projects, use the lowest-emitting architectural coatings during construction. When zero-VOC coatings are commercially available, they should be used. When only low-VOC coatings are available, they shall be used in lieu of higher-emitting formulations. Design review submittals shall include information concerning the coatings products proposed for use in the project.

4.8-3e Bicycle usage shall be promoted by requiring the following:

- All non-residential projects shall provide bicycle lockers and/or racks;
- All apartment complexes or condominiums without garages shall provide at least two Class I bicycle storage spaces per unit;
- Require residential neighborhoods to be interconnected, with easy access to commercial and recreational land uses. All neighborhoods shall have access to the Class I bicycle trails without having to travel on an arterial street. All schools and public parks (except neighborhood tot lots) shall be connected with a Class I bicycle trail through the open space and greenbelts;
- A pedestrian/bikeway (P/B) Master Plan shall be developed for the entire Specific Plan area. This master plan shall be consistent with the guidelines established in the Placer County Regional Bikeway Plan and in the Specific Plan; and
- As each residential phase is constructed, each subdivision shall install its share of the overall P/B network, and ensure that the layout of each residential phase does not interfere with completion of the overall P/B network. Residential areas adjacent to open space corridors shall provide reasonable access to the Class I P/B trails located in the

corridors. These Class I corridors shall provide linkages with the comprehensive network of other trails throughout the Specific Plan area. The P/B Master Plan shall provide linkages from all residential neighborhoods to all commercial areas. Non-vehicular access shall consist of a network of convenient linkages of Class I, II and III trails.

4.8-3f Transit usage and ride sharing shall be promoted by requiring participation in the development of a regional transit system at such time as a system is established and setasides of land for park-and ride facilities. Fair share participation may consist of dedication of right-of-way, easements, capital improvements, and/or other methods of participation deemed appropriate. In addition, future project design shall ensure that an adequate number of developers in the Specific Plan area provide reservations for future installations of bus turnouts and passenger benches and shelters, to be installed at such time as transit service is established and as demand and service routes warrant. The two transit centers shall be connected with the Class I bicycle trail. The Specific Plan shall provide for set-asides of land for two separate park-and-ride facilities. Construction of the park-and-ride facilities shall be phased over the buildout period of the project, with the first 50 spaces in place prior to issuance of the 3,000th residential building permit. Prior to issuance of the 6,000th residential building permit another 50 spaces shall be provided, followed by 50 more prior to the 9,000th residential building permit. Forty-three more spaces shall be provided prior to issuance of the 12,000 residential building permit for a total of 193 spaces to be constructed (equal to 0.1% of the anticipated daily trip generation of the project). A public transit development fee shall be required for all development projects. The amount of this fee shall be based upon the traffic generation potential of each project. A dial-a-ride transportation system shall be established to reduce individual vehicle trips and establish data for the eventual formation of a transit system within the Specific Plan area.

An Air Quality and Transportation System Management (TSM) Plan shall be prepared for the Specific Plan to implement all feasible means of reducing Specific Plan area emissions. This plan shall provide for eventual public transit and implementation of trip reduction strategies that coordinate with surrounding areas. A Transportation Management Association (TMA) shall be established that shall be funded by the developer and all businesses located within the Specific Plan area. The TSM plan shall be updated annually by TMA staff to demonstrate compliance with all air quality requirements, and to incorporate the latest state-of-the-art techniques and strategies to reduce emissions. Initially, the TMA shall provide each home and business with an information packet that will contain, at a minimum, the following information:

- Commute options: to inform Specific Plan area occupants of the alternative travel amenities provided, including ridesharing and public transit availability/schedules;
- Maps showing Specific Plan area pedestrian, bicycle, and equestrian paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas;
- Instructions on how to use TMA services that will facilitate trip reduction opportunities; and
- Information regarding PCAPCD programs to reduce county-wide emissions.

4.8-3g All projects requiring issuance of residential and non-residential building permits shall participate in an off-site mitigation program coordinated through the PCAPCD to offset NOx and ROG emissions not mitigated through on-site measures.

The PCAPCD, on behalf of Placer County, will determine air quality mitigation fees using calculation methodology established in practice and routinely applied to other, similar, contemporaneous land use development projects. The off-site mitigation program, coordinated through the PCAPCD, is designed to offset the project's longterm ozone precursor emissions. Monetary incentives shall be provided to sources of air pollutant emissions within the project's general vicinity that are not required by law to reduce their emissions. Therefore, the reductions are real, quantifiable and implement provisions of the 1994 State Implementation Plan. The off-site mitigation program reduces emissions within the region that would not otherwise be eliminated and thereby "offsets" the project's increase to regional emissions.

4.8-3h School districts shall be encouraged to incorporate the following measures into the design, construction, and operation of elementary, middle and high school buildings and facilities: • Install bicycle lockers and racks at all appropriate locations;

- Post signage prohibiting the idling of diesel vehicles for longer than five minutes;
- Construct at least one bus stop at a convenient location to be used for either fixed route service within the Specific Plan area or commuter service;
- Provide a community notice board and information kiosk with information about community events, ride-sharing, and commute alternatives;
- Provide preferential parking for carpools and hybrid vehicles (vehicles with selfcharging electric engines); and
- Incorporate solar water heating systems and HVAC PremAir or similar catalyst systems in building design.

4.8-3i The following measures shall be incorporated into the design, construction, and operation of public park areas:

- The pedestrian/bikeway (P/B) master plan shall provide at least one Class I linkage to all school sites;
- Additional Class I and II linkages shall be provided so as to provide convenient access to/from the park sites;
- Install bicycle lockers and racks at all appropriate locations;
- Provide a community notice board and information kiosk with information about community events, ride-sharing, and commute alternatives;

4.8-3j Prohibit open burning throughout the Specific Plan area. Include this prohibition in any project CC&Rs that are established.

4.8-3k The County may substitute different air pollution control measures for individual projects, that are equally effective or superior to those proposed herein, as new technology and/or other feasible measures become available in the course of buildout of the Specific Plan area.

4.8.5 Notice shall be provided in the recorded Covenants, Codes and Restrictions of all lots created within 500 feet of the proposed lift station that there is the potential for odors to result from lift station operations and maintenance.

4.8-6a The operators shall obtain an Authority to Construct/NSR permit and a Permit to Operate from the air district with jurisdiction prior to addition and operation of new facilities.

4.8-6b Potential odor effects shall be mitigated by installing or maintaining existing odor control systems, including odor scrubbers or chemical addition, for all screening facilities and grit/primary sedimentation facilities.

4.8.6c The County shall ensure that notice is provided in the recorded Covenants, Codes and Restrictions of all lots created within 500 feet of the proposed lift stations that there is the potential for odors to result from lift station operations and maintenance.

Noise

4.9-2 When specific uses are proposed, they shall be reviewed for their potential to produce significant noise impacts and, as required, noise studies shall be conducted to determine the most effective and practical mitigation measures. Mitigation measures shall be applied to assure that new stationary sources do not exceed adopted noise standards. Mitigation measures shall be consistent with the Noise Element of the Placer County General Plan, including use of setbacks, barriers, and other standard noise mitigation measures.

4.9-3 The hours of operation of noise-producing equipment shall comply with Placer County's "Standard Construction Noise Condition of Approval." Effective mufflers shall be fitted to gas- and diesel- powered equipment to reduce noise levels as much as possible.

4.9-4 Site-specific acoustical analyses shall be conducted when actual roadway design and tentative subdivision map design are proposed and grading is established to determine setbacks and any other measures (e.g. berms, site design, location of structures, noise walls/barriers) required to reduce traffic noise to level that meet County and Specific Plan noise standards, and Specific Plan design standards.

Population, Employment, and Housing

No mitigation measures

Public Services

4.11.2-1 The staffing ratios contained in Table 4.11-1 shall be maintained for the Specific Plan area during all phases of development concurrent with demand. The applicants shall be required to establish a special benefit assessment district or other funding mechanism to assure adequate funding for the ongoing maintenance and operation of fire protection and related services, with funding responsibilities imposed on residential and commercial properties within the Specific Plan area, including the costs for services required to satisfy Placer County Fire Department staffing requirements set forth above. The funding mechanism shall be subject to the prior review and approval of Placer County, and shall be approved by the affected landowners prior to recordation of the first final subdivision map. It shall be maintained until such time as the County determines that property tax revenues are adequate to maintain the required staffing.

4.11.2-2a A minimum of two fire stations shall be provided to serve the Specific Plan area at buildout, which shall be fully funded and equipped (i.e., desks, computers, telephones, radio systems, beds, refrigerators and all other needs).

4.11.2-2b The western fire station shall be constructed and equipped, at a location approved by the Placer County Fire Department, prior to issuance of a certificate of occupancy for the first dwelling unit located west of Watt Avenue. This first station may initially be located in a temporary building or location; however, a permanent station shall be available for

occupancy within 18 months of issuance of the certificate of occupancy for the first dwelling unit located West of Watt Avenue. The eastern fire station shall be constructed and equipped, at a location approved by the Placer County Fire Department, prior to issuance of a building permit for the 5,000th dwelling unit.

4.11.2-2c Formation of a County Services Area (CSA), a Community Facilities District (CFD), or expansion of CSA #28, including a landowner-approved special tax of an adequate amount or other financing mechanism acceptable to the County, shall be required prior to recordation of the first final subdivision map to ensure that a funding mechanism for fire protection infrastructure and equipment is in place to provide adequate fire safety services in the Specific Plan area during all stages of development. Required fire stations shall be completed and fully staffed and equipped prior to the issuance of certificates of occupancy. Fire stations shall be located on sites readily accessible to service areas and final fire station locations shall be subject to approval by the Placer County Fire Department.

4.11.2-3a Development and subdivision design shall include adequate setbacks, as determined by the Placer County Fire Department, between open space/corridor areas and structures. Fire pre-suppression and suppression access easements to utility corridors and open space areas shall be required as part of the subdivision map process. Building envelopes or another method shall ensure separation of structures, and shall ensure access, as deemed appropriate by the Placer County Fire Department prior to approval of any tentative subdivision map.

4.11.2-3b A County Service Area (CSA), Community Facilities District (CFD), or Zone of Benefit under CSA #28, or other entity for sustainable park maintenance shall be formed for the Specific Plan area prior to recordation of the first final subdivision map. Funds for a fuels reduction program for open spaces and corridors shall be included in the financing arrangement by a vote of the landowners prior to recordation of the first final subdivision map. The maintenance entity shall establish and identify ongoing funding for a continuous maintenance program for vegetation (both wildland and landscaped) in any and all open space, vacant areas, and landscape trail, easement and corridor areas within the Specific Plan area prior to recordation of the first final subdivision map.

4.11.2-3c The developers shall fund a fire-safe plan for the subdivisions adjacent to wildland (natural, landscape, and corridor) areas. The fire-safe plan shall include a fuels management plan, and recommend building separations and distances from wildland areas, evacuation and access routes, fire safety zones and maintenance schedule prior to approval of tentative subdivision maps.

4.11.3-1 The staffing ratios contained in Table 4.11-2 shall be maintained for the Specific Plan area. The applicants shall be required to establish a special benefit assessment district or other funding mechanism to assure adequate funding for the ongoing maintenance and operation of law enforcement services, with funding responsibilities imposed on residential and commercial properties within the Specific Plan area, including the costs for services required to satisfy the staffing standards set forth above and General Plan standards now in existence or as later amended. The funding mechanism shall be subject to the prior review and approval of Placer County.

4.11.3-2a The project developer(s) shall comply with Placer County Policy 4.H.4, which requires that all future development either fund or develop law enforcement facilities. The project developer(s) shall dedicate land for development of a 19,000-square foot substation prior to recordation of the first final subdivision map. Said development shall be consistent with the

requirements of the County, the needs of the County Sheriff's Department and the County Facilities Services Department. Compliance with Policy 4.H.4 shall include formation of a County Service Area (CSA), Community Facilities District (CFD), or expansion of CSA #28 for the construction of an equipped Sheriff's substation prior to recordation of the first final subdivision map.

4.11.3-2b The project developer(s) shall enter into a Development Agreement with Placer County prior to recordation of the first final subdivision map for facilities, staffing, and the purchase and scheduled replacement of the number of equipped vehicles needed as determined by the Sheriff in the same frequency and manner currently used by the County in its patrol vehicle replacement program. All patrol vehicles shall include the necessary equipment to accomplish the mission of the Placer County Sheriff's Department or as otherwise required by the Sheriff.

4.11.3-3 Law enforcement personnel shall have access to and visibility of schools, parks and open spaces, pedestrian areas shall be well lighted and designed in such a manner as to maximize the safety of pedestrians, and buildings shall be designed and sited to provide a safe environment. Improvement plans submitted for review and approval by the Placer County Planning Department shall be accompanied by a written explanation regarding the manner in which the design of the improvements achieves compliance with these requirements.

4.11.5-1a Contractors shall be required to provide on-site separation of construction debris to assure a minimum 50% diversion of this material from the landfill.

4.11.5-1b Projects in the Specific Plan area shall contribute a fair share amount toward expansion of the MRF (including accommodation of a greenwaste program for Placer Vineyards) and landfill to the Western Placer Waste Management Authority. A mechanism for ensuring that this is implemented shall be described in the Development Agreement for the Specific Plan.

4.11.5-1c A source-separated greenwaste program shall be implemented within the Specific Plan area, subject to review and approval by the Western Placer Waste management Authority.

4.11.5-1d The Specific Plan proponents shall present a plan for County approval that meets the requirements of Placer County Code Section 8.16.080. The plan shall ensure the development and continuous operation and maintenance of recycling centers within the Specific Plan area. Recycling centers shall accept all types of recyclable waste, shall be fenced and screened from view, and shall be located in commercial or industrial areas dispersed throughout the Specific Plan area. The first recycling center shall be established upon issuance of the 1500th residential building permit.

4.11.6-1a Prior to recordation of any large-lot final subdivision map, all required steps shall be taken to initiate formation of a new County Service Area (CSA, or expansion of CSA #28. Major core backbone infrastructure as shown on Figure 3-17A or Figure 3-17B in Chapter Three of this Revised Draft EIR shall be in place prior to recordation of the first final small lot subdivision map. Other on-site collection and conveyance facilities shall be constructed as necessary to serve actual development (except as required in Mitigation Measure 4.11.6-1g).

4.11.6-1b All new commercial, industrial, institutional, and residential subdivisions in the Specific Plan area shall install collection systems and connect to a public wastewater system.

4.11.6-1c All new development in the Specific Plan area shall comply with General Plan Policy 4.D.2, which requires written certification from the service provider that either existing services are

available or needed improvements will be made prior to occupancy to meet wastewater demands of the Specific Plan.

4.11.6-1d Approval of the Specific Plan shall be premised on concurrent County approval of a financing plan that will provide for funding the necessary wastewater collection facilities needed to serve the Specific Plan area, and implemented through approval for formation of a County Service Area (CSA) or expansion of CSA #28 and a corresponding funding mechanism.

4.11.6-1e The Specific Plan proponents shall construct or participate financially in the construction of off-site wastewater conveyance capacity, including lift stations, to accommodate projected wastewater flows that would be generated by development of the Specific Plan.

4.11.6-1f Adequately sized on-site collection facilities, including lift stations, shall be installed for each subdivision in the Specific Plan area concurrent with road construction for individual subdivisions. A "backbone" conveyance system sufficient to serve each subdivision shall be installed prior to issuance of building permits for that subdivision.

4.11.6-1g The Sewer Master Plan shall be revised prior to submission of any wastewater--related improvement plans to include a detailed description of necessary lift station components on-site as well as off-site. The Master Plan shall include a plan for dealing with power and pump failure, and pump maintenance. The plan shall identify how necessary pumping capacity will be replicated in the event of pump failure or pump maintenance, and shall provide for on-site back-up power sufficient to run pumps and any odor scrubbers, in the event of power failure. Each lift station shall include a wastewater storage component in the form of an enclosed reservoir or tank sufficient to deal with temporary emergency conditions while backup systems are brought on line, in accordance with sizing standards utilized by the County Department of Facility Services.

4.11.6-2a Commitments from the wastewater treatment provider to receive anticipated flows from the Specific Plan area at the DCWWTP and/or the SRWTP shall be secured by Placer County prior to County approval of improvement plans for wastewater collection and transmission infrastructure. The County shall comply with General Plan Policy 4.D.2, which requires written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy to meet wastewater demands of the Specific Plan area.

4.11.6-2b Specific Plan proponents shall participate financially through connection fees and other financial mechanisms in the construction of additional wastewater treatment capacity sufficient to accommodate projected flows and treatment at the DCWWTP and/or the SRWTP. In addition, Specific Plan proponents shall prepare, or shall provide a fair share contribution toward the preparation of any additional CEQA analysis that may be required for plant modifications and/or expansions.

4.11.6-2c For each increment of new development within the Specific Plan area, the County shall confirm that all necessary permits (e.g., NPDES) are in place for either the DCWWTP or the SRWTP to discharge additional treated effluent in the amounts associated with the new development. This shall include a determination that development timing will not impede other development for which entitlements have been issued. The requirement for such a showing shall be made a condition of any small lot tentative map approval associated with the new development and shall be verified by the County prior to recordation any final map

associated with the new development. Where no small lot tentative map and final map are required prior to non-residential development having the potential to increase wastewater flows, the requirement for such verification, to be demonstrated no later than the time of issuance of building permits, shall be made a condition of approval of project-level discretionary approvals analogous to issuance of small-lot tentative maps.

4.11.6-3a Design of on- and off-site sewer pipelines shall have watertight joints and be in accordance with design standards adopted by Placer County in order to minimize the potential for accidental discharge.

4.11.6-3b Paved access shall be provided to all sewer system access points to allow for pipeline maintenance and repair.

4.11.6-6 Should expansion of the SRWTP treatment plant be pursued to serve the Specific Plan area, a Treatment Plant Master Plan Update will be needed and additional analysis of water quality impacts on the Sacramento River will be required in a cumulative context. This analysis shall be performed in a manner similar to and at the same level of detail as the analysis contained in the EIR for the current Master Plan, and shall be consistent with standards established by RWQCB and SRCSD. All recommendations of the analysis shall be implemented utilizing a fair share funding arrangement with Placer Vineyards project proponents.

4.11.7-1a Prior to approval of any small lot tentative subdivision map for a proposed residential project of more than five hundred dwelling units, the County shall comply with Government Code Section 66473.7. Prior to approval of any small lot tentative subdivision map for a proposed residential project of 500 or fewer units, the County need not comply with Section 66473.7, or formally consult with PCWA or other public water system, but shall nevertheless make a factual showing or impose conditions similar to those required by Section 66473.7 in order to ensure an adequate water supply for development authorized by the map. Prior to recordation of any final small lot subdivision map, or prior to County approval of any similar project-specific discretionary approval or entitlement required for nonresidential uses, the applicant shall demonstrate the availability of a long-term, reliable water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of a written certification from the water service provider that either existing sources are available or that needed improvements will be in place prior to occupancy.

4.11.7-1b The Specific Plan proponents shall, comply with PCWA water conservation strategies as described in PCWA's Urban Water Management Plan.

4.11.7-1c Prior to approval of any small lot tentative subdivision map or similar project level discretionary approval for land uses that do not require a tentative subdivision map, the Placer County Water Agency (PCWA) shall perform an analysis of the remaining wheeling capacity in the City of Roseville's system. This analysis shall consider all of the previously committed demand to Morgan Creek, Placer Vineyards, Regional University or other projects within southwest Placer County that rely on water conveyed through City of Roseville facilities and/or pursuant to the wheeling agreement between the City of Roseville and PCWA, as amended from time to time. The analysis shall be submitted to both the County and the City of Roseville. The County shall confirm with PCWA that uncommitted capacity remains to wheel the required amount of PCWA-supplied water to the Specific Plan area prior to approval of discretionary actions. In the event sufficient uncommitted capacity does

not exist, the County shall not grant the proposed tentative subdivision map or other project level discretionary approval until the County determines that a water supply not dependent on water from PCWA that is wheeled thru the Roseville system becomes available for the area at issue.

4.11.8-3a Plans for site-specific recycled water storage facilities shall include provisions for emergency storage, including redundant in-ground storage ponds or enclosed tanks capable of holding one day peak demand for the area served. All recycled water storage ponds shall be bermed to prevent inflow from surface sources and shall not be located where a direct discharge to a drainage course or natural waterway could occur if the pond should experience a containment failure. All storage ponds for recycled water shall be fenced to restrict access and posted with warning signs to reduce the potential for direct human contact with recycled water.

4.11.8-3b The project applicants shall be responsible for completing the Engineering Report that is required to be submitted to the State for the production, distribution and use of recycled water. Recycled water shall not be used until the Engineering Report is approved by the State.

4.11.8-3c Adequate storage and pumping facilities must be provided prior to connection to the recycled water system.

4.11.9-1a The Master Project Drainage Study shall be incorporated as part of Specific Plan approval by reference or other similar means.

4.11.9-1b Individual project drainage reports consistent with the County's Stormwater Management Manual and Grading Ordinance shall be submitted for each development project, including installation of backbone infrastructure. Drainage reports shall identify the proposed detention/retention basins that will serve the new development area or submit an interim detention basin design with supporting calculations subject to approval by County staff.

4.11.9-1c Drainage reports for development projects within the Specific Plan area shall comply with the current permit requirements of the NPDES Phase II (Attachment 4).

4.11.9-1d The Master Project Drainage Study shall be submitted to the Placer County Department of Public Works and reviewed and approved by the Department of Public Works prior to the recordation of the first large lot tentative map.

4.11.9-1e Individual project drainage reports shall be consistent with the approved Master Project Drainage Study.

4.11.9-2 Prior to recordation of the first small lot final subdivision map in the Specific Plan area, a drainage service area under a new County Service Area (CSA), existing CSA #28, or a Community Facilities District (CFD) shall be established for the Specific Plan area in compliance with law. The CSA or CFD shall identify and establish ongoing funding for a continuous drainage facility maintenance program.

4.11.10-1a The Specific Plan applicants and subsequent developers shall work closely with PG&E and SMUD to ensure that development of electrical and natural gas infrastructure with the capacity to service the entire Specific Plan area is located and provided concurrently with roadway construction and in accordance with PUC regulations. The applicant(s) shall grant all necessary easements for installation of electrical and natural gas facilities, including utility easements along existing and future on-site major arterial roads for the development of area-

wide utility corridors. Coordination with SMUD and/or PG&E shall occur, and any required agreements shall be established prior to recordation of the first final subdivision map.

4.11.10-1b Implement Mitigation Measures 4.8-3a through 4.8-3g as set forth in Section 4.8 of this Revised Draft EIR.

4.11.10-2a All locations and continuous maintenance access points for natural gas and electrical infrastructure are to be clearly marked or noted on tentative subdivision maps. Dedicated easements for utility maintenance equipment shall be recorded prior to or concurrent with acceptance and recordation of final maps.

4.11.10-2b Clear, unrestricted access shall be maintained beneath existing transmission lines that traverse the Specific Plan area. This may include provision for unobstructed access to gates in proposed fences that may surround such uses as the County corporation yard. Any realignment of transmission line paths shall be negotiated with PG&E. Structures shall only be allowed in those areas that do not restrict access and meet the requirements of PG&E.

4.11.12-1a Formation of a County Service Area (CSA), Community Facilities District (CFD), or expansion of CSA #28, or other financing mechanism acceptable to the County shall be required prior to recordation of the first final small lot subdivision map to ensure that immediate funding for adequate library infrastructure consistent with County standards is in place. The Specific Plan developers shall enter into a Development Agreement to ensure a fair share contribution to adequate library facilities, and that such facilities are available prior to demonstrated need.

4.11.12-1b Completion of one or more branch libraries to provide a minimum of 0.4 square feet per capita, dedication of land, and stocking with books and other materials necessary for a functioning library with a minimum of 2.2 volumes per capita and otherwise meeting the standards of the Auburn-Placer County Library Long-Range Plan, including any subsequent amendments, shall occur concurrent with demand.

4.11.12-1c Project developers shall be required to establish a special benefit assessment district or other funding mechanism to ensure adequate funding of the Specific Plan's fair share for the ongoing operation and maintenance of library facilities. Such funding mechanism shall be established prior to recordation of the first final subdivision map to ensure that immediate funding for adequate library operations and maintenance is in place.

4.11.13-1 Project developers in the Specific Plan area shall comply with the requirements of the General Plan by dedication and improvement of a minimum of 174 acres of active parkland and 174 acres of passive parkland. Project developers shall be responsible for dedicating and fully developing parks and or portions thereof, concurrent with demand in accordance with County levels of service. The County may require oversizing of neighborhood and larger type recreation parks, trails and facilities on a subdivision basis when it is deemed necessary and practical to serve the needs of future residents. In such cases, the County will enter into reimbursement agreements whereby future developments will pay initial developers for oversizing.

Concurrent with the construction of the community parks, project developers shall construct a park maintenance building and yard and provide maintenance equipment. The design and building materials, location and quantity of equipment shall be subject to the approval of the Department of Facility Services.

All plans and specifications shall be approved by the Department of Facility Services and/or the managing agency prior to the recordation of each final small lot subdivision map. A procedure or agreement to govern the acquisition of parklands and completed park improvements acceptable to the County and/or managing agency, and in compliance with applicable General Plan standards and policies, shall be in place prior to recordation of the first final small lot subdivision map.

The specific park plans shall be submitted to the County for approval prior to the final decision as to the number and location of facilities.

4.11.13-3 Project developers shall cause a new County Service Area (CSA) or Community Facilities District (CFD) to be formed, or expand CSA #28 for sustainable park maintenance and recreation programs for the Specific Plan area prior to recordation of the first final small-lot subdivision map. A procedure or agreement to govern park maintenance and local recreation programs shall also be finalized prior to recordation of the first final small-lot subdivision map within the Specific Plan area. This entity would thus have the ability to participate in design, inspection and acceptance of facilities, and determination of appropriate funding levels necessary to maintain these facilities and operate recreational programs. A park maintenance special tax or special assessment with a provision for increases indexed to the CPI shall be approved by the landowners (voters) of the Specific Plan area, to be developed prior to recordation of the first final subdivision map in the Specific Plan area. An indexing formula for maintenance and operation of recreational facilities and programs shall be in place prior to recordation of the first final subdivision map.

4.11.13-4 As a condition of Specific Plan approval, proponents shall submit a phased schedule for providing community recreation facilities for approval by the County Parks Division. This phasing plan shall comply with County levels of service for parks and recreational facilities. Funding for construction, operation and maintenance of these improvements shall be provided in accordance with Mitigation Measures 4.11.13-1 and 4.11.13-3. 4.11.14-2 Project developers shall establish a special benefit assessment district or other funding mechanism to ensure fair share funding for the ongoing operation and maintenance of general County services serving the Specific Plan area. This funding mechanism shall be established prior to recordation of the first final small lot subdivision map in the Specific Plan area to ensure that immediate funding for adequate general County services is in place.

4.11.14-3 The Specific Plan proponents shall submit a phased schedule for providing the above described general government facilities for approval by the County Executive Office. Funding for construction, operation and maintenance of these improvements shall be provided in accordance with Mitigation Measure 4.11.14-2.

Hazards and Hazardous Materials

4.12-1 The two USTs shall be removed and soil samples shall be collected and analyzed. In the event soil or water contamination has occurred above regulatory clean-up thresholds, remediation shall be performed consistent with State and County regulations. All required remediation shall be completed prior to recordation of any final small lot subdivision map on Property #7 (now Properties #4 and #7).

4.12-2 If sampling during removal of the UST for the Hilltop site should confirm concentrations of potential motor oil and/or TPH diesel contamination at or above the level of concern, the site shall be remediated as described in Mitigation Measure 4.12- 1.

4.12-3 Prior to recordation of any final small lot subdivision map on Property #7 (now Property #4), the open well shall be abandoned/destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and Placer County Environmental Health Services requirements.

4.12-4 Additional sampling shall be performed at the Dyer Lane and Tanwood Avenue area of illegal dumping. If test results show that the level of concern is exceeded, remediation shall be required to meet State and County regulations. All remediation shall be completed prior to recordation of any final small lot subdivision map on Property # 9.

4.12-5 Prior to recordation of any final small lot subdivision map on Property #9, unused wells on-site shall be destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and according to Placer County Division of Environmental Health Services requirements.

4.12-6a Additional sampling shall be performed on sites #10-1 and #10-2. If test results show that regulatory clean-up thresholds are exceeded, remediation shall be required to meet State and County regulations. All remediation shall be completed prior to recordation of any final small lot subdivision map on Property #10.

4.12-6b Prior to recordation of any final maps on Property #10, unused wells on-site shall be destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and according to Placer County Division of Environmental Health Services requirements.

4.12-7a Additional sampling shall be performed on sites #11-1 and #11-2. If test results show that levels of concern are exceeded, remediation shall be required to meet State and County regulations. All remediation shall be completed prior to recordation of any final small lot subdivision map on Property #11.

4.12-7b Prior to recordation of any final maps on Property #11, unused wells on-site shall be destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and according to Placer County Division of Environmental Health Services requirements.

4.12-8 Disposal of refrigerators, tires, batteries and similar materials by licensed waste haulers at approved waste disposal facilities shall be completed prior to recordation of any final maps on Property #15A (now Property # 22).

4.12-9 Additional sampling shall be performed on sites #15-1, #15-2, #15-3, #15-4, #15-5, #15-6, #15-7, #15-8, #15-9, #15-10, #15-11, #15-12, and #15-13. If test results show that levels of concern, or regulatory clean-up thresholds are exceeded, remediation shall be required to meet State and County regulations. All remediation shall be completed prior to recordation of any final small lot subdivision map on Property #15A (now Property # 22).

4.12-10 Disposal of auto parts, debris, household waste and similar materials by licensed waste haulers at approved waste disposal facilities shall be completed prior to recordation of any final small lot subdivision map on Property #19.

4.12-11a Soil in the storage area and below the concrete slab in the workshop shall be inspected by a California Registered Environmental Assessor II for indications of impacts to soil at the time of the demolition of the site buildings and concrete slab. Recommendations for soil sampling and analysis shall be determined at that time. If sampling results show that regulatory clean-

up thresholds are exceeded, remediation shall be required to meet State and County regulations. All demolition and remediation shall be completed prior to recordation of any final small lot subdivision map on Property #20 (now Property #21).

4.12-11b Disposal of auto parts, debris, household waste and similar materials by licensed waste haulers at approved waste disposal facilities shall be completed prior to recordation of any final small lot subdivision map on Property #20 (now Property #21).

4.12-11c The in-service well shall be abandoned/destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and Placer County Environmental Health Services (EHS) requirements upon discontinuation of use.

4.12-12a During construction, all grading shall be performed in a manner to prevent the occurrence of standing water or other areas suitable for breeding of mosquitoes and other vectors.

4.12-12b The Placer Mosquito Abatement District shall be granted access to perform vector control in all common areas including drainage, open space corridor and park areas in perpetuity. Such access shall be a condition of approval of all tentative maps approved within the Specific Plan area.

4.12-13 Site-specific evaluation by a California Registered Environmental Assessor II shall be conducted at each identified existing and former dwelling area to identify surface indications and locations of septic tanks or cesspools prior to demolition of existing residences. Identified septic tanks shall be destroyed according to Placer County Division of Environmental Health criteria prior to recordation of final small lot subdivision map for the affected property.

Surface conditions shall be evaluated by a California Registered Environmental Assessor II when the dwellings are vacated, and prior to demolition of the structures, regarding the possibility of previous site uses which may have included hazardous materials that could have been disposed of in on-site wastewater disposal systems.

Tank or cesspool destruction shall be monitored by a California Registered Environmental Assessor II regarding the likelihood of hazardous materials disposal in the systems. Any required remediation work shall be completed in accordance with State and County regulations prior to recordation of final small lot subdivision map for the affected property.

4.12-14a Surveys of structures that are planned for demolition (that were not surveyed in the Phase II ESA) during Specific Plan development shall be conducted by a Certified Asbestos Consultant licensed with the California Department of Occupational Safety and Health to determine if friable Regulated Asbestos Containing Materials or nonfriable asbestos containing materials are present within the structure demolition areas. Any regulated asbestos materials found in the investigated areas shall be removed and disposed of by a California licensed asbestos abatement contractor. All removal of asbestos material shall be completed prior to recordation of Final Maps for the affected property.

4.12-14b A California licensed asbestos abatement contractor shall be hired to remove the exterior wall shingles prior to demolition of the abandoned radio beacon structure on Property #7.

4.12-15 Prior to submittal of a small lot tentative subdivision map or plans for industrial/commercial development, properties not previously evaluated with a current Phase I Environmental Site Assessment may be required to complete a Phase I Environmental Site Assessment, as determined by Environmental Health Services. A Phase I Environmental Site Assessment shall be conducted by a qualified professional. If past commercial agricultural uses are

disclosed that could have resulted in persistent contamination, such as orchards or vineyards, then soil sampling shall be conducted within former commercial agriculture areas. In these instances, prior to setting conditions for subdivision or industrial/commercial development soil investigation shall be conducted according to guidelines developed by the California Department of Toxic Substances Control (DTSC) and contained in the DTSC August 2002 "Interim Guidance for Sampling Agricultural Fields for School Sites", or equivalent protocol. Sampling and site investigation shall be conducted by a California registered environmental professional, performed with oversight from Placer County Environmental Health Services, and with applicable permits.

As a result of soil investigation, a limited and confined area of contamination may be identified and found to be suitable for simple removal. If this is the case, remediation will be required to meet State and County regulations and be completed prior to recordation of the final small lot subdivision map or equivalent final Placer County approval for commercial/industrial projects.

As a result of soil investigation, unconfined and/or widespread residual concentrations of agricultural chemicals may be identified at levels where they individually or in combination meet or exceed US EPA, CalEPA Preliminary Remediation Goals, or equivalent screening levels, thereby indicating the need for risk assessment. Any indicated risk assessment shall be completed prior to improvement plans or equivalent approval. Risk assessments shall include a DTSC Preliminary Endangerment Assessment or no further action determination, or equivalent.

Any remedial action indicated by a risk assessment shall be completed and certified prior to recordation of the small lot tentative subdivision final map or equivalent final Placer County approval for commercial/industrial projects. Remediation shall include a DTSC Remedial Action Workplan, or equivalent, and can include a range of activities, including restrictions on use, soil excavation and disposal off-site, or encapsulation in appropriate areas away from sensitive receptors in the Specific Plan area.

4.12-16 Any unused well encountered during subsequent exploration or development of the Specific Plan area shall be destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and according to Placer County Division of Environmental Health Services requirements.

4.12-17 Prior to submittal of a small lot tentative subdivision map or plans for industrial/commercial development, properties not previously evaluated with a current Phase I Environmental Site Assessment may be required to complete a Phase I Environmental Site Assessment, as determined by Environmental Health Services. A Phase I Environmental Site Assessment shall be conducted by a qualified professional. If past commercial uses are disclosed that could have resulted in persistent contamination then soil sampling shall be conducted within former commercial areas. In these instances, prior to setting conditions for subdivision or industrial/commercial development soil sampling shall be conducted according to guidelines developed by the California Department of Toxic Substances Control (DTSC) Phase II Environmental Site Assessment and/or Preliminary Endangerment Assessment with DTSC, or equivalent protocol. Sampling and site investigation shall be conducted by a California registered environmental professional, performed with oversight from Placer County Environmental Health Services, and with applicable permits.

As a result of soil investigation, a limited and confined area of contamination may be identified and found to be suitable for simple removal. If this is the case, remediation will be required to meet State and County regulations and be completed prior to recordation of the small lot tentative subdivision final map or equivalent final Placer County approval for commercial/industrial projects.

As a result of soil investigation, unconfined and/or widespread residual concentrations of chemicals or other contaminants maybe identified at levels where they individually or in combination meet or exceed US EPA, CalEPA Preliminary Remediation Goals, or equivalent screening levels, thereby indicating the need for risk assessment. Any indicated Risk Assessment shall be completed prior to improvement plans or equivalent approval. Risk assessments shall include a DTSC Preliminary Endangerment Assessment or no further action determination, or equivalent.

Any remedial action indicated by a risk assessment shall be completed and certified prior to recordation of the small lot tentative subdivision final map or equivalent final Placer County approval for commercial/industrial projects. Remediation shall include a DTSC Remedial Action Workplan, or equivalent, and can include a range of activities, including restrictions on use, soil excavation and disposal off-site, or encapsulation in appropriate areas away from sensitive receptors in the Specific Plan area.

4.12-19a The design of the substation shall implement no cost and low cost EMF reduction measures on new and upgraded transmission, substation, and distribution facilities. These measures shall reduce the magnetic field strength in the area by 15% or more at the fence line as compared to traditional installations.

4.12-19b PG&E proposes to prepare an EMF Field Management Plan that will specifically delineate the no-cost and low-cost EMF measures to be installed as part of the final engineering design for the substation. PG&E shall submit to the California Public Utilities Commission the EMF Field Management Plan for the project, prior to construction activity on the substation.

4.12-19c The site shall be graded to direct drainage to a pond that meets Federal Guidelines (40 Code of Federal Regulations, Part 112) for the facility so that, in the event a transformer becomes damaged and leaks oil, the oil would drain into the pond. The pond shall be designed to be impermeable and designed to contain 100% of the largest transformer oil volume plus 10% to contain rainwater and prevent discharge to surface water.

4.12-19d Storage batteries shall be located inside a dedicated metal-enclosed compartment in the switchgear.

4.12-19e Access to the site shall be restricted by fencing and warning signs posted to alert persons of the potential electrical hazards.

4.12-19f The power lines shall be designed in accordance with California Public Utilities Commission General Order 95 Guidelines for safe ground clearances that have been established to protect the public from electric shock.

4.12-19g The substation shall be fitted with an automated central alarm system that will immediately alert PG&E to any change in equipment condition.

4.12-21a Any USTs that are encountered during off-site utility line/roadway survey or construction, or wastewater treatment or storage facility construction shall be removed and soil samples shall be collected and analyzed. If a UST is subject to UST regulation, then a UST removal permit

from Environmental Health Services shall be obtained. In the event soil or water contamination has occurred above regulatory clean-up thresholds, remediation shall be performed consistent with State and County regulations.

4.12-21b Prior to any utility, roadway, or wastewater treatment or storage facility construction on properties not previously evaluated in a Phase I Environmental Site Assessment, a Phase I Environmental Site Assessment shall be conducted by a Registered Environmental Assessor. If contaminant concentrations are found to be at or above regulatory clean-up thresholds, the site shall undergo remediation in accordance with State and County standards.

4.12-21c Any unused well encountered during construction of off-site utilities, roadways, or wastewater treatment and storage facilities shall be destroyed according to California Well Standards, California Department of Water Resources Bulletin 74-90 Section 23, and local requirements.

4.12-21d Surveys of any structures that are planned for demolition during off-site utility line, roadway, or wastewater treatment or storage facility construction shall be conducted by a Certified Asbestos Consultant licensed with the California Department of Occupational Safety and Health to determine if friable Regulated Asbestos Containing Materials or non-friable asbestos containing materials are present within the structure demolition areas. Any regulated asbestos materials found in the investigated areas shall be removed and disposed of by a California licensed asbestos abatement contractor.

4.12-21e Site-specific evaluation by a California Registered Environmental Assessor II shall be conducted at each identified existing and former dwelling area that may be affected by off-site utility line, roadway, or wastewater treatment and storage facility construction to identify surface indications and locations of septic tanks or cesspools prior to demolition of existing residences. Identified septic tanks shall be destroyed under permit of either the County Environmental Health Services Division or the Public Works Department.. Surface conditions shall be evaluated by a California Registered Environmental Assessor II when the dwellings are vacated, and prior to demolition of the structures, regarding the possibility of previous site uses which may have included hazardous materials that could have been disposed of in on-site wastewater disposal systems. Tank or cesspool destruction shall be monitored by a California Registered Environmental Assessor II regarding the likelihood of hazardous materials disposal in the systems. Any required remediation work shall be completed in accordance with State and County regulations prior to recordation of final small lot subdivision maps for the affected property.

4.12-21f Disposal of auto parts, debris, household waste and similar materials by licensed waste haulers at approved waste disposal facilities shall be completed prior to any construction within off-site utility corridors.

Climate Change

4.13-1a Implement Mitigation Measure 4.8-3, establishing guidelines for County review of future project-specific submittals for non-residential development within the Specific Plan area in order to reduce generation of air pollutants.

4.13-1b Implement Mitigation Measure 4.8-3b, requiring implementation measures to accomplish an overall reduction of 10 to 20% in residential energy consumption relative to the requirements of Sate of California Title 24.

4.13-1c Implement Mitigation Measure 4.8-3c, promoting a reduction of residential emissions.

4.13-1d Implement Mitigation Measure 4.8-3e, requiring measures to promote bicycle usage.

4.13-1e Implement Mitigation Measure 4.8-3f, requiring measures to promote transit usage and ride sharing.

4.13-1h Implement Mitigation Measure 4.8-3h, encouraging school districts to incorporate energy saving measures into the design, construction, and operation of elementary, middle and high school buildings and facilities.

4.13-1i Implement Mitigation Measure 4.8-3i, requiring measures to promote bicycle use, ride sharing, and commute alternatives to be incorporated into the design, construction and operation of public park areas.

4.13-1j Implement Mitigation Measure 4.6-3j, prohibiting open burning throughout the Specific Plan Area and requiring this prohibition in any project CC&Rs that are established.

4.13-1k Implement Mitigation Measure 4.7-2a-b; 4.7-5a-b, 4.7-6a-b; 4.7-12; and 4.7-13a-b, 4.7-15a-b, 4.7-16a-b, 4.7-17a-b, 4.7-19a-b, mitigating traffic impacts (see Recirculated RDEIR, July 2006).

4.13-1l Implement mitigation measures 4.11.5-1a -4.11.5-1d, requiring waste diversion and recycling.

4.13-1m Placer County and the project applicant shall work together to publish and distribute an Energy Resource Conservation Guide describing measures individuals can take to increase energy efficiency and conservation. The applicant shall be responsible for funding the preparation of the Guide. The Energy Resource Conservation Guide shall be updated every 5 years and distributed at the public permit counter.

4.13-1n The project applicants shall pay for an initial installment of Light Emitting Diode (LED) traffic lights in all Specific Plan area traffic lights.

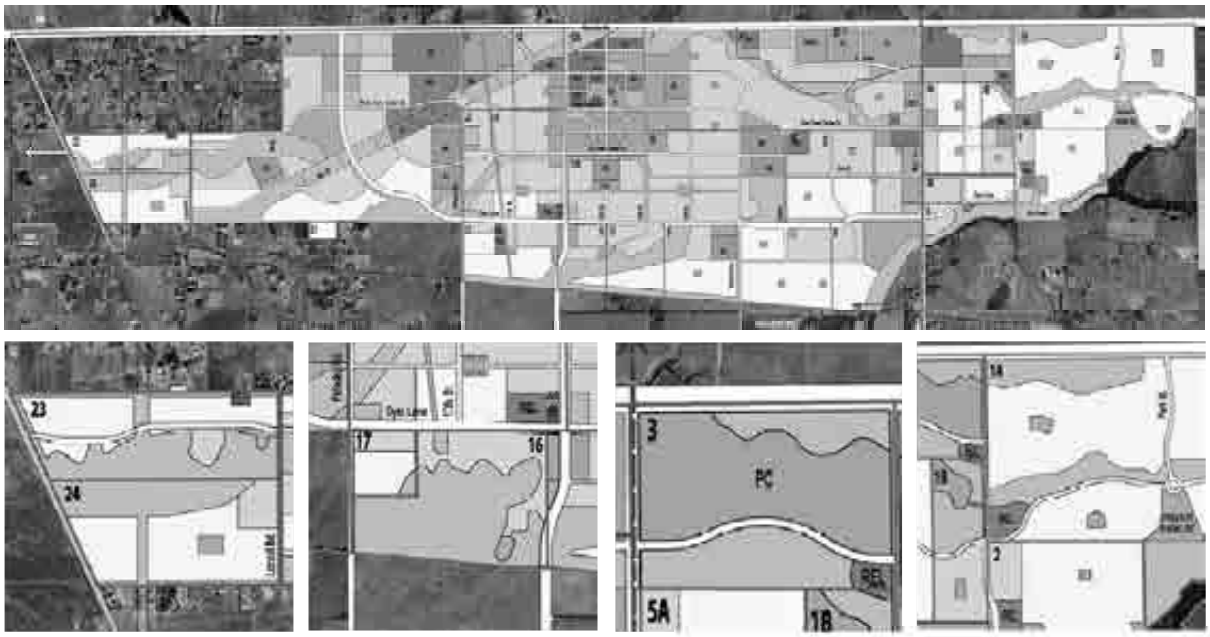
4.13-1o The project applicants and Placer County shall jointly develop a tree planting informational packet to help project area residents understand their options for planting trees that can absorb carbon dioxide.

4.13-1p Prioritized parking within commercial and retail areas shall be given to electric vehicles, hybrid vehicles, and alternative fuel vehicles.

APPENDIX 3.14

Placer Vineyards Specific Plan EIS Transportation Analysis

Placer Vineyards Specific Plan EIS Transportation Analysis



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TRANSPORTATION AND CIRCULATION

INTRODUCTION

This Draft EIS Traffic Study analyzes the transportation and circulation impacts associated with development of the *Placer Vineyards Specific Plan*, including roadways, transit services and bicycle facilities. The traffic analysis is conducted under cumulative (2025) conditions.

This section is organized to include three parts. The first two parts are the environmental and regulatory settings. The Environmental Setting describes the existing transportation system and relevant characteristics of the proposed project. The Regulatory Setting describes the applicable transportation policies (including County General Plan policies), standards and regulations that apply to the Specific Plan. The third part describes the impact analysis and identifies specific proposed mitigation measures.

TRANSPORTATION ANALYSIS SCENARIOS

The traffic associated with full development of the proposed Specific Plan was estimated under existing and future (2025) conditions. The following conditions and scenarios of development were defined and evaluated:

EXISTING CONDITIONS

- Existing No Project scenario

CUMULATIVE CONDITIONS

- Cumulative No Project scenario
- Cumulative Plus Project scenarios
    - Proposed Action
    - Blueprint Alternative
    - Alternative “A” (Ownership 1B)
    - Alternative “B” (Ownership 3)
    - Alternatives “C” and “D” (Ownership 16 and 17)
    - Alternative “E” (Ownership 23)
    - “No Action” Alternative

Comparing traffic conditions under these conditions and scenarios provides a comprehensive basis for determining the traffic impacts of the proposed Specific Plan. To determine the traffic impacts, the traffic associated with full development of the Specific Plan area was compared to a No Project scenario for the same time frame, as follows:

- The traffic impacts under the Cumulative Plus Project alternatives scenarios were determined by comparing its traffic operations to the Cumulative No Project scenario.

ENVIRONMENTAL SETTING

Evaluation of the operating characteristics of the existing circulation system in the vicinity of the Specific Plan area is the initial task in defining the transportation impacts of the Specific Plan. The following sections discuss existing roadway functions, traffic volumes, and traffic Levels of Service, as well as transit services and bicycle facilities. Figure 1 shows the location of the Proposed Project and area roadways.

STUDY AREA ROADWAY SYSTEM

The traffic analysis covers an area from north of Baseline Road to Elverta Road on the south, and from Hwy 65 on the east to Hwy 70/99 on the west. The study area for this traffic impact analysis covers portions of five jurisdictions: Placer County, Sutter County, Sacramento County, the City of Roseville, and Caltrans.

The Circulation Plan Diagram in the *Placer County General Plan* depicts the circulation system for unincorporated Placer County by use of a set of roadway classifications. The roadway classification system has been developed to guide Placer County's long range capital improvement planning and programming. Roadways are classified in this system based on the linkages they provide and their function, both of which reflect their importance to the land use pattern, traveler, and general welfare. The County's functional classification system recognizes differences in roadway function and standards between urban/suburban areas and rural areas.

The roadway classifications are as follows:

- Local streets provide direct access to abutting land and access to the collector street system. The public uses these streets for local circulation. They carry little, if any, through traffic, and generally carry very low traffic volumes.

- Collector roadways are intended to "collect" traffic from local streets and carry it to roadways higher in the street classification hierarchy (e.g., arterials). The public uses these roadways as secondary circulation routes, and they generally carry light to moderate traffic volumes. Access to abutting land is normally permitted, but may be restricted to certain locations dependent upon future traffic volumes. In urban/suburban areas, major collector roadways will generally carry higher traffic volumes than minor collectors, and thus require more right-of-way and have more access restrictions.

- Arterial roadways are fed by local and collector roadways and provide linkages to the state highway system, as well as linkages to and between communities and major activity centers. The public uses these roadways as primary circulation routes for through traffic, and they carry higher volumes of traffic than local streets and collector roadways. In urban/suburban areas, major arterials will generally carry higher traffic volumes than minor arterials, and thus require more right-of-way and have more access restrictions. Rural arterial roadways may or may not carry high traffic volumes, but do provide primary access routes for through travel in rural areas of the county.

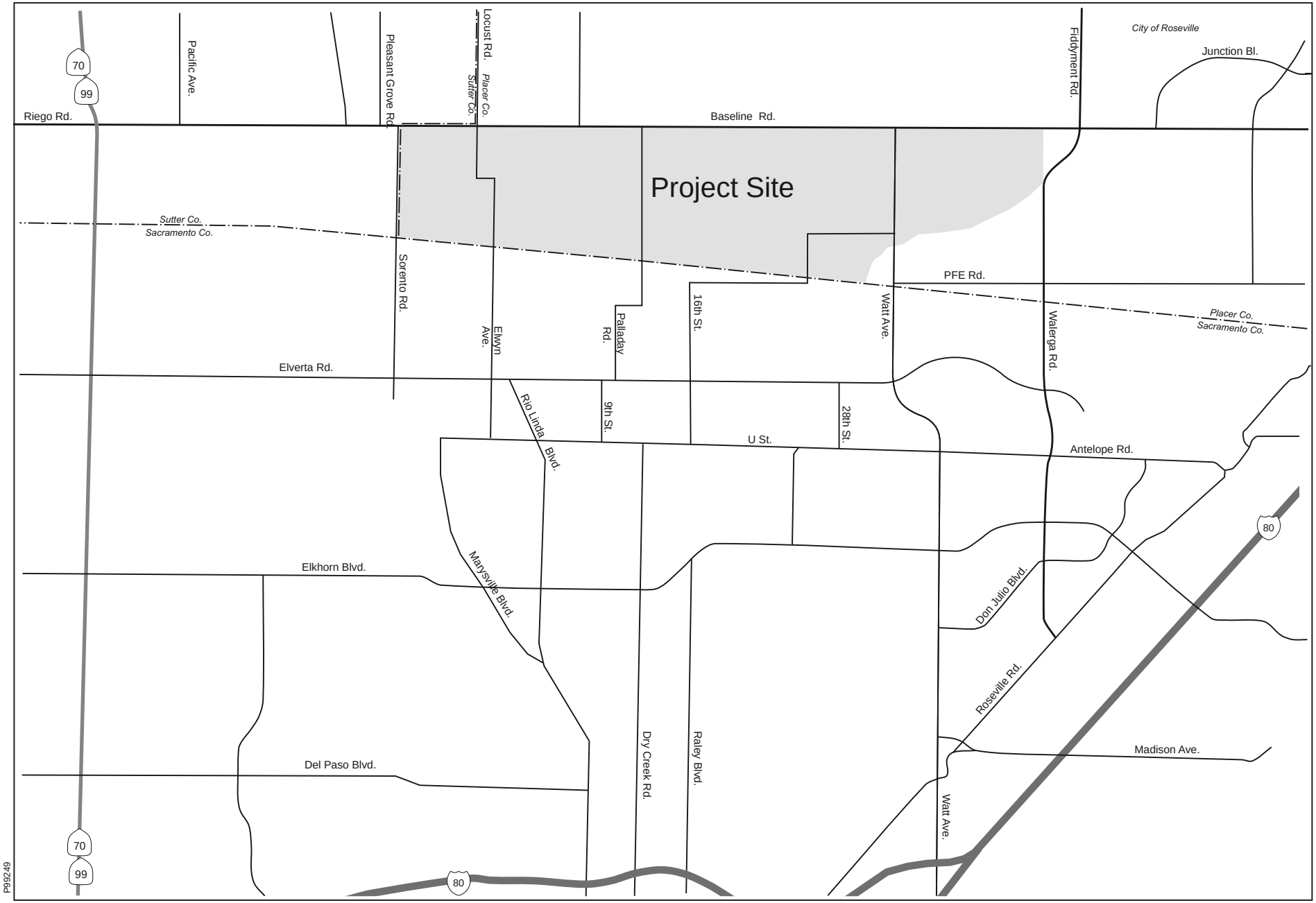

Figure 1
Project Location

DKS Associates

The existing roadway network in the vicinity of the Specific Plan area consists of state highways, arterials, collectors and local roadways. The key roadways shown in the study area are described below.

- Baseline Road is an east-west rural arterial that runs along the northern boundary of the Specific Plan area. This roadway extends from the Sutter County line to Foothills Boulevard in the city of Roseville. Within Sutter County, this roadway becomes Riego Road, while east of Foothills Boulevard this roadway becomes Main Street. Baseline Road and Riego Road connect Roseville, west Placer County and south Sutter County with Hwy 70/99. East of Watt Avenue, Baseline Road carries about 12,600 vehicles per day, while west of Watt Avenue, Baseline Road carries 10,400 vehicles per day.

- Watt Avenue is a north-south arterial that crosses the Specific Plan area. This roadway runs from Baseline Road south to Florin Road in Sacramento County. Watt Avenue connects west Placer County with Interstate 80 and extends across the American River to provide access to U.S. 50. The roadway becomes South Watt Avenue at Jackson Road (Hwy 16), and becomes Elk Grove-Florin Road at Florin Road. Elk Grove-Florin Road continues south to Stockton Boulevard at Hwy 99 in the community of Elk Grove. Within Placer County, Watt Avenue has two travel lanes and carries about 7,100 vehicles per day.

- PFE Road is an east-west rural arterial that extends from Watt Avenue west to the city of Roseville, where it becomes Atkinson Street. East of Watt Avenue, this roadway carries about 4,700 vehicles per day.

- Walerga Road is a two-lane rural arterial that extends from Baseline Road south to Roseville Road in Sacramento County. It provides access between western Placer County and the Antelope area of Sacramento County. Walerga Road carries about 14,900 vehicles per day near Baseline Road.

- Fiddyment Road is a two-lane north-south rural arterial that extends north from Baseline Road along the western boundary of the city of Roseville to Moore Road, southwest of the city of Lincoln. North of Baseline Road, Fiddyment Road carries about 19,600 vehicles per day.

- Brewer Road is a two-lane north-south rural collector that extends from Baseline Road north across western Placer County. It terminates just south of the Bear River, which is the Yuba County line.

- Locust Road is a two-lane north-south rural collector that extends from the Sacramento County line north to Sunset Boulevard West. In Sacramento County this roadway becomes Elwyn Avenue.

- Pleasant Grove Road is a two-lane north-south rural arterial that runs along the Placer County/Sutter County line from Baseline Road south to the Sacramento County line, where it becomes Sorrento Road. Pleasant Grove Road also extends north of Riego Road, beginning

about one-quarter mile west of its southern section, and runs north to the Yuba County line where it becomes Forty Mile Road. Pleasant Grove Road carries about 1,600 vehicles per day south of Baseline Road**.**

Palladay Road, 16th Street, Dyer Lane, Tanwood Avenue, Colburn Street, Newton Street, and Straight Road are two-lane rural local roadways that provide access to private properties within the Specific Plan area.

EXISTING TRAFFIC LEVELS OF SERVICE

The PVSP EIR was certified in 2007 by the Placer County Board of Supervisors. A comprehensive existing conditions section was included in that EIR and was based on existing roadways and traffic volumes in 2004. Because of the economic downturn that has taken place in recent years, traffic volumes have not been rising annually as has traditionally been the case. A comparison of traffic counts from 2004 and 2009 (where available) was conducted to determine if the 2004 counts used in the EIR would be adequate for reporting existing conditions in this document. For daily, a.m. peak, and p.m. peak counts, nearly all of the 2004 counts were higher than their 2009 conterparts. Therefore, to be consistent with the adopted EIR, and because 2004 counts do not appear to be understated, the 2004 existing conditions analysis contained within the EIR serves as the basis foor this EIS.

Determination of traffic impacts of the proposed project is based upon projected roadway volumes and comparisons to roadway capacities. Roadway operating conditions are described using the concept of "Levels of Service."

Level of Service (LOS) is a qualitative measure of the effect of a number of factors which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operation costs. Levels of Service are designated "A" through "F," from the best to worst, which cover the entire range of traffic operations that might occur. Level of Service "E" describes conditions approaching or at maximum capacity.

Under the *Placer County General Plan*, the County has established a standard of LOS "C" for all roadways and intersections except those for within one-half mile of state highways, where the standard is LOS "D". Two types of Level of Service analyses were conducted in the unincorporated Placer County portion of the study area: peak hour intersection analysis and daily segment-based Level of Service analysis. Tables 1, 2, 3, and 4 summarize the Level of Service criteria used for these analyses.

The daily segment-based analysis criteria used to evaluate these roadways are consistent with the methodologies used in the *Placer County General Plan EIR*. Arterial roadways were evaluated using the criteria for "moderate access control arterials", while the criteria for "low access control arterials" were used for collector roadways. Table 5 contains the daily segment-based analysis for existing conditions.

Table 1
Level of Service Definitions - Signalized Intersections (Circular 212)

LOS	V/C	Description
A	0.00-0.60	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	0.61-0.70	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted.
C	0.71-0.80	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	0.81-0.90	**Approaching Unstable/Tolerable Delays:** Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	0.91-1.00	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	>1.00	**Forced Flow/Excessive Delays:** Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

Note: V/C = Volume/Capacity
Sources: Circular 212, Transportation Research Board, 1981.

Table 2
Level of Service Criteria - Signalized Intersections (Highway Capacity Manual)

Level of Service (LOS)	Control Delay Per Vehicle (seconds)	Description
A	≤ 10.0	Very low control delay. Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and ≤ 20.0	Generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS "A," causing higher levels of average delay.
C	> 20.0 and ≤ 35.0	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.
F	> 80.0	This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

Table 3
Level of Service Definitions - Unsignalized Intersections

Level of Service (LOS)	Average Delay per Vehicle (sec/vehicle)
A	0 to 5.0
B	5.1 to 10.0
C	10.1 to 20.0
D	20.1 to 30.0
E	30.1 to 45.0
F	> 45.0

Source: Highway Capacity Manual, Transportation Research Board, 1994.

Table 4
Level of Service Definitions - Daily Segment Based Analysis

Roadway Capacity Class	Maximum Daily Traffic Volume Per Lane for Each Level of Service Designation				
	A	B	C	D	E
1) Arterial – High Access Control	6,000	7,000	8,000	9,000	10,000
2) Arterial – Moderate Access Control	5,400	6,300	7,200	8,100	9,000
3) Arterial and Collector – Low Access Control	4,500	5,250	6,000	6,870	7,500
4) Expressway[1] – Level Terrain	4,050	6,620	9,450	12,150	13,500
5) Freeway – Level Terrain	6,300	10,620	13,680	16,740	18,000

[1] Capacity assumes one-half minimum spacing between access points, grade separations at high volume intersections and signalization at low volume intersections. Used for portions of Baseline Road west of Watt Avenue under certain analysis scenarios.
Source: Placer County General Plan Update, Countywide General Plan, Draft Environmental Impact Report, Placer County, 1994, except expressway.

Table 5
Existing Roadway Segment Levels of Service – Unincorporated Placer County

Roadway	Segment	No. of Lanes	ADT	LOS
Baseline Road	East of County Line	2	10,100	A
Baseline Road	East of 16th Street	2	10,400	A
Baseline Road	East of Country Acres	2	10,400	B
Baseline Road	East of Watt Avenue	2	12,600	B
Baseline Road	East of Walerga Road	3	15,100	A
Walerga Road	South of Baseline Road	2	14,900	D
Watt Avenue	South of Baseline Road	2	7,100	A
PFE Road	East of Watt Avenue	2	4,700	A
PFE Road	East of Walerga Road	2	7,200	A
South of Baseline Road	South of Baseline Road	2	1,000	A
Locust Road	North of county line	2	1,000	A
Palladay Road	South of Baseline Road	2	500	A
Palladay Road	North of county line	2	500	A

Note: ADT = average daily traffic
Source: DKS Associates, 2006.

Placer County uses the *Transportation Research Board Circular 212* (critical movement) method to evaluate Levels of Service at its signalized intersections. Analysis of Level of Service at unsignalized intersections is based upon the methodology found in the Transportation Research Board's *Highway Capacity Manual*. This method calculates Level of Service based on the delay on each of the stop-sign controlled movements at the intersection. For this Revised Draft EIR, the Level of Service for stop-sign controlled intersections is based on the average delay for all movements in the intersection. Table 6 summarizes existing peak hour conditions for key study intersections in unincorporated Placer County.

Table 6
Existing P.M. Peak Hour Intersection Levels of Service - Unincorporated Placer County

Intersection		Level of Service	LOS Criteria	
North-South Roadway	**East-West Roadway**		**Signalized Intersections (V/C Ratio)**	**Unsignalized Intersections (Delay)[1]**
Locust Road	Baseline/Riego Rd	E		46.8
Brewer Road	Baseline/Riego Rd	A		0.6
Watt Avenue	Baseline Road	E	0.94	
Fiddyment Road	Baseline Road	D (F)[2]	0.87 (>1.00)[2]	
Watt Avenue	PFE Road	C		16.3
Walerga Road	PFE Road	E	0.93	
Cook Riolo Road	PFE Road	B		10.2

[1] Average delay for all movements at intersection, including uncontrolled movements. Delay on some stop-signed controlled left-turn movements may be substantial, but typically impact a limited number of vehicles.
[2] Observed long queues indicate intersection operates at LOS "F".
Source: DKS Associates, 2005.

The study area also covers the western portion of Roseville. Under Cumulative conditions, an analysis of all signalized intersections in the city of Roseville using the City's Capital Improvement Program (CIP) analysis methodology was conducted at the City's request. The study area also covers a portion of Sacramento County south of the Specific Plan area and a portion of south Sutter County that is west of the Specific Plan area. Levels of Service in these portions of the study area were calculated using the methodologies and policies of those jurisdictions as outlined below.

The *City of Roseville General Plan* states that it should strive to maintain LOS "C" on its roadway system. The City's Level of Service policy allows the City Council to take an action to accept degradation in the Level of Service of one or more of its signalized intersections from the levels identified in the 2020 CIP as long as 70% or more of the total signalized intersections in the city would operate at LOS "C" or better.

Roseville uses a modified version of the Circular 212 (critical movement) method that was adopted as part of Roseville's CIP to evaluate its intersections. This modified method assumes intersection capacities that are approximately 7% higher than the Circular 212 method used by Placer County. Table 7 summarizes existing peak hour intersection conditions for study intersections in Roseville.

Table 7
Existing P.M. Peak Hour Intersection Levels of Service – City of Roseville

Intersection		Existing Conditions		
			LOS Criteria	
North-South Roadway	East-West Roadway	LOS	V/C	Delay
1 Fiddyment Road	Blue Oaks Blvd	C		14.3
2 Fiddyment Road	Pleasant Grove Blvd	B	0.62	
3 Junction Boulevard	Baseline Road	A	0.48	
4 Woodcreek Oaks Blvd	Blue Oaks Blvd	B	0.65	
5 Woodcreek Oaks Blvd	Pleasant Grove Blvd	C	0.75	
6 Woodcreek Oaks Blvd	Baseline Road	B	0.64	
7 Foothills Boulevard	Blue Oaks Blvd	D	0.89	
8 Foothills Boulevard	Pleasant Grove Blvd	C	0.73	
9 Foothills Boulevard	Junction Boulevard	F	1.03	
10 Foothills Boulevard	Baseline Road	D	0.81	
11 Foothills Boulevard	Cirby Way	E	0.99	
12 Riverside Avenue	Cirby Way	F	1.08	
13 Washington Boulevard	Pleasant Grove Blvd	C	0.76	
14 Fiddyment Road[2]	Baseline Road	C	0.76	

Notes:
[1] Average delay for all movements at intersection, including uncontrolled movements. Delay in some stop-sign controlled left-turn movements may be substantial, but typically impacts a limited number of vehicles.
[2] This intersection is also analyzed under the Placer County methodology (see Table 6). The volume-to-capacity ratio and level of service standards differ due to different lane capacity assumptions.
Source: DKS Associates, 2005.

Unlike Placer, Sacramento and Sutter counties, Roseville does not use a daily segment-based analysis to evaluate impacts on its roadway system.

The portion of Sacramento County north of Elkhorn Boulevard was included in the traffic analysis study area. Sacramento County uses a LOS "E" standard for urban areas and a LOS "D" standard for rural areas. All of the roadways in the study area are located in an urban area. Like Placer County, Sacramento County uses a daily segment-based analysis to evaluate its roadways. Sacramento County's criteria for the segment-based analysis are the same as those used by Placer County. Table 8 contains the daily segment-based analysis for existing conditions on these roadways.

Table 8
Existing Roadway Segment Levels of Service – Sacramento County

Roadway	Segment	No. of Lanes	ADT	LOS
Elverta Road	East of Hwy 70/99	2	5,000	A
Elverta Road	East of Rio Linda Boulevard	2	8,000	A
Elverta Road	East of 16th Street	2	10,400	A
Elverta Road	West of Watt Avenue	2	19,000	F
Watt Avenue	North of Elverta Road	4	19,400	A
Watt Avenue	North of Antelope Road	4	28,900	D
Watt Avenue	North of Elkhorn Boulevard	4	37,900	F
Watt Avenue	North of Air Base Drive	6	46,700	D
Watt Avenue	North of Roseville Road	5	49,200	F
Watt Avenue	North of I-80	5	62,600	F
Walerga Road	North of Elverta Road	4	24,700	B
Walerga Road	North of Antelope Road	4	40,300	F
Walerga Road	North of Elkhorn Boulevard	4	31,100	D
Sorento Road	North of Elverta Road	2	1,200	A
Elwyn Road	North of Elverta Road	2	1,000	A
Palladay Road	North of Elverta Road	2	500	A
16th Street	North of Elverta Road	2	400	A
16th Street	South of Elverta Road	2	400	A
Dry Creek Rd	North of Elkhorn Boulevard	2	8,600	A
Dry Creek Rd	South of Elkhorn Boulevard	2	9,000	A
Elkhorn Boulevard	East of Watt Avenue	4	25,700	C
Elkhorn Boulevard	East of Walerga Road	4	50,300	F

Note: ADT = average daily traffic
Source: DKS Associates, 2006.

Sacramento County uses a modified version of the Circular 212 (critical movement) method to evaluate its signalized intersections. This modified method assumes intersection capacities that are about 10% higher than the Circular 212 method that is used by Placer County. Table 9 summarizes existing peak hour intersection conditions for study intersections in Sacramento County.

Traffic forecasts indicate that the roadways in Sutter County that would experience significant changes in traffic volumes due to assumed development of the South Sutter County Specific Plan area are Riego Road and Hwy 70/99. Thus, these roadways are included in the traffic analysis study area. Sutter County has set a standard of LOS "D" for its roadway system in the *Sutter County General Plan 2015*. Table 10 contains the daily segment-based analysis for existing conditions on these roadways using the same criteria as Placer and Sacramento counties.

Table 9
Existing Peak Hour Intersection Levels of Service– Sacramento County

Intersection		A.M. Peak Hour			P.M. Peak Hour		
			LOS Criteria			LOS Criteria	
North-South Roadway	East-West Roadway	LOS	V/C	Delay	LOS	V/C	Delay
1 Hwy 70/99	Elverta Road	A		8.4	A		8.3
2 16th Street	Elverta Road	A		1.6 [1]	A		2.3 [1]
3 Watt Avenue	Elverta Road	A	0.56		A	0.60	
4 Walerga Rd	Elverta Road	D	0.86		C	0.76	
5 Watt Avenue	Antelope Road	C	0.73		C	0.77	
6 Walerga Rd	Antelope Road	C	0.73		D	0.89	
7 Watt Avenue	Elkhorn Blvd	C	0.76		B	0.70	
8 Walerga Rd	Elkhorn Blvd	B	0.68		D	0.89	
9 Watt Avenue	Don Julio Blvd	A	0.51		C	0.74	
10 Watt Avenue	Air Base Drive	B	0.63		E	1.00	
11 Watt Avenue	Roseville Rd	D	0.88		E	0.97	
12 Watt Avenue	I-80 WB	B		16.6	B		14.1

Notes:
[1] Average delay for all movements at an unsignalized intersection, including uncontrolled movements. Delay on some stop-signed controlled left-turn movements may be substantial, but typically impacts a limited number of vehicles.
Source: DKS Associates, 2005.

Table 10
Existing Roadway Segment Levels of Service – Sutter County

Roadway	Segment	No. of Lanes	ADT	LOS
Hwy 70/99	South of Riego Road	4	32,000	A
Hwy 70/99	North of Riego Road	4	29,000	B
Riego Road	East of Hwy 70/99	2	9,900	A
Pleasant Grove Road	North of county line	2	1,000	A

Note: ADT = average daily traffic
Source: DKS Associates, 2006.

Intersection Levels of Service in Sutter County were evaluated using the Circular 212 method. Table 11 summarizes existing peak hour intersection conditions for study area intersections in Sutter County.

Two types of Level of Service analyses were conducted on the Caltrans facilities in the study area: peak hour intersection analysis and daily segment-based Level of Service analysis. Tables 2, 3 and 4 summarize the Level of Service criteria used for these analyses.

Table 12 shows the existing daily traffic volumes on Caltrans roadways in the vicinity of the Specific Plan area. Hwy 70/99 north of Elverta Road was evaluated using the criteria for "expressway", while the criteria for "freeways" were used for the other freeways. Table 12 contains the daily segment-based analysis for existing conditions.

Table 11
Existing P.M. Peak Hour Intersection Levels of Service– Sutter County

Intersection		Existing Conditions		
			LOS Criteria	
North-South Roadway	East-West Roadway	Level of Service	Signalized Intersection (Delay)	Unsignalized Intersection (Delay)[1]
Hwy 70/99	Riego Road	B	13.6	
Natomas Road	Riego Road	C (F)[2]		16.3 (50)[2]
Pleasant Grove North	Riego Road	C (F)[2]		20.9 (50)[2]
Pleasant Grove South	Riego Road	D (F)[2]		28.9 (50)[2]

Notes:
[1] Average delay for all movements at intersection, including uncontrolled movements. Delay on some stop-signed controlled left-turn movements may be substantial, but typically impacts a limited number of vehicles.
[2] Observed delay is greater than the calculated delay.
Source: DKS Associates, 2005.

Table 12
Existing Freeway Segment Levels of Service – State Highways

Roadway	Segment	Existing Conditions		
		Lanes[1]	ADT[2]	LOS
Hwy 70/99[3]	North of Riego Road	4	29,000	C
Hwy 70/99[3]	South of Riego Road	4	32,000	C
Hwy 70/99	South of Elverta Road	4	40,500	B
Hwy 65	North of Pleasant Grove Blvd	4	76,000	F
Hwy 65	South of Pleasant Grove Blvd	4	83,400	F
I-80	West of Watt Avenue	10	145,000	D
I-80	East of Auburn Boulevard	12	240,000	F
I-80	West of Riverside Avenue	8	184,200	F
I-80	East of Riverside Avenue	6	165,000	F
Business 80	West of Watt Avenue	6	133,000	F

1: Excluding carpool lanes.
2: ADT = average daily traffic, excluding HOV traffic
3: Evaluated as expressway, not as a freeway
Source: DKS Associates, 2005.

Caltrans uses the Transportation Research Board's *Highway Capacity Manual* method to evaluate Levels of Service at its signalized intersections. This method calculates Level of Service based on the average intersection delay.

EXISTING TRANSIT SERVICE

Local transit service in Placer County is currently provided by local governments and social service agencies. Most of the services are oriented towards senior citizens, disabled persons and other transit dependents, and are not geared towards commuters or congestion relief. Fixed-route service providers in south Placer County include Placer County Transit, Lincoln Transit, Roseville Fixed Route and Roseville Commuter Service. However, none of these transit routes serves the Specific Plan area. The Sacramento Regional Transit District (RT) provides fixed-

route transit service in Sacramento County. The closest RT bus routes to the Specific Plan area are Routes 19, 84 and 101, which do not serve areas north of Watt Avenue and Black Saddle Drive (just north of Elverta Road, about one mile south of the Specific Plan area).

The vicinity of the Specific Plan area is not served by "dial-a-ride" transit services. Consolidated Transportation Services Agency, an independent provider of demand responsive transportation services to the elderly and disabled, provides services in portions of Placer County, but they do not serve the vicinity near the Specific Plan.

EXISTING BICYCLE FACILITIES

Bicycle facilities in Placer County are classified as follows:

- Class I: Off-street bike trails or paths which are physically separated from streets or roads used by motorized vehicles.
- Class II: On-street bike lanes with signs, striped lane markings and pavement legends.
- Class III: On-street bike routes marked by signs and shared with motor vehicles and pedestrians. Optional four-inch edge lines painted on the pavement.

There is a very limited bikeway system in the vicinity of the Specific Plan area.

Placer County adopted a *Bikeway Master Plan* in 1988. That plan covered much of Placer County, but not areas west of Watt Avenue.

REGULATORY SETTING

A number of County standards, plans and programs apply to the evaluation of transportation impacts of the proposed project. These standards cover the primary aspects of the transportation system (operations and design).

PLACER COUNTY GENERAL PLAN POLICIES

The *Placer County General Plan* policies addressing transportation and circulation are identified below. A separate discussion is provided for Policy 3.8.7 at the end of this section.

3.A.2 Streets and roads shall be dedicated, widened, and constructed according to the roadway design and access standards generally defined in Section I of this *Policy Document* and, more specifically, in *community plans* and the County's *Highway Deficiencies Report*. Exceptions to these standards may be necessary but should be kept to a minimum and shall be permitted only upon determination by the Public Works Director that safe and adequate public access and circulation are preserved by such exceptions.

3.A.3 The County shall require that roadway rights-of way be wide enough to accommodate the travel lanes needed to carry long-range forecasted traffic volumes (beyond 2010), as well as any planned bikeways and required drainage, utilities, landscaping, and suitable separations. Minimum right-of-way criteria for each class of roadway in the county are specified in Part I of this *Policy Document*.

3.A.6 The County shall require all new development to provide off-street parking, either on-site or in consolidated lots or structures.

3.A.9 The County shall work with neighboring jurisdictions to provide acceptable and compatible levels of service and joint funding on the roadways that may occur on the circulation network in the Cities and the unincorporated area.

3.A.10 The County shall strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

3.A.12 The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others.

3.A.14 The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits (e.g., low income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.

3.B.2 The County shall promote the provision of high quality transit service in transit corridors designated in Figure I-7 in Part I of the Policy Document.

3.B.3 The County shall consider the need for future right-of-way in reviewing and approving plans for development. Rights-of-way may be either exclusive or shared with other vehicles.

3.D.5 The County shall continue to require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.

3.D.7 The County shall, where appropriate, require new development to provide sheltered public transit stops, with turnouts.

PLACER COUNTY GENERAL PLAN POLICY 3.A.7 AND DRY CREEK/ WEST PLACER COMMUNITY PLAN LEVEL OF SERVICE STANDARDS

Under *Placer County General Plan* Policy 3.A.7, the County has established a standard of LOS "C" or better for its roadway system, or as otherwise specified in a community plan or specific plan. The *Dry Creek/West Placer Community Plan* also sets a LOS "C" standard. Consequently, LOS "A", "B", and "C" are considered acceptable, while "D", "E" and "F" are unacceptable. Within one-half mile of a state highway, LOS "D" is considered acceptable under the *Placer County General Plan*. In addition, community plans and specific plans may set standards that differ from LOS "C" for roadways and intersections within the plan boundaries. Exceptions are also allowed based on the following considerations:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.
- The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.
- The right-of-way needs and the physical impacts on the surrounding properties.
- The visual aesthetics of the required improvement and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- The impacts on general safety.
- The impacts of the required construction phasing and traffic maintenance.
- The impacts on quality of life as perceived by residents.

- Consideration of other environmental, social or economic factors on which the County may base findings to allow an exceedance of the standards.

The Specific Plan has established a standard of LOS "D" or better for its roadway system. This covers all roadways and intersections both internal to the project and on the project boundaries, including Baseline Road.

PLACER COUNTY IMPROVEMENT STANDARDS

Roadway improvements within Placer County must conform to a set of standard plans that detail County standards for pavement width, lighting, drainage, sewer, and other roadside facilities. Roadway facilities associated with the proposed Specific Plan must meet or exceed these standards.

PLACER COUNTY CAPITAL IMPROVEMENT PROGRAM (CIP)

The Placer County CIP identifies roadway improvements that are needed to meet the County's Level of Service standards. The County has established eleven benefit districts, each of which has a separate CIP and associated traffic impact fee. The CIP identifies roadway improvements and facilities within each district needed as a result of future development. The CIP also provides details on funding sources for each project, including amounts to be collected through the Traffic Impact Fee Program. Traffic impact fees are based on Dwelling Unit Equivalents and are charged on all new development within a district, regardless of type or location. Traffic impact fees are indexed to construction costs and are adjusted annually. The CIP and fees are periodically updated as conditions change to account for approvals to major land use projects and reflect completed roadway improvements or updates to local community plans.

PLACER COUNTY BIKEWAY MASTER PLAN

The *Placer County General Plan* calls for the development of a comprehensive bikeway system that would provide connections between the major urban areas of the county, with linkages to bikeway systems in other jurisdictions. The County adopted the *Placer County Regional Bikeway Plan* in 2002 to provide guidelines for the development of a countywide network of bicycle facilities and design standards (based on Caltrans standards) for new bicycle facilities.

PLACER COUNTY TRUCK ROUTES

Placer County has not developed a system of truck routes for the unincorporated area. However, trucks are prohibited from using specific bridges and roadways.

IMPACTS AND MITIGATION MEASURES

This section identifies and discusses the transportation-related environmental impacts resulting from the proposed Specific Plan, and suggests mitigation measures to reduce the level of significance of impacts. The discussion begins by describing the thresholds for determining when an impact is considered significant (standards of significance). This is followed by a description of the analysis methodology, the presentation of specific impacts and proposed mitigation measures.

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, Placer County has determined that a project will have a significant effect on the environment if it will cause a substantial increase in traffic in relation to the existing traffic load and capacity of the street system. For this analysis, Levels of Service will be used as the basis for determining significant impacts.

Potential significant impacts associated with traffic have been evaluated using the following specific criteria:

- In unincorporated Placer County outside of the Dry Creek/ West Placer Plan Area, the Specific Plan would increase congestion on County roadway segments and/or at County intersections to the extent that one or more roadway or intersections would deteriorate from LOS "C" or better to levels below LOS "C," or would increase congestion by more than 5% on a roadway or at an intersection already operating at an unacceptable Level of Service.

- Within the Dry Creek/ West Placer Plan Area (including adjacent roadways and intersections), the Specific Plan would cause a roadway or intersection to operate at LOS "E" or "F", or would increase congestion by more than 5% on a roadway or at an intersection already operating at LOS "E" or "F". There are noted exceptions to this policy, which are identified in the appropriate tables in this document.

- In Roseville, the Specific Plan would increase congestion to the extent that one or more signalized intersections previously identified in Roseville's CIP as functioning at LOS "C" or better (volume-to-capacity [V/C] ratio of 0.81 or better) would deteriorate to LOS "D" or worse (V/C ratio of 0.82 or worse); or, at a signalized intersection previously identified in Roseville's CIP as functioning at LOS "D" or "E" conditions, the increased congestion causes operations to deteriorate to a worse standard level. This criterion requires an analysis based on the City of Roseville's buildout development forecasts.

- In Roseville, the Specific Plan would increase congestion to the extent that the number of signalized intersections operating at LOS "C" or better conditions would be reduced to less than 70% of the total number of signalized intersections in the city. This criterion requires an analysis based on the City of Roseville's buildout development forecasts.

- In Sacramento County, the Specific Plan would increase congestion to the extent that one or more intersections would deteriorate from LOS "E" or better to LOS "F". For facilities that are or will be (cumulative condition) operating at unacceptable Levels of Service without the project, an impact is considered significant if increased congestion due to the Specific Plan would:

  - Increase the average delay at one or more unsignalized intersections by more than five seconds, or

  - Increase the V/C ratio by 0.05 or more on a roadway or at one or more signalized intersections.

- In Sutter County, the Specific Plan would increase congestion to the extent that intersection operations would deteriorate to levels below Sutter County's LOS "D" standard.

- The Specific Plan would increase congestion to the extent that operations on a state highway would deteriorate to levels below those identified in Caltrans' Transportation Concept Report (TCR). The TCRs for Hwy 65, Hwy 70/99 and I-80 indicate that these state highways have a LOS "E" standard.

- Planned transit services do not meet the additional transit demand generated by the Specific Plan, which includes helping the County meet its Level of Service standard, transportation systems management standards and air quality goals.

- Planned bicycle facilities do not provide adequate capacity for the additional bicycle trips generated by the Specific Plan, and the policies and guidelines of Placer County's *Bikeway Master Plan*.

METHODOLOGY

OVERVIEW

Transportation system needs and impacts are based on the Placer County Travel Demand Model, which was originally developed by DKS Associates in 1993 and has since been updated and revalidated to 2004 conditions. The model translates land uses into roadway volume projections. Its inputs are estimates of development (i.e., the number of single-family and multi-family dwelling units and the amount of square footage of various categories of non-residential uses) and a detailed description of the roadway system. The model covers the portions of Placer County west of Colfax, as well as the entire Sacramento region, including Sacramento, Yolo and south Sutter counties. For areas outside Placer County, the model uses the trip generation estimates from the regional model used by the Sacramento Area Council of Governments (SACOG). The Placer County model also maintains a general consistency with the trip distribution and mode choice estimates from SACOG's regional model for the entire region.

For intersections within the Specific Plan area, this analysis assumes the intersection geometries shown in the traffic appendix to the Placer Vineyards Specific Plan and Blueprint Specific Plan.

To evaluate Specific Plan impacts, two types of roadway Level of Service analyses were conducted in the study area. A roadway segment analysis based on average daily traffic volumes and capacities was conducted following the same methodology used in the *Placer County General Plan EIR*. In addition, an intersection Level of Service analysis was performed for p.m. peak hour traffic conditions. This analysis addressed the major intersections in the vicinity of the Specific Plan area. Placer County assesses traffic impacts based on p.m. peak hour conditions as the p.m. peak hour is typically the worst one-hour period during that day. As individual development projects within the Specific Plan area are proposed, additional traffic analysis may reveal the need for additional improvements to provide acceptable operations for a.m. peak period operations as well.

SPECIFIC PLAN ALTERNATIVES TRIP GENERATION

Table 13 summarizes the trip generation of the Specific Plan and the Blueprint alternative. The trip generation rates used in this analysis reflect those contained in the Placer County Travel Demand Model. These trip rates were validated by applying them in the Travel Demand Model using 2004 land use data from throughout Placer County and comparing the model's resulting traffic volumes to extensive 2004 traffic count data from throughout Placer County.

Table 13
Land Use and Trip Generation Changes
Blueprint Alternative

Land Use	Daily Trip Rate		PVSP				Change in Daily Trip Ends
			Approved		Blueprint Alternative		
			Units	Trips	Units	Trips	
Single Family	9	per DU	9,040	81,360	11,967	107,703	+ 26,343
Multi-Family	6.5	per DU	3,750	24,375	7,878	51,207	+ 26,832
Age-Restricted	3.3	per DU	931	3,072	1,375	4,538	+ 1,466
SPA	9	per DU	411	3,699	411	3,699	+ 0
Total DU			*14,132*		*21,631*		
Commercial	35	per KSF	2206.1	77,214	2,211.0	77,385	+ 171
Office	17.7	per KSF	1,346.8	23,838	1,483.2	26,252	+ 2,414
Public	25	per KSF	307.1	7,678	276.6	6,915	-763
Church	9.3	per KSF	766.8	7,131	1,006.3	9,359	+ 2,228
K-12 School	1	per Student	8,005	8,005	11,963	11,963	+ 3,958
Park	2.2	per Acre	210.0	462	257.7	567	+ 105
Total Daily Trip Ends				**236,834**		**299,588**	+ 62,754
% Change in Total Placer Vineyards Specific Plan Trip Generation							+ 26.5 %

Note: Single Family cosnsists of LDR and MDR, Multi-Family includes CMU, KSF equals 1,000 square feet

Table 13 shows that buildout of the entire proposed Specific Plan would generate about 237,000 daily vehicle trip ends on an average weekday. It should be noted that this number represents all

vehicle trips generated by the project and includes trips that may begin in one portion of the project and terminate somewhere else in the project. Because this project contains a mixture of residential and non-residential uses, and because the project covers a very large area of land, it can be assumed that a fairly large number of vehicle trips remain within the boundaries of the project. The travel demand model has estimated this to be over 20% of the project generated trips.

Table 13 also shows that buildout of the Blueprint alternative would increase trip generation to approximately 300,000 daily vehicle trip ends on an average day. This represents an increase of approximately 26.5% over the proposed project. As with the propsed Specific Plan, it is assumed that a large number of trips (over 20%) would likely remain within the project boundaries.

Table 14
Land Use and Trip Generation Changes
Alternative "A"

Land Use	Daily Trip Rate		Property 1B						Change in Daily Trip Ends
			Approved			Alternative A			
			Acres	Units	Trips	Acres	Units	Trips	
Single Family	9	per DU	28	255	2,295	22	222	1,998	-297
Multi-Family	6.5	per DU	6	94	611	8	127	826	+215
Total DU				*349*			*349*		
Church	9.3	per KSF	9	61.0	567			0	-567
Park	2.2	per Acre	2	2.0	4	1	1.0	2	-2
Total Daily Trip Ends					**3,477**			**2,826**	-651
									-19%
% Change in Total Placer Vineyards Specific Plan Trip Generation									-0.3%

Note: Single Family cosnsists of LDR and MDR, KSF equals 1,000 square feet

Alternative "A" represents a modification of Property 1B, located west of East Dyer Lane. The modification consists of an increase in open space and resultant decrease in residential and church acreage. Table 14 shows that implementation of Alternative "A" would represent a decrease of approximately 650 daily trip ends. This represents approximately 19% of trips generated by Property 1B and approximately 0.3% of trips generated by the entire Specific Plan.

Alternative "B" represents a modification of Property 3, located south of Baseline Road and west of Watt Avenue. The modification consists of changing the land use designation of Property 3 from a combination of general commercial, single and multi-faily residential, and a park to commercial "Power Center" and open space. "Power Center" commercial is assumed to have a higher trip generastion rate than general commercial and for this nalysis, it is assumed that the residential dwelling units assumed under the Specific Plan for Property 3 would still be located on the property. Because this would be a mixed use property, all 259 dwelling units are assumed to be multi-family units. Table 15 shows that implementation of Alternative "B" would represent an increase of approximately 14,000 daily trip ends. This represents over a doubling of

trips generated by Property 1B and an increase in approximately 6.0% of trips generated by the entire Specific Plan.

Table 15
Land Use and Trip Generation Changes
Alternative "B"

Land Use	Daily Trip Rate		Property 3						Change in Daily Trip Ends
			Approved			Alternative B			
			Acres	Units	Trips	Acres	Units	Trips	
Single Family	9	per DU	27	146	1,314			0	-1,314
Multi-Family	6.5	per DU	7	113	735		259	1,684	+949
Total DU				*259*			*259*		
Commercial	35	per KSF	25	272.3	9,531			0	-9,531
Power Center	40	per KSF			0	**56**	609.8	24,394	+24,394
Church	9.3	per KSF	4	52.3	486	**2**	22.7	211	-275
Park	2.2	per Acre	4	4.0	9			0	-9
Total Daily Trip Ends					**12,075**			**26,289**	+14,214
									+118 %
% Change in Total Placer Vineyards Specific Plan Trip Generation									6.0%

Note: Single Family cosnsists of LDR and MDR, KSF equals 1,000 square feet

Table 16
Land Use and Trip Generation Changes
Alternative "C/D"

Land Use	Daily Trip Rate		Property 16/17						Change in Daily Trip Ends
			Approved			Alternative C/D			
			Acres	Units	Trips	Acres	Units	Trips	
Single Family	9	per DU	83	358	3,222	43	358	3,222	0
Church	9.3	per KSF	6	47.9	445			0	-445
Park	2.2	per Acre	4	4.0	9	2	2.0	4	-5
Total Daily Trip Ends					**3,676**			**3,226**	-450
									-12%
% Change in Total Placer Vineyards Specific Plan Trip Generation									-0.2%

Note: Single Family cosnsists of LDR and MDR, KSF equals 1,000 square feet

Alternative "C" and "D" represent modifications of Property 17, located south of West Dyer Lane. The modifications consist of an increase in open space and resultant decrease in residential and church acreage. Because one modification is basically dependent upon the other, both are analyzed together. Table 16 shows that implementation of Alternative "C" and "D" would represent a decrease of approximately 450 daily trip ends. This represents approximately

12% of trips generated by Property 17 and approximately 0.2% of trips generated by the entire Specific Plan.

Table 17
Land Use and Trip Generation Changes
Alternative "E"

Land Use	Daily Trip Rate		Property 23						Change in Daily Trip Ends
			Approved			Alternative E			
			Acres	Units	Trips	Acres	Units	Trips	
Single Family	9	per DU	59	214	1,926	43	214	1,926	0
Church	9.3	per KSF							
Park	2.2	per Acre	5	5.0	11	2	2.0	4	-7
Total Daily Trip Ends					**1,937**			**1,930**	-7
									- 0.0%
% Change in Total Placer Vineyards Specific Plan Trip Generation									0.0%

Note: Single Family cosnsists of LDR and MDR, KSF equals 1,000 square feet

Table 18
Land Use and Trip Generation Changes
No Action Alternative

Land Use	Daily Trip Rate		PVSP				Change in Daily Trip Ends
			Approved		No Action		
			Units	Trips	Units	Trips	
Single Family	9	per DU	9,040	81,360	4,964	44,676	-36,684
Multi-Family	6.5	per DU	3,750	24,375	2,147	13,956	-10,419
Age-Restricted	3.3	per DU	931	3,072	919	3,033	-39
SPA	9	per DU	411	3,699	411	3,699	0
Total DU			*14,132*		*8,441*		
Commercial	35	per KSF	2206.1	77,214	1,572.9	55,052	-22,162
Office	17.7	per KSF	1,346.8	23,838	567.1	10,038	-13,800
Public	25	per KSF	307.1	7,678	204.5	5,113	-2,565
Church	9.3	per KSF	766.8	7,131	567.6	5,279	-1,852
K-12 School	1	per Student	8,005	8,005	5,400	5,400	-2,605
Park	2.2	per Acre	210.0	462	123.8	272	-190
Total Daily Trip Ends				**236,834**		**146,518**	-90,316
% Change in Total Placer Vineyards Specific Plan Trip Generation							-38.1%

Note: Single Family cosnsists of LDR and MDR, Multi-Family includes CMU, KSF equals 1,000 square feet

Alternative "E" represents a modification of Property 23, located west of Locust Road. The modification consists of an increase in open space and resultant decrease in residential acreage,

however the same number of dwelling units is assumed. The only difference is a reduction in park acreage. Table 17 shows that implementation of Alternative "A" would represent a decrease of 7 daily trip ends. Because this change is so minor, this alternative is assumed to be the same as the proposed project for analysis purposes.

The No Action alternative represents a complete redesign of the Specific Plan based on input from the USACE. The alternative modifies the land use plan, along with the circulation plan, eliminating or changing a number of project roadways. Table 18 shows that the No Action Alternative would decrease Specific Plan trip generation by approximately 90,000 daily trip ends, a decrease of approximately 38%.

Table 19
Trip Generation Changes: All Alternatives

Alternative	Total Specific Plan Daily Trip Ends	Change	% Change
Proposed Project	236,834		
Blueprint Alternative	299,588	**+62,754**	**+26.5%**
Alternative "A"	236,183	-651	-0.3%
Alternative "B"	251,048	**+14,214**	**+6.0%**
Alternative "C/D"	236,389	-445	-0.2%
Alternative "E"	236,827	-7	-0.0%
No Action Alternative	146,518	-90,316	-38.1%

Source: DKS Associates, 2012

Table 19 shows that all but two of the alternatives result in lower trip generation. The Blueprint Alternative results in an increase of 26.5% while Alternative "B" results in an increase of 6%. Alternatives "A," "C/D," and "E" all result in decreases of less than one percent, while the No Action Alternative results in a decrease of 38.1%.

PLANNED TRANSPORTATION IMPROVEMENTS

Future transportation improvements have been identified by the *Placer County General Plan* and CIP, the general plans and CIPs for the City of Roseville, Sacramento County and Sutter County, and SACOG's *Metropolitan Transportation Plan* (MTP). New roadways needed to serve proposed development areas assumed in the 2025 scenario were based on discussions with local jurisdictions. For the purposes of this traffic analysis, the following key improvements to the transportation system were assumed under existing and future conditions:

- Existing Conditions Roadway Improvements. The Existing No Project conditions assumed only the existing roadway network. The analysis of the Existing Plus Project conditions assumed that all the internal roadways in the proposed Specific Plan area would be fully implemented, including the widening of Baseline Road and Watt Avenue to six lanes, but no off-site improvements were assumed other than the widening of Baseline Road to east of

Fiddyment Road and Watt Avenue south of the Specific Plan area. The internal roadway network of the Specific Plan is discussed later in this section.

- Roadway Improvements under Cumulative No Project Conditions. The analysis of the No Project Alternative under Cumulative conditions assumed roadway improvements that are planned to be constructed by 2025, including all the new roadways and roadway improvements in the *Placer County General Plan EIR*, Placer County CIP and SACOG MTP that would be implemented by 2025.

  The *Dry Creek/West Placer Community Plan* calls for the eventual closure of PFE Road west of Cook Riolo Road. However, based on discussions with Placer County, the analysis of Cumulative conditions assumed that this roadway would remain open.

  For Sacramento County, improvements contained in SACOG's MTP were assumed. This includes the widening of Elverta Road from two lanes to four lanes from Rio Linda Boulevard to Watt Avenue. This also includes the widening of Watt Avenue and Walerga Road from two lanes to four lanes from Elverta Road to the Placer County line.

  Under Cumulative No Project conditions, about half of the potential 17,500 dwelling units that could be constructed in the South Sutter County Specific Plan area under the County's recently passed Measure M were assumed. That level of development would require improvements to local roadways, including Riego Road. Under Cumulative No Project conditions, those improvements contained in SACOG's MTP were assumed, including an interchange at Riego Road and Hwy 70/99, and the widening of Riego Road from two lanes to six lanes from Hwy 70/99 to the Placer County line. Federal and State regulations require that the MTP be "financially constrained" and contain a set of transportation improvements that have realistic funding sources. SACOG's MTP assumed that improvements to Riego Road and other roadways in south Sutter County would be funded primarily by development in that area.

  As discussed later in this section, the City of Roseville has requested that traffic impacts under Cumulative conditions within the city of Roseville be evaluated using their 2020 Travel Demand Model, which was used for the development of the City's CIP. Therefore, the analysis of the Cumulative No Project scenario in the City of Roseville assumed the improvements contained in Roseville's CIP. The City of Roseville has adopted a Traffic Mitigation Fee that, in conjunction with other identified funding sources, will fully fund these improvements.

  A planning level signal warrant analysis was conducted for the Cumulative (2025) No Project scenario to define the locations where traffic signals should be assumed. This analysis indicates that the following intersections should be signalized by 2025:

  - Watt Avenue and PFE Road
  - Baseline Road and new roadway in proposed Sierra Vista Specific Plan area (across from 9th Street in Placer Vineyards Specific Plan area)

- Baseline Road and new roadway in proposed Sierra Vista Specific Plan area (across from East Dyer Lane in Placer Vineyards Specific Plan area)
- Locust Road and Baseline Road
- Brewer Road and Baseline Road
- Palladay Road and Baseline Road
- Pleasant Grove Road (S) and Baseline/Riego Road
- Pleasant Grove Road (N) and Riego Road
- Hwy 70/99 interchange ramps and Riego Road
- Hwy 70/99 interchange ramps and Elverta Road
- 16th Street and Elverta Road

FUTURE DEVELOPMENT ASSUMPTIONS

Future development assumptions were prepared through discussions with the staffs of Placer County and the cities of Roseville, Rocklin and Lincoln. Cumulative conditions were based on estimates of 2025 development levels in Placer County and the remainder of the region. Table 20 shows the assumptions for the Cumulative No Project scenario.

Table 20
Development Assumptions in Key Areas – 2025 No Project Alternative

Area		Dwelling Units	Floor Area (1,000 square feet) Retail	Office	Industrial	College Enrollment
Placer Vineyards Specific Plan Area		261[1]	0	0	0	0
Roseville	General Plan Area	60,002	14,400	15,319	17,401	
	MOU Remainder Area	14,154	780	584	0	
Rocklin	General Plan Area	28,606	4,586	2,848	6,494	23,000
Lincoln	General Plan Area	22,123	2,948	3,622	8,161	5,000
	SOI Expansion Area	15,000	1,875	4,000	0	
Placer Ranch		6,758	900	2,213	1,387	25,000
Remainder Sunset Industrial Area		0	357	912	7,851	
Regional University		4,387	215	75	0	6,000
Riolo Vineyards		949	88	0	0	
South Sutter Specific Plan Area		8,750	1,094	750	1,500	
Total		**160,990**	**27,243**	**30,323**	**42,794**	**59,000**

Notes:
[1]The No Project land use assumptions used in this traffic analysis vary slightly from those shown in Chapter Three of this Final EIR because the traffic analysis was conducted for a prior version of the Specific Plan. The differences would not affect the outcome of the analysis.
Source: DKS Associates, 2006

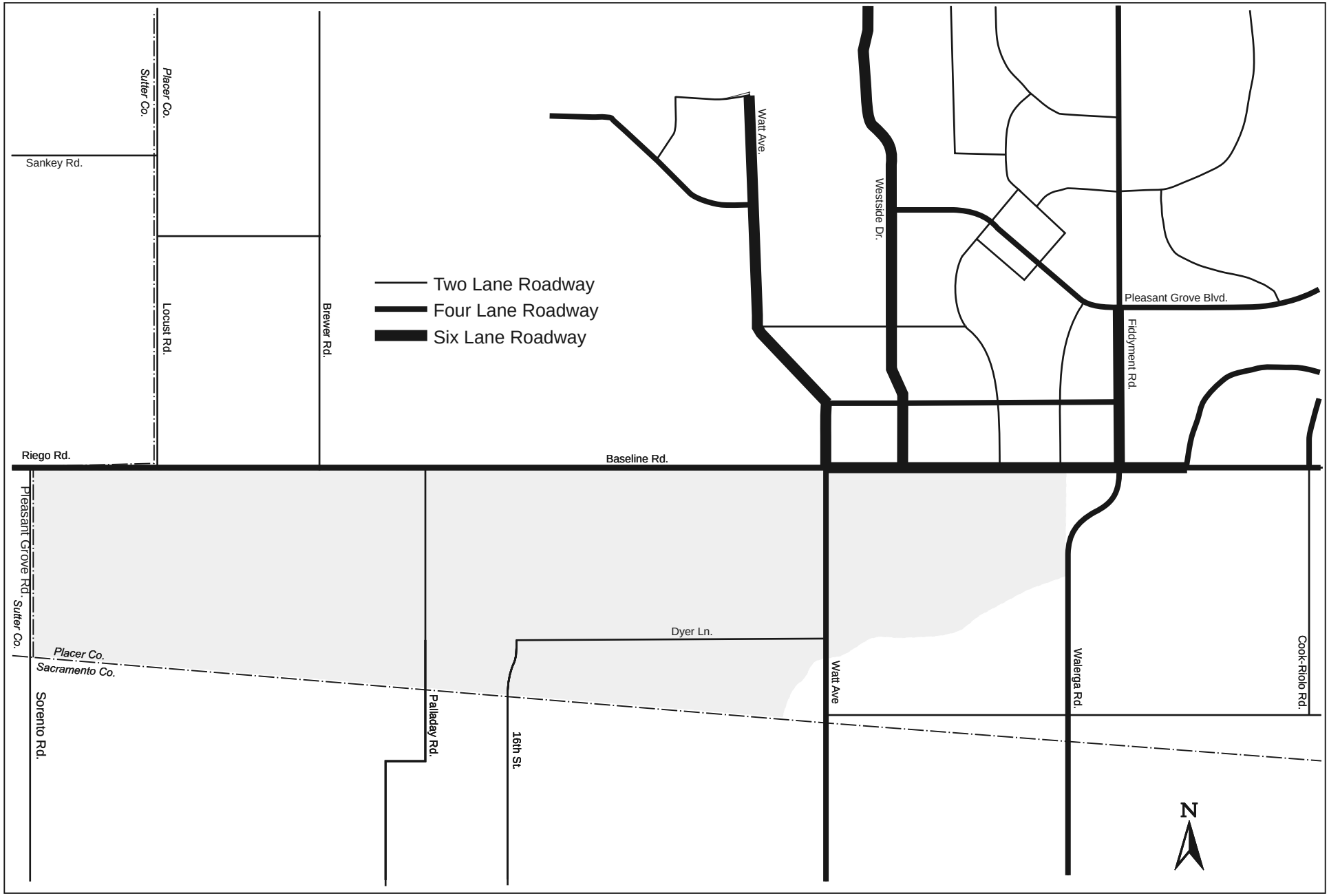

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Figure 2
Project Area Roadway Lanes - Cumulative No Project

DKS Associates

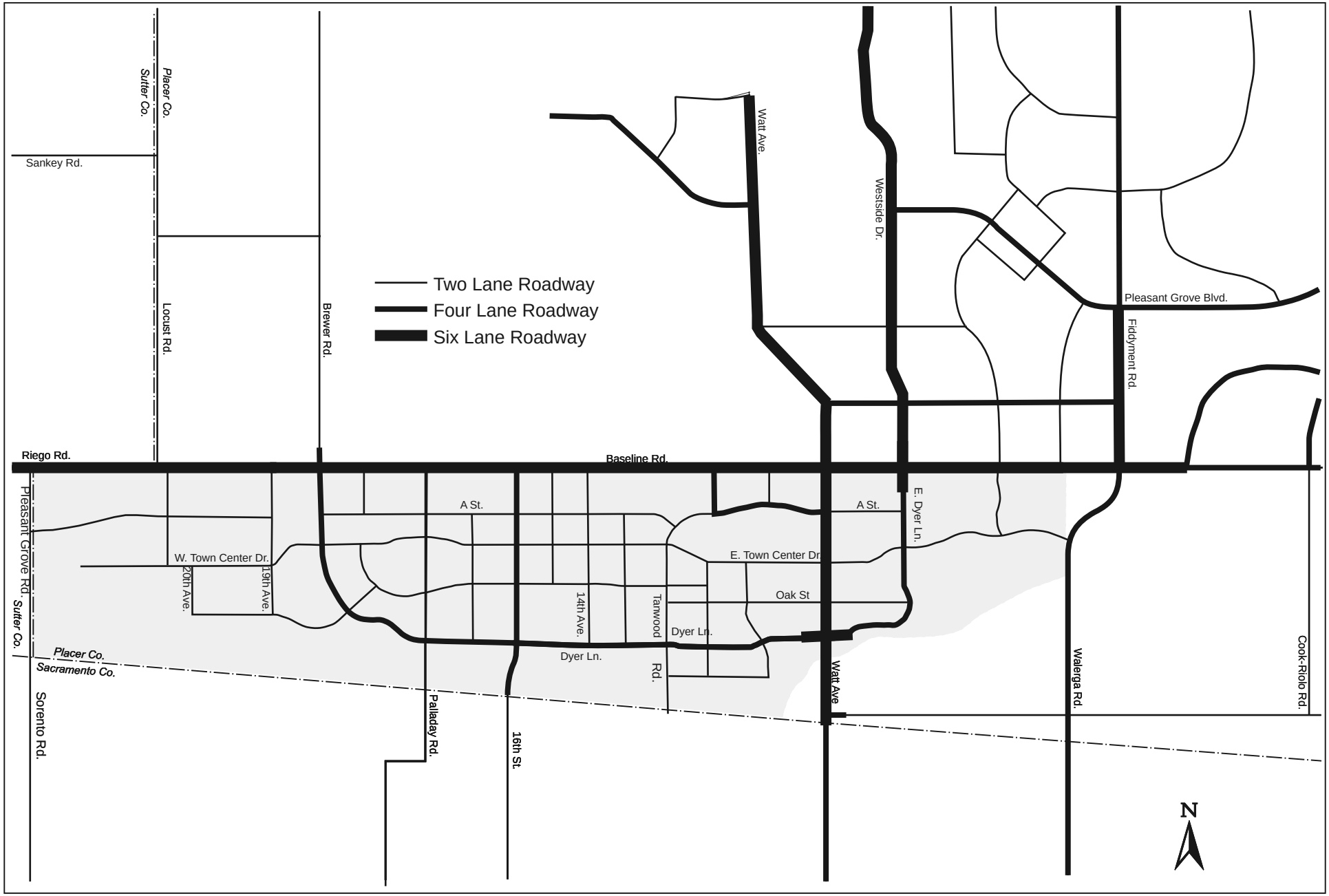

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Figure 3
Project Area Roadway Lanes - Cumulative Plus Project

DKS Associates

CUMULATIVE IMPACTS AND MITIGATION MEASURES

CUMULATIVE PLUS PROJECT CONDITIONS

Cumulative conditions were based on the best estimates of 2025 market levels of development throughout the region. The 2025 No Project Alternative assumes 2025 development levels, but only includes the very limited amount of existing development on the project site. The 2025 development assumptions and how they were estimated are described under the Methodology discussion earlier in this section. The regional roadway improvements assumed under 2025 conditions are described earlier in this section, and are depicted in Figure 2.

The traffic impacts of fully developing the proposed Specific Plan under Cumulative conditions were determined by comparing its traffic operations to the Cumulative No Project Alternative described previously under Methodology.

The Placer County Travel Demand Model was used to estimate and distribute project-related trips. The estimated trip generation of these conditions is outlined in Tables 13 through 19. To provide the best estimate of the project's impact on traffic volumes, the model's estimated traffic volume under Existing No Project conditions was subtracted from the model's traffic volume estimate under the Cumulative Plus Project conditions for each roadway segment and each intersection turning movement. These differences were then added to existing traffic count data to provide a refined estimate of traffic volumes under Cumulative Plus Project conditions.

The analysis of Cumulative Plus Project conditions assumed that the only improvements to the Cumulative No Project roadway network (described earlier in this section) would be the internal roadways to the Specific Plan area, including the widening of Baseline Road and Watt Avenue to six lanes. Figure 3 shows the roadway network and lanes in the vicinity of the Specific Plan area that were assumed in the traffic analysis.

It should be noted that the traffic volume forecasts are not based on a simple layering/adding of assumed project-generated traffic volumes onto existing traffic counts. Rather, the County's Travel Demand Model is used to predict how travel patterns would change if the Specific Plan land uses are added to existing or buildout land uses. The model redistributes trips and can cause traffic on some roadways to decrease and cause changes in critical traffic movements at intersections, sometimes at intersections some distance from the Specific Plan area.

The five jurisdictions in the study area (Placer County, Sacramento County, Sutter County, the City of Roseville, and Caltrans) have different Level of Service policies. Therefore, the traffic impacts of development of the Specific Plan area are discussed separately for each jurisdiction.

Impact 1: **Buildout of the Specific Plan under Cumulative Plus Project conditions would increase daily traffic volumes on roadways in unincorporated Placer County.**

It should be noted that the new roadways in the Specific Plan area would provide new travel routes for existing traffic and change some travel patterns. For example, the extension of Dyer Lane from Watt Avenue to the northeast to connect to Baseline Road would divert some existing

traffic from Watt Avenue north of Dyer Lane and from Baseline Road east of Watt Avenue. The new roadways in the Specific Plan area would also divert some existing traffic from portions of PFE Road and Walerga Road. These traffic diversions would offset some of the increase in traffic from the proposed Specific Plan.

The proposed project would increase volumes on many Placer County roadways. While the EIR analysis looked at all roadway segments in the study area, this EIS analysis focuses on the roadways that were either impacted by or close to being impacted by the Proposed Project.

A roadway segment Level of Service analysis for Placer County roadways based on the daily traffic volumes is presented in Table 21. This analysis indicates that full development of the Specific Plan area under Cumulative Plus Project conditions would increase congestion at a number of locations throughout the study area. The following segments are projected to degrade from acceptable to unacceptable levels with the project and/or are new segments that would operate at unacceptable levels.

Baseline Road east of Dyer Lane

The Dry Creek/ West Placer Community Plan Circulation Element identifies LOS F as the policy for Baseline Road between Watt Avenue and Fiddyment Road, however it also identifies a significant impact where a project increases the volume to capacity ratio by 0.05 or more if the roadway already operates at LOS E or F. Without the Proposed Project, the roadway segment is projected to operate at LOS B. The addition of the Proposed Project, as well as Alternatives A, B, C/D, and E would result in LOS E at this location. The addition of the Blueprint Alternative would result in LOS F at this location. All of these represent a volume-to-capacity ratio increase of much more than 0.05. These volume increases represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Locust Road north of the Placer/ Sacramento County Line

Without the Proposed Project, this roadway segment is projected to operate at LOS B. The addition of the Proposed Project, as well as Alternatives A, B, C/D, and E would result in LOS E at this location. The addition of the Blueprint Alternative would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Palladay Road north of the Placer/ Sacramento County Line

Without the Proposed Project, this roadway segment is projected to operate at LOS A. The addition of the Proposed Project, as well as the Blueprint Alternative and Alternatives A, B, C/D, and E would result in LOS E at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Dyer Lane (East) west of Watt Avenue

This roadway segment would be constructed as part of a new roadway with the development of the Proposed Project and project alternatives. The Proposed Project, as well as Alternatives A, C/D, and E would result in LOS D conditions, which is within the County's LOS policy. The Blueprint Alternative and Alternative B would result in LOS E. These volume increases and resultant LOS changes represent a **significant impact** for these two alternatives.

Dyer Lane (East) south of Baseline Road

This roadway segment would be constructed as part of a new roadway with the development of the Proposed Project and project alternatives, with the exception of the No Action Alternative. The addition of the Proposed Project, as well as Alternatives A, C/D, and E would result in LOS E at this location. The Blueprint Alternative and Alternative B would result in LOS F. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Table 21
Roadway Segment Levels of Service Impacts – Unincorporated Placer County
Cumulative Plus Project Conditions

Roadway Segment	Cumulative No Project			Cumulative Plus Project		
	ADT	V/C	LOS	ADT	V/C	LOS
Baseline Rd: east of Dyer Lane	36,600	0.68	B	**50,200**	**0.93**	**E**
LOS "F" Policy 6 Lane Roadway	Blueprint Alternative			***51,800***	***0.96***	***F***
	Alternative "A"			**49,600**	**0.92**	**E**
	Alternative "B"			**51,100**	**0.95**	**E**
	Alternative "C/D"			**50,400**	**0.93**	**E**
	Alternative "E"			**50,200**	**0.93**	**E**
	"No Action" Alternative			40,700	0.75	C
Locust Road: north of county line	12,500	0.69	B	**17,100**	**0.95**	**E**
LOS "D" Policy 2 Lane Roadway	Blueprint Alternative			***18,200***	***1.01***	***F***
	Alternative "A"			**17,200**	**0.96**	**E**
	Alternative "B"			**17,100**	**0.95**	**E**
	Alternative "C/D"			**17,100**	**0.95**	**E**
	Alternative "E"			**17,100**	**0.95**	**E**
	"No Action" Alternative			16,000	0.89	D
Palladay Road: north of county line	10,200	0.57	A	**16,600**	**0.92**	**E**
LOS "D" Policy 2 Lane Roadway	Blueprint Alternative			**17,800**	***0.99***	***E***
	Alternative "A"			**16,600**	**0.92**	**E**
	Alternative "B"			**16,800**	**0.93**	**E**
	Alternative "C/D"			**16,600**	**0.92**	**E**
	Alternative "E"			**16,600**	**0.92**	**E**
	"No Action" Alternative			13,200	0.73	C

Table 21
Roadway Segment Levels of Service Impacts – Unincorporated Placer County
Cumulative Plus Project Conditions

Roadway Segment	Cumulative No Project			Cumulative Plus Project		
	ADT	V/C	LOS	ADT	V/C	LOS
Dyer Lane (East): west of Watt Ave	n/a	n/a	n/a	32,300	0.90	D
LOS "D" Policy 4 Lane Roadway	Blueprint Alternative			***35,600***	***0.99***	***E***
	Alternative "A"			32,000	0.89	D
	Alternative "B"			***32,800***	***0.91***	***E***
	Alternative "C/D"			32,300	0.90	D
	Alternative "E"			32,300	0.90	D
	"No Action" Alternative			5,300	0.15	A
Dyer Lane (East): south of Baseline Rd	n/a	n/a	n/a	**35,400**	**0.98**	**E**
LOS "D" Policy 4 Lane Roadway	Blueprint Alternative			***36,400***	***1.01***	***F***
	Alternative "A"			**34,600**	**0.96**	**E**
	Alternative "B"			***40,600***	***1.13***	***F***
	Alternative "C/D"			**35,500**	**0.99**	**E**
	Alternative "E"			**35,400**	**0.98**	**E**
	"No Action" Alternative			n/a	n/a	n/a

Note: ADT = average daily traffic. Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
New impact identified with alternative(s)
Source: DKS Associates, 2006, 2012.

Impact 2: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area intersections in unincorporated Placer County.

The proposed project would increase volumes on many Placer County roadways. While the EIR analysis looked at all intersections in the study area, this EIS analysis focuses on the intersections that were either impacted by or close to being impacted by the Proposed Project.

AM Peak Hour

Table 22 presents the intersection Level of Service analysis at these intersections for the a.m. peak hour under Cumulative Plus Project conditions. This analysis indicates that development of the Specific Plan under Cumulative Plus Project and alternatives conditions would increase congestion at a number of locations throughout the study area. The following intersections are projected to degrade with the project and/or are new intersections that would operate at unacceptable levels.

Fiddyment Road & Baseline Road

The Dry Creek/ West Placer Community Plan Circulation Element identifies LOS F as the policy for the intersection of Baseline Road and Fiddyment Road, however it also identifies a significant impact where a project increases the volume to capacity ratio by 0.05 or more if the intersection already operates at LOS E or F. Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.27. The addition of the Proposed Project, as well as Alternatives A, B, C/D, and E would all result in a v/c increase of less than 0.05 at this location. The addition of the Blueprint Alternative would result in a v/c increase of greater than 0.05 at this location. The volume increase under the Blueprint Alternative represents a **significant impact**, while the other alternatives have less than significant impacts.

East Dyer Lane and Baseline Road

Without the Proposed Project, this intersection is projected to operate at LOS D. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Walerga Road and Town Center Drive

This intersection would be constructed with the development of the Proposed Project and project alternatives. The addition of the Proposed Project, as well as Alternatives A, B, C/D, E, and No Action would result in LOS F at this location. The Blueprint Alternative would result in LOS E. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Dyer Lane

This intersection would be constructed with the development of the Proposed Project and project alternatives. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, E, and No Action would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

PM Peak Hour

Table 23 presents the intersection Level of Service analysis at these intersections for the p.m. peak hour under Cumulative Plus Project conditions. This analysis indicates that development of the Specific Plan under Cumulative Plus Project and alternatives conditions would increase congestion at a number of locations throughout the study area. The following intersections are projected to degrade with the project and/or are new intersections that would operate at unacceptable levels.

Table 22
A.M. Peak Hour Intersection Levels of Service – Unincorporated Placer County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Fiddyment Road & Baseline Road	F	1.27	F	1.28
LOS "F" Policy	Blueprint Alternative		***F***	***1.39***
	Alternative "A"		F	1.27
	Alternative "B"		F	1.29
	Alternative "C/D"		F	1.29
	Alternative "E"		F	1.28
	"No Action" Alternative		F	1.26
East Dyer Lane & Baseline Road	D	0.81	**F**	**1.09**
LOS "D" Policy	Blueprint Alternative		**F**	**1.05**
	Alternative "A"		**F**	**1.09**
	Alternative "B"		**F**	**1.10**
	Alternative "C/D"		**F**	**1.10**
	Alternative "E"		**F**	**1.09**
	"No Action" Alternative		D	0.89
Walerga Rd & Town Center	n/a	n/a	**F**	**1.03**
LOS "D" Policy	Blueprint Alternative		**E**	**0.99**
	Alternative "A"		**F**	**1.02**
	Alternative "B"		**F**	**1.02**
	Alternative "C/D"		**F**	**1.03**
	Alternative "E"		**F**	**1.03**
	"No Action" Alternative		**F**	**1.04**
Watt Avenue & Dyer Lane	n/a	n/a	**F**	**1.08**
LOS "D" Policy	Blueprint Alternative		***F***	***1.25***
	Alternative "A"		**F**	**1.08**
	Alternative "B"		**F**	**1.07**
	Alternative "C/D"		**F**	**1.07**
	Alternative "E"		**F**	**1.08**
	"No Action" Alternative		C	0.72

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
New impact identified with alternative(s)
Source: DKS Associates, 2007

Fiddyment Road & Baseline Road

The Dry Creek/ West Placer Community Plan Circulation Element identifies LOS F as the policy for the intersection of Baseline Road and Fiddyment Road, however it also identifies a significant impact where a project increases the volume to capacity ratio by 0.05 or more if the intersection already operates at LOS E or F. Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.12. The addition of the Proposed Project, as well as Blueprint, Alternatives A and E, and No Action would all result in a v/c increase of less than 0.05 at this location. The addition of Alternatives B and C/D would result in a v/c increase of greater than 0.05 at this location. The volume increase under Alternatives B and C/D represents a **significant impact**, while the other alternatives have less than significant impacts.

Walerga Road & PFE Road

The Dry Creek/ West Placer Community Plan Circulation Element identifies LOS F as the policy for the intersection of Walerga Road and PFE Road, however it also identifies a significant impact where a project increases the volume to capacity ratio by 0.05 or more if the intersection already operates at LOS E or F. Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.42. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of greater than 0.05 at this location. The volume increase under all of the alternatives represents a **significant impact**.

East Dyer Lane and Baseline Road

Without the Proposed Project, this intersection is projected to operate at LOS D. The addition of the Proposed Project, as well as all of the alternatives would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Walerga Road and Town Center Drive

This intersection would be constructed with the development of the Proposed Project and project alternatives. The addition of the Proposed Project, as well as all of the alternatives would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Dyer Lane

This intersection would be constructed with the development of the Proposed Project and project alternatives. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Table 23
P.M. Peak Hour Intersection Levels of Service – Unincorporated Placer County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Fiddyment Rd & Baseline Rd	F	1.12	F	1.16
LOS "F" Policy	Blueprint Alternative		F	1.14
	Alternative "A"		F	1.16
	Alternative "B"		***F***	***1.18***
	Alternative "C/D"		***F***	***1.18***
	Alternative "E"		F	1.16
	"No Action" Alternative		F	1.10
Walerga Road & PFE Road	F	1.42	**F**	**1.62**
LOS "F" Policy	Blueprint Alternative		***F***	***1.71***
	Alternative "A"		**F**	**1.62**
	Alternative "B"		**F**	**1.64**
	Alternative "C/D"		**F**	**1.63**
	Alternative "E"		**F**	**1.62**
	"No Action" Alternative		**F**	**1.56**
East Dyer Lane & Baseline Road	D	0.84	**F**	**1.05**
LOS "D" Policy	Blueprint Alternative		***F***	***1.10***
	Alternative "A"		**F**	**1.03**
	Alternative "B"		**F**	**1.07**
	Alternative "C/D"		**F**	**1.06**
	Alternative "E"		**F**	**1.05**
	"No Action" Alternative		**F**	**1.06**
Walerga Road & Town Center	n/a	n/a	**F**	**1.07**
LOS "D" Policy	Blueprint Alternative		**F**	**1.08**
	Alternative "A"		**F**	**1.07**
	Alternative "B"		**F**	**1.07**
	Alternative "C/D"		**F**	**1.07**
	Alternative "E"		**F**	**1.07**
	"No Action" Alternative		***F***	***1.15***
Watt Avenue & Dyer Lane	n/a	n/a	**F**	**1.06**
LOS "D" Policy	Blueprint Alternative		**F**	**1.10**
	Alternative "A"		**F**	**1.07**
	Alternative "B"		**F**	**1.09**
	Alternative "C/D"		**F**	**1.07**
	Alternative "E"		**F**	**1.06**
	"No Action" Alternative		C	0.71

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
New impact identified with alternative(s)
Source: DKS Associates, 2006, 2012

Impact 3: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase daily traffic volumes on study area roadways in Sacramento County.

The proposed project would increase volumes on many Sacramento County roadways. While the EIR analysis looked at all segments in the study area, this EIS analysis focuses on the segments that were either impacted by or close to being impacted by the Proposed Project.

A roadway segment Level of Service analysis for Sacramento County roadways based on these daily traffic volumes is presented in Table 24. This analysis indicates that full development of the Specific Plan and its alternatives under Cumulative Plus Project conditions would increase congestion on the following Sacramento County roadway segments that would already operate at LOS "F" and/or cause the segment to operate at LOS "F":

Watt Avenue: County Line to Antelope Road

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as all alternatives would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue: Antelope Road to Elkhorn Boulevard

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Walerga Road: County Line to Antelope Road

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Sorento Road: County Line to Elverta Road

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as Blueprint, Alternatives B, C/D, and E would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives, with the exception of Alternative A and the No Action Alternative.

Elwyn Road: County Line to Elverta Road

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as all alternatives would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Table 24
Roadway Segment Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Roadway Segment	Cumulative No Project			Cumulative Plus Project		
	ADT	V/C	LOS	ADT	V/C	LOS
Watt Ave: Co Line to Antelope	56,500	1.57	F	63,100	**1.75**	**F**
LOS "E" Policy 4 Lane Roadway	Blueprint Alternative			64,400	**1.79**	**F**
	Alternative "A"			62,900	**1.75**	**F**
	Alternative "B"			63,300	**1.76**	**F**
	Alternative "C/D"			63,100	**1.75**	**F**
	Alternative "E"			63,100	**1.75**	**F**
	"No Action" Alternative			61,600	**1.71**	**F**
Watt Ave: Antelope to Elkhorn	65,700	1.22	F	68,800	**1.27**	**F**
LOS "E" Policy 6 Lane Roadway	Blueprint Alternative			69,900	**1.29**	**F**
	Alternative "A"			68,900	**1.28**	**F**
	Alternative "B"			68,700	**1.27**	**F**
	Alternative "C/D"			68,900	**1.28**	**F**
	Alternative "E"			68,800	**1.27**	**F**
	"No Action" Alternative			67,800	1.26	F
Walerga Rd: Co Line to Antelope	45,000	1.25	F	46,900	**1.30**	**F**
LOS "E" Policy 4 Lane Roadway	Blueprint Alternative			47,300	**1.31**	**F**
	Alternative "A"			46,900	**1.30**	**F**
	Alternative "B"			47,000	**1.31**	**F**
	Alternative "C/D"			46,800	**1.30**	**F**
	Alternative "E"			46,900	**1.30**	**F**
	"No Action" Alternative			46,200	1.28	F
Sorento Road: Co Line to Elverta	18,500	1.03	F	19,500	**1.08**	**F**
LOS "E" Policy 2 Lane Roadway	Blueprint Alternative			*20,300*	***1.13***	***F***
	Alternative "A"			19,300	1.07	F
	Alternative "B"			19,400	**1.08**	**F**
	Alternative "C/D"			19,400	**1.08**	**F**
	Alternative "E"			19,500	**1.08**	**F**
	"No Action" Alternative			18,600	1.03	F

Table 24
Roadway Segment Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Roadway Segment	Cumulative No Project			Cumulative Plus Project		
	ADT	V/C	LOS	ADT	V/C	LOS
Elwyn Road: Co Line to Elverta	16,800	0.93	E	19,900	**1.11**	**F**
LOS "E" Policy 2 Lane Roadway	Blueprint Alternative			20,700	**1.15**	**F**
	Alternative "A"			20,000	**1.11**	**F**
	Alternative "B"			19,800	**1.10**	**F**
	Alternative "C/D"			19,800	**1.10**	**F**
	Alternative "E"			19,900	**1.11**	**F**
	"No Action" Alternative			19,200	**1.07**	**F**
16th Street: Co Line to Elverta	9,000	0.50	A	22,300	**1.24**	**F**
LOS "E" Policy 2 Lane Roadway	Blueprint Alternative			23,100	**1.28**	**F**
	Alternative "A"			22,200	**1.23**	**F**
	Alternative "B"			22,500	**1.25**	**F**
	Alternative "C/D"			22,300	**1.24**	**F**
	Alternative "E"			22,300	**1.24**	**F**
	"No Action" Alternative			21,200	**1.18**	**F**
Dry Creek Road: North of Elkhorn Blvd	21,000	1.17	F	25,700	**1.43**	**F**
LOS "E" Policy 2 Lane Roadway	Blueprint Alternative			*27,100*	***1.51***	***F***
	Alternative "A"			25,600	**1.42**	**F**
	Alternative "B"			25,700	**1.43**	**F**
	Alternative "C/D"			25,700	**1.43**	**F**
	Alternative "E"			25,700	**1.43**	**F**
	"No Action" Alternative			23,900	**1.33**	**F**

Note: ADT = average daily traffic
Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012.

16th Street: County Line to Elverta Road

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as all alternatives would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Dry Crek Road: North of Elkhorn Boulevard

Without the Proposed Project, this roadway segment is projected to operate at LOS F. The addition of the Proposed Project, as well as all alternatives would result in a v/c ratio increase of over 0.05. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Impact 4 Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area intersections in Sacramento County.

The proposed project would increase volumes on many Sacramento County roadways. While the EIR analysis looked at all intersections in the study area, this EIS analysis focuses on the intersections that were either impacted by or close to being impacted by the Proposed Project.

AM Peak Hour

Table 25 presents the intersection Level of Service analysis at these intersections for the a.m. peak hour under Cumulative Plus Project conditions. This analysis indicates that development of the Specific Plan under Cumulative Plus Project and alternatives conditions would increase congestion at a number of locations throughout the study area. The following intersections are projected to degrade with the project and/or are new intersections that would operate at unacceptable levels.

Sorento Road & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.13. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would all result in a v/c increase of greater than 0.05 at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

16th Street & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS B. The addition of the Proposed Project, as well as all alternatives would all result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Walerga Road & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.33. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of 0.05 or greater at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Elkhorn Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.02. The addition of the Proposed Project, as well as Blueprint, Alternatives A, B, C/D, and E would all result in a v/c increase of 0.05 or greater at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the No Action Alternative.

Table 25
A.M. Peak Hour Intersection Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Sorento Rd & Elverta Rd	F	1.13	**F**	**1.26**
LOS "E" Policy	Blueprint Alternative		**F**	**1.21**
	Alternative "A"		**F**	**1.26**
	Alternative "B"		**F**	**1.25**
	Alternative "C/D"		**F**	**1.27**
	Alternative "E"		**F**	**1.26**
	"No Action" Alternative		F	1.13
16th St & Elverta Rd	B	0.64	**F**	**1.04**
LOS "E" Policy	Blueprint Alternative		**F**	**1.07**
	Alternative "A"		**F**	**1.04**
	Alternative "B"		**F**	**1.06**
	Alternative "C/D"		**F**	**1.05**
	Alternative "E"		**F**	**1.04**
	"No Action" Alternative		**F**	**1.05**
Walerga Rd & Elverta Rd	F	1.33	**F**	**1.38**
LOS "E" Policy	Blueprint Alternative		**F**	**1.39**
	Alternative "A"		**F**	**1.42**
	Alternative "B"		***F***	***1.44***
	Alternative "C/D"		***F***	***1.43***
	Alternative "E"		**F**	**1.38**
	"No Action" Alternative		**F**	**1.41**
Watt Ave & Elkhorn Bl	F	1.02	**F**	**1.07**
LOS "E" Policy	Blueprint Alternative		**F**	**1.10**
	Alternative "A"		**F**	**1.08**
	Alternative "B"		**F**	**1.08**
	Alternative "C/D"		**F**	**1.07**
	Alternative "E"		**F**	**1.07**
	"No Action" Alternative		F	1.05

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012

PM Peak Hour

Table 26 presents the intersection Level of Service analysis at these intersections for the p.m. peak hour under Cumulative Plus Project conditions. This analysis indicates that development of the Specific Plan under Cumulative Plus Project and alternatives conditions would increase congestion at a number of locations throughout the study area. The following intersections are projected to degrade with the project and/or are new intersections that would operate at unacceptable levels.

Elwyn Avenue & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.01. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of greater than 0.05 at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Palladay Road & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.16. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of greater than 0.05 at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

16th Street & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS D. The addition of the Proposed Projectand all alternatives would all result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Elverta Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.11. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of greater than 0.05 at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Dry Creek Road & Elkhorn Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.25. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of greater than 0.05 at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Elkhorn Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.22. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of 0.05 or greater at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Walerga Road & Elkhorn Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS E. The addition of the Proposed Project, Alternative A, and Alternative E would result in LOS F at this location. These volume increases and resultant LOS changes represent a **significant impact** for the Proposed Project and two of the alternatives.

Watt Avenue & Airbase Drive

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.31. The addition of the Proposed Projectand all alternatives would all result in a v/c increase of 0.05 or greater at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives.

Watt Avenue & Roseville Road

Without the Proposed Project, the intersection is projected to operate at LOS F, with a v/c ratio of 1.34. The addition of the Proposed Projectand all alternatives (except the Blueprint Alternative) would all result in a v/c increase of 0.05 or greater at this location. These volume increases represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the Blueprint Alternative.

Table 26
P.M. Peak Hour Intersection Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Elwyn Ave & Elverta Rd	F	1.01	**F**	**1.16**
LOS "E" Policy	Blueprint Alternative		**F**	**1.16**
	Alternative "A"		**F**	**1.17**
	Alternative "B"		**F**	**1.16**
	Alternative "C/D"		**F**	**1.16**
	Alternative "E"		**F**	**1.16**
	"No Action" Alternative		**F**	**1.14**
Palladay Rd & Elverta Rd	F	1.16	**F**	**1.34**
LOS "E" Policy	Blueprint Alternative		***F***	***1.43***
	Alternative "A"		**F**	**1.36**
	Alternative "B"		**F**	**1.36**
	Alternative "C/D"		**F**	**1.36**
	Alternative "E"		**F**	**1.34**
	"No Action" Alternative		**F**	**1.28**
16th St & Elverta Rd	D	0.84	**F**	**1.06**
LOS "E" Policy	Blueprint Alternative		**F**	**1.10**
	Alternative "A"		**F**	**1.07**
	Alternative "B"		**F**	**1.10**
	Alternative "C/D"		**F**	**1.08**
	Alternative "E"		**F**	**1.06**
	"No Action" Alternative		***F***	***1.11***
Watt Ave & Elverta Rd	F	1.11	**F**	**1.28**
LOS "E" Policy	Blueprint Alternative		**F**	**1.31**
	Alternative "A"		**F**	**1.28**
	Alternative "B"		**F**	**1.27**
	Alternative "C/D"		**F**	**1.28**
	Alternative "E"		**F**	**1.28**
	"No Action" Alternative		**F**	**1.23**

Table 26
P.M. Peak Hour Intersection Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Watt Ave & Antelope Rd	E	0.95	**F**	**1.00**
LOS "E" Policy	Blueprint Alternative		**F**	**1.01**
	Alternative "A"		**F**	**1.02**
	Alternative "B"		**F**	**1.02**
	Alternative "C/D"		E	0.99
	Alternative "E"		**F**	**1.00**
	"No Action" Alternative		E	0.99
Walerga Rd & Antelope Rd	E	0.95	E	0.98
LOS "E" Policy	Blueprint Alternative		E	1.00
	Alternative "A"		E	0.97
	Alternative "B"		E	1.00
	Alternative "C/D"		E	0.96
	Alternative "E"		E	0.98
	"No Action" Alternative		E	0.98
Dry Creek Rd & Elkhorn Blvd	F	1.25	**F**	**1.37**
LOS "E" Policy	Blueprint Alternative		**F**	**1.39**
	Alternative "A"		**F**	**1.38**
	Alternative "B"		**F**	**1.37**
	Alternative "C/D"		**F**	**1.38**
	Alternative "E"		**F**	**1.37**
	"No Action" Alternative		**F**	**1.33**
Watt Ave & Elkhorn Blvd	F	1.22	**F**	**1.28**
LOS "E" Policy	Blueprint Alternative		***F***	***1.33***
	Alternative "A"		**F**	**1.29**
	Alternative "B"		**F**	**1.29**
	Alternative "C/D"		**F**	**1.29**
	Alternative "E"		**F**	**1.28**
	"No Action" Alternative		**F**	**1.27**
Walerga Rd & Elkhorn Blvd	E	0.94	**F**	**1.02**
LOS "E" Policy	Blueprint Alternative		E	0.97
	Alternative "A"		**F**	**1.00**
	Alternative "B"		E	0.99
	Alternative "C/D"		E	0.99
	Alternative "E"		**F**	**1.02**
	"No Action" Alternative		E	0.95
Watt Ave & Airbase Dr	F	1.31	**F**	**1.36**
LOS "E" Policy	Blueprint Alternative		**F**	**1.38**
	Alternative "A"		***F***	***1.43***
	Alternative "B"		***F***	***1.42***
	Alternative "C/D"		***F***	***1.41***
	Alternative "E"		**F**	**1.36**
	"No Action" Alternative		**F**	**1.37**

Table 26
P.M. Peak Hour Intersection Levels of Service – Sacramento County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Watt Ave & Roseville Rd	F	1.34	**F**	**1.55**
LOS "E" Policy	Blueprint Alternative		F	1.34
	Alternative "A"		**F**	**1.57**
	Alternative "B"		**F**	**1.59**
	Alternative "C/D"		**F**	**1.55**
	Alternative "E"		**F**	**1.55**
	"No Action" Alternative		**F**	**1.54**

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012

Impact 5: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area roadways in Sutter County.

Under Cumulative No Project conditions, about half of the potential 17,500 dwelling units that could be constructed in the South Sutter County Specific Plan area under the County's recently passed Measure M were assumed. That level of development would require improvements to local roadways, including Riego Road. Under Cumulative No Project conditions, those improvements contained in SACOG's MTP were assumed, including an interchange at Riego Road and Hwy 70/99, and the widening of Riego Road from two lanes to six lanes from Hwy 70/99 to the Placer County line. Federal and State regulations require that the MTP be financially constrained and contain a set of transportation improvements that have realistic funding sources. The MTP assumed that improvements to Riego Road and other roadways in south Sutter County would be funded primarily by development in that area.

A roadway segment Level of Service analysis for Sutter County roadways based on daily traffic volumes is presented in Table 27. This analysis indicates that full development of the Specific Plan under Cumulative Plus Project conditions would increase congestion at the roadway segment in Sutter County shown in the table, which already operates at an unacceptable level. Because the roadway segment would operate at an acceptable LOS "F", this impact is considered **significant and unavoidable** for the Proposed Project and all alternatives.

Table 27
Roadway Segment Levels of Service – Sutter County
Cumulative Plus Project Conditions

Roadway Segment	Cumulative No Project			Cumulative Plus Project		
	ADT	V/C	LOS	ADT	V/C	LOS
Pleasant Grove Road: North of county line	18,200	1.01	F	**19,100**	**1.06**	**F**
LOS "D" Policy	Blueprint Alternative			***20,000***	***1.11***	***F***
	Alternative "A"			**18,900**	**1.05**	**F**
	Alternative "B"			**19,000**	**1.06**	**F**
	Alternative "C/D"			**19,000**	**1.06**	**F**
	Alternative "E"			**19,100**	**1.06**	**F**
	"No Action" Alternative			**18,300**	**1.02**	**F**

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012

Impact 6: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area intersections in Sutter County.

AM Peak Hour

Table 28 presents the intersection Level of Service analysis at Sutter County intersections for the a.m. peak hour under Cumulative Plus Project conditions.

There will be several new signals along Riego Road between Hwy 70/99 and Pleasant Grove Road (North) as part of the *South Sutter Specific Plan*. However, there are no details on how many signalized intersections there will be or the proposed lane geometry. Therefore a detailed intersection analysis was not conducted for intersections in that segment of Riego Road.

This analysis indicates that development of the Specific Plan under Cumulative Plus Project conditions would increase congestion at the following study area intersections that already operate at unacceptable levels.

Pleasant Grove Road (North) & Riego Road

Without the Proposed Project, the intersection is projected to operate at LOS D. The addition of the Proposed Project, as well as Alternatives A, B, C/D, and E, as well as the No Action Alternative would all result in LOS E at this location. These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives, with the exception of the Blueprint Alternative.

Pleasant Grove Road (South) & Riego Road

Without the Proposed Project, the intersection is projected to operate at LOS D. The addition of the Proposed Project and all alternatives would all result in LOS E or F at this location.

These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives.

Table 28
A.M. Peak Hour Intersection Levels of Service – Sutter County
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Pleasant Grove Rd (North) & Riego Rd	D	0.89	**E**	**0.95**
LOS "D" Policy	Blueprint Alternative		D	0.90
	Alternative "A"		**E**	**0.96**
	Alternative "B"		**E**	**0.96**
	Alternative "C/D"		**E**	**0.96**
	Alternative "E"		**E**	**0.95**
	"No Action" Alternative		**E**	**0.92**
Pleasant Grove Rd (South) & Riego Rd	D	0.89	**F**	**1.02**
LOS "D" Policy	Blueprint Alternative		***F***	***1.10***
	Alternative "A"		***F***	***1.03***
	Alternative "B"		***F***	***1.03***
	Alternative "C/D"		***F***	***1.03***
	Alternative "E"		***F***	***1.02***
	"No Action" Alternative		**E**	**0.98**

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012

PM Peak Hour

Table 29 presents the intersection Level of Service analysis at these intersections for the a.m. peak hour under Cumulative Plus Project conditions.

This analysis indicates that development of the Specific Plan under Cumulative Plus Project conditions would increase congestion at the following study area intersections that already operate at unacceptable levels.

Pleasant Grove Road (North) & Riego Road

Without the Proposed Project, the intersection is projected to operate at LOS E. The addition of the Proposed Project, as well as all alternatives would all result in LOS F at this location. These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives.

Table 29 P.M. Peak Hour Intersection Levels of Service – Sutter County Cumulative Plus Project Conditions				
Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Pleasant Grove Rd (N) & Riego Rd	E	0.98	**F**	**1.11**
LOS "D" Policy	Blueprint Alternative		**F**	**1.12**
	Alternative "A"		**F**	**1.11**
	Alternative "B"		**F**	**1.11**
	Alternative "C/D"		**F**	**1.11**
	Alternative "E"		**F**	**1.11**
	"No Action" Alternative		**F**	**1.10**

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
Source: DKS Associates, 2006, 2012

Impact 7: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area intersections in Roseville.

PM Peak Hour

Table 30 presents the intersection Level of Service analysis at Roseville intersections for the p.m. peak hour under Cumulative Plus Project conditions.

This analysis indicates that development of the Specific Plan under Cumulative Plus Project conditions would increase congestion at the following study area intersections that already operate at unacceptable levels.

Fiddyment Road & Baseline Road

Without the Proposed Project, the intersection is projected to operate at LOS C. The addition of the Proposed Project, as well as Alternatives A, B, C/D, and E, as well as the No Action Alternative would all result in LOS E at this location. The Blueprint Alternative would result in LOS F. These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives.

Foothills Boulevard & Junction Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS C. The addition of the Proposed Project, as well as all alternatives would result in LOS D at this location. These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives.

Table 30
P.M. Peak Hour Intersection Levels of Service – City of Roseville
Cumulative Plus Project Conditions

Intersection/ LOS Policy	Cumulative No Project		Cumulative Plus Project	
	LOS	V/C	LOS	V/C
Baseline Rd & Junction Blvd	A	0.57	C	0.75
LOS "C" Policy	Blueprint Alternative		C	0.74
	Alternative "A"		C	0.73
	Alternative "B"		C	0.73
	Alternative "C/D"		C	0.74
	Alternative "E"		C	0.75
	"No Action" Alternative		B	0.67
Fiddyment Rd & Basline Rd	C	0.78	**E**	**0.99**
LOS "C" Policy	Blueprint Alternative		***F***	***1.04***
	Alternative "A"		**E**	**0.99**
	Alternative "B"		**E**	**0.97**
	Alternative "C/D"		**E**	**0.96**
	Alternative "E"		**E**	**0.99**
	"No Action" Alternative		**E**	**0.98**
Foothills Blvd & Junction Blvd	C	0.81	**D**	**0.87**
LOS "C" Policy	Blueprint Alternative		**D**	**0.90**
	Alternative "A"		**D**	**0.88**
	Alternative "B"		**D**	**0.86**
	Alternative "C/D"		**D**	**0.86**
	Alternative "E"		**D**	**0.87**
	"No Action" Alternative		**D**	**0.85**
Foothills Blvd & Baseline/ Main	D	0.85	D	0.89
LOS "C" Policy	Blueprint Alternative		***E***	***0.91***
	Alternative "A"		D	0.90
	Alternative "B"		D	0.89
	Alternative "C/D"		D	0.90
	Alternative "E"		D	0.89
	"No Action" Alternative		D	0.87
Washington Blvd & Junction Blvd	C	0.76	**D**	**0.85**
LOS "C" Policy	Blueprint Alternative		**D**	**0.88**
	Alternative "A"		**D**	**0.83**
	Alternative "B"		**D**	**0.85**
	Alternative "C/D"		**D**	**0.86**
	Alternative "E"		**D**	**0.85**
	"No Action" Alternative		**D**	**0.82**

Notes: Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
New impact identified with alternative(s)
Source: DKS Associates, 2006, 2012

Foothills Boulevard & Baseline Road, Main Street

Without the Proposed Project, the intersection is projected to operate at LOS D. The addition of the Blueprint Alternative would result in LOS D at this location. This volume increase and resultant LOS change represent a **significant impact** for the Blueprint Alternative only.

Washington Boulevard & Junction Boulevard

Without the Proposed Project, the intersection is projected to operate at LOS C. The addition of the Proposed Project, as well as all alternatives would result in LOS D at this location. These volume increases and resultant LOS change represent a **significant impact** for the Proposed Project and all alternatives.

Impact 8: Buildout of the Specific Plan under Cumulative Plus Project conditions would increase peak hour traffic volumes on study area roadways that are part of the state highway system.

A roadway segment Level of Service analysis for State Highway facilities is presented in Table 31. This analysis indicates that full development of the Specific Plan under Cumulative Plus Project conditions would increase congestion on the following state highway segments that would operate at LOS "F" without the project:

Hwy 70/99 South of Riego Road

This four lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

Hwy 70/99 South of Elverta Road

This four lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

Hwy 65 North of Pleasant Grove Boulevard

This four lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

Hwy 65 South of Pleasant Grove Boulevard

This four lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

I-80 West of Watt Avenue

This ten lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

Table 31
Freeway Segment Levels of Service – State Highways
Cumulative Plus Project Conditions

		Cumulative No Project		Cumulative Plus Project		
Roadway	**Segment**	**ADT**	**LOS**	**ADT**	**% Increase**	**LOS**
Hwy 70/99 North of Riego Rd		68,600	E	69,000	+ 0.6%	E
LOS E Policy 4 Lanes		Blueprint Alternative		69,600	+ 1.5%	E
		Alternative "A"		69,000	+ 0.6%	E
		Alternative "B"		69,100	+ 0.7%	E
		Alternative "C/D"		69,000	+ 0.6%	E
		Alternative "E"		69,000	+ 0.6%	E
		"No Action" Alternative		68,600	+ 0.0%	E
Hwy 70/99 South of Riego Rd		100,200	F	**101,600**	**+ 1.4%**	**F**
LOS E Policy 4 Lanes		Blueprint Alternative		***103,100***	***+ 2.9%***	***F***
		Alternative "A"		***101,800***	***+ 1.6%***	***F***
		Alternative "B"		***101,900***	***+ 1.7%***	***F***
		Alternative "C/D"		***101,800***	***+ 1.6%***	***F***
		Alternative "E"		**101,600**	**+ 1.4%**	**F**
		"No Action" Alternative		**100,800**	**+ 0.6%**	**F**
Hwy 70/99 South of Elverta Rd		96,000	F	**98,700**	**+ 2.8%**	**F**
LOS E Policy 4 Lanes		Blueprint Alternative		***99,300***	***+ 3.4%***	***F***
		Alternative "A"		***98,900***	***+ 3.0%***	***F***
		Alternative "B"		***98,800***	***+ 2.9%***	***F***
		Alternative "C/D"		**98,700**	**+ 2.8%**	**F**
		Alternative "E"		**98,700**	**+ 2.8%**	**F**
		"No Action" Alternative		**98,100**	**+ 2.2%**	**F**

Table 31
Freeway Segment Levels of Service – State Highways
Cumulative Plus Project Conditions

Roadway	Segment	Cumulative No Project		Cumulative Plus Project		
		ADT	LOS	ADT	% Increase	LOS
Hwy 65 North of Pleasant Grove		127,300	F	**127,700**	**+ 0.3%**	**F**
LOS E Policy 4 Lanes		Blueprint Alternative		***128,300***	***+ 0.8%***	***F***
		Alternative "A"		**127,700**	**+ 0.3%**	**F**
		Alternative "B"		**127,600**	**+ 0.2%**	**F**
		Alternative "C/D"		***127,900***	***+ 0.5%***	***F***
		Alternative "E"		**127,700**	**+ 0.3%**	**F**
		"No Action" Alternative		**127,500**	**+ 0.2%**	**F**
Hwy 65 South of Pleasant Grove		127,200	F	**128,100**	**+ 0.7%**	**F**
LOS E Policy 4 Lanes		Blueprint Alternative		***128,600***	***+ 1.1%***	***F***
		Alternative "A"		**128,100**	**+ 0.7%**	**F**
		Alternative "B"		**128,000**	**+ 0.6%**	**F**
		Alternative "C/D"		**128,100**	**+ 0.7%**	**F**
		Alternative "E"		**128,100**	**+ 0.7%**	**F**
		"No Action" Alternative		**127,700**	**+ 0.4%**	**F**
I-80 West of Watt Ave		194,400	F	**195,100**	**+ 0.4%**	**F**
LOS E Policy 10 Lanes		Blueprint Alternative		**194,600**	**+ 0.1%**	**F**
		Alternative "A"		***195,300***	***+ 0.5%***	***F***
		Alternative "B"		***195,700***	***+ 0.7%***	***F***
		Alternative "C/D"		**195,000**	**+ 0.3%**	**F**
		Alternative "E"		**195,100**	**+ 0.4%**	**F**
		"No Action" Alternative		***195,200***	***+ 0.4%***	***F***
I-80 East of Auburn Blvd		307,700	F	**308,200**	**+ 0.2%**	**F**
LOS E Policy 12 Lanes		Blueprint Alternative		***308,300***	***+ 0.2%***	***F***
		Alternative "A"		**308,100**	**+ 0.1%**	**F**
		Alternative "B"		***308,900***	***+ 0.4%***	***F***
		Alternative "C/D"		**308,000**	**+ 0.1%**	**F**
		Alternative "E"		**308,200**	**+ 0.2%**	**F**
		"No Action" Alternative		**308,200**	**+ 0.2%**	**F**
I-80 West of Riverside Ave		241,200	F	**243,400**	**+ 0.9%**	**F**
LOS E Policy 8 Lanes		Blueprint Alternative		***244,600***	***+ 1.4%***	***F***
		Alternative "A"		**243,300**	**+ 0.9%**	**F**
		Alternative "B"		**243,400**	**+ 0.9%**	**F**
		Alternative "C/D"		**243,300**	**+ 0.9%**	**F**
		Alternative "E"		**243,400**	**+ 0.9%**	**F**
		"No Action" Alternative		**242,200**	**+ 0.4%**	**F**

Table 31
Freeway Segment Levels of Service – State Highways
Cumulative Plus Project Conditions

Roadway	Segment	Cumulative No Project		Cumulative Plus Project		
		ADT	LOS	ADT	% Increase	LOS
I-80 East of Riverside Ave		246,600	F	**247,600**	**+ 0.4%**	**F**
LOS E Policy 8 Lanes		Blueprint Alternative		***248,500***	***+ 0.8%***	***F***
		Alternative "A"		**247,400**	**+ 0.3%**	**F**
		Alternative "B"		***247,700***	***+ 0.4%***	***F***
		Alternative "C/D"		**247,600**	**+ 0.4%**	**F**
		Alternative "E"		**247,600**	**+ 0.4%**	**F**
		"No Action" Alternative		**246,900**	**+ 0.1%**	**F**
Business 80 West of Watt Ave		155,000	F	154,700	-0.2%	F
LOS E Policy 6 Lanes		Blueprint Alternative		***155,500***	***+ 0.3%***	***F***
		Alternative "A"		***155,200***	***+ 0.1%***	***F***
		Alternative "B"		***155,600***	***+ 0.4%***	***F***
		Alternative "C/D"		154,900	-0.1%	F
		Alternative "E"		154,700	-0.2%	F
		"No Action" Alternative		154,500	-0.3%	F

Notes: ADT and Lanes exclude HOV (carpool) lanes
Significant impacts are highlighted in **bold**.
Alternative(s) significantly worse than the Proposed Project are in ***italics***.
New impact identified with alternative(s)
Source: DKS Associates, 2006, 2012

I-80 East of Auburn Boulevard

This twelve lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

I-80 West of Riverside Avenue

This eight lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

I-80 East of Riverside Avenue

This eight lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Proposed Project, as well as all alternatives would

cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the Proposed Project and all of the alternatives.

Business 80 (SR 51) West of Watt Avenue

This six lane highway is projected to operate at LOS F under cumulative conditions without the Proposed Project. The addition of the Blueprint and Alternatives A and B would cause small increases in daily traffic at this location. Since Caltrans considers any increase in volume to a location operating at LOS F, this represents a **significant impact** for the three of the alternatives. The Proposed Project does not impact this location.

PVSP EIR MITIGATION MEASURES

The Placer Vineyards EIR (certified in 2007) identified a number of mitigation measures for transportation related impacts. A comprehensive list of these mitigation measures is included below. It should be noted that this complete list of mitigation measures includes mitigation measures for both Existing plus Project and Cumulative plus Project conditions. This EIS analysis only includes Proposed Project and Project Alternatives impact analysis under Cumulative conditions. Therefore not all of the specific mitigation measures mentioned below correspond to Cumulative impacts. With a few exceptions, the impacts identified for the six alternatives in this EIS are the same or less than the Cumulative impacts identified in the EIR. Below is a summary of the mitigation measures identified in the EIR, which should offer similar results for thre alternatives analyized in this EIS.

MM 4.7-1 *Prepare and implement construction traffic management plans for on-site and off-site construction activities for all development projects, including coordination with appropriate agencies, and implement a community relations program during construction period. The purpose of the construction traffic management plan is to minimize adverse Level of Service or neighborhood traffic impacts during the various phases of construction.*

MM 4.7-2a *Developers of property within the Placer Vineyards Specific Plan area shall be responsible for the project's fair share of all feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts, as identified in this traffic analysis, consistent with the policies and exceptions set forth in the Transportation and Circulation Element of the 1994 Placer County General Plan as amended. The project's contribution toward such improvements, which the County recognizes will not be sufficient to mitigate all transportation-related impacts to less than significant levels, may take any, or some combination, of the following forms:*

1. *Construction of roads and related facilities within and adjacent to the boundaries of the Specific Plan area, which may be subject to fee credits and/or reimbursement, coordinated by the County, from other fee-paying development projects with respect to roads or other facilities that would also serve fee-paying development projects other than Placer Vineyards;*

2. *Construction of roads and/or road improvements or other transportation facilities outside the boundaries of the Specific Plan area but within unincorporated Placer County, subject in some instances to future reimbursement, coordinated by the County, from other fee-paying development projects where the roads or improvements at issue would also serve fee-paying development projects other than Placer Vineyards;*

3. *The payment of impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation*

facilities to be built or improved within unincorporated Placer County, consistent with the County's CIP;

4. *The payment of impact fees to the South Placer Regional Transportation Authority (SPRTA) in amounts that constitute the Project's fair share contribution to the construction of transportation facilities funded through fees collected by the SPRTA for Tier 1 and/or Tier 2 projects;*

5. *The payment of other adopted regional impact fees that would provide improvements to roadways, intersections and/or interchanges that are affected by multiple jurisdictions (e.g., Walerga/Fiddyment/Baseline);*

6. *The payment of impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation facilities and/or improvements within the City of Roseville, Sacramento County and/or Sutter County needed in whole or in part because of the Specific Plan, to be made available to the City of Roseville, Sacramento County, and/or Sutter County, if and when those jurisdictions and Placer County enter into an enforceable agreement consistent with Placer County General Plan Policy 3.A.15(c). At the time of issuance of building permits for individual development projects within the Specific Plan area, the County shall collect fair share fee payments for improvements or facilities addressed by its CIP as it exists at that time;*

7. *Developers of property within the Placer Vineyards Specific Plan area shall pay impact fees to Placer County in amounts that constitute the Specific Plan's fair share contributions to the construction of transportation facilities and/or improvements on federal or State highways or freeways needed in part because of the Specific Plan, to be made available to Caltrans if and when Caltrans and Placer County enter into an enforceable agreement consistent with State law and Placer County General Plan Policy 3.A.15; and*

1. *In pursuing a single agreement or multiple agreements with the City of Roseville, Sacramento County, Sutter County, and Caltrans, Placer County shall negotiate in good faith with these other jurisdictions to enter into fair and reasonable arrangements with the intention of achieving, within a reasonable time period after approval of the Placer Vineyards Specific Plan, commitments for the provision of adequate fair share mitigation payments from the Specific Plan for its out-of-jurisdiction traffic impacts and its impacts on federal and State freeways and highways.*

MM 4.7-2b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the widening of Walerga Road to four lanes from Baseline Road to PFE Road to provide LOS "A" (V/C 0.43).*

MM 4.7-3a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-3b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:*

i. Construct a second through lane on the southbound approach, a right turn lane to the eastbound approach and construct a second left turn lane on both the eastbound and westbound approaches to improve the intersection of Fiddyment Road and Baseline Road to LOS "C" (V/C 0.80).

ii. Construct a second through lane on both the northbound and southbound approaches, to improve the intersection of Walerga Road and PFE Road to LOS "D" (V/C 0.80).

MM 4.7-4a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-4b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute fees toward the following improvements, which are part of the City of Roseville's 2020 CIP:*

- *A second through lane on the eastbound approach, to improve the intersection of Woodcreek Oaks Boulevard and Baseline Road to LOS "A" (V/C 0.57).*
- *A second left turn lane on both the northbound, southbound and westbound approaches, a third through lane to the northbound approach and fourth through lane to the southbound approach to improve the intersection of Foothills Boulevard and Baseline Road to LOS "C" (V/C 0.71).*
- *A second left turn lane on all of the approaches, a second through lane on both the northbound and southbound approaches, and a third through lane on the eastbound and westbound approaches to improve the intersection of Woodcreek Oaks Boulevard and Pleasant Grove Boulevard to LOS "A" (V/C 0.50).*
- *A second left turn lane on the westbound approach, a third left turn lane on the southbound approach, and second through lane on both the northbound and southbound approaches, to improve the intersection of Foothills Boulevard and Cirby Way to LOS "B" (V/C 0.70).*

Implement Mitigation Measure 4.7-3(b)(ii), which would result in LOS "C" (V/C 0.78) at the intersection of Fiddyment Road and Baseline Road using the Roseville methodology.

MM 4.7-5a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-5b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:*

1. *Widen Watt Avenue to six lanes from the Placer County line to Elverta Road to provide LOS "D" (0.87).*

2. *Widen Watt Avenue to six lanes from Elverta Road to Antelope Road to provide LOS "C" (0.71).*

3. *Widen Watt Avenue to six lanes from Antelope Road to Elkhorn Boulevard to provide LOS "D" (0.90).*

4. *Widen Watt Avenue to six lanes from Elkhorn Boulevard to Don Julio Boulevard to provide LOS "D" (0.87).*

5. *Widen Elkhorn Boulevard to six lanes from Walerga Road to I-80 to provide LOS "E" (0.96)*

MM 4.7-6a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-6b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following intersection improvements in Sacramento County:*

1. *Install a traffic signal to improve the intersection of Elwyn Avenue and Elverta Road to LOS "C" (V/C 0.74) in the a.m. peak hour and LOS "D" (V/C 0.82) in the p.m. peak hour.*

2. *Install a traffic signal to improve the intersection of 16th Street and Elverta Road to LOS "E" (V/C 0.90) in the a.m. peak hour and LOS "D" (V/C 0.87) in the p.m. peak hour.*

3. *Construct a second exclusive left turn lane on the southbound approach to improve the intersection of Watt Avenue and Antelope Road to LOS "E" (V/C 0.93) in the p.m. peak hour.*

4. *Construct a second exclusive right turn lane on the westbound approach to improve the intersection of Walerga Road and Elkhorn Boulevard to LOS "D" (V/C 0.87) in the p.m. peak hour.*

5. *Construct a third northbound through lane to improve the intersection of Watt Avenue and Don Julio Boulevard to LOS "D" (V/C 0.87) in the p.m. peak hour.*

6. *Construct a third northbound through lane to improve the intersection of Watt Avenue and Air Base Drive to LOS "C" (V/C 0.80) in the a.m. peak hour and LOS "D" (V/C 0.86) in the p.m. peak hour.*

7. *Construct a second westbound left turn lane to improve the intersection of Watt Avenue and Roseville Road to LOS "E" (V/C 0.92) in the p.m. peak hour.*

MM 4.7-8a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-8b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:*

1. *Install a signal at the intersection of Riego Road and Natomas Road to provide LOS "B" (V/C 0.62).*

2. *Install a signal at the intersection of Riego Road and Pleasant Grove Road (North) to provide LOS "B" (V/C 0.64).*

3. *Install a signal at the intersection of Riego Road and Pleasant Grove Road (South) to provide LOS "C" (V/C 0.74).*

MM 4.7-9a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-9b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:*

1. *Widen Hwy 65 to six lanes from Blue Oak Boulevard to Galleria Boulevard.*

2. *Widen Interstate 80 to ten lanes from Antelope Road to Riverside Avenue.*

3. *Widen Interstate 80 to eight lanes from Riverside Avenue to Douglas Boulevard.*

4. *Widen Business 80 to eight lanes from Fulton Avenue to Watt Avenue.*

5. *Consider construction of additional lanes on Interstate 80 from Auburn Boulevard to Madison Avenue, or other improvements.*

MM 4.7-10a *A Community Service Area (CSA) shall be established to fund the cost of transit services listed in this section, and any related capital costs for buses, passenger amenities, and facilities.*

MM 4.7-10b *Bus shelters shall be placed along major roadways at one-half-mile intervals serving Medium-Density, High-Density, Commercial and Office land use designations.*

MM 4.7-12 *Implement Mitigation Measure 4.7-2a.*

A number of transportation improvements have been identified that, in various combinations, could reduce anticipated congestion levels on major roadways within or near the Specific Plan area. Mitigation Measure 4.7-2a would provide the proposed project's fair share contribution toward the combination of improvements ultimately selected by the County and other affected jurisdictions as best able to provide a County roadway network that serves existing and new development at Levels of Service consistent with the County's General Plan. In order to determine the extent to which a set of identified improvements could reduce cumulative traffic congestion, a Mitigated Transportation Network was modeled. This Mitigated Transportation Network is just one of a number of possible roadway improvements that could be implemented. General evaluation of these improvements was conducted to determine their acceptability and feasibility and whether they should be included in a Mitigated Transportation Network. The roadway lanes in the Mitigated Transportation Network are shown in Figure 4.7-19. These potential improvements are summarized below:

1. *Widening Baseline Road to eight lanes from Brewer Road to Fiddyment Road.*

   This widening would improve the Level of Service along this section of Baseline Road. The widening could also have some undesirable effects including:

   - *Such a widening may not promote pedestrian and bicycle circulation since wide roadways can be barriers for walking and cycling. The widening could discourage walking near Baseline Road by lengthening the distance for pedestrians and bicycle to cross Baseline Road to an unacceptable level.*

   - *Such a widening would not be consistent with the County's General Plan roadway standards that call for a maximum of six lanes on arterials and thoroughfares.*

   - *The widening would further increase traffic volumes on roadways in western Roseville, some of which are projected to operate at LOS "D", "E" or "F" conditions under Cumulative Plus Project conditions and cannot be further mitigated.*

   - *There may be concerns about visual aesthetics of an eight-lane roadway and its impact on community character.*

   For these reasons, and because Placer Parkway (discussed below) would also provide substantial east-west traffic capacity, the widening of Baseline Road to eight lanes was not included in the Mitigated Transportation Network.

2. *Constructing Placer Parkway.*

The Concept Report for Placer Parkway calls for a new controlled-access highway that would connect Hwy 65 to Hwy 70/99. This new facility would decrease traffic volumes on a number of existing and planned roadways in western Placer County, including Baseline Road, and numerous roadways in the city of Roseville. This regional facility would help mitigate traffic impacts of not only the proposed Placer Vineyards project but the traffic impacts from other proposed developments in western Placer County as well, and thus was considered a key improvement in the Mitigated Transportation Network.

3. *Extending Watt Avenue from the proposed Regional University development north to Blue Oaks Boulevard.*

   This extension would divert some traffic from Fiddyment Road and Baseline Road east of Watt Avenue and was considered a key improvement in the Mitigated Transportation Network.

4. *Widening the Watt Avenue Extension from Baseline Road to Pleasant Grove Boulevard to six lanes.*

   This extension was assumed to have four lanes in the Cumulative No Project scenario but would need six lanes to have an acceptable Level of Service. Therefore, six lanes were assumed in the Mitigated Transportation Network.

5. *Constructing a new north-south roadway from the proposed Regional University to Baseline Road at 12th Street.*

   This improvement would run parallel to, and west of, the Watt Avenue Extension and connect to Baseline Road at 12th Street, which is a new roadway in the proposed Placer Vineyards Specific Plan. Coupled with a new east-west roadway (discussed in #6 below) and the extension of Watt Avenue to Blue Oaks Boulevard, this new roadway would allow some traffic to divert around the intersection of Watt Avenue and Baseline Road. However, it would extend into vacant land north of Blue Oaks Boulevard and west of Watt Avenue that was not considered developed under Cumulative (2025) conditions and thus it was not included in the Mitigated Transportation Network.

6. *Constructing a new east-west arterial roadway north of Baseline Road from Watt Avenue to the new north-south roadway described in #4 above. Coupled with that new north-south roadway and the extension of Watt Avenue to Blue Oaks Boulevard, this new roadway would allow some traffic to divert around the intersection of Watt Avenue and Baseline Road. However, it would extend into vacant land north of Blue Oaks Boulevard west of Watt Avenue that was not considered developed under Cumulative (2025) conditions and thus was not included in the Mitigated Transportation Network.*

7. *Widening PFE Road to four lanes between Watt Avenue and Walerga Road.*

   This widening would help divert traffic from Baseline Road between Watt Avenue and Walerga Road and was considered a key improvement in the Mitigated Transportation Network.

8. *Widening Walerga Road to six lanes from south of Baseline Road to the Sacramento County line.*

   This widening would increase the capacity of this segment of Walerga Road but it would also increase traffic volumes on this segment, as well as on portions of Walerga Road in Sacramento County. Since widening Walerga Road in Sacramento County to six lanes may not be feasible, the widening of Walerga Road to six lanes in Placer County was not included in the Mitigated Transportation Network except near its intersections with Baseline Road and PFE Road.

9. *Widening Dyer Lane to six lanes from 16th Street east to Baseline Road.*

   While the segment-based Level of Service analysis indicates that widening this entire segment may be needed, the analysis of peak hour operations at intersections along Dyer Lane indicates that six through lanes are only required near its intersection with Watt Avenue and its eastern intersection with Baseline Road. The widening to six lanes near these intersections was included as part of proposed Specific Plan.

10. *Construct triple lefts and/or fourth through lanes*

    The project includes extensive improvements to intersections. At some locations, these improvements include what is termed maximum conventional intersections. This term is defined as an intersection consisting of three through lanes, double left turn lanes, and free right turn lanes on all approaches. An example of this type of intersection is the one located in Roseville near the Galleria Mall at Galleria Boulevard and Roseville Parkway. The resulting roadway includes 10 lanes, and with shoulders is 140 feet wide.

    Despite utilizing the maximum conventional intersection configuration, several intersections are projected to operate at LOS "F". These intersections include 1) Baseline Road and Watt Avenue, 2) Baseline Road and Fiddyment/Walerga Road, 3) Cook Riolo Road and PFE Road, and 4) Watt Avenue and Dyer Lane. One alternative would be to add additional lanes such as triple left turn lanes or four through lanes. The addition of triple left turn lanes and/or four through lanes (in various combinations) at these intersections could improve to LOS E". These additional lanes, while

technically improving the level of service at an intersection tend to create other problems including:

- *Such roadways can become barriers to pedestrians and bicyclists, who may be discouraged from trying to cross such facilities. For some pedestrians, it is difficult to cross such a wide street.*

- *The long time devoted to pedestrian crossing movements can also adversely affect traffic signal coordination efforts, frustrating efforts to facilitate the smooth flow of traffic.*

- *The additional capacity added with each new lane is reduced due to inefficiencies in lane utilization. As an example, triple left turn lanes do not provide 50% more capacity as compared to double left turn lanes.*

- *There are traffic safety implications to such a wide facility. Motorists may have difficulty staying within lanes with a triple left turn configuration. In the case of four through lanes it can be difficult to cross so many lanes to reach the left turn lanes.*

- *Very large intersections tend to divide neighborhoods, so that communities on one side of such intersections feel little or any connection to the neighborhoods on the other side. By discouraging pedestrians and bikes it contributes to more vehicle trips and poor air quality. This result is at cross purposes to the goals of the Specific Plan to encourage walkable communities.*

- *Before such large intersections are considered, other mitigations should be explored including interchanges, reduced land use near the intersections and parallel roadways. In addition, the overall corridor Level of Service should be evaluated. Under this procedure a series of intersections are examined; in some cases one intersection has high delay but the delay in the overall corridor is acceptable.*

- *The Level of Service at intersections is based upon traffic during the peak hour. The additional lanes would be unnecessary and underutilized the remainder of the day with all the negatives described above.*

Periods of LOS "F" at a few intersections during peak hour tends to encourage alternate forms of transportation, ride-sharing and transit usage. In addition residents are encouraged to work and shop closer to home with resulting benefits to air quality. For the above reasons, County staff believes that this mitigation measure, at these three intersections, is not feasible and is at odds with the goals of the Specific Plan. Overall, the negatives, in staff's judgment, outweigh the benefits of a small reduction in travel delay. Some of the negative effects on

pedestrian and bicycle circulation could be addressed by construction of connecting facilities, such as grade separated crossings for bicycle and pedestrian paths.

11. A substantial increase in the transit system serving the project site.

A robust transit service plan for the Specific Plan could help reduce traffic volumes on the roadway system serving the project site. The proposed Specific Plan states that "the Plan Area will include systems and facilities to promote public transit use" and would include the following:

- *Bus rapid transit lanes will be dedicated on Watt Avenue from Baseline Road to the Specific Plan's southern limits and a transit center at Watt Avenue and Town Center Drive.*

- *Rights-of-way for a future streetcar system will be provided along the northern side of Town Center Drive, extending from the transit center on Watt Avenue to the Town Center, ending at 16th Street.*

- *An internal transit system will be planned and implemented as the project is constructed that connects the Village Centers with the Town Center and other areas as deemed appropriate.*

- *An ADA dial-a-ride service will be provided.*

- *Commuter service will be provided to downtown Sacramento.*

- *Placer Vineyards will participate in regional service with connection to light rail transit on Watt Avenue in Sacramento County, Regional University, Galleria Mall and other Regional Centers.*

MM 4.7-13a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-13b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements:*

i. A third northbound and southbound through lane, a second eastbound and westbound through lane, a second northbound, an eastbound and westbound left turn lane and a free eastbound right turn lane to improve the intersection of Walerga Road and PFE Road to LOS "F" (V/C 1.19).

ii. A third northbound and southbound through lane to improve the intersection of Walerga Road and Town Center Drive to LOS "C" (V/C 0.73).

iii. Make the eastbound right turn lane a free right turn to improve the intersection of Watt Avenue and Dyer Lane to LOS "F" (V/C 1.05).

MM 4.7-14a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-14b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward construction of a third southbound and northbound through lanes to the intersection of Fiddyment Road and Baseline Road to improve operations from LOS "E" to LOS "D."*

MM 4.7-14c *Consistent with Mitigation Measure 4.7-2a, participate in the City of Roseville ITS/TDM program on a fair share basis as determined by the County in consultation with the City of Roseville.*

MM 4.7-15a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-15b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:*

1. *Widen Watt Avenue to six lanes from the Placer County line to Antelope Road, to reduce the V/C from 1.75 to 1.17 (LOS "F").*

2. *Widen Watt Avenue to eight lanes from Antelope Road to Elkhorn Blvd, to provide LOS "E".*

3. *Widen Sorento Road to four lanes from the Placer County line to Elverta Road, to provide LOS "A".*

4. *Widen Elwyn Avenue to four lanes from the Placer County line to Elverta Road, to provide LOS "A".*

5. *Widen 16th Street to four lanes from the Placer County line to Elverta Road, to provide LOS "B".*

6. *Widen Dry Creek Road to four lanes from the U Street to Ascot Avenue, to provide LOS "C".*

MM 4.7-16a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-16b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sacramento County:*

1. *Construct a second left turn lane on the eastbound approach to improve the intersection of Sorento Road and Elverta Road to LOS "F" conditions (V/C 1.11) during the a.m. peak hour.*

2. *Construct a second left turn lane on the eastbound approach to improve the intersection of Elwyn Avenue and Elverta Road to LOS "E" conditions (V/C 0.94) during the p.m. peak hour.*

3. *Construct a second left turn lane on the eastbound approach to improve the intersection of Palladay Road and Elverta Road to LOS "F" conditions (V/C 1.07) during the p.m. peak hour.*

4. *Construct a second through lane on the northbound and southbound approaches, and a right turn lane on the eastbound and westbound approaches to improve the intersection of 16th Street and Elverta Road to LOS "B" conditions (V/C 0.66) during the a.m. peak hour and to LOS "C" conditions (V/C 0.77) during the p.m. peak hour.*

5. *Construct a third through lane on the eastbound and westbound approaches at the Watt Avenue and Elverta Road intersection to provide LOS "F" conditions (V/C 1.11) during the p.m. peak hour.*

6. *Construct a third through lane on the northbound and southbound approaches at the Walerga Road and Elverta Road intersection to provide LOS "F" conditions (V/C 1.16) during the a.m. peak hour.*

7. *Construct a third through lane on the northbound and southbound approaches, and second left turn lane on the westbound approach at the Watt Avenue and Antelope Road intersection to provide LOS "C" (V/C 0.80) conditions during the p.m. peak hour.*

8. *Construct a second through lane on the northbound approach at the Dry Creek Road and Elkhorn Boulevard intersection to provide LOS "E" conditions (V/C 0.99) during the p.m. peak hour.*

9. *Construct a fourth through lane on the northbound and southbound approaches at the Watt Avenue and Elkhorn Boulevard intersection to provide LOS "E" (V/C 0.94) in the a.m. peak hour and LOS "F" conditions (V/C 1.14) during the p.m. peak hour.*

10. *Construct a second left turn lane and a second right turn lane on the westbound approach at the Walerga Road and Elkhorn Boulevard intersection to provide LOS "E" conditions (V/C 0.94) during the p.m. peak hour.*

11. *Construct a third through lane on the northbound approach and a second westbound right turn lane at the Watt Avenue and Air Base Drive intersection to provide LOS "E" conditions (V/C 0.91) during the p.m. peak hour.*

12. *Construct a second left turn lane on the westbound approach at the Watt Avenue and Roseville Road intersection to provide LOS "F" conditions (V/C 1.24) during the p.m. peak hour.*

MM 4.7-17a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-17b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:*

1. *Widen Pleasant Grove Road to four lanes from Riego Road to the Placer County line, to provide LOS "A").*

MM 4.7-18a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-18b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements in Sutter County:*

i. Construct a second left turn lane on the southbound approach, to improve the intersection of Pleasant Grove Road (North) and Riego Road to LOS "D" conditions (V/C 0.87).

ii. Construct a second left turn lane on the northbound and westbound approaches, to improve the intersection of Pleasant Grove Road (South) and Riego Road to LOS "D" conditions (V/C 0.87).

MM 4.7-19a *Implement Mitigation Measure 4.7-2a.*

MM 4.7-19b *Consistent with Mitigation Measure 4.7-2a, the proposed project shall contribute its fair share toward the following improvements on state highways.*

1. *Widen Hwy 70/99 to six lanes from Riego Road to Elkhorn Boulevard.*

2. *Widen Hwy 65 to six lanes from Blue Oak Boulevard to Galleria Boulevard.*

3. *Widen Interstate 80 to twelve lanes from Longview Drive to Watt Avenue.*

4. *Widen Interstate 80 to ten lanes from Antelope Road to Douglas Boulevard.*

5. *Consider construction of additional lanes on Interstate 80 from Auburn Boulevard to Madison Avenue or other improvements.*

MM 4.7-21 *Placer County shall coordinate with the City of Roseville, Sacramento County, Sutter County and Caltrans to ensure that roadway improvements implemented in whole or in part as mitigation for the proposed project are designed to minimize impacts on existing and future roadways and intersections.*

ALTERNATIVE IMPACTS BEYOND PROPOSED PROJECT

While most of the alternatives analyzed in this document represent a decrease in trip generation when compared to the Proposed Project, two of the alternatives (Blueprint and Alternative B) represent an increase in trip generation. The following list documents all alternative impacts above and beyond the Proposed Project under Cumulative Conditions. The impacts are listed by alternative and are shown in all of the tables as white text on a black background.

New CumulativeAlternative Impacts

Blueprint Alternative
- Dyer Lane west of Watt Avenue (daily)
- Fiddyment Road & Baseline Road (a.m. peak hour)
- Foothills Boulevard & Baseline/ Main (p.m. peak hour)
- Business 80 west of Watt Avenue (daily)

Alternative A
- Business 80 west of Watt Avenue (daily)

Alternative B
- Dyer Lane west of Watt Avenue (daily)
- Fiddyment Road & Baseline Road (p.m. peak hour)
- Business 80 west of Watt Avenue (daily)

Alternative C/D
- Fiddyment Road & Baseline Road (p.m. peak hour)

Alternative E
- None identified

No Action Alternative
- None identified

In addition to these new impacts, a number of impacts are exacerbated by implementing one or more of the alternatives. This represents a situation where the v/c ratio for the alternative is 0.05 or greater than the Proposed Project or the LOS for a location degrades beyond that of a location already impacted by the Proposed Project. These are shown in all of the tables in italics and are not listed in detail here.

APPENDIX 3.3

Air Quality Emissions Calculations

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction GHG.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2013 TOTALS (lbs/day unmitigated)	23,457.28	472.37	1,439.80	2.26	10,023.59	21.15	10,044.74	2,094.76	19.02	2,113.78
2013 TOTALS (lbs/day mitigated)	23,457.28	472.37	1,439.80	2.26	10,023.59	21.15	10,044.74	2,094.76	19.02	2,113.78

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	744.87	166.69	239.46	0.01	0.70	0.70

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1,355.80	1,685.88	14,861.88	16.94	2,933.13	565.18

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	2,100.67	1,852.57	15,101.34	16.95	2,933.83	565.88

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction Criteria Base Plan.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Time Slice 1/1/2013-2/8/2013 Active Days: 29	7.95	64.40	35.58	0.00	512.61	3.08	515.69	107.06	2.84	109.89
Fine Grading 01/01/2013-02/11/2013	7.95	64.40	35.58	0.00	512.61	3.08	515.69	107.06	2.84	109.89
Fine Grading Dust	0.00	0.00	0.00	0.00	512.60	0.00	512.60	107.05	0.00	107.05
Fine Grading Off Road Diesel	7.90	64.32	33.96	0.00	0.00	3.08	3.08	0.00	2.83	2.83
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01

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Time Slice 2/11/2013-2/11/2013 Active Days: 1	17.71	**116.00**	**129.07**	0.12	**513.16**	**6.48**	**519.64**	**107.25**	**5.93**	**113.18**
Asphalt 02/11/2013-05/11/2013	3.91	18.80	11.85	0.01	0.02	1.52	1.54	0.01	1.40	1.41
Paving Off-Gas	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.69	16.46	10.15	0.00	0.00	1.43	1.43	0.00	1.32	1.32
Paving On Road Diesel	0.16	2.30	0.79	0.00	0.02	0.08	0.10	0.01	0.08	0.08
Paving Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Building 02/11/2013-12/30/2013	5.85	32.80	81.64	0.11	0.52	1.87	2.40	0.19	1.70	1.89
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16
Building Vendor Trips	0.86	10.69	8.55	0.03	0.11	0.41	0.52	0.04	0.37	0.41
Building Worker Trips	1.80	3.07	59.75	0.08	0.41	0.20	0.62	0.15	0.16	0.31
Fine Grading 01/01/2013-02/11/2013	7.95	64.40	35.58	0.00	512.61	3.08	515.69	107.06	2.84	109.89
Fine Grading Dust	0.00	0.00	0.00	0.00	512.60	0.00	512.60	107.05	0.00	107.05
Fine Grading Off Road Diesel	7.90	64.32	33.96	0.00	0.00	3.08	3.08	0.00	2.83	2.83
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01
Time Slice 2/12/2013-5/10/2013 Active Days: 64	9.75	51.60	93.49	0.12	0.55	3.39	3.94	0.19	3.10	3.29
Asphalt 02/11/2013-05/11/2013	3.91	18.80	11.85	0.01	0.02	1.52	1.54	0.01	1.40	1.41
Paving Off-Gas	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.69	16.46	10.15	0.00	0.00	1.43	1.43	0.00	1.32	1.32
Paving On Road Diesel	0.16	2.30	0.79	0.00	0.02	0.08	0.10	0.01	0.08	0.08
Paving Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Building 02/11/2013-12/30/2013	5.85	32.80	81.64	0.11	0.52	1.87	2.40	0.19	1.70	1.89
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16
Building Vendor Trips	0.86	10.69	8.55	0.03	0.11	0.41	0.52	0.04	0.37	0.41
Building Worker Trips	1.80	3.07	59.75	0.08	0.41	0.20	0.62	0.15	0.16	0.31

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Time Slice 5/13/2013-11/29/2013 Active Days: 145	5.85	32.80	81.64	0.11	0.52	1.87	2.40	0.19	1.70	1.89
Building 02/11/2013-12/30/2013	5.85	32.80	81.64	0.11	0.52	1.87	2.40	0.19	1.70	1.89
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16
Building Vendor Trips	0.86	10.69	8.55	0.03	0.11	0.41	0.52	0.04	0.37	0.41
Building Worker Trips	1.80	3.07	59.75	0.08	0.41	0.20	0.62	0.15	0.16	0.31
Time Slice 12/2/2013-12/30/2013 Active Days: 21	**1,306.09**	33.36	92.58	**0.13**	0.60	1.91	2.51	0.21	1.73	1.94
Building 02/11/2013-12/30/2013	5.85	32.80	81.64	0.11	0.52	1.87	2.40	0.19	1.70	1.89
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16
Building Vendor Trips	0.86	10.69	8.55	0.03	0.11	0.41	0.52	0.04	0.37	0.41
Building Worker Trips	1.80	3.07	59.75	0.08	0.41	0.20	0.62	0.15	0.16	0.31
Coating 12/01/2013-12/30/2013	1,300.25	0.56	10.94	0.02	0.08	0.04	0.11	0.03	0.03	0.06
Architectural Coating	1,299.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.33	0.56	10.94	0.02	0.08	0.04	0.11	0.03	0.03	0.06

Phase Assumptions

Phase: Fine Grading 1/1/2013 - 2/11/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 102.52

Maximum Daily Acreage Disturbed: 25.63

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/11/2013 - 5/11/2013 - Default Paving Description

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Acres to be Paved: 25.63

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 2/11/2013 - 12/30/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2013 - 12/30/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction Criteria Blueprint.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2013 TOTALS (lbs/day unmitigated)	2,052.35	140.92	176.09	0.20	780.68	7.48	788.17	163.17	6.85	170.01
2013 TOTALS (lbs/day mitigated)	2,052.35	140.92	176.09	0.20	404.90	7.48	412.38	84.69	6.85	91.53

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	74.83	14.39	28.53	0.00	0.10	0.10

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	107.66	132.32	1,172.24	1.33	230.36	44.41

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	182.49	146.71	1,200.77	1.33	230.46	44.51

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction Criteria Base Plan.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2013 TOTALS (lbs/day unmitigated)	1,306.09	116.00	129.07	0.13	513.16	6.48	519.64	107.25	5.93	113.18
2013 TOTALS (lbs/day mitigated)	1,306.09	116.00	129.07	0.13	266.14	6.48	272.61	55.66	5.93	61.59

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	42.19	9.40	23.52	0.00	0.08	0.08

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	75.31	93.65	825.62	0.93	162.95	31.39

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	117.50	103.05	849.14	0.93	163.03	31.47

APPENDIX 3.4

Biological Resources Documentation

Applicant's Submittal in Support of a Biological Assessment,
U.S. Fish and Wildlife Service

Revised U.S. Fish and Wildlife Service Biological Assessment to Support Section 7 Consultation for the

Placer Vineyards Specific Plan Project

Placer County, California

(USFWS ID# 81420-2008-TA-0983-1)

Revised Date: March 27, 2013

Revised Date: February 26, 2013

Original Date: October 18, 2007

Prepared for:

Placer Vineyards Development Group, LLC.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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- Conservancy Fairy Shrimp – Potential Effects Analysis Table
- Valley Elderberry Longhorn Beetle – Potential Effects Analysis Table
- Delta Smelt – Potential Effects Analysis Table
- California Tiger Salamander – Potential Effects Analysis Table
- California Red-Legged Frog– Potential Effects Analysis Table
- Giant Garter Snake – Potential Effects Analysis Table
- Western Yellow-Billed Cuckoo – Potential Effects Analysis Table

1.0 INTRODUCTION

The purpose of this Biological Assessment is to review the proposed Placer Vineyards Specific Plan project (Project), including off-site infrastructure elements, in sufficient detail to allow the U.S. Fish and Wildlife Service (USFWS) to determine the impact of proposed actions on federally protected species of interest (listed below). This Biological Assessment is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act [16 U.S.C. 1536 (c)].

A map depicting the location of the Project and a description of the proposed Action Area are provided in section 5.0, below.

2.0 SPECIES LIST

A list of federally listed, proposed and/or candidate species was created for the proposed Action Area and Vicinity (i.e., within a 10-mile radius of the site), based on the following sources:

- The USFWS official species list for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-minute quadrangles (Attachment A);

- Revised Draft Environmental Impact Report, Placer Vineyards Specific Plan (Revised Draft EIR) (Quad Knopf 2006); and

- California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDB) record search for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-minute quadrangles (CDFG 2003) (Attachment B).

- USFWS letter of April 13, 2007 reporting *Branchinecta conservatio* in western Placer County (USFWS 2007).

Species of regulatory interest to USFWS are reported below according to their legal status.

2.1 Federal Endangered Species

- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Sacramento Orcutt grass (*Orcuttia viscida*)
- Hartweg's golden sunburst (*Pseudobahia bahiifolia*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)

2.2 Federal Threatened Species

- California tiger salamander (*Ambystoma californiense*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Delta smelt (*Hypomesus transpacificus*)
- Slender Orcutt grass (*Orcuttia tenuis*)
- California red-legged frog (*Rana aurora draytonii*)
- Giant garter snake (*Thamnophis gigas*)

2.3 Federal Candidate Species

- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

2.4 Anadromous Fish Species

In addition to those species reported above, the following anadromous fish species may be affected by the proposed project:

- Central Valley Steelhead *(Oncorhynchus mykiss)*
- Central Valley fall/late fall run Chinook Salmon *(Oncorhynchus tshawytscha)*

The scope of this Biological Assessment is to address federally protected plants and animals for consultation with USFWS. As such, all discussion of anadromous fish and their habitat within the Specific Plan Area, Specific Plan Area vicinity and off-site infrastructure areas will be addressed in a separate Biological Assessment prepared for the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS).

3.0 CRITICAL HABITAT

No Critical Habitat units are located within the proposed Action Area. Four Critical Habitat units were identified from the above-listed sources as occurring within the vicinity (i.e., within 10 miles) of the proposed Action Area. These are:

- Valley elderberry longhorn beetle
- Vernal pool fairy shrimp (as identified by USFWS in the 2006 Critical Habitat Final Rule)
- Spring-run Chinook Salmon, and
- Central Valley Steelhead.

As discussed above, the scope of this Biological Assessment is to address federally protected plants and animals for consultation with USFWS. As such, all discussion of Critical Habitat for anadromous fish will be addressed in a separate Biological Assessment prepared for the NOAA, NMFS. The nearest Critical Habitat designated for vernal pool fairy shrimp is approximately nine miles north of the Action Area (CDFG 2003). The nearest Critical Habitat unit designated for the Valley elderberry longhorn beetle is approximately eight miles southeast, along the American River (CDFG 2003).

4.0 CONSULTATION TO DATE

This document is intended to support the reinitiation of consultation with the USFWS, pursuant to Section 7 of the Federal Endangered Species Act. Formal consultation was initiated by the U.S. Army Corps of Engineers on 01 February 2008. That consultation (Service File No. 81420-2008-TA-0983-1) was suspended on 07 March 2008, although informal consultation continued, and is ongoing.

5.0 DESCRIPTION OF THE PROPOSED ACTION

5.1 Project Location

The proposed Placer Vineyards Specific Plan (PVSP) area encompasses approximately 5,230 acres in unincorporated southwestern Placer County, approximately 15 miles north of Sacramento. It is bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line, and Pleasant Grove Road, and on the east by Dry Creek and Walerga Road. East to west, it spans approximately six miles. North to south, at its widest point, it spans approximately two miles. Surrounding land uses include agricultural land with cultivated crops, irrigated pastures, rice fields, and scattered rural residences. Land to the east (City of Roseville) and southwest (Natomas Basin) are currently being developed for residential and commercial uses. Coordinates for the approximate center of the area are 38° 45' 00" N and 121° 24' 30" W. The area coincides with portions of Township 10 North, Range 4 East, Section 1, Township 10 North, Range 5 East, Sections 1-12, and Township 10 North, Range 6 East, Sections 6-10 of the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA" 7.5-minute quadrangles (U.S. Department of the Interior, Geological Survey, photo revised 1992, 1981, 1992, and 1992, respectively; Figure 1. *Placer Vineyards Specific Plan Area and Properties with Active Applications*). The PVSP area includes portions of the Lower American River Watershed and the Lower Sacramento River Watershed (#18020111 and #18020109, U.S. Department of Interior, Geological Survey 1978).

Within the PVSP area separate permit applications were submitted by each of 23 property owners. Those property owners (or their current successors) are identified in Section 5.2, below. At the direction of the Corps of Engineers, in order to support public notice and analysis of cumulative impacts, these applications were bundled together, along with an application for jointly-required backbone infrastructure elements to be constructed both within and outside the PVSP area. These bundled applications were originally submitted in May 2006. One is no longer active. Each of the properties with an active application is depicted on Figure 1.

Infrastructure improvements, both within the PVSP area and off-site, would be necessary to support the proposed development. These infrastructure improvements include road improvements (e.g., widening of lanes and the addition of intersection controls), the addition of utility lines and routes for trunk sewer and water lines, and recycled water storage facilities and transmission lines. Regarding off-site infrastructure improvements, where possible, utility lines would be placed within existing roadways or other disturbed areas, so as to minimize environmental impacts. Due to then-uncertainties regarding the precise path/alignment for each of these off-site infrastructure elements, six different scenarios were presented in the 2006 bundled Clean Water Act, Section 404 Permit Application package. Scenario #3 was identified as the most likely to be implemented, and was incorporated into the bundled permit application package. Since that time, uncertainties have been removed. The location of the off-site infrastructure elements are identified in Figure 2. *Off-Site Area for Infrastructure Elements*. The Placer Vineyards Specific Plan area and the area for off-site infrastructure elements together constitute the basis for the Action Area defined at Section 5.4, below.

5.2 Project Proponents

Project proponents and contact information for active permit applications within the Placer Vineyards Specific Plan area are listed below, in Table 1.

Table 1. Project Proponents and Contact Information

Property No.	Name	Regulatory No.	Owner / Applicant	Agent
Infrastructure	Infrastructure	PN 199900737	Placer Vineyards Development Group, LLC. c/o: Kent MacDiarmid The MacDiarmid Company 1079 Sunrise Avenue, Suite B-317 Roseville, California 95661 Phone: 916-772-3680 kent@macdiarmidcompany.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
1A.	Doyle	200500090	PLACER 400 INVESTORS, LLC, a California limited liability company c/o: Ron Bertolina, Esq. AKT Investments, Inc. 7700 College Town Drive, Suite 101 Sacramento, California 95826	Karen Shaffer Gibson & Skordal, LLC 2617 K Street, Suite 175 Sacramento, California 95816 Phone: 916-822-3230 kshaffer@gibsonandskordal.com
1B.	Hodel	200500089	Hodel Family Enterprises, LP., a California limited partnership c/o: Christine Jordon and Rebecca Beach Hodel Family Enterprises, LP 7314 Quail Road Fair Oaks, California 95628 Phone: 916-927-1126	Karen Shaffer Gibson & Skordal, LLC 2617 K Street, Suite 175 Sacramento, California 95816 Phone: 916-822-3230 kshaffer@gibsonandskordal.com
2.	Mourier 135	200600578	John L. Mourier III, a Trustee of the Mourier Family Revocable Lifetime Trust, UTA dated April 13, 1978 c/o: Steve Schnable John Mourier Construction, Inc. 1430 Blue Oaks Boulevard, Suite 190 Roseville, California 95747 Phone: 916-969-2842 sschnable@jmchomes.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
3.	Watt x Baseline	200501181	Baseline & Watt, LLC, a California limited liability company c/o: Phillip Harvey Petrovich Development 5046 Sunrise Boulevard, Suite 1 Fair Oaks, California 95628 Phone: 916-768-1238 phil@petrovichdevelopment.com	Karen Shaffer Gibson & Skordal, LLC 2617 K Street, Suite 175 Sacramento, California 95816 Phone: 916-822-3230 kshaffer@gibsonandskordal.com
4A.	Placer Vineyards 179a	200501073	B and W 60, L.P., a California limited partnership c/o:Ted Messner Evergreen Commercial 1755 Creekside Oaks Drive, Suite 290 Sacramento, California 95833 Phone: 916-648-1100 tmessner@theevergreencompnay.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
4B.	Placer Vineyards 179b	200600578	Placer 536, a California limited partnership c/o: Jack Sioukas and Sotiris Kolokotronis JAS Development 2277 Fair Oaks Boulevard, Suite 295 Sacramento, California 95825 Phone: 916-761-6431 jack@sioukas.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com

Property No.	Name	Regulatory No.	Owner / Applicant	Agent
6.	Placer Vineyards C	200500598	Frances E. Shadwick, a married woman as her sole and separate property; Ellen G. O'Looney and John P. O'Looney, as Trustees of the John P. O'Looney and Ellen G. O'Looney 1991 Living Trust, dated October 9, 1991; and Susan K. Pilarsky, a married woman as her sole and separate property, each as to an undivided one-third (1/3) interest, as tenants in common c/o: Fran Shadwick 7811 Feldspar Court Citrus Heights, California 95610 Phone: 916-725-1807 Susan Pilarski 1272 Palmerston Loop Roseville, California 95678	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
7.	Placer Vineyards 356	200500088	BHT II NORTHERN CAL 1, a Delaware limited liability company c/o: Steven J. Kessler West Coast Housing Partners, LLC 3027 Townsgate Road, Suite 250 Thousand Oaks, California 91361 BHT II Northern Cal 1, LLC c/o: Rick Langdon West Coast Housing Partners, LLC 3130 W. Main Street, Suite A-2 Visalia, California 93291	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
8.	Placer Vineyards B	200500597	Spinelli Investments, LLC, a California limited liability company, as to an undivided 50% interest and c/o: Donna Miller 2250 Coronet Drive San Jose, California 95124 Millspin Investments, LLC, a California limited liability company, as to an undivided 50% interest c/o: Joan Williams Millspin Investments 2318 Starbright Drive San Jose, California 95124 Phone: 408-371-2846	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
9A.	Placer Vineyards A(a)	200500535	Placer 1 Owners' Receivership c/o: Elli M. A. Mills Court Appointed Receiver 5401 Longley Lane, Suite 42 Reno, Nevada 89511 Phone: 775-424-2805 EMillsPV@aol.com	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com
9B.	Placer Vineyards A(b)	200600582	Placer 1 Owners' Receivership c/o: Elli M. A. Mills Court Appointed Receiver 5401 Longley Lane, Suite 42 Reno, Nevada 89511 Phone: 775-424-2805 EMillsPV@aol.com	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com

Property No.	Name	Regulatory No.	Owner / Applicant	Agent
10.	Dyer 240	200500018	Frank Stathos, individual c/o: Frank Stathos 7700 College Town Drive, Suite 201 Sacramento, California 95826	Karen Shaffer Gibson & Skordal, LLC 2617 K Street, Suite 175 Sacramento, California 95816 Phone: 916-822-3230 kshaffer@gibsonandskordal.com
11.	PGG Properties	200500044	P.G.G. Properties, a General Partnership c/o: Gus Galaxidas 7700 College Town Drive, Suite 201 Sacramento, California 95826 Phone: 916-425-6897 ggalaxidas@metroproperties.com	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com
12A.	Placer Vineyards 290, Parcel 1	200500230	IL Centro, LLC, a California limited liability company c/o: Robert or Mike Musolino 8775 Sierra College Boulevard, Suite 400 Roseville, California 95661 rmusolino@surewest.net mmusolino@surewest.net	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
12B.	Placer Vineyards 290, Parcel 2	200500230	PLACER 102, LLC, a California limited liability company c/o: Gus Galaxidas 7700 College Town Drive, Suite 201 Sacramento, California 95826 Phone: 916-425-6897 ggalaxidas@metroproperties.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
14.	D.F. 80	200400893	DF Properties, a California corporation c/o: Ken Denio and Jeff Ronten D.F. Properties, Inc. 2013 Opportunity Drive, #140 Roseville, California 95678 Phone: 916-782-704 JRonten@surewest.net	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
15.	Placer Vineyards 200	200500233	Palladay Greens, LLC, a California limited liability company c/o: Tony Gallas 11448 Ski Slope Way Truckee, California 96161 Phone: 916-769-6787 tgallas@pacbell.net	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
16.	Placer Vineyards 88	200600581	Placer Vineyards Development Group, LLC, a California limited liability company c/o: Bob Shattuck Lennar Communities 1420 Rocky Ridge Drive, Suite 320 Roseville, California 95661 Phone: 916- 746-8500	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
17.	Gulley 20	200500025	J.A. Sioukas Family Partnership, L.P., a California limited partnership c/o: Jack Sioukas JAS Developments, Inc. 2277 Fair Oaks Boulevard, Suite 295 Sacramento, California 95825 Phone: 916-648-1100	Karen Shaffer Gibson & Skordal, LLC 2617 K Street, Suite 175 Sacramento, California 95816 Phone: 916-822-3230 kshaffer@gibsonandskordal.com

Property No.	Name	Regulatory No.	Owner / Applicant	Agent
19.	Placer Vineyards 815	200300670	Lennar Winncrest, LLC, a Delaware limited liability company c/o: Bob Shattuck Lennar Communities 1420 Rocky Ridge Drive, Suite 320 Roseville, California 95661 Phone:916-746-8500 bob.shattuck@Lennar.com Baseline A&B Holding, LLC, A California limited liability company c/o: Julie Hanson 1700 Eureka Road, Suite 150C Roseville, California 95667 Phone: 916-774-6622 jmrhanson@gmail.com	Hal Freeman ECORP Consulting, Inc. 2525 Warren Drive Rocklin, California 95677 Phone: 916-782-9100 Fax: 916-782-9134 hfreeman@ecorpconsulting.com
21.	Pan de Leon	200500754	John Petros Pandeleon and Nicholas Pandeleon and Contilo K. Pandeleon, as Joint Tenants c/o: Gus Galaxidas 7700 College Town Drive, Suite 201 Sacramento, California 95826 Phone: 916-425-6897 ggalaxidas@metroproperties.com	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com
23.	Fong	200500042	PMF5C, LLC Candace Fong 3009 65th Street Sacramento, California 95820	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com
24.	Capri	200500091	Nicolas Pandeleon and Contilo K. Pandeleon, as Trustees of the Pandeleon Family Trust dated May 18, 1999, as to an undivided 25% interest; Nick J. Pantis, as Trustee of the Nick J. Pantis Revocable Trust dated July 1, 2003, as to an undivided 25% interest; Nick Galaxidas, a married man as his sole and separate property, as to an undivided 12.5% interest; Constantino Galaxidas and Stelene D. Galaxidas, as Trustees of The Galaxidas Family Trust dated May 21, 2007, as to an undivided 25% interest; and Anna Galaxidas, as Trustee of the Anna Galaxidas Living Trust, UTA dated July 5, 2007, as to an undivided 12.5% interest. c/o: Gus Galaxidas 7700 College Town Drive, Suite 201 Sacramento, California 95826 Phone: 916-425-6897 ggalaxidas@metroproperties.com	Ken Whitney Foothill Associates 590 Menlo Drive, Suite 1 Rocklin, California 95765 Phone: 916-435-1202 ken@foothill.com

5.3 Project Purpose and Description

The U.S. Army Corps of Engineers has determined that the project purpose is:

> "to construct a large-scale, regional mixed-use residential project in western Placer County."

The Applicants' stated need for the Proposed Action is described as follows:

> "The project is proposed as a large scale residential community because the primary purpose of the Project is to accommodate projected population growth in Placer County and provide a coordinated development envelope consisting of residential, commercial, recreational, public/quasi-public land uses, required infrastructure and open space to accommodate a population of approximately 30,000 to 50,000 persons. The project is intended to assist in meeting the region's future needs for residential opportunities through comprehensive planning."

The purpose of the Placer Vineyards Specific Plan (PVSP) is to establish a coordinated and comprehensive approach towards land use development consisting of residential, employment, commercial, recreational and public/quasi-public land uses, and required infrastructure, as well as open space. The properties with currently active individual permit applications total approximately 3,746 acres within the PVSP area. The projects have independent utility so that if any of the current bundle of permits become inactive, the remaining applicants will continue to pursue permits for development. Similarly, it is anticipated that the entire PVSP area will ultimately be developed over a period of many years and that future individual permits will be pursued as required for the remaining properties. The remaining 1,484 acres consist of those development parcels whose owners are not pursuing permits at this time, and a 979-acre "Special Planning Area" (SPA) that is predominated by existing rural residential development. . An estimated 35 acres of those remaining 1484 acres would by impacted by major roadways constructed to serve the PVSP area.

Additional elements addressed in this Biological Assessment include the off-site infrastructure elements, (i.e., two sewer lines, a potable water line/tank, a recycled water line, and road improvements) (see Figure 2, above). Other integral elements of the proposed actions include the compensatory and construction-related conservation and minimization measures proposed to reduce potential impacts to biological resources within the Placer Vineyards Specific Plan area (Section 5.7).

In its environmental review of the PVSP, Placer County evaluated a range of development densities, from 14,132 dwelling units up to 21,631 dwelling units within the 5230-acre PVSP area. The "bookends" of this range are represented by the lower density "Base Plan" and a higher density version known as the "Blueprint Scenario", due to its consistency with the 2005 Sacramento Area Council of Governments' (SACOG's) "Preferred Blueprint Scenario." Under this higher density scenario, the development footprint would remain essentially the same, but the density of residential and commercial land uses would be increased to accommodate an estimated population of approximately 49,000 people (increased from approximately 33,000 at the lower end of the density range). The higher density scenario would also result in minor land use shifts within the plan to accommodate the higher densities. There is some potential that, during the 20-to 30-year buildout of the PVSP, local policy makers may determine that the plan area is suitable for the higher densities. Accordingly, the applicants have requested that the EIS evaluate, and the Corps' 404 permits reflect, the potential for development throughout the continuum between low and high densities analyzed in the Specific Plan EIR. That is, the Corps' permits and NEPA review will allow local policy makers to adjust the densities of the plan, within these "bookends," without the need for further Corps permitting or environmental review, as long as the development footprint remains unchanged.

At full build-out at the lower end of the density range, the PVSP area would support a population of 33,000 persons in 14,132 dwelling units. The newly-developed 4,251-acre area[1] would include approximately 2,382 acres of residential uses, 309 acres of commercial uses, 640 acres of quasi-public (public facilities/services, religious facilities, schools, and major roadways) land uses, and 211 acres of park and 709 acres of open space land (Figure 3. *Placer Vineyards Specific Plan –Approved Development Plan*). There would be approximately 13,982 new

dwelling units[2]. The 709 acres of open space would include corridors with drainage infrastructure elements to be constructed as part of the plan. The PVSP is expected to develop over a 20 to 30-year time frame.

All of the proposed development that would be allowed under the currently-pursued permit actions would occur within approximately 3,746 acres. When complete, this portion of the development would consist of approximately 2,005.5 acres of residential uses; 277.7 acres of office/business park/commercial uses; 50.5 acres of public facilities and services uses; 74 acres of religious facilities; 167 acres of elementary, middle, and high school uses; 199 acres of park (neighborhood, community and "mini" parks, as well as a recreational center); 296.5 acres of major roadways; and 675.5 acres of open space. Consistent with the Placer County General Plan, the Placer Vineyards Specific Plan allocates 11,585 of the 14,132 allowable dwelling units to these 3,746 acres. As discussed above, build-out is anticipated to occur over a 20 to 30-year period.

At full-buildout at the higher end of the density range, the development footprint would remain the same, but the density of residential and commercial land uses would increase to accommodate 21,631 dwelling units and an estimated population of 49,000 people. Like at the lower end of the density-range, there would be new development of approximately 4,251 acres within the 5,230-acre Placer Vineyards Specific Plan area. The remaining 979 acres are within a Special Planning Area (SPA) where there is existing rural residential land use, and only very limited additional development (i.e., 261 new dwelling units) would occur.

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[1] The "newly-developed" area is the portion of the Placer Vineyards Specific Plan area not designated as "Special Planning Area", which is predominated by existing rural residential development.

[2] The total dwelling unit count for the Placer Vineyards Specific Plan is 14,132 which is the total of 13,721 new dwelling units within the newly-developed 4,251 acres, plus an allowance for 150 existing dwelling units and 261 new dwelling units in the 979-acre Special Planning Area.

Higher density would require minor land use shifts within the plan area, but the development footprint would remain the same with 709 acres of open space at full-buildout, regardless of density. There would be a maximum of approximately 21,481[3] new dwelling units and a population of approximately 49,000 persons that would develop over a 20 to 30-year time frame. As with the low end of the density range, the 709 acres of open space would include corridors with drainage infrastructure elements to be constructed as part of the plan.

5.4 Action Area

The proposed Action Area includes the 3,746 acres of properties with active permit applications within the Placer Vineyards Specific Plan (PVSP) area, the footprint of infrastructure elements (both within the properties without active applications and completely outside the PVSP area), and a 250-foot buffer zone (Figure 4. *Action Area*).

The Action Area has been defined to include a 250-foot buffer in order to assess potential indirect impacts to adjacent habitats that may support federally listed species. Most of the adjacent properties (outside of the PVSP area) that could support special aquatic habitats, however, are either hydrologically disconnected, from the PVSP area or are already part of a different development plan area. The northern boundary of the PVSP area is functionally defined by Baseline Road which serves as a hydrological barrier to adjacent isolated seasonal wetlands within the Action Area. Similarly, Dry Creek provides a hydrological barrier along the southeastern boundary. In addition, much of the Action Area is bordered by Plan Areas for existing and/or proposed developments, including the Sierra Vista Specific Plan Area, the Curry Creek Community Plan Area, the Elverta Specific Plan Area, the Dry Creek Community Plan Area, and the Riolo Vineyards Specific Plan Area (Figure 5. *Adjacent Existing and/or Proposed Developments and Plan Areas*). Direct impacts to special aquatic habitats in these areas would be permitted through separate Federal Actions (Section 7 or 10) specific to each area/project, and should not require assessment of indirect impacts.

[3] The total dwelling unit count for the Placer Vineyards Specific Plan Blueprint Scenario is 21,631 which is the total of 21,220 new dwelling units within the newly-developed 4,251 acres, plus an allowance for 150 existing dwelling units and 261 new dwelling units in the 979-acre Special Planning Area.

5.4.1 Active Development Area

The properties within the PVSP area with active permit applications comprise 3,746 acres of currently-proposed development and open space areas (see Figure 3). Development of the 3,746 acres will consist of approximately 11,585 dwelling units on 2,005.5 acres of residential uses; approximately 277.7 acres of office/business park/commercial uses; 50.5 acres of public facilities and services uses; 74 acres of religious facilities; approximately 167 acres of elementary, middle, and high school uses; 199 acres of park (neighborhood, community and "mini" parks, as well as a residential center); approximately 296.5 acres of major roadways; and approximately 675.5 acres of open space. For this discussion, we will describe this area as the Active Development Area.

5.4.2 Secondary Development Area

Major roadways would also cover an estimated additional 35 acres on properties within the PVSP area, but without active permit applications. Development of these roadways would be permitted under the infrastructure permit. For the purposes of this discussion, we will describe this area as the Secondary Development Area.

5.4.3 Off-Site Area for Infrastructure Elements

The Off-Site Area for Infrastructure Elements is the area required for implementation of four infrastructure elements (i.e., two sewer lines, a potable water line, a recycled water line, and road improvements). The off-site infrastructure elements would be constructed outside of the boundary of the 5,230-acre PSVP area

5.5 Existing Site Conditions

5.5.1 Development Area

The Placer Vineyards Specific Plan (PVSP) area, including both the active and Secondary Development Areas is located on level to gently rolling terrain that slopes primarily southwest,

except for a smaller area in the east which drains towards Dry Creek. It is situated at an elevational range of approximately 40 to 100 feet above mean sea level. Current land uses include active agriculture (pasturelands and farmlands), rural residences, transmission line corridors, and paved and unpaved roadways.

The PVSP area supports a variety of habitat types (Figure 6 – *Existing Habitat Types within the Active Development Area*), and is dominated by a mixture of cultivated agricultural land and non-native annual grassland (grazed and non-grazed), with scattered seasonal wetlands, including vernal pools, stock ponds, ephemeral (and formerly ephemeral) drainages. Runoff from the irrigated pastures and rice fields has altered the hydrology of the site, as several historically ephemeral drainage features are currently intermittently, or even perennially, wet. Where changed, these watercourses typically support emergent marsh vegetation and scattered stands of scrub riparian habitat. There is a mature riparian corridor along Dry Creek at the southeastern edge of the PVSP area, two discrete stands of oak woodland, and scattered oak savannah.

The following is a general description of the habitat types found within the in the PVSP area. Acreages reported in the text and in Table 2, below relate only to the Active Development Area.

Table 2. Summary of Habitat Types

Habitat Type	Acres within the Active Development Area
Seasonal Wetlands	81.5
Vernal Pools	32.5
Drainage/Pond	49.3
Marsh/Riparian	39.1
Oak Woodland/Oak Savannah	65.5
Grassland	2,123.7
Agricultural Land	1,330.3
Roads/Other Surfaces	22.0
Total:	**3,743.9**[1]

[1] This number represents the acreage for the 3,746-acre Active Development Area. Surveyed boundary data overlap results in minor acreage discrepancy.

As discussed above, an estimated additional 35 acres of major roadways are to be constructed in the Secondary Development Area. The majority of this would be upon land classified as agricultural (described below). An estimated 0.72 acres of wetlands, along with an estimated 0.19 acres of wetlands within the Special Planning Area, associated with this construction would be permitted under the infrastructure permit.

5.5.1.1 Seasonal Wetlands

Seasonal wetlands (including seasonal wetlands, seasonal wetland swales, drainage swales, and riverine seasonal wetlands) occur throughout the area. They are typically associated with shallow drainages, swales or other depressions, and typically support wetland vegetation including grasses such as Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), perennial ryegrass (*Lolium perenne*), curly dock (*Rumex crispis*), annual bluegrass (*Poa annua*), and annual rabbits-foot grass (*Polypogon monspeliensis*).

Because the wetland delineations compiled for the development area were conducted by different consultants, the wetlands are described using different nomenclature. These differences in nomenclature are most evident in the classification of seasonal wetlands, some of which are typically considered by USFWS to constitute potential habitat for federally-listed aquatic invertebrates such as the vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*). Because the wetland delineations have been verified, and to avoid introducing potential confusion to the discussion, ECORP will not change the nomenclature used on the different properties, but will attempt to estimate what USFWS might consider to represent potential habitat for listed aquatic invertebrates. Since the proposed mitigation makes no distinction between occupied and unoccupied habitat, the estimate reported in Table 3, below has been made without regard for negative survey results which were obtained through surveys conducted according to USFWS-promulgated protocols on some properties. It is important to emphasize that the values reported represent only our estimate of the type of habitat which appears typical of that which, in the absence of negative survey data, would likely be considered by USFWS to represent habitat for those listed species.

Table 3. Estimate of Potential Aquatic Invertebrate Habitat in Seasonal Wetlands

Wetland Type	Wetland Acreage	Potential Aquatic Invertebrate Habitat
Seasonal Wetlands (Basin-Type)	39.9	39.9
Seasonal Wetlands (Basin-Type, Non Jurisdictional)	1.5	1.5
Seasonal Wetland Swales	12.7	12.1
Drainage Swales	2.1	2.1
Riverine Seasonal Wetlands	25.3	21.4
Total	81.5	77.0

Altogether, the Active Development Area contains approximately 81.5 acres of seasonal wetlands within the participating properties, 77.0 acres of which are of the type typically considered (in ECORP's experience) by USFWS to represent potential habitat for federally-listed aquatic invertebrates.

5.5.1.2 Vernal Pools

Vernal pools are shallow depressions underlain by a hardpan layer causing them to inundate. These wetland features support typical vernal pool plant species found in the Sacramento Valley. Plant species observed in these habitats include Vasey's coyote-thistle (*Eryngium vaseyi*), popcorn flower (*Plagiobothrys stipitatus*), tricolored monkeyflower (*Mimulus tricolor*), and downingia (*Downingia* spp.). The Active Development Area contains approximately 32.5 acres of vernal pools.

5.5.1.3 Drainage/Pond

Several drainage types are mapped within the PVSP area. These include canal/ditch, creek, ephemeral drainage, intermittent drainage, and channel. These features typically have a defined bed and bank, and are mostly devoid of vegetation. Most of these drainages remain dry most of the time, carrying water only during and/or shortly after rain events. The ponds and stock ponds on-site support a narrow fringe of perennial vegetation dominated by cattail (*Typha latifolia*), bulrush (*Scirpus acutus*), and common rush (*Juncus effusus*). The remainder of pond surface acreage is open water. There are approximately 30.8 acres of ephemeral

drainage features mapped within the Active Development Area. Ponds and stock ponds represent approximately 18.5 acres.

5.5.1.4 Marsh/Riparian

Where water remains in an intermittent drainage long enough, emergent vegetation can become established and riparian vegetation may be supported in the adjacent upland. Mature riparian habitat occurs along the southeastern edge of the property adjacent to Dry Creek. Another small, sparse stand of riparian habitat occurs in association with an intermittent drainage in the southwestern portion of the PVSP area. Riparian trees such as arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix goodingii*), and Fremont's cottonwood (*Populus fremontii*) occur in these areas. The associated understory consists of woody and herbaceous plant species such as Himalayan blackberry (*Rubus discolor*), dallis grass (*Paspalum dilatatum*), and Johnson grass (*Sorghum halepense*). Just upstream to the east, across Palladay Road, there is a 0.6-acre stand of eucalyptus planted around a stock pond (mapped as riparian non-native). There are, approximately 0.2 acre of depressional seasonal marsh, 0.6 acres of riverine seasonal marsh, 0.6 acres of riverine perennial marsh, and approximately 38 acres of riparian vegetation within the Active Development Area.

5.5.1.5 Oak Woodland/Oak Savannah

Two stands of blue oak woodland totaling approximately 44.1 acres occur within the Active Development Area. The blue oak woodland is dominated by blue oaks (*Quercus douglasii*) with a non-native herbaceous understory typical of non-native grassland habitat. The savannah is an open community with several scattered oaks. Approximately 21.4 acres of oak savannah habitat have been identified in the Active Development Area.

5.5.1.6 Agricultural Land

Cultivated agricultural land makes up a large portion of land use throughout the PVSP area. Typically, these lands are actively maintained (disced or tilled) throughout the year for cultivated grain crops such as wheat. Other areas are leveled and flooded for rice production,

or irrigated for cattle grazing. Upland herbaceous vegetation primarily consists of non-native grass species such as wild oats (*Avena* sp.), foxtail (*Hordeum murinum*), annual ryegrass (*Lolium multiflorum*), and annual bluegrass (*Poa annua*). Additional weedy herbaceous species include yellow star-thistle (*Centaurea solstitialis*), filaree (*Erodium* sp.), and wild radish (*Raphanus sativus*). There are approximately 1,330 acres of agricultural lands within the Active Development Area.

5.5.1.7 Annual Grassland

Annual grassland is used for grazing (or lies fallow) and occurs throughout the region. This herbaceous vegetation community is dominated by non-native grasses and forbs, such as those found in the aforementioned agricultural land. Other species found in this community include Fitch's tarweed (*Hemizonia fitchi*) and soft chess (*Bromus hordeaceus*). There are approximately 2,124 acres of grassland within the Active Development Area.

5.5.2 Off-Site Area for Infrastructure Elements

Existing land uses within the Off-Site Area for Infrastructure Elements include active agriculture (pasturelands and farmlands), rural residences, transmission line corridors, and developed and undeveloped roadways.

Vegetation communities mapped within the off-site infrastructure area include annual grassland, riparian woodland, oak woodland, seasonal wetland and vernal pool complexes, and landscaped areas associated with industrial, commercial, rural, and residential development. In addition, there are other waters, such as creek and small drainage crossings. Aquatic features in the Off-Site Area for Infrastructure Elements have been estimated based on aerial photograph interpretation, since access to these off-site areas has not yet been secured. Furthermore, the upland resources have not been quantified, since construction-related disturbances to these resources are expected to be temporary and minor in nature. Additional detailed information, with respect to off-site impacts can be found in Section 7.0 of this report.

5.5.3 Soil Types

According to the *Soil Survey of Placer County, Western Part*, California (U.S. Department of Agriculture, Soil Conservation Service 1980), 18 soil units, or types, have been mapped within the Action Area (Figure 7. *Natural Resources Conservation Service Soil Types*). These are: (104) Alamo-Fiddyment Complex, 0 - 5 percent slopes; (123) Cometa Loam, 0 – 2 percent slopes, (140) Cometa sandy loam, 1 - 5 percent slopes; (141) Cometa-Fiddyment Complex, 1 - 5 percent slopes; (142) Cometa-Ramona sandy loams, 1 - 5 percent slopes; (145) Fiddyment fine sandy loam, 1 - 8 percent slopes, (146) Fiddyment loam, 1 - 8 percent slopes; (147) Fiddyment-Kaseberg loams, 2 - 9 percent slopes; (158) San Joaquin sandy loam, 0 – 2 percent slopes, (160) San Joaquin-Arents-Durochrepts complex, 0-1 percent slopes, (172) Live Oak sandy clay loam, 0 – 2 percent slopes, occasionally flooded, (174) Ramona sandy loam, 0 - 2 percent slopes;, (175) Ramona sandy loam, 2 - 9 percent slopes, (182) San Joaquin-Cometa sandy loam, 1 - 5 percent slopes; (193) Xerofluvents, occasionally flooded; (194) Xerofluvents, frequently flooded; (194) Xerofluvents, frequently flooded, (195) Xerofluvents, hardpan substratum; and (198) water.

5.6 Surveys Conducted in the Active Development Area

5.6.1 Waters of the United States

Wetland delineations have been conducted for each of the properties with permit applications, however verification for the Placer Vineyards C property (#6) was never completed. The request for verification was withdrawn (by the Corps) on 31 October 2006. Figure 8.*Composite Wetland Delineation* is a composite map of all of these individual wetland delineations. Table 4 is a summary of each property's status regarding verification. Aquatic features within the Secondary Development Area, and Off-Site Area for Infrastructure Elements were visually assessed through aerial photograph interpretation (Figure 9. *Wetland Assessment- Off-Site Area for Infrastructure Elements*). Delineations in the Off-Site Area for Infrastructure Elements will be conducted and submitted to the Corps for verification as access rights are secured.

Table 4. Summary of Wetland Delineation Status

Ownership # / Name	Consultant	Report Date	Verified	Regulatory Branch No.
1a. Doyle	Gibson and Skordal	1/28/2004	4/21/2006	200500090
1b. Hodel	Gibson and Skordal	1/28/2004	4/28/2006	200500089
2. Mourier 135	ECORP	8/21/2006	12/1/2006	200600584
3. Watt X Baseline	Gibson and Skordal	3/25/2005	2/14/07	200501181
4a. Placer Vineyards 179a	ECORP	10/26/2005	11/15/2006	200501073
4b. Placer Vineyards 179b	ECORP	10/26/2005	11/15/2006	200600578
6. Placer Vineyards C	ECORP	2/15/2006	Withdrawn	200500598
7. Placer Vineyards 356	ECORP	11/26/2004	3/15/2005	200500088
8. Placer Vineyards B	ECORP	2/13/2006	10/7/2007	200500597
9a. Placer Vineyards A(A)	Foothill Associates	7/7/2005	10/11/2007	200500535
9b. Placer Vineyards A (B)	Foothill Associates	7/7/2005	10/11/2007	200600582
10. Placer Vineyards 239/Dyer Lane	Gibson and Skordal	October 2009	3/25/20012	200500018
11. PGG Properties	Foothill Associates	6/21/2005	2/14/2006	200500044
12a. Placer Vineyards 290, Parcel 1	ECORP	1/19/2005	1/24/2006	200500230
12b. Placer Vineyards 290, Parcel 2	ECORP	1/19/2005	1/24/2006	200500230
14. D.F. 80	ECORP	3/14/2008	2/11/2009	200400893
15. Placer Vineyards 200	ECORP	2/9/2005	1/24/2006	200500233
16. Placer Vineyards 88	Foothill Associates	4/27/05	7/2/2007	200600581
17. Gulley 20	Gibson and Skordal	8/18/2004	10/4/2005	200500025
19. Placer Vineyards 815	Foothill Associates	2/7/2005	5/31/2007	200300670
21. Pan De Leon	Foothill Associates	6/22/2005	9/27/2005	200500754
23. Fong	Foothill Associates	6/24/2005	11/15/2006	200500042
24. Capri	Foothill Associates	6/24/2005	11/15/2006	200500091

5.6.2 Plants

Surveys for federally listed, proposed, and/or candidate plant plants potentially occurring within the Active Development Area were conducted in 2004, 2005, and 2006 and have been completed on approximately 3,502.3 acres. To date, no federally listed plants species have been identified on-site. Plant surveys for the remaining 242 acres of remaining in the Active Development Area, Secondary Development Area, and for the Off-Site Area for Infrastructure Elements have yet to occur, but are planned prior to project implementation. Table 5 shows the results of plant surveys for each of the properties, and Figure 10. *Surveyed Properties – Potentially-Occurring Federally-Listed Proposed and/or Candidate Plants* is a depiction of the surveyed properties for plants.

Table 5. Summary of Surveys for Potentially Occurring Federally Listed Proposed and/or Candidate Plants

Ownership # / Name	Consultant	Year of Survey	Federally Listed, Proposed or Candidate Species Found
1a. Doyle	Williams	2005/2006	None
1b. Hodel	Williams	2005/2006	None
2. Mourier 135	ECORP	2005	None
3. Watt X Baseline	ECORP	2006	None
4a. Placer Vineyards 179a	M. Green & ECORP	2006	None
4b. Placer Vineyards 179b	M. Green & ECORP	2006	None
6. Placer Vineyards C	ECORP	2006	None
7. Placer Vineyards 356	ECORP	2004	None
8. Placer Vineyards B	ECORP	2005	None
9a. Placer Vineyards A (a)	Foothill Associates	2005	None
9b. Placer Vineyards A (b)	Foothill Associates	2005	None
10. Placer Vineyards 239/Dyer Lane	Gibson and Skordal	---	---
11. PGG Properties	Foothill Associates	2005	None
12a. Placer Vineyards 290, Parcel 1	ECORP	2004	None
12b. Placer Vineyards 290, Parcel 2	ECORP	2004	None
14. D.F. 80	ECORP	2005	None
15. Placer Vineyards 200	ECORP	2004	None
16. Placer Vineyards 88	ECORP	2005	None
17. Gulley 20	M. Green	2005/2006	None
19. Placer Vineyards 815	ECORP	2004	None
21. Pan De Leon	Foothill Associates	2005	None
23. Fong	Foothill Associates	2005	None
24. Capri	Foothill Associates	2005	None

5.6.3 Invertebrates

5.6.3.1 Vernal Pool Branchiopods

The approach used in this document's assessment of vernal pool branchiopod presence is consistent with the approach taken in the Draft Placer County Conservation Plan, as approved by the Biological Working Group (Feb. 1, 2011 Agency Review Draft Document) ("Draft PCCP") and the Placer Vineyards Mitigation Strategy (Nov. 2012). Under that approach, vernal pool branchiopod habitat is assumed to be directly impacted by urban and rural development, if such development is projected to occur, based on the growth projection model and on the modeled habitats for vernal pool branchiopods. This method uses habitat models that identify the location and amount of specific land-cover types assumed to be suitable for each covered species. As noted in the Draft PCCP, these estimates of suitable habitat are likely to be somewhat inflated because habitat models may overestimate the actual extent of suitable habitat, and not all suitable habitat is occupied by the species. Thus, species habitat (modeled as land-cover types) is used as a proxy for species occurrence because of the limitations of survey data.

The Placer Vineyards Mitigation Strategy assumes that all land within the Active Development Area (not including the Special Planning Area) is included in the calculation of take, with the exception of land that will be maintained in or restored to a natural or semi-natural condition as required by the County and/or any state or federal permitting agency. Figure 11. *Placer Vineyards Specific Plan, Open Space Plan* and Table 6. *Placer Vineyards Specific Plan, Open Space Summary* show the take area and take calculation by property based upon the proposed land use and avoidance required for compliance with County standards through adoption of the Specific Plan, prior to consideration of any additional avoidance that may be required by a permitting agency.

Table 6. Placer Vineyards Specific Plan Open Space Summary

Property ID No.	Gross Parcel Area (Acres)	Open Space Area (Acres)	Remaining Area (Acres)
1A	402.0	88.0	314.0
1B	56.0	4.0	52.0
2	138.0	19.0	119.0
3	100.5	26.0	74.5
4	179.2	20.0	159.2
5A	106.5		106.5
5B	51.0	5.0	46.0
5C	241.5	6.5	235.0
6	39.0	18.0	21.0
7	357.0	63.0	294.0
8	120.0	24.5	95.5
9	326.0	61.5	264.5
10	242.0	30.0	212.0
11	79.0	27.5	51.5
12A	196.0	20.0	176.0
12B	102.0	6.5	95.5
13	80.0	13.0	67.0
14	80.0	20.0	60.0
15	202.0	23.0	179.0
16	94.0	16.0	78.0
17	19.5		19.5
18	3.5	2.5	1.0
19	816.5	159.5	657.0
20	0.3		0.3
21	10.5		10.5
22	22.5	6.5	16.0
23	92.5	22.5	70.0
24	94.0	26.5	67.5
TOTAL:	**4,251.0**	**709.0**	**3,542.0**

As discussed in the Placer Vineyards Mitigation Strategy, the take acreage may only be reduced below that shown on Figure 11 and Table 6 to the extent that additional avoidance is required by the County and/or any state or federal permitting agency. Similarly, the take acreage and corresponding mitigation requirements will be increased to the extent that the County and the state and federal permitting agencies allow future development of any area not included in the take calculations as shown in Figure 11 and Table 6.

Wet and/or dry season surveys for vernal pool branchiopods have been completed on approximately 2,520 acres of participating properties. Both vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) have been identified from scattered locations within the Active Development Area. Wet season surveys were conducted during the 2004-2008 seasons. Dry season surveys spanned the period from 2003 to 2007. Surveys for listed aquatic invertebrates in the Secondary Development Area and Off-Site Area for Infrastructure Elements have yet to be initiated (because access has not yet been secured). Figure 12 is a depiction of the surveyed properties for aquatic invertebrates, and Table 7 reports the results of aquatic invertebrate surveys for each of the properties.

Table 7. Summary of Surveys for Potentially Occurring Vernal Pool Branchiopods

Ownership # / Name	Consultant	Surveys Conducted and Report Date	Federally Listed Species Found
1a. Doyle	Helm	Dry season (12/04), Wet season (6/05)	vernal pool tadpole shrimp
1b. Hodel	Helm	Dry season (12/04), Wet season (6/05)	None
2. Mourier 135	ECORP	Wet season (7/07), Wet season (07/08)	None
3. Watt X Baseline	Helm	Dry season (10/03), Wet season (date unknown)	vernal pool fairy shrimp
4a. Placer Vineyards 179a	Helm	Dry season (10/05), Wet season (7/06)	None
4b. Placer Vineyards 179b	Helm	Dry season (10/05), Wet season (7/06)	None
6. Placer Vineyards C	ECORP	---	---
7. Placer Vineyards 356	ECORP	Wet season (8/06), Wet season (7/07)	None
8. Placer Vineyards B	ECORP	Dry season, Wet season (9/06)	None
9a. Placer Vineyards A(A)	Ecoanalysts/Foothill	Dry season (8/06), Wet season (7/06)	None
9b. Placer Vineyards A (B)	Ecoanalysts/Foothill	Dry season (8/06), Wet season (7/06)	None
10. Placer Vineyards 239/Dyer Lane	Helm	Dry season (11/04), Wet season (8/04)	vernal pool fairy shrimp
11. PGG Properties	Foothill Associates	---	---
12a. Placer Vineyards 290, Parcel 1	ECORP	Dry season (10/05), Wet season (1/07)	vernal pool fairy shrimp
12b. Placer Vineyards 290, Parcel 2	ECORP	Dry season (10/05), Wet season (1/07)	None
14. D.F. 80	ECORP	Dry season (9/06), Wet season (9/06)	None
15. Placer Vineyards 200	ECORP	Dry season (3/07), Wet season (3/07)	None
16. Placer Vineyards 88	Helm	Dry Season (7/07)	vernal pool fairy shrimp
17. Gulley 20	Helm	Dry season (9/05), Wet season (6/06)	None
19. Placer Vineyards 815[1]	ECORP	Dry assessment (12/06), Wet assessment (12/06)	vernal pool fairy shrimp
21. Pan De Leon	Foothill Associates	---	---
23. Fong	Foothill Associates	---	---
24. Capri	Foothill Associates	---	---

[1] Assessment surveys conducted on Property #19 (Placer Vineyards 815) were not full-protocol surveys (i.e., focused on specific subset of potential habitat and terminated after positive results were obtained).

5.6.3.2 Valley Elderberry Longhorn Beetle

To date, no elderberry shrubs have been observed in the Action Area. However, they may occur in previously unsurveyed areas within the Active Development Area, within the Secondary Development Area and/or Off-Site Area for Infrastructure Elements. Valley Elderberry Longhorn Beetle surveys have been conducted for parcels totaling approximately 934.2 acres (see Table 8 and Figure13).

Table 8. Summary of Valley Elderberry Longhorn Beetle Habitat Surveys

Ownership # / Name	Consultant	Year of Survey	Elderberry Shrubs Found
1a. Doyle	Pending	Pending	Pending
1b. Hodel	Pending	Pending	Pending
2. Mourier 135	Pending	Pending	Pending
3. Watt X Baseline	Pending	Pending	Pending
4a. Placer Vineyards 179a	ECORP	2007	None
4b. Placer Vineyards 179b	ECORP	2007	None
6. Placer Vineyards C	Pending	Pending	Pending
7. Placer Vineyards 356	ECORP	2007	None
8. Placer Vineyards B	Pending	Pending	Pending
9a. Placer Vineyards A(A)	Pending	Pending	Pending
9b. Placer Vineyards A (B)	Pending	Pending	Pending
10. Placer Vineyards 239/Dyer Lane	Pending	Pending	Pending
11. PGG Properties	Pending	Pending	Pending
12a. Placer Vineyards 290, Parcel 1	ECORP	2007	None
12b. Placer Vineyards 290, Parcel 2	Pending	Pending	Pending
14. D.F. 80	Pending	Pending	Pending
15. Placer Vineyards 200	ECORP	2007	None
16. Placer Vineyards 88	Pending	Pending	Pending
17. Gulley 20	Pending	Pending	Pending
19. Placer Vineyards 815	Pending	Pending	Pending
21. Pan De Leon	Pending	Pending	Pending
23. Fong	Pending	Pending	Pending
24. Capri	Pending	Pending	Pending

5.7 Project Impacts, Avoidance, and Mitigation

The proposed Project would impact a variety of vegetation communities and habitats including oak woodland/oak savannah, agricultural land, grassland, wetlands, and other aquatic features such as drainages and ponds. Except where negative survey results indicate, the vernal pools, a portion of the seasonal wetlands, and seasonal wetland swales are considered occupied habitat for federally-listed aquatic invertebrate species (e.g., vernal pool tadpole shrimp and vernal pool fairy shrimp). As detailed in Section 5.5.1.1, above, and disregarding negative survey results, there are an estimated 116.9 acres of potential habitat for listed aquatic invertebrates in the Action Area.

Wetland delineations have been conducted for each of the properties in the Active Development Area. However, the delineation for the Placer Vineyards C (#6) property has not been verified. To date, approximately 164.74 acres of waters of the United States (U.S.) have been delineated within the Active Development Area (see Figure 8). Of the 164.74 acres mapped within the Active Development Area, development (i.e., both land use and infrastructure) will result in direct impacts to approximately 103.82 acres of waters of the U.S. The remaining 60.92 acres of wetlands occur and would be avoided within the 675.5 acres of open space to remain on-site.

An estimated 0.91 acre of wetland impacts are anticipated to occur due to infrastructure development in the Secondary Development Area, and the Special Planning Area.

An estimated additional 4.12 acres of waters of the U.S. would be directly impacted by off-site infrastructure elements.

Thus, the combined total for all wetland impacts within the Development Area and the estimated impacts in the Area for Off-Site Infrastructure elements is 108.85 acres. This estimate is partially based on aerial photograph interpretation, since access to the off-site areas has not been secured (see Figure 9), and does not include estimates of indirect impacts.

As discussed above, irrespective of negative survey results, potential listed aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, and seasonal wetland swales typically considered by USFWS to be potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Active Development Area and one vernal pool tadpole shrimp cyst was reported from one wetland on-site. Of the 108.85 total wetland acres to be directly impacted, approximately 95.21 acres (i.e., wet acres) may be described as potential aquatic invertebrate habitat and approximately 13.64 acres (i.e., wet acres) are other types of wetlands/waters.

5.7.1 Minimization and Conservation Measures

The project proponents have developed and committed to the implementation of several conservation measures that will serve to minimize potential effects to biological resources in the Action Area, and to compensate for the effects of the proposed action on federally listed species. The proposed conservation strategies and mitigation measures were developed in consultation with Placer County, the Sierra Club and Audubon Society. They are compatible with the Conservation Strategy being proposed for the Placer County Conservation Plan (PCCP), but they are not dependent upon its adoption. Summaries of the proposed compensatory conservation/mitigation strategies and the construction-related mitigation measures are presented below.

5.7.1.1. Placer Vineyards Mitigation Strategy

In addition to providing substantial and protected open space areas, the intent of the Placer Vineyards Mitigation Strategy ("Mitigation Strategy" or "Strategy", Attachment C) is to approach the mitigation needs of the Plan through a more holistic approach that better responds to the regional landscape. The Mitigation Strategy will provide a single, all-inclusive mitigation program that can simultaneously mitigate for all biological resources of concern, including mitigation requirements for unavoidable impacts to Specific Plan area endangered species habitats, wetlands and other waters of the U.S. The Mitigation Strategy, is compatible with the Conservation Strategy proposed in the Draft PCCP, as submitted by the County and approved by the Biological Working Group, and like the Draft PCCP, could contribute towards a

regionally important expanse of contiguous private and public land that will continue to support agricultural use, meet species needs in the long term and aid recovery objectives outlined in the Draft PCCP. This regional approach to conservation of agricultural land, wetlands and habitat is designed to complement efforts to avoid and/or minimize impacts on site for key components of the aquatic system, rare habitat, and individual species.

Regardless of whether the PCCP is adopted, the Mitigation Strategy represents the most sound approach towards mitigation of a very large plan area such as Placer Vineyards. If the PCCP is adopted during the build out of Placer Vineyards, development projects within the Specific Plan could fulfill mitigation requirements by compliance with the terms of the adopted PCCP in lieu of the Mitigation Strategy, creating a relatively seamless transition. Such compliance would obviate the need to comply with measures found in the Mitigation Strategy. Subsequent changes to the draft PCCP will not affect the mitigation proposal presented in this Biological Assessment.

The Mitigation Strategy mitigates for irreversible land conversion through permanent conservation of large tracts of land with similar land cover, habitat, and agricultural value strategically located off-site in the area described on Figure A-1 of the Mitigation Strategy (the "Reserve Acquisition Area" or "RAA"). The RAA was selected in collaboration with Placer County, the Sacramento Area Council of Governments (SACOG), the Sierra Club and the Audubon Society, based upon the best available information as the area with the greatest opportunity to create a regionally important expanse of private and public land that will continue to support aquatic functions and meet species' needs in the long term with minimal edge effect and fragmentation from urbanization.

It is the goal of the Placer Vineyards Mitigation Strategy to achieve a mixed mosaic of habitats within acquired preserve areas to achieve ecosystem and preserve stability to support and conserve biological resources. The Mitigation Strategy includes three key elements including Site-Specific Avoidance and Minimization, Land Cover Mitigation, and Wetland Mitigation.

5.7.1.1.1 Site-Specific Avoidance and Minimization

The Applicants' proposed on-site avoidance and conservation strategy emphasizes maintaining the connectivity and integrity of drainage corridors from east to west through the Specific Plan Area. The Specific Plan design incorporates measures for preserving and enhancing critical aquatic resources on site. The Specific Plan Area incorporates a 709-acre open space area which also provides for historic habitat linkages and habitat quality through the Plan Area. Specific areas that exhibit habitat degradation due to historic land use were identified and will be enhanced. Large contiguous areas that exhibited habitat integrity have been preserved with adequate buffers to protect aquatic function. The Specific Plan incorporates minimization and low impact development strategies to minimize long-term habitat degradation within avoided open space areas. Restoration, enhancement, and creation would compensate for the anticipated loss of wetland areas and the replacement of impacted wetland functions.

The Placer Vineyards Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field-level investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. Of 675.5 acres of open space designated within the Active Development Area, the Avoidance and Open Space Plan incorporates 640 acres of resource-related open space preserves, with a further goal of establishing interconnected preserves. The Specific Plan level avoidance and minimization is reflected in Figure A2 of Attachment C. The resource-related open space preserves include significant wetland/swale corridors identified within the Specific Plan. These corridors, which are central to the open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially through agricultural manipulation, and are designed to promote avoidance efficiency by maximizing wetlands avoided per total open space area. Additional on-site avoidance of habitat is not encouraged and is generally considered to be inconsistent with the core strategy of creating large scale preserves located in areas that can be more readily linked and expanded to create a sustainable ecosystem at a landscape level.

5.7.1.1.2 Land Cover Mitigation

Most of the natural communities represented in the Plan Area require large, continuous and intact habitat to retain maximum biological function. Avoidance of small patches of communities such as vernal pool grassland may result in short-term avoidance of take of species present, but is generally inconsistent with long-term maintenance of stable species populations due to multiple factors such as reduced population size, loss of contributing hydrology, edge effects, increased non-native species, lack of management oversight, inability to implement management activities due to adjacent land uses etc. (Placer County 2011). Similarly, compatible agriculture that is important for long-term management of preserved lands is best served by large contiguous blocks of land that can minimize edge effects from surrounding urbanization. For this reason, impacts to agricultural land and biological resources at the natural community level are addressed by designating large areas for conservation outside of the area planned for future growth The Mitigation Strategy contemplates the conservation of sensitive habitats within Western Placer County. These efforts are focused on the conservation of land in the Reserve Acquisition Area . The Placer Vineyards Mitigation Strategy provides that for each acre converted to urban use by development, 1.35 acre of land will be conserved, consistent with the regional planning goals.

Impacts to annual grassland, vernal pool grassland, and pasture lands shall be mitigated on existing or restorable grassland (see Figure A-4b of Attachment C). For the purpose of establishing mitigation for Placer Vineyards, this will include those dry-framed, fallow and irrigated pasture lands designated as agriculture on Figure 6 of this document. Thus, all of the 3,746 acres in the Active Development Area, along with the 35 acres in the Secondary Development Area would be mitigated on existing or restorable grassland. Vernal pool grassland would be mitigated by conservation of any (restorable) grassland, without regard to existing wetted area density, and including wetted acres. Mitigation sites for vernal pool grasslands would be a minimum of 200 acres in size, unless located adjacent to other conservation properties (thereby increasing the effective size of the regional preserve system) or the “Stream System” (as identified in Figure A5 to Attachment C), or unless otherwise specifically approved by the County due to especially high resource value or strategic value to

the County's overall conservation strategy. In some cases, this may include mitigation sites outside of Placer County.

As explained in the Placer Vineyard Mitigation Strategy, the vast majority of land targeted for conservation in the Reserve Acquisition Area is suitable for agriculture and continued agricultural use will be encouraged by the conservation easements required pursuant to this mitigation. Thus, no additional agricultural mitigation will be required beyond the 1.35 to 1.0 requirement for the take of land cover. Likewise, the land cover mitigation criterion is such that it will also provide suitable foraging habitat mitigation for Swainson's hawk. No additional land mitigation will be required beyond the 1.35 to 1.0 requirement for the take of land cover.

5.7.1.1.3 Wetland Mitigation

Due to their regulatory status and biological significance, wetlands are accounted for separately through mitigation ratios requiring preservation and/or restoration of a set number of wetted area calculated as a proportion of wetland take. These wetted acres, along with any upland area that is conserved in association with the wetted acres, are fully credited towards the required land cover mitigation. In other words, it is intended that all of the wetland mitigation will be counted towards land cover mitigation requirements. Likewise, all wetted acres contained within land cover mitigation shall be counted towards wetland mitigation.

Due to their particular importance to endangered and/or threatened species, vernal pools (which, for the purpose of this discussion is deemed to include any seasonal depressional wetland habitat, without regard for the composition of its plant community) receive particular consideration. For the purpose of establishing mitigation for Placer Vineyards, this will include 77.0 acres of seasonal wetland habitat, as detailed in Section 5.5.1.1 of this document. Under the Placer Vineyards Mitigation Strategy, the take/conversion of each acre of wetted vernal pool habitat would be mitigated by the preservation of an acre of vernal pool. For each acre of vernal pool take/conversion, 1.25 acres of compensatory wetlands will be restored, enhanced or created, including a minimum of 0.75 acre of vernal pool and no more than 0.50 acre of other wetlands. In order of preference, restoration would precede both enhancement and creation, which would only be undertaken with specific approval of Placer County.

For take/conversion of each wetted acre of other wetland types, one acre of wetland (of any type) would be preserved, along with the restoration, enhancement, or creation of 1.25 acre of any wetland type, without regard for "in-kind" mitigation. Similarly, take/conversion of each acre of open water would require the preservation of an acre of open water or any type of wetland; along with the restoration, enhancement, or creation of 1.25 acre of open water or any type of wetland. Again, in order of preference, restoration would precede both enhancement and creation, which would only be undertaken with specific approval of Placer County. These mitigation ratios are outlined in Table 2 of Attachment C. For convenience, they are summarized below, in Table 9.

Table 9. Summary of Wetland Mitigation Ratios

Impacted Wetland Type	Mitigation Ratio	Mitigation Wetland Type
Vernal Pool	1:1	Preserved Vernal Pool
	0.75:1	Restored, Enhanced, Created Vernal Pool
	0.50:1	Restored, Enhanced, Created Wetland
Other Wetland	1:1	Preserved Wetland (any kind)
	1.25:1	Restored, Enhanced, Created Wetland (any kind)
Open Water	1:1	Preserved Open Water or Wetland (any kind)
	1.25:1	Restored, Enhanced, Created Open Water Wetland (any kind)

The goal of restoration is to return natural wetland functions to areas where historic wetland landscapes and features have been converted or heavily degraded. Restoration of prior-existing and/or degraded wetlands will be preferred. However, in some cases, enhancement of existing wetland habitat may add greater wetland function and value than restoration. The goal of enhancement is to improve wetland functions and values in areas where they have been degraded, but not entirely lost. Creation is the construction of wetland features where none has existed historically. In some circumstances, creation of new wetland features may be appropriate and beneficial. Although there is an established hierarchy in the Placer Vineyards Mitigation Strategy which ranges from the most-preferred restoration to the least-preferred creation, both preservation and other mitigation credits from agency-approved mitigation banks with appropriate service areas may be used to satisfy the requirements of the strategy.

5.7.1.1.4 Open Space Mitigation and Management Plan

The project proponents will prepare Open Space Mitigation and Management Plans for mitigation sites to assure the implementation of the preservation, enhancement, restoration, and creation of wetlands and other habitat in accordance with the compensatory mitigation requirements described above. As stated in the Placer Vineyards Mitigation Strategy, project applicants may use credits from approved conservation or mitigation banks to meet all or a part of the wetland mitigation required.

The Placer Vineyards Mitigation Strategy anticipates that, depending on the density of wetlands on land conserved to meet the land cover mitigation requirement, some projects within the Specific Plan may provide wetland mitigation in excess of the acreage required by the Strategy. Excess mitigation may be freely assigned by private agreement between projects within the Specific Plan. Such assignment will be documented and tracked by the County. Project applicants may apply excess mitigation assigned from other projects in the Specific Plan to meet all or a part of the wetland mitigation required by the Strategy provided proof of assignment be demonstrated to the satisfaction of the County.

5.7.1.2 Construction-Related Mitigation Measures

In addition to compensatory mitigation, a variety of mitigation measures have been designed to minimize impacts to biological resources resulting from construction and other Project-related activities.

Mitigation measures designed to protect potential water quality impacts will serve to minimize impacts to biological resources that occur in aquatic habitats within the Action Area (e.g., vernal pool branchiopods). These measures include, but are not limited to, the proposed mitigation requirements of the project's Master Project Drainage Study, the National Pollutant Discharge Elimination System (NPDES) Permit, and the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction Activity, and the Placer County Department of Public Works and Flood Control water quality requirements. Among these mitigation requirements, the Applicant is required to submit a site-specific Best Management

Practices Plan (BMP) Plan showing the on-site locations and effectiveness of the BMP facilities designed for the treatment and control of runoff. Implementation of these proposed BMPs would minimize impacts to aquatic habitats in the Action Area that may be affected by water quality degradation as a result of construction and other related activities.

Several additional conservation measures will be implemented to minimize the potential effects of the proposed action from construction and other related activities that may result in impacts to biological resources. The construction-related mitigation measures are primarily designed to educate construction personnel of the on-site resources at risk and the measures required to minimize impacts to these resources. Many of the proposed measures are standard measures typically required by the Service, and would require:

- that an on-site biological monitor (approved by the USFWS) be present during construction-related activities within 250 feet of designated habitat. The monitor would be required to ensure that construction conservation measures are implemented and to report on compliance of the conservation measures to the USFWS

- that the on-site approved biological monitor would conduct mandatory environmental awareness training for all construction personnel. The training would include a discussion of the measures imposed on construction personnel (e.g., trash disposal requirements, speed limit requirements, no pets or firearms allowed), and would include distribution of training materials that, at minimum, describe the biological resources/species at risk, species habitat requirements, and the conservation measures developed to protect those species

- that exclusion fencing, flagging, staking, and signage be placed to limit encroachment by construction personnel and equipment into sensitive areas

- that construction staging areas be clearly identified and monitored by the approved biological monitor

- that a hazardous spill-response plan be developed and measures implemented (e.g., restricted equipment refueling and maintenance practices)

- that BMPs, including those for water quality (above), dust control, erosion reduction and sediment control are implemented (e.g., use of silt screens, sediment fences, weed-free straw bales, sand bags, and water bars)

- that measures to prevent introduction of invasive nonnative plants species are implemented including development of an invasive species control program, and

- that enforcement of the said mitigation measures is required (written in to) construction contracts prior to project approval.

In addition to these general compensatory and construction-related mitigation measures, detailed species-specific mitigation measures have been developed to minimize potential impacts to federally listed species. They are described in Section 7.2.

6.0 DESCRIPTION OF THE SPECIES AND THEIR HABITAT

The following is a summary of federally listed, proposed and/or candidate species that may be affected by the proposed action, and it includes a description of species' distribution, habitat, life-cycle, threats to species' population, and current habitat conservation efforts. These species were identified in the USFWS list as occurring within the vicinity of the Action Area (USFWS 2012), the California Natural Diversity Database (CDFG 2003) (Attachment B) (Figure 14. *California Natural Diversity Database Federal Special-Status Species Occurrences*), and/or the Revised Draft EIR (Quad Knopf 2006).

6.1 Plants

6.1.1 Slender Orcutt Grass

Slender Orcutt grass is listed as threatened pursuant to the federal Endangered Species Act. Prior to the mid-1980s, slender Orcutt grass was only known to occur from 18 locations in Lake, Sacramento, Shasta, and Tehama Counties. Subsequently, additional populations were discovered throughout the Northern Sacramento Valley. A total of 90 occurrences are known, of which 88 are presumed to be extant (CDFG 2003). In addition to the counties listed in its historic range, slender Orcutt grass is also known from Lassen, Modoc, Butte, and Plumas Counties (USFWS 2005a). The highest concentration of slender Orcutt grass occurs in Tehama County where 31 natural occurrences are found (CDFG 2003).

Threats to slender Orcutt grass are habitat loss and fragmentation resulting from urbanization, agricultural conversion, and mining (USFWS 1997a). Other origins of habitat loss include changes in hydrological regime, competition with invasive species, overgrazing, erosion, and off-road vehicle use (USFWS 1997a).

The nearest documented population of slender Orcutt grass is approximately 13 miles southeast of the Action Area (CDFG 2003, see Figure 14). This species was identified in the Revised Draft EIR (Quad Knopf 2006) as a species potentially occurring within the Project, Project vicinity, or in the off-site infrastructure areas. However, it was also stated that slender Orcutt grass was considered unlikely to occur, due to the relatively shallow and disturbed nature of the vernal pools in the Action Area. Protocol-level surveys for slender Orcutt grass within the Active Development Area were conducted on approximately 3,503.3 acres during 2004, 2005, and 2006 with negative results. Critical Habitat for vernal pool species including slender Orcutt grass was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006a). The nearest Critical Habitat Unit for slender Orcutt grass is located approximately 13 miles southeast of the Action Area near Mather Air Force Base (CDFG 2003). Additionally, the USFWS has produced a *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (*Recovery Plan*) which includes efforts for slender Orcutt grass conservation (USFWS 2005a). Portions of Western Placer County, including portions of the

Action Area, is within the Southeastern Sacramento Vernal Pool Region (as identified within the *Recovery Plan)*, and is a "Priority 2" recovery priority area. The recovery plan recommends protection of 85% of the suitable vernal pool habitat within the Core Area, but it does not specify regulatory limits or requirements. This species, however, has not been documented as occurring within any Core Areas within the Southeastern Sacramento Valley Vernal Pool Region.

6.1.2 Sacramento Orcutt Grass

Sacramento Orcutt grass is listed as endangered pursuant to the federal Endangered Species Act. The earliest collection of this species was in 1936 near Phoenix Field; however, by 1990, Sacramento Orcutt grass was known from 11 natural occurrences and one introduction (CDFG 2003). The current distribution of the species is restricted to 10 extant populations in Sacramento County. One additional population was discovered after 1990; but one known population and a portion of another have been extirpated (USFWS 2005a). The highest concentration of occupied habitat occurs within a 2.3-square mile area near Rancho Cordova (USFWS 2005a).

Threats to Sacramento Orcutt grass include loss of habitat through urbanization, especially in the Rancho Cordova area (USFWS 2005a, USFWS 1997a). Other origins of habitat loss include changes in hydrological regime, overgrazing, competition from other plants, fertilization from adjacent areas, and off-road vehicle use (CNPS 2001, USFWS 2005a, USFWS 19997a).

The nearest documented population of Sacramento Orcutt grass is approximately seven miles southeast of the Action Area (CDFG 2003, see Figure 14). This species was identified in the Revised Draft EIR (Quad Knopf 2006) as a species potentially occurring within the Project, Project vicinity, or in the off-site infrastructure areas. However, it was also stated that Sacramento Orcutt grass was considered unlikely to occur, due to the relatively shallow and disturbed nature of the vernal pools in the Action Area. Protocol-level surveys for Sacramento Orcutt grass within the Active Development Area were conducted on approximately 3,503.3 acres during 2004, 2005, and 2006 with negative results. Critical Habitat for vernal pool species including Sacramento Orcutt grass was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006a). The nearest Critical Habitat Unit for

Sacramento Orcutt grass is approximately 7 miles southeast of the Action Area within the Phoenix Field vernal pool complex (CDFG 2003). Additionally, the USFWS has produced a *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan)*, which includes efforts for Sacramento Orcutt grass conservation (USFWS 2005a). Portions of Western Placer County, including portions of the Action Area, is within the Southeastern Sacramento Vernal Pool Region (as identified within the *Recovery Plan)*, and is a "Priority 2" recovery priority area. The *Recovery Plan* does not specify regulatory limits or requirements, but it recommends the protection of 85% of the suitable vernal pool habitat within the Core Area. This species, however, has not been documented as occurring within any Core Areas within the Southeastern Sacramento Valley Vernal Pool Region.

6.1.3 Hartweg's Golden Sunburst

Hartweg's golden sunburst is listed as endangered pursuant to the federal Endangered Species Act. This species was once a locally common grassland species in the Central Valley in California (USFWS 1997b), and it may have existed throughout the Central Valley from Yuba County south to Fresno County (Stebbins 1991, as cited in USFWS 1997b). Currently, the species is restricted to 27 populations in the eastern San Joaquin Valley in Merced, Stanislaus, Madera, and Fresno Counties (CDFG 2003).

Hartweg's golden sunburst is an annual herb that is endemic to grasslands and grassland/blue oak woodland communities (USFWS 1997b). It tends to grow on the north and northeast facing slopes of "Mima" mounds where grass cover is minimal (Stebbins 1991, as cited in USFWS 1997b). Furthermore, it seems to be strongly correlated with the shallow, well-drained, medium textured soils typical of the Amador and Rocklin soils series, neither of which occurs in the Action Area (Stebbins 1991, as cited in USFWS 1997b). Mima mound topography, which is characterized by raised mounds interspersed with shallow basins that may pond water during the rainy season, is often found in vernal pool/grassland landscapes.

Threats to Hartweg's golden sunburst are development, agriculture, overgrazing, and trampling (CNPS 2001, USFWS 1997b). Furthermore, a variant of one of the two soil series preferred by Hartweg's golden sunburst contains large quantities of pumice, which is mined for making concrete (Chesterman and Schmidt 1956 as cited in USFWS 1997b).

There are no documented occurrences of Hartweg's golden sunburst within the Action Area or its vicinity (CDFG 2003, see Figure 14). This species was identified in the Revised Draft EIR (Quad Knopf 2006) as a species potentially occurring within the Project, Project vicinity or in the off-site infrastructure areas; however, it was also stated that Hartweg's golden sunburst has low potential to occur, due to the disturbed nature of the vernal pool and grassland landscape in the Action Area. Furthermore, the Action Area is outside the known range of this species (CNPS 2001). The nearest documented occurrence of this species is approximately 27 miles north of the Action Area. There is no Critical Habitat designation for Hartweg's golden sunburst, nor has any been proposed. However, a recovery plan for southern Sierran foothill plants, which addresses this species, is currently under development by USFWS.

6.2 Invertebrates

6.2.1 Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is listed as threatened pursuant to the federal Endangered Species Act. Historically, the range of vernal pool fairy shrimp extended throughout the Central Valley of California. Vernal pool fairy shrimp populations have been found in several locations throughout California, with habitat extending from Stillwater Plain in Shasta County through the Central Valley to Pixley in Tulare County, and along the Central Coast range from northern Solano County to Pinnacles National Monument in San Benito County (Eng *et al.* 1990, Fugate 1992, Sugnet and Associates 1993). Additional populations occur in San Luis Obispo, Santa Barbara, and Riverside counties. The historic and current ranges of vernal pool fairy shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005a).

The life cycle of vernal pool fairy shrimp is adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales. Fairy shrimp embryos survive the dry season in cyst form. Cysts "hatch" soon after pools become inundated during the wet season. Fairy shrimp complete their life cycle quickly and feed on small particles of detritus, algae, and bacteria (Eriksen and Belk 1999).

Threats to vernal pool fairy shrimp include agricultural conversion and development that result in habitat loss. Habitat loss also occurs through changes in natural hydrology, incompatible livestock grazing, pollution by storm water, and disturbance from recreational activities (USFWS 2005a).

According to the CNDDB, there are several documented occurrences of vernal pool fairy shrimp within 10 miles of the Action Area, and two of these occurrences are located within the Action Area (CDFG 2003, see Figure 14). To date, determinate surveys for vernal pool fairy shrimp have been conducted on 2,521.9 acres within the Active Development Area. Positive findings for vernal pool fairy shrimp have been reported on 5 parcels within the Active Development Area (Placer Vineyards 815, Placer Vineyards 239/Dyer Lane, Watt/Baseline, Placer Vineyards 88, and Placer Vineyards 290 Parcel 1, see Figure 12). Critical Habitat for vernal pool species was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006a). The nearest Critical Habitat Unit for vernal pool fairy shrimp is located approximately nine miles north of the Action Area (CDFG 2003). This Critical Habitat Unit is located south of the City of Lincoln, north of the City of Roseville, and northeast of the City of Rocklin (USFWS 2003a). Additionally, the USFWS has produced a *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan)*, which includes efforts for vernal pool fairy shrimp conservation (USFWS 2005a). Portions of Western Placer County, including portions of the Action Area, are situated within the Southeastern Sacramento Vernal Pool Region (as identified within the *Recovery Plan)*, which is a "Priority 2" recovery priority area. The Recovery Plan recommends the protection of 85% of suitable habitat within the Core Area, but it does not specify regulatory limits or requirements.

6.2.2 Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp is listed as endangered pursuant to the federal Endangered Species Act. The historic range of the vernal pool tadpole shrimp likely extended throughout the Central Valley of California, and has been documented from east of Redding in Shasta County south to Fresno County, and from the San Francisco Bay Wildlife Refuge in Alameda County. The historic and current ranges of vernal pool tadpole shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005a).

This species is associated with low-alkalinity seasonal pools in grasslands throughout the northern and eastern portions of the Central Valley. Suitable vernal pools and seasonal swales are generally underlain by hardpan or sandstone. Vernal pool tadpole shrimp are adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales. Tadpole shrimp embryos survive the dry season in cyst form. Cysts “hatch” soon after pools become inundated during the wet season. Sexually mature adults may persist three to four weeks after habitat inundation (Sugnet and Associates 1993).

The largest threats to vernal pool tadpole shrimp are loss of habitat through urbanization. Other threats include encroachment of nonnative annual grasses, agricultural conversion, and parasitism by flukes (Trematoda) of an undetermined species (Ahl 1991). Some populations are also threatened by pesticide drift from adjacent farmlands (USFWS 2005a).

There are several documented occurrences of vernal pool tadpole shrimp within 10 miles of the Action Area (CDFG 2003, see Figure 14). To date, determinate surveys for vernal pool tadpole shrimp have been conducted on 2,521.9 acres within the Active Development Area. There has been one positive finding of vernal pool tadpole shrimp in the Active Development Area. This finding represents one cyst from one wetland feature. Critical Habitat for vernal pool species was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006a). The nearest Critical Habitat Unit for vernal pool tadpole shrimp is located approximately 11 miles southeast of the Action Area near Mather Air Force Base (CDFG 2003). Additionally, the USFWS has produced a *Recovery Plan for Vernal Pool Ecosystems of*

California and Southern Oregon (Recovery Plan), which includes efforts for vernal pool tadpole shrimp conservation (USFWS 2005a). Portions of Western Placer County, including portions of the Action Area, are situated within the Southeastern Sacramento Vernal Pool Region (as identified within the *Recovery Plan)*, which is a "Priority 2" recovery priority area. The Recovery Plan recommends 85% of the suitable vernal pool habitat, but it does not specify regulatory limits or requirements.

6.2.3 Conservancy Fairy Shrimp

The Conservancy fairy shrimp is listed as endangered pursuant to the federal Endangered Species Act. This fairy shrimp is endemic to California, and is found in grasslands in the northern two thirds of the Central Valley (Eriksen and Belk 1999). The historic distribution of Conservancy fairy shrimp is not known, but it likely occurred throughout a large portion of the Central Valley and Southern Coastal regions of California (USFWS 2005). Until recently, this species has only been known from a few disjunct populations in California, including four clustered populations in the Vina Plains area in Tehama and Butte Counties, Jepson Prairie Preserve in Solano County, The Sacramento National Wildlife Refuge in Glenn County, the Tule Ranch Unit of CDFG's Yolo basin Wildlife Area in Yolo County, the Grasslands Ecological Area in Merced County, one location in Stanislaus County, three locations in the Southern Sierra Foothills Vernal Pool Region, and two locations near the Santa Barbara Vernal Pool Region (USFWS 2003a, USFWS 2006a). In April of 2007, the USFWS reported that a single Conservancy fairy shrimp in one vernal pool was documented within the Mariner Conservation Bank in Placer County, near the town of Lincoln, California.

Like vernal pool fairy shrimp and vernal pool tadpole shrimp, the life cycle of Conservancy fairy shrimp is reliant on the ephemeral conditions of its vernal habitat. It inhabits a variety of different landforms and soil types, and is often found in large, turbid pools with low conductivity, total dissolved solids, and alkalinity (USFWS 2005).

The largest threat to Conservancy fairy shrimp is loss of habitat through urbanization. Other threats include water supply/flood control projects and agricultural conversion (USFWS 1994).

There are no documented occurrences of Conservancy fairy shrimp within 10 miles of the Action Area, according to the CNDDB (CDFG 2003). However, the USFWS reported in April 2007 that a single Conservancy fairy shrimp in one vernal pool was documented approximately 11 miles northwest of the Action Area within the Mariner Conservation Bank in Placer County, near the City of Lincoln, California (CDFG 2003). This finding represents the only occurrence of this species from Placer County. To date, determinate surveys for vernal pool branchiopods have been conducted on 2,521.9 acres within the Active Development Area. Conservancy fairy shrimp has not been identified on-site. Critical Habitat for vernal pool species was designated in August 2003 by USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS 2006a). There is no Critical Habitat for Conservancy fairy shrimp within the vicinity of the Action Area. Additionally, the USFWS has produced a *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan)*, which includes efforts for Conservancy fairy shrimp conservation (USFWS 2005a). The Vernal Pool Recovery Plan does not include western Placer County as a Core Area for this species.

6.2.4 Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle is listed as threatened pursuant to the federal Endangered Species Act. The historic range of this beetle is limited to moist Valley oak woodlands along margins of rivers and streams in the lower Sacramento and lower San Joaquin Valleys (USFWS 1984). At the time of its listing, the beetle was known from less than 10 localities in Merced, Sacramento, and Yolo Counties (USFWS 1980). Its current distribution is patchy throughout California's Central Valley and associated foothills (USFWS 1999b).

The Valley elderberry longhorn beetle is completely dependent on its host plant, elderberry (*Sambucus* species), which occurs in riparian and other woodland communities in California's Central Valley and the associated foothills (USFWS 1999b). Female beetles lay their eggs in crevices on the stems or on the leaves of living elderberry plants. When the eggs hatch, larvae bore into the stems. The larval stages last for one to two years. The fifth instar larvae create emergence holes in the stems and then plug the holes and remain in the stems through pupation (Talley 2003). Adults emerge through the emergence holes from late March through June. The short-lived adult beetles forage on leaves and flowers of elderberry shrubs.

The largest threat to Valley elderberry longhorn beetle is the loss of riparian habitat through agricultural conversion and urban development (USFWS 2006d). Habitat loss is also attributable to extensive flood control activities such as the construction and maintenance of levees. However, protection of existing habitat and creation of new habitat have increased the prevalence of this beetle in the Central Valley (USFWS 2006d). A five-year review by USFWS has concluded that the increased number of sightings and the reduction of threats warrant that the Valley elderberry longhorn beetle be delisted (USFWS 2006d).

There are several documented occurrences of Valley elderberry longhorn beetle within 10 miles of the Action Area (CDFG 2003, see Figure 14). Determinate-level surveys have been conducted on approximately 934.6 acres of the participating parcels. So far, no elderberry shrubs have been detected within the Action Area. Critical Habitat for this species was designated along the American River in 1980 by USFWS (1980). This Critical Habitat unit is approximately eight miles southeast of the site. A recovery plan, *Valley Elderberry Longhorn Beetle Recovery Plan*, was established by USFWS in 1984 (USFWS 1984).

6.3 Delta Smelt

Delta smelt is listed as threatened pursuant to the federal Endangered Species Act. The historic range of this species extended from Suisan Bay upstream to the city of Sacramento on the Sacramento River. However, currently it is only known to occur in the lower reaches of the Sacramento River below Isleton, the San Joaquin River below Mossdale, throughout the Delta and into Suisun Bay (Moyle 1976). It is most abundant in the fresher waters of the Delta and Suisun Bay (Ganssle 1966; Messersmith 1966).

Delta smelt spawn is a small, slender-bodied fish that is found in freshwater from late winter to early summer. Optimal spawning conditions occur during high outflow events that flood vegetated areas of the Delta and Suisun Bay. Female Delta smelt produce between 1000 and 2600 eggs that sink and attach to the bottom substrate, primarily in sandy and hard-bottom substrates (Wang 1986). Larvae hatch between 10-14 days, and float downstream to areas near the entrapment zone (where salt and fresh water mix). This zone fluctuates depending on outflow, and occurs anywhere from the lower Delta, near Antioch, westward to Carquinez

Straights, near San Pablo Bay. Delta smelt forage on zooplankton and crustaceans, which are abundant in the area near the entrapment zone. Delta smelt grow rapidly and generally die in their first year following spawning. Some Delta smelt, however, survive to a second year.

Threats to Delta smelt include the introduction of exotic fish species, competition and predation, toxicity, hybridization with similar species. Other threats include entrainment in water diversion facilities, unsuitable water flows (outflow), and disease and parasites.

The nearest occurrence of Delta smelt is approximately 29 miles southwest of the Action Area (CNDDB 2003). Except for the small portion of Dry Creek, there is no suitable habitat for Delta smelt within the Action Area. Furthermore, no occurrences of Delta smelt are reported from the Dry Creek watershed. Critical Habitat for Delta smelt was established by USFWS (1994) in Suisan Bay, Goodyear, Suisun, Cutoff, First Mallard (Spring Branch), and Montezuma sloughs, and in the Sacramento/San Joaquin River Delta. The Action Area is not within designated Critical Habitat for this species.

6.4 Amphibians

6.4.1 California Tiger Salamander

The Central Population of California tiger salamander is listed as threatened pursuant to the federal Endangered Species Act. The historic and current range of California tiger salamander in the Central Valley extends from Yolo County south through the Central Valley to Kern County (USFWS 2003b). Two other distinct population segments (along the Central Coast and in Sonoma County) are not considered in this assessment.

California tiger salamanders are typically associated with the annual grassland community, but may also occur within open woodland areas of low hills and valleys. Necessary habitat components include suitable underground retreats and breeding ponds. Tiger salamanders spend most of their adult life within suitable underground refugia, such as California ground squirrel (*Spermophilis beecheyi*) or pocket gopher (*Thomomys* sp.) burrows. Suitable breeding sites include vernal pools, seasonal wetlands, stock ponds, or slow-moving streams that do not

support fish, although streams are rarely used for reproduction. This species may use permanent man-made ponds, if predatory species (e.g., fish, crayfish) are absent.

Adult tiger salamanders, which are generally nocturnal, may migrate over long distances (up to one mile) from underground refuges to breeding ponds (USFWS 2003b). Breeding and egg laying typically occurs between November and February (Shaffer and Fisher 1991) following relatively warm rain events. Eggs are laid singly or in clumps on both submerged and emergent vegetation and submerged debris in shallow water (Stebbins 1972, Shaffer and Fisher 1991, Barry and Shaffer 1994, Jennings and Hayes 1994). Adult females will usually remain at the pond for only a few days following egg laying, whereas adult males may stay for several weeks. Larvae feed upon various planktonic aquatic invertebrates and occasionally larvae of other amphibian species. The salamander larvae metamorphose during late spring or early summer, usually by the first week of July. The minimum length of time required for egg laying through metamorphosis (continuous inundation) is 10 weeks, extending into April. However, 12 weeks is more typical (Range = three to six months).

Threats to California tiger salamanders include the loss and fragmentation of habitat from human activities (USFWS 2004). Human activities responsible for habitat loss include urban and agricultural development, and land conversion. Another threat to both adult and larval tiger salamanders is the encroachment of predators, especially non-native ones, into the vernal pools of California. Predators include bullfrogs, crayfish, and introduced fish, which prey upon adult or larval salamanders.

There are no documented occurrences of California tiger salamander within the Action Area or its vicinity (CDFG 2003, see Figure 14). According to the Revised Draft EIR (Quad Knopf 2006), this species is not expected to occur, due to the disturbed nature and degraded condition of the habitat in the Action Area. Critical Habitat has been designated for the Central Population of California tiger salamanders by USFWS in August 2005 (USFWS 2005c). The Action Area does not fall within California tiger salamander Critical Habitat, and the nearest Critical Habitat unit is located approximately 28 miles southeast of the Action Area.

6.4.2 California Red-Legged Frog

The California red-legged frog is listed as threatened pursuant to the federal Endangered Species Act. The historic range of this species extends through Pacific slope drainages from Shasta County, California, to Baja, Mexico. This area includes the Coast Ranges and the west slope of the Sierra Nevada Mountains at elevations below 1,548 meters (5,000 feet). The current range is reduced, with most remaining populations occurring along the coast from Marin County to Ventura County, and in isolated locations in the Sierra Nevada foothills.

California red-legged frogs occur in different habitats depending on their life stage, the season, and weather conditions. Breeding habitat includes coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams. These frogs also breed in artificial impoundments including stock ponds, irrigation ponds, and siltation ponds. Creeks and ponds with dense growths of woody riparian vegetation, especially willows (*Salix* spp.) are preferred (Hayes and Jennings 1988), although the absence of vegetation at an aquatic site does not rule out the possibility of occupancy. Adult frogs prefer dense, shrubby or emergent riparian vegetation near deep [≥ 0.6 to 0.9 meters (2 to 3 feet)], still or slow moving water, especially where dense stands of overhanging willow and an intermixed fringe of cattail (*Typha* sp.) occur adjacent to open water. California red-legged frogs breed from November through April (Jennings and Hayes 1994), and larvae generally metamorphose by mid to late summer.

Upland and riparian areas provide sheltering habitat during summer when this species is known to aestivate in dense vegetation, mammal burrows, and leaf litter. They often disperse from breeding habitat to forage and seek summer habitat, and are often found within close proximity to a pond or deep pool in a creek where emergent vegetation, undercut banks, or semi-submerged rootballs afford shelter (USFWS 2005d). The diet of California red-legged frogs is highly variable. Larvae probably eat algae, and adults most commonly eat invertebrates. Vertebrates, such as Pacific treefrogs (*Hyla regilla*) and California deer mice (*Peromyscus californicus*), are frequently eaten by larger frogs. Juvenile frogs are active both during the day and at night, whereas adult frogs are largely nocturnal.

The subspecies has experienced a 70 percent reduction in its range in California due to habitat alteration, excessive harvest, and introduction of non-native predators, especially bullfrogs (*Rana catesbeiana*) and introduced fish species. Current information suggests that this species has been extirpated from most of its Sierra Nevada range (Jennings 1996). Although considered extirpated in the Central Valley, a limited number of drainages in the foothills of the Sierra Nevada are known to support California red-legged frog (USFWS 2005d).

There are no documented occurrences of California red-legged frog within the Action Area or its vicinity (CDFG 2003, see Figure 14). California red-legged frog was not identified in the Revised Draft EIR (Quad Knopf 2006) as a species that could potentially occur within the Project Area; however, this species is included on the USFWS list for the four U.S. Geological Survey (USGS) quadrangles associated with the Action Area. Critical Habitat has been designated for California red-legged frog (USFWS 2006b); however, the Action Area does not fall within any Critical Habitat units. The nearest Critical Habitat unit is located approximately 35 miles east of the Specific Plan Area. The USFWS has developed a recovery plan, *Recovery Plan for the California Red-legged Frog (Rana aurora draytonii)*, to address preservation of this species (USFWS 2002).

6.5 Giant Garter Snake

Giant garter snake is listed as threatened pursuant to the federal Endangered Species Act. The historic range of giant garter snake extended from the vicinity of Sacramento and Contra Costa Counties southward to Buena Vista Lake, near Bakersfield in Kern County (Fitch 1940, as cited in USFWS 1993); however, by the 1950s, agricultural conversion appeared to have resulted in the extirpation of the species from the southern one-third of its range (Hansen and Brode 1980, Hansen 1980, as cited in USFWS 1993). Currently, the range of this species is restricted to rice production zones of Sacramento, Sutter, Butte, Colusa, and Glenn Counties, portions of Yolo County, and along the eastern fringes of the Sacramento-San Joaquin River delta (USFWS 1993).

Giant garter snakes inhabit marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands such as irrigation and drainage canals and rice fields (Fitch 1941, Hansen 1980, and Hansen 1988, as cited in USFWS 1993). Several habitat requirements for giant garter snake include adequate water during the snake's active period (early-spring to mid-fall), emergent herbaceous wetland vegetation for cover and foraging, grassy banks and openings for basking, and higher elevation uplands for cover and refuge from flood waters in the winter (Hansen 1988, as cited in USFWS 1993). This species is typically absent from larger rivers and other water bodies that have been highly channelized and support predatory fish (USFWS 1993).

Threats to giant garter snakes include urbanization, flooding, contaminants, agricultural and maintenance activities, and introduced predators (USFWS 1993, USFWS 2006c). Urbanization has caused the direct loss of natural habitat for giant garter snake, thus requiring this species to rely heavily on rice fields in the Sacramento Valley (USFWS 2006c).

The nearest documented occurrences of giant garter snake is approximately 1.2 miles west of the Action Area (CDFG 2003, See Figure 14). This species was identified in the Revised Draft EIR (Quad Knopf 2006) as a species potentially occurring within the Project Area, Project vicinity, or in the off-site infrastructure areas; however, it was also stated that giant garter snake had low potential to occur in the Project area, due to the lack of suitable habitat. Potentially suitable habitat may occur within the off-site infrastructure alignments For road improvements along Riego Road. Road improvements at a single intersection are proposed within the Natomas Basin, which is an area generally considered to provide habitat for this species. No Critical Habitat has been designated for giant garter snakes; however a Draft Recovery Plan was proposed in 1999 by USFWS (1999a).

6.6 Western Yellow-Billed Cuckoo

The western yellow-billed cuckoo is a candidate to be proposed for federal listing. Historically, the breeding range of the yellow-billed cuckoo included most of North America from southern Canada to the Greater Antilles and northern Mexico (AOU 1957, AOU 1998, as cited in USFWS 2001). In the west, the distribution of the species has declined significantly. In California, the

northern limit of breeding is the Sacramento Valley, and in the western interior states, the northern breeding limit is southern Idaho (AOU 1998, Hughes 1999 as cited in USFWS 2001).

The western yellow-billed cuckoo requires large blocks of riparian habitats (particularly woodlands with cottonwoods and willows). Along the Sacramento River, home ranges for the western yellow-billed cuckoo range from 25 to 99 acres or more of riparian habitat (USFWS 2001). In addition to large riparian habitats, a dense understory appears to be an important factor in nest site selection, while cottonwood trees provide foraging habitat (Laymon *et al.* 1993, as cited in USFWS 2001). Nesting occurs almost exclusively close to water, probably due to humidity requirements for hatching and rearing of young (USFWS 2001).

Threats to western yellow-billed cuckoos include loss and modification of breeding habitat in North America and wintering habitat in the tropics. This occurs through urban development, flood control practices, clearing of land for agriculture, and overgrazing by livestock. Furthermore, the spread of the non-native tamarisk throughout riparian areas in the west has also facilitated the decline of native riparian forests.

There are no documented occurrences of western yellow-billed cuckoo within the Action Area or its vicinity (CDFG 2003, see Figure 14). This species was not identified in the Revised Draft EIR (Quad Knopf 2006) as a species potentially occurring within the Project area or vicinity; however, this species is included on the official USFWS list for the four U.S. Geological Survey (USGS) quadrangles associated with the Specific Plan Area. No Recovery Plan or Critical Habitat has been designated for this species.

7.0 DIRECT AND INDIRECT EFFECTS OF THE ACTION

7.1 General Effects of the Proposed Action

95.21 acres of occupied and/or potential habitat for listed vernal pool branchiopods (i.e., vernal pools and a portion of seasonal wetlands, as determined in Section 5.5.1.1 and reported in Section 5.7) will be eliminated by the Proposed Action, and potential habitat for other listed species, such as giant garter snake, and Valley elderberry longhorn beetle may be affected by

development within the Action Area. This section addresses the potential effects of the proposed actions in the Action Area. A discussion of species-specific effects follows. The species-specific effects from each potential effect are summarized in the Potential Effects Analysis Tables (Attachment D). Development of the Action Area could result in a variety of effects on biological resources. Specific types of direct and indirect effects are presented below.

7.1.1 Construction-Related Effects

During construction, uncontrolled trespass of construction equipment and personnel into adjacent vernal wetland habitats could result in disturbance of the habitats and their watersheds as well as in take of individuals of listed species. Other construction-related effects could include dust emissions, erosion, sedimentation, hazardous material spills, and introduction of invasive non-native plant species. These potential effects could result in injury or direct mortality of biological resources within the Action Area.

Several conservation measures, however, have been developed to and will be implemented to minimize the potential effects of the proposed action from construction activities (5.7.1.2), and include:

- Presence of an on-site biological monitor (approved by the USFWS) during construction-related activities within 250' of suitable habitat to be preserved

- Mandatory worker environmental awareness training for all construction personnel

- Exclusion fencing, flagging, staking, and signage be placed to limit encroachment by construction personnel and equipment into sensitive areas

- Demarcating and monitoring of construction staging areas

- Development of a hazardous spill-response plan and implementation of the said measures (e.g., restricted equipment refueling and maintenance practices)

- Implementation of construction BMP's, including those for water quality, dust emissions, and erosion reduction and sediment control

- Implementation of measures to prevent introduction of invasive nonnative plants, including development of an invasive species control program, and

- Enforcement of the said avoidance and minimization measures through development contracts.

7.1.2 Altered Hydrology and Nonpoint Source Pollution

Impervious surfaces (e.g., concrete, asphalt, rooftops) decrease water infiltration into soil, thereby increasing the amount and concentrating the duration of stormwater runoff. These alterations can disrupt normal patterns of vernal pool inundation and desiccation, thereby affecting the life cycles of vernal-pool dependent species. Moreover, runoff from urbanized areas can carry sediment and pollutants (e.g., fertilizers, pesticides, oil, and fuel) into surrounding habitat and water bodies.

Avoidance and minimization measures designed to protect potential water quality impacts will serve to minimize impacts to biological resources that occur in aquatic habitats within the Action Area (e.g., vernal pool branchiopods).

These measures include, but are not limited to:

- Implementation of the proposed requirements of the Project's Master Project Drainage Study

- Implementation of the proposed BMP's mandated within the National Pollutant Discharge Elimination System (NPDES) Permit

- Implementation of the proposed requirements of the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction Activity

and New Development/Redevelopment; and the Placer County Department of Public Works and Flood Control water quality requirements; and

- Controlling and redirecting runoff from adjacent properties, as needed, to minimize potential impacts to wetlands in the on-site preserve areas.

7.1.3 Human Disturbance

Without proper controls, management, and enforcement, increased human activity in the Action Area could disturb open space habitat within the Action Area. Potential human uses could include bicycling, off-highway vehicle (OHV) use, hiking, and plant collection. Such activities could results in trampling of vegetation and soil compaction, inadvertent introduction of non-native invasive plant species, disturbance of wildlife species, introduction of litter and debris, and recruitment of opportunistic wildlife species that can compete with, or prey upon, native species.

Potential human disturbance of sensitive areas during construction will be avoided and minimized by measures that would minimize potential encroachment of construction personnel in these areas including:

- Presence of an on-site biological monitor (approved by the USFWS) during construction-related activities within 250' of suitable habitat to be preserved

- Mandatory worker environmental awareness training for all construction personnel

- Exclusion fencing, flagging, staking, and signage will be placed to limit encroachment by construction personnel and equipment into sensitive areas, and

- Marking and monitoring of construction staging areas.

Measures to protect potential long-term effects to the on-site preservation area and adjacent sensitive habitats will be developed within and implemented through the project's Operations

and Management Plan (O&M Plan). The O&M Plan will detail measures to be minimized and avoid potential impacts to remaining and adjacent resources, and would include public education, signage, fencing, litter cleanup, exclusion and enforcement of unauthorized uses, careful control of authorized uses of habitat areas, and monitoring and managing protected areas.

7.1.4 Introduction of Non-Native Species

Construction of the proposed action could result in the introduction of nonnative plant and animal species in adjacent habitats. Nonnative plant species could be introduced during ground-disturbing activities associated with construction, and could then disperse to adjacent habitats. Also, use of nonnative species for ornamental landscaping associated with the proposed action could create a source for invasion by such species.

Urbanization also may favor generalist wildlife species, such as raccoon, coyote, feral pig, and bullfrog that may prey upon or compete with listed species. In addition, domestic dogs and cats can disturb and prey upon native wildlife species, and feral populations can become established in undeveloped areas.

Measures to prevent introduction of invasive non-native plant species will be developed through an invasive species control program as part of the O&M Plan for the Project. Avoidance and minimization requirements developed within the O&M plan would include measures such as the use of weed-free materials in erosion control during construction and removal of seed sources from earth moving construction equipment. Measures to limit, monitor, and manage incursions of domestic or feral dogs and cats will also be addressed in the Project's O&M Plan, and may include measures such as placement of restrictive fencing and mandatory leash laws.

7.1.5 Fragmentation of Habitat

Habitat fragmentation can occur when lands, habitats, or species become isolated as a result of urban development that creates a barrier between previously contiguous habitats or populations. Such isolation can increase the risk of stochastic extinction, decrease genetic

diversity, and reduce suitability of habitat to support species that are particularly susceptible to fragmentation.

When considered on a regional basis, development of the PVSP area, while eliminating habitat, would not further contribute to fragmentation of remaining similar habitat. As discussed above, portions of the Action Area are located within the Western Placer County Core Area of the southeastern Sacramento Valley vernal pool region. However, the PVSP area is located at the extreme southeastern end of that Core Area. The PVSP area is effectively surrounded on the east, south, and west by rural residential development and active agricultural use, which was likely considered by USFWS when the boundary of the Core Area was drawn. There is no practical opportunity to significantly expand vernal pool habitat in those directions. As such, although vernal pool habitat would be eliminated within the PVSP area, its development would not fragment remaining habitat, or introduce new limitations to the establishment of significant expanses of similar habitat outside of the Core Area.

Portions of the Action Area are already separated from one another by agricultural land, developed areas (e.g. residences and other structures), and roads. Although habitat fragmentation within the PVSP area would occur as a result of the proposed action, compensatory conservation measures will be implemented to reduce the effects of this action. As discussed above, under 5.7.1.1.1, The Placer Vineyards Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field-level investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. Further, landscape level mitigation, consistent with regional planning as expressed in the Placer County Conservation Plan is incorporated into the Placer Vineyards Mitigation Strategy (discussed under 5.7.1.1 and 5.7.1.1.2, above). Under this strategy, impacts to biological resources at the natural community level would be addressed by designating large areas for conservation outside of the area planned for future growth.

7.1.6 Thatch/Fuel Build-up

Thatch/fuel build-up may result from long-term build-out and subsequent lack of maintenance (e.g., grazing) of plant material in open space areas. Thatch build-up may affect federally listed

species in remaining/adjacent habitats (e.g., vernal pool branchiopods) by increasing vegetation density that may interfere with the use of these habitats by these species. Thatch may also increase the risk of fire damage that could affect federally listed species and/or their habitat, and reduce the value of preserved on-site habitats.

Measures to minimize thatch buildup will be developed as part of the O&M Plan for the project. Mitigation requirements developed within the O&M plan would include measures to manage vegetation densities and fire associated risks that could affect federally listed species and their habitat. These measures may include grazing and/or prescribed burns, where compatible with adjacent land use.

7.2 Species-Specific Effects

7.2.1 Effects on Federally Listed, Proposed and/or Candidate Plants

Three plant species were identified in the Revised Draft EIR (Quad Knopf 2006) to have the potential to occur (however, unlikely) within and in the vicinity of the Action Area. These are slender Orcutt grass, Sacramento Orcutt grass, and Hartweg's golden sunburst. All three species occur within vernal pool landscapes. Sacramento Orcutt grass and slender Orcutt grass occur in vernal pools and Hartweg's golden sunburst is an upland species that typically occurs on Mima mounds associated with vernal pools.

7.2.1.1 Slender Orcutt Grass and Sacramento Orcutt Grass

There are no documented occurrences of either of these species within the Action Area (CDFG 2003). The nearest documented occurrences of slender Orcutt grass and Sacramento Orcutt grass are approximately 13 miles and seven miles (respectively) southeast of the Action Area (CDFG 2003). Both Orcutt grasses are highly unlikely to occur within the majority of the Action Area due to the relatively shallow and disturbed nature of the vernal pools (Quad Knopf 2006). Furthermore, surveys for Sacramento Orcutt grass and slender Orcutt grass have been conducted on approximately 3,503.3 acres within the Active Development Area, and none have been observed (see Figure 10). Surveys for the remaining parcels in the Active Development

Area, the Secondary Development Area, and for Off-Site Area for Infrastructure Elements are planned to occur, but are expected to likely also yield negative results. If either of these species is found within the un-surveyed portions of the Action Area, appropriate measures will be taken for avoidance, minimization, and protection in consultation with the USFWS. In addition, measures developed to minimize potential impacts to biological resources resulting from construction-related activities (see Section 5.7.2.6) will be implemented, thereby further reducing the potential to impact this species. However, because the presence/absence of these species has yet to be determined throughout the Action Area, the proposed action ***may affect and is likely to adversely affect these species***.

7.2.1.2 Hartweg's golden sunburst

There are no documented occurrences of Hartweg's golden sunburst within the Action Area (CDFG 2003). The nearest documented occurrence of this species is approximately 27 miles north of the Action Area (CDFG 2003). Hartweg's golden sunburst is highly unlikely to occur within the majority of the Action Area due to the disturbed nature of the vernal pool landscape within the Action Area. Furthermore the Action Area is outside the known range of previously recorded observations for this species (CNPS 2007), and does not contain species-favored soil types (i.e., Amador and Rocklin series). In addition, measures developed to minimize potential impacts to biological resources resulting from construction-related activities (see Section 5.7.2.6) will be implemented, thereby further reducing the potential to impact this species. As such, the proposed action ***may affect, and is not likely to adversely affect*** Hartweg's golden sunburst.

7.2.2 Effects on Federally Listed Proposed and/or Candidate Invertebrates

Four federally listed invertebrates have the potential to be affected by the proposed project. These include three vernal pool branchiopod species (vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp) and the Valley elderberry longhorn beetle.

7.2.2.1 Vernal Pool Branchiopods

Although vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool landscapes. Furthermore, these species are known to co-occur within the same pools. These species are supported by similar habitat types, including vernal pools, seasonal wetlands, seasonally ponded areas within vernal swales, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, all three species are subject to a common set of threats and considerations.

Surveys have been completed with negative results on 1,583.2 acres in the Active Development Area. Because remaining portions of the Action Area have not been surveyed, and because determination of presence/absence is not relevant to the implementation of the Placer Vineyards Mitigation Strategy vernal pool fairy shrimp and vernal pool tadpole shrimp are assumed to be present in all potential habitat (i.e., vernal pools and certain seasonal wetlands, as determined in Section 5.5.1.1, above) reported in Section 5.7. Therefore, construction within any portion of the Action Area that supports potential habitat ***may affect and is likely to adversely affect*** 95.21 acres of habitat supporting populations of vernal pool fairy shrimp, and vernal pool tadpole shrimp.

Surveys for listed branchiopod species have occurred on 2,521.9 acres within the Active Development Area, and vernal pool fairy shrimp and vernal pool tadpole shrimp have been found in scattered locations (See Figure 12). Conservancy fairy shrimp is not documented to occur within the Action Area, and the nearest documented occurrence of this species is over 10 miles away, near the City of Lincoln. This observation near Lincoln represents the only known occurrence of this species from Placer County. Therefore, construction within the Action Area that supports potential habitat may affect and is considered ***not likely to adversely affect*** conservancy fairy shrimp.

Direct effects (i.e., habitat conversion) to vernal pool branchiopods would result in mortality of individuals and destruction of cysts. Development within the Action Area is estimated to result in the loss of approximately 95.21 acres of potential aquatic invertebrate habitat (i.e., vernal

pools, seasonal wetlands, and seasonal wetland swales) within the Action Area. This may also result in indirect adverse effects including habitat fragmentation, altered hydrology, non-point source pollution, human disturbance, establishment of invasive non-native plants, and possible effects of habitat enhancement, restoration, and creation activities.

Indirect effects include the alteration of natural topography and drainage patterns within the remaining open space within the Action Area, and perhaps wetlands on adjacent parcels. An increase in paved and other impermeable surfaces, summer irrigation, and changes in the rates of soil infiltration could potentially alter the hydrology of the open space area and adjacent parcels. Changing the average duration of inundation in seasonal wetlands adjacent to developed areas may adversely impact these areas. Runoff from the surrounding developed area could cause reduction in water quality. In addition, runoff from developed areas may result in contaminants and increased sedimentation in adjacent wetlands and/or waterways.

Because quantification of such indirect effects is not relevant to the implementation of the Placer Vineyards Mitigation Strategy, they are not estimated or reported here. Direct impacts to potential vernal pool branchiopod habitat will be mitigated through preservation and/or restoration of wetland acreages based on an acreage ratio for each acre of impacted wetlands The applicants will be securing off-site mitigation areas consistent with regional planning principles consistent with the Draft Placer County Conservation Plan (per the Placer Vineyards Mitigation Strategy, provided as Attachment C). Acquisition, preservation, and enhancement of these mitigation areas will provide compensatory mitigation for impacts to vernal pool branchiopod species resulting from the proposed action

Potential effects to remaining/adjacent vernal pool branchiopods resulting from construction-related impacts will be avoided and minimized by implementation of several conservation measures designed to protect biological resources in the Action Area (see Section 5.7.1.2). In particular, conservation measures designed to minimize potential impacts to water quality from erosion, sedimentation, and non-point source pollution will minimize the potential for construction-related impacts to these areas.

7.2.2.2 Valley Elderberry Longhorn Beetle

The potential effects of the proposed action on Valley elderberry longhorn beetle depends on the existence of elderberry shrubs within the Action Area. Focused surveys for elderberry shrubs have occurred for approximately 934.6 acres with negative (i.e., no elderberries identified) results. However, shrubs could occur in the un-surveyed portions of the Action Area. Surveys prior to the start of construction activities will be required to determine the presence/absence of elderberry shrubs. If shrubs are found, they will be considered potential habitat for Valley elderberry longhorn beetle, and, if they are to be impacted, a detailed mitigation/conservation plan that includes long-term strategies to ensure no net loss of Valley elderberry longhorn beetle habitat will be developed. Mitigation may include the replacement and/or translocation of elderberry shrubs into mitigation areas that are suitable for elderberry and the beetle. Because the presence/absence of elderberry shrubs has not been determined throughout the Action Area, the proposed action ***may affect, and is likely to adversely affect*** the Valley elderberry longhorn beetle.

The following avoidance and minimization measures are included to reduce the loss or disturbance to Valley elderberry longhorn beetle habitat on properties requiring more detailed resource identification:

- Prior to approval of grading/engineering plans for any property within the Specific Plan Area, a focused survey for elderberry shrubs shall be conducted to determine the presence/absence of the shrubs. The survey shall be completed by a qualified biologist anytime throughout the year. If elderberry shrubs are found, locations of these occurrences shall be mapped. If these resources can be avoided, no further studies are required. However, if projects within the Action Area will likely adversely affect these shrubs, then a detailed mitigation/conservation plan that includes long-term strategies to ensure no net loss of Valley elderberry longhorn beetle habitat shall be developed.

7.2.3 Effects on Delta Smelt

Delta smelt generally occurs in open surface waters and shoal areas of fresh water rivers. Except for the small portion of Dry Creek, there is no potential habitat for Delta smelt within the Action Area. Furthermore, no occurrences of Delta smelt are reported from the Dry Creek watershed. The nearest documented occurrence of the species is approximately 29 miles southwest of the Action Area (CDFG 2003). Thus, this species is not considered to be directly impacted by the proposed project. Potential indirect impacts to water quality and supply could affect this species. Measures designed to minimize construction-related impacts to water quality from erosion, sedimentation, and non-point source pollution (5.7.1.2) and those additional measures mandated to protect salmon and steelhead resources potentially impacted in the vicinity of the Action Area will minimize potential downstream water quality impacts to Delta smelt. Potential water supply impacts to the Sacramento River and Delta resulting from the proposed actions are expected to be negligible ((Quad Knopf 2006), and are therefore not expected to affect Delta smelt. As such, the proposed action is ***not likely to adversely affect this species***.

7.2.4 Effects on Federally-Listed Proposed and/or Candidate Amphibians

7.2.4.1 California Red-Legged Frog

Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species has not been observed within the Action Area. Furthermore, it is unlikely to occur because the Action Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003, see Figure 14). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As a result, the likelihood of this species occurring within the Action Area is extremely low. The nearest documented occurrence of this species is approximately 13 miles east of the site (CDFG 2003). The proposed action is ***not likely to adversely affect this species***.

7.2.4.2 California Tiger Salamander

Although marginally suitable habitat for California tiger salamander occurs within the Action Area, this species has not been observed within the Action Area. Furthermore, this species is unlikely to occur because the Action Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003, see Figure 14). The nearest documented occurrence of California tiger salamander is approximately 20 miles southwest of the Action Area (CDFG 2003). The proposed action is ***not likely to adversely affect this species***.

7.2.5 Effects on Giant Garter Snake

The majority of the Action Area is outside the range of previously recorded observations for giant garter snake, and none have been found within the Action Area. The nearest documented occurrence of this species is located approximately one mile west of the site in the Natomas Basin (CDFG 2003, Figure 14). As such, the only element of the proposed action that may affect giant garter snake is the anticipated infrastructure development (i.e., roadway and intersection improvements) to Base Line/Riego Road.

Most infrastructure construction is temporary and surface conditions would generally be returned to their original condition. However, roadway and intersection improvement is expected to result in a small amount of potential habitat conversion. Direct effects to giant garter snake due to the proposed action could include loss of both potential breeding and aestivation habitat. The development of upland habitat could also cause direct mortality to aestivating snakes by the crushing and collapsing of burrows by construction machines. Indirect effects include increased sedimentation to their aquatic habitats, reduction in the quality of water, and changes in water temperature that may prohibit giant garter snake activity. In addition, increased human activity in the area may increase the likelihood of predators and other human-related disturbances (e.g., increased traffic-related mortalities) to giant garter snakes that may occur in the Action Area and adjacent areas.

The following measures to reduce take of giant garter snake, identified in *The Natomas Basin Habitat Conservation Plan* (NBHCP) (City of Sacrament *et al*. 2003) will be implemented:

- All construction activity involving disturbance of habitat, shall be restricted to the period between May 1 and September 30. This is the active period for giant garter snake and direct mortality is lessened, because snakes are expected to actively move and avoid danger.

- 24-hours prior to construction activities, the project area shall be surveyed for giant garter snakes. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any incidental take and any sightings shall be reported to the USFWS immediately.

- Movement of heavy equipment shall be confined to existing roadways to minimize habitat disturbance.

- Construction personnel shall (to the extent practical) receive USFWS-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s), and what to do if a giant garter snake is encountered during construction activities.

- No plastic, monofilament, jute, or similar erosion control mating that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic or rice habitat. Substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by the Wildlife Agencies.

- Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat shall be completely dewatered, with no puddle water remaining, for a least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. Make sure dewatered habitat does not continue to support giant garter snake prey, which

could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary.

- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project as Environmentally Sensitive Areas. This area shall be avoided by all construction personnel.

- If a live giant garter snake is found during construction activities, immediately notify the USFWS and the project's manager. The manager shall do the following:

  - *Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. A monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for giant garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a giant garter snake does not leave on its own within one working day, further consultation with USFWS is required.*

- Fill or construction debris may be used by giant garter snakes as an over-wintering site. Therefore, upon completion of construction activities, remove any temporary fill and construction debris. If this material is situated near undisturbed giant garter snake habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that giant garter snake are not using it as a hibernaculum. Wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting removed species.

With implementation of these provisions, the proposed action will avoid and minimize impacts to giant garter snake. Nonetheless, because of the possibility that the anticipated in the offsite area for infrastructure work may impact giant garter snake habitat, the proposed action ***may affect, and is likely to adversely affect this species***.

7.2.6 Effects on Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. The riparian area along Dry Creek provides only marginally suitable habitat for this species. Furthermore, the Action Area is located outside the known current breeding range for this species. The nearest documented occurrence of this species is approximately 11 miles northwest of the Action Area (CDFG 2003, Figure 14). The proposed action is considered ***not likely to adversely affect this species.***

8.0 CUMULATIVE EFFECTS OF THE ACTION

A number of proposed and/or approved development projects surround the Action Area, including the Sierra Vista Specific Plan Area, the Curry Creek Community Plan Area, the Elverta Specific Plan Area, the Dry Creek Community Plan Area, and the Riolo Vineyards Specific Plan (see Figure 5). Several additional projects are approved and/or proposed in the vicinity including, West Roseville Specific Plan, Pleasant Grove Waste Water Treatment Facility, Regional University and Community Plan, Creekview Specific Plan, Placer Ranch, Western Regional Landfill, and Lincoln Crossing. Other potential projects include the 10,500-acre South Sutter County Industrial/Commercial Reserve in the southeastern corner of Sutter County (Section 4.1 of the RDEIR, Quad-Knopf 2006). These projects will be subject to their own Section 7 Consultation and/or Section 10 permitting efforts.

Seasonal wetland resources on-site (i.e., vernal pools, seasonal wetland swales, and other seasonal wetlands) provide known and potentially suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Cumulative impacts to these species and their habitat would arise from the regional loss of seasonal wetland habitats

For example, ongoing and routine agricultural activities such as road construction, road maintenance, or intensive livestock grazing may limit or degrade habitat for these and other species. (However, as described in the Draft PCCP, ranching activities such as pond maintenance and moderate livestock grazing are essential to the long-term survival of some species, such as vernal pool species.) While cattle grazing is used as a tool to manage invasive

species in vernal pools, overgrazing and inappropriately-timed grazing (e.g., during period when plants flower or set seed) can result in adverse impacts to plant species and can impact vernal pool ecosystems. In addition, conversion of agricultural land that support uses that are compatible with the sustainability of vernal pools and the species that support (e.g., rangeland) to intensive forms of agriculture (e.g., row crops, laser-leveled rice) has caused widespread loss and fragmentation of vernal pool habitat in the Central Valley, and continues to threaten vernal pool habitat in the project area.

The Mitigation Strategy reflects the best available science regarding the aquatic resources and associated habitat known to exist in the Plan Area and Southwest Placer County, including biological information and conservation strategies developed in conjunction with the proposed Placer County Conservation Plan (PCCP). However, any such information utilized from the PCCP planning effort was carefully reviewed and adapted for the specific purpose of providing effective mitigation that meets all applicable regulatory requirements for development of Placer Vineyards in the absence of an adopted PCCP. The Mitigation Strategy incorporates a variety of compensatory wetland mitigation measures, including the acquisition and preservation of vernal pool-occupied grasslands, restoration of previously existing wetlands, enhancement of existing wetlands, and the establishment of new wetlands.

Impacts to seasonal wetland functions would be offset through preservation of existing seasonal wetland habitats (at a 1:1 ratio), and, in order of preference, restoration and/or enhancement of degraded seasonal wetland habitats, and or creation of new seasonal wetlands (at a 1.25:1 ratio).

The preservation and enhancement measures developed through this program are intended primarily to assure that there will be no net loss of wetlands function. The restoration and creation components are primarily intended to compensate for the loss of wetland area, and to result in the replacement of a portion of the impacted wetland functions. The Mitigation Strategy will be implemented in a way that specifically addresses mitigation habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp.

The Mitigation Strategy will be based on a holistic watershed-level approach involving a variety of aquatic habitats and their surrounding upland environments. In selecting and securing mitigation areas, the emphasis will be on securing large parcels encompassing intact watersheds. Securing larger parcels allows for a more comprehensive ecosystem approach and minimizes indirect impacts and disturbance from activities on adjacent lands. In many instances, these mitigation measures will serve a dual function in mitigating impacts to rare, threatened, or endangered species.

As such, the cumulative effects resulting from loss of seasonal wetlands would be offset by the acquisition of mitigation lands that provide contiguous seasonal wetland habitat habitats and/or seasonal wetland preservation, creation, and restoration opportunities.

8.1 Recovery Plan Goals

The *U.S. Fish and Wildlife Service Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* ("Recovery Plan" or "Plan") covers 33 plant and animal species associated with vernal pools within the Plan area. The overall goals of the Recovery Plan are to achieve and protect in perpetuity self-sustaining populations of each species; de-list the 20 federally listed plant and animal species; and ensure the long term survival of the 13 species of special concern. The over-arching recovery strategy for species covered by the Plan is habitat protection and management. A central component of the recovery strategy is to establish conservation areas and reserves that represent important vernal pool habitat within the Plan area. To this end, the Recovery Plan designates "Core Area" for habitat preservation. Core Area includes areas actually occupied by covered species ("occupied habitat"), as well as habitat necessary to provide for corridors and dispersal habitat, population dynamics and reintroduction/introduction sites, and to protect currently undiscovered populations ("suitable habitat"). The Recovery Plan designates Core Area in each of 17 distinct vernal pool regions, and over half of the Placer Vineyards Specific Plan area.

8.2 Recovery Criteria

The Recovery Plan identifies the following General Recovery Criteria:

- Protect vernal pool habitat in the largest blocks possible from loss, fragmentation, degradation and incompatible uses;
- Manage, restore and monitor vernal pool habitat to promote the recovery of listed species and the long-term conservation of the species of concern;
- Conduct range-wide status surveys for all species addressed in the Recovery Plan;
- Conduct research and use results to refine recovery actions and criteria, and guide overall recovery and long-term conservation efforts; and
- Develop and implement participation programs.

The Recovery Plan identifies several factors which should be considered when identifying areas for conservation of vernal pool species, including size, quality, connectivity with other preserved habitat, ease or feasibility of protection, ability to maintain and/or implement effective management, and cost of protection and long-term management. Although the Recovery Plan indicates a preference for protecting species occurrences and vernal pool habitat within the Core Area, it recognizes that protection of species occurrences and vernal pool habitat *outside* of Core Area (or even outside a vernal pool region) may contribute to conservation of the species as required by the Plan. In addition, while large preserves are often preferred, the Recovery Plan acknowledges that the network of conservation area will include small, large and intermediate-sized preserves.

Compliance with the recovery criteria set forth in the Recovery Plan constitutes one specific strategy for obtaining recovery of the covered vernal pool plant and animal species. However, the Recovery Plan states that the Plan "is not the only mechanism through which recovery may be obtained." Habitat may be protected through new conservation agreements with willing private landowners, or other protection mechanisms to promote the recovery and conservation of the species addressed in the Recovery Plan. Moreover, alternative conservation mechanisms, such as currently proposed or future Habitat Conservation Plan(s), may be deemed equivalent to implementation of this Recovery Plan for the covered area.

8.3 Summary of the Placer Vineyards Mitigation Strategy

The Mitigation Strategy for the Placer Vineyards Specific Plan is intended to provide a single, all-inclusive mitigation program that will simultaneously mitigate for all biological resources of concern, including mitigation requirements for unavoidable impacts to the Specific Plan area endangered species habitats, wetlands and other "waters." The Strategy will incorporate a variety of compensatory wetland mitigation measures, including the acquisition and preservation of vernal pool-dominated grasslands, restoration of previously existing wetlands, restoration of degraded wetlands, enhancement of existing wetlands, and/or the establishment of new wetlands. As part of the Strategy, impacts to vernal pool species (fairy shrimp and tadpole shrimp) habitat will be mitigated through preservation of one acre for each wetted acre of vernal pool habitat directly impacted, and restoration of 1.25 acre, (0.75 acre of which would be vernal pool habitat) for each acre of wetted vernal pool habitat.

In selecting and securing mitigation areas, the emphasis would be on securing large parcels encompassing intact watersheds. Securing larger parcels allows for a more comprehensive ecosystem approach and minimized indirect impacts and disturbance from activities on adjacent lands. To further minimize indirect effects to the preserve site, the County may impose measures such as controlling and redirecting runoff from adjoining properties or the construction of fences. Buffers of off-site mitigation lands are anticipated to be consistent with the future requirements of the Placer County Conservation Plan ("PCCP") if ultimately adopted by the County (to the extent that the PCCP is adopted prior to the acquisition of preserve sites, and to the extent feasible). Restoration is intended to be construction of vernal pools at densities within the range of historical levels as identified on 1937 aerial photograph, or other valid historical evidence, for the proposed preserve site to be restored. The recreation and/or restoration of vernal pools must include adequate upland areas to maintain the value of the pools.

8.4 The Placer Vineyards Mitigation Strategy is in Furtherance of the Recovery Plan Objectives

The Placer Vineyards Mitigation Strategy is consistent with USFWS' *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005a). Although a portion of the PVSP area is within the Western Placer County Core Area of the Southeastern Sacramento Valley Vernal Pool Region, that portion is only 2,823 acres of that 33,036 acre Core Area. While habitat conversion due to development of the Action Area would result in the loss of those 2,823 acres, much of that area and the wetlands contained therein have been degraded by historical agricultural use. The overall average California Rapid Assessment Method (CRAM) score reported by ECORP (2010) for those types of wetlands typically considered by USFWS to constitute habitat for listed aquatic invertebrates (i.e., using CRAM terminology, depressional wetlands, individual vernal pools, and vernal pool systems) is 69.1. Further, as discussed above at Section 7.1.5, the PVSP area is located at the extreme southeastern end of the Core Area. As such, its conversion, while contributing to tolerable habitat loss within the Core Area, would not contribute to regional habitat fragmentation because other land uses effectively preclude the significant expansion of a Core-associated preserve area/system to the East, West, or South. If some habitat conversion is tolerable within the Core Area, the PVSP area represents a good place for that conversion to occur.

In addition, it is important to remember that lands within the Core Area are not automatically protected from threat by development. Implementation of the Vernal Pool Recovery Plan relies on voluntary participation from the private-sector. To encourage private participation in vernal pool recovery, Placer County and other stakeholders have been working on development of the Placer County Conservation Plan which, as recognized by the Recovery Plan, is intended to provide an alternative vehicle to accomplish vernal pool recovery goals. Because of the compatibility of the Mitigation Strategy with the Draft PCCP, the Strategy supports vernal pool recovery goals by incorporating the principles of the Draft PCCP. In fact, the PVSP mitigation plan represents an important early building block for the overall conservation strategy.

Finally with regard to wetlands, the implementation of the Placer Vineyards Mitigation Strategy, with its hierarchical preference for preservation and restoration over enhancement and creation, ensures that wetland mitigation landscapes will enjoy a higher probability of long-term success, as they would be based upon preserving existing natural systems, and restoring degraded natural systems, as opposed to enhancing existing systems or creating new systems. This fundamental and underlying consistency with natural systems is inherently less risky than reliance upon engineering solutions.

In summary, the Placer Vineyards Mitigation Strategy is consistent with the Vernal Pool Recovery Plan in that it:

- Incurs a tolerable amount of conversion of mediocre habitat in a strategically acceptable location within the Core Area.
- Yields a high probability that those converted lands within the Core Area are exchanged for voluntary permanent protection, management, and monitoring of other landscapes within or adjacent to the Core Area.
- Ensures a higher probability of long-term success of mitigation wetlands within those landscapes by favoring their establishment as based upon naturally-occurring systems.

9.0 ANALYSIS OF ALTERNATE ACTIONS

The Corps and project proponents are in the process of evaluating alternatives to comply with Section 404(b)(1) of the Clean Water Act and through the development of an Environmental Impact Statement (EIS) to comply with the National Environmental Policy Act (NEPA). These alternatives will consider other locations within southwestern Placer County that are available, practicable and can achieve the applicants' stated project purpose.

10.0 CONCLUSION AND DETERMINATION

The proposed action ***may affect, and is not likely to adversely affect*** Hartweg's golden sunburst, Delta smelt, California tiger salamander, California red-legged frog, or western yellow-

billed cuckoo. These species are considered unlikely to occur and be directly affected within the Action Area or to be indirectly impacted by the proposed project.

Surveys for slender Orcutt grass and Sacramento Orcutt grass have been conducted within the majority of the Action Area with negative results. However, because the presence/absence of these species has yet to be determined throughout the Action Area, the proposed action ***may affect, and is likely to adversely affect*** these species. If slender Orcutt grass or Sacramento Orcutt grass are found within areas yet to be surveyed, appropriate mitigation measures would be implemented to reduce any adverse effects to these species.

The host shrub for Valley elderberry longhorn beetle has not yet been observed within the Action Area. Because the presence/absence of elderberry shrubs has not been determined throughout the Action Area, the proposed action ***may affect, and is likely to adversely affect*** the Valley elderberry longhorn beetle. If the shrub is found within areas yet to be surveyed, appropriate mitigation measures would be implemented to reduce any adverse effects to this species.

Giant garter snake is not likely to occur within the Plan Area, but may occur within the off-site area for infrastructure element within the Natomas Basin. Therefore, the proposed action ***may affect, and is likely to affect*** this species. If the provisions set forth within the Natomas Basin Habitat Conservation Plan are followed as outlined above, the proposed action is considered ***not likely to adversely affect*** this species.

The proposed action is considered likely to adversely affect two federally listed branchiopod species (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp). However, the effects of the action would likely be reduced to a level unlikely to jeopardize the continued existence of these species through implementation of the Conceptual Conservation Strategy proposed by the applicants. The proposed action ***may affect, but is not likely to adversely affect*** Conservancy fairy shrimp, due to the fact that invertebrate surveys within the Active Development Area have not identified this species and the probability of this species occurring in the Action Area is very low.

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Figure 6 – Existing Habitat Types within the Active Development Area

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Figure 14 – California Natural Diversity Database Federal Special-Status Species Occurrences

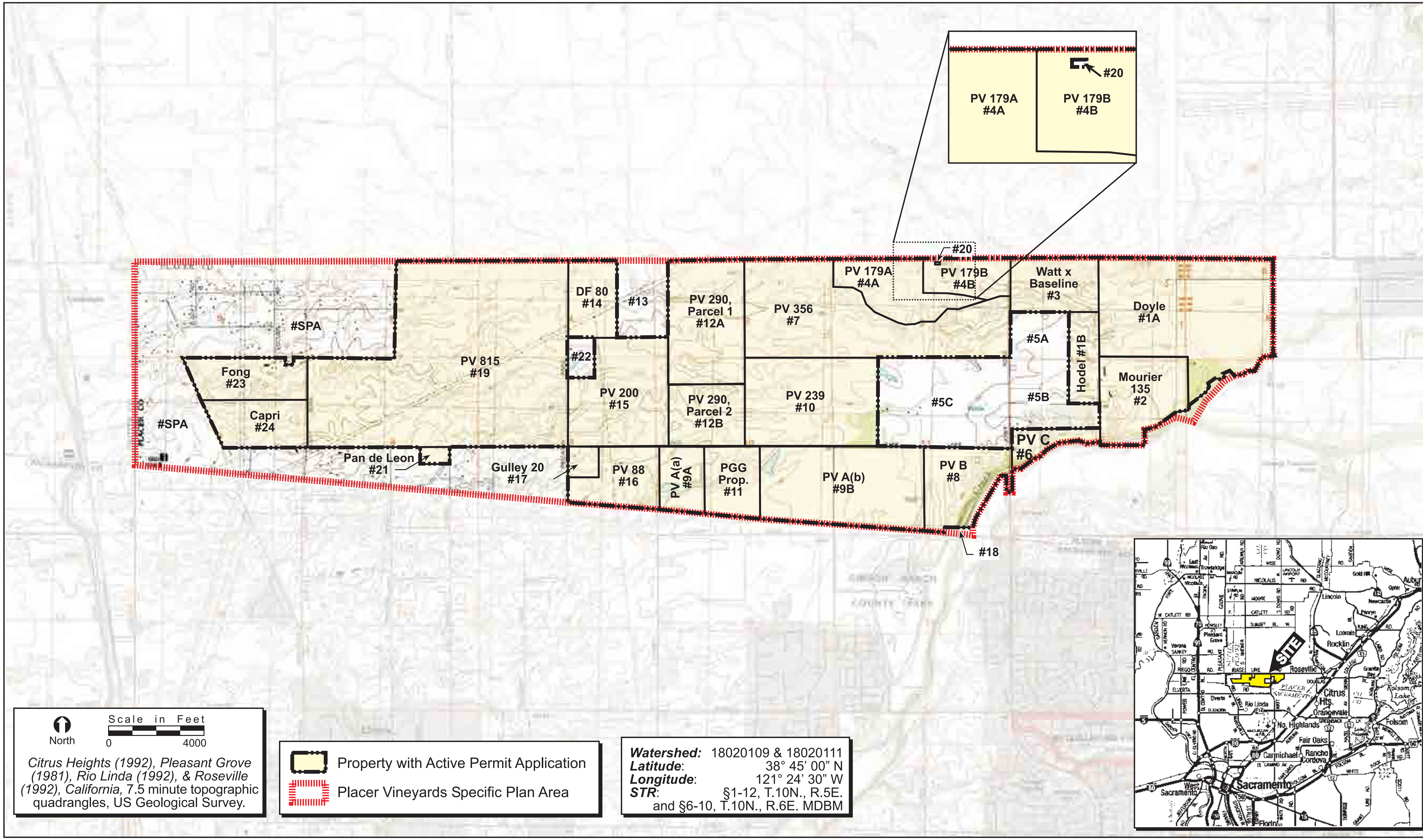

Figure 1. Placer Vineyards Specific Plan Area and Properties with Active Applications

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ENVIRONMENTAL CONSULTANTS

2001-196 Placer Vineyards

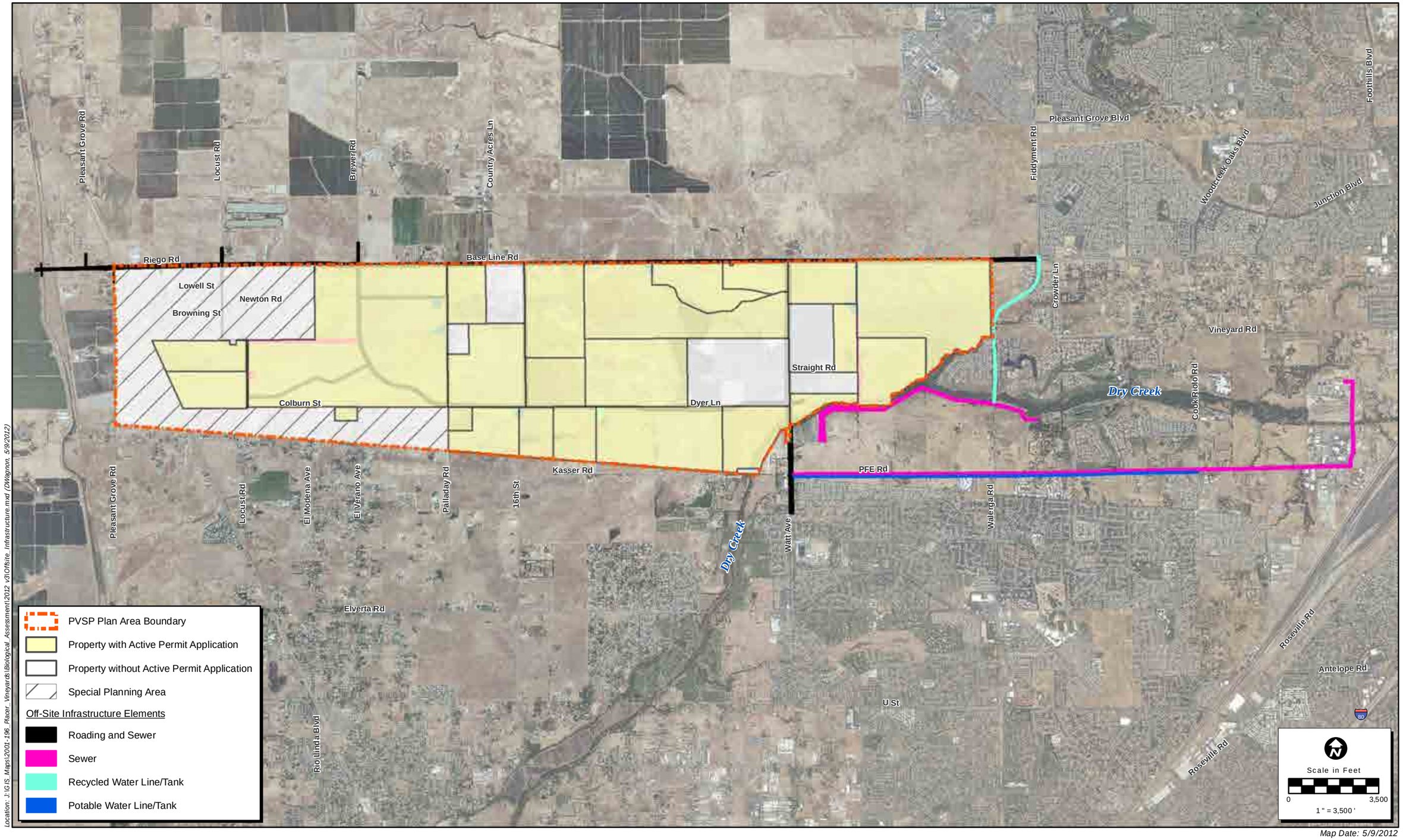

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Figure 2. Off-Site Area for Infrastructure Elements

2001-196.1 Placer Vineyards

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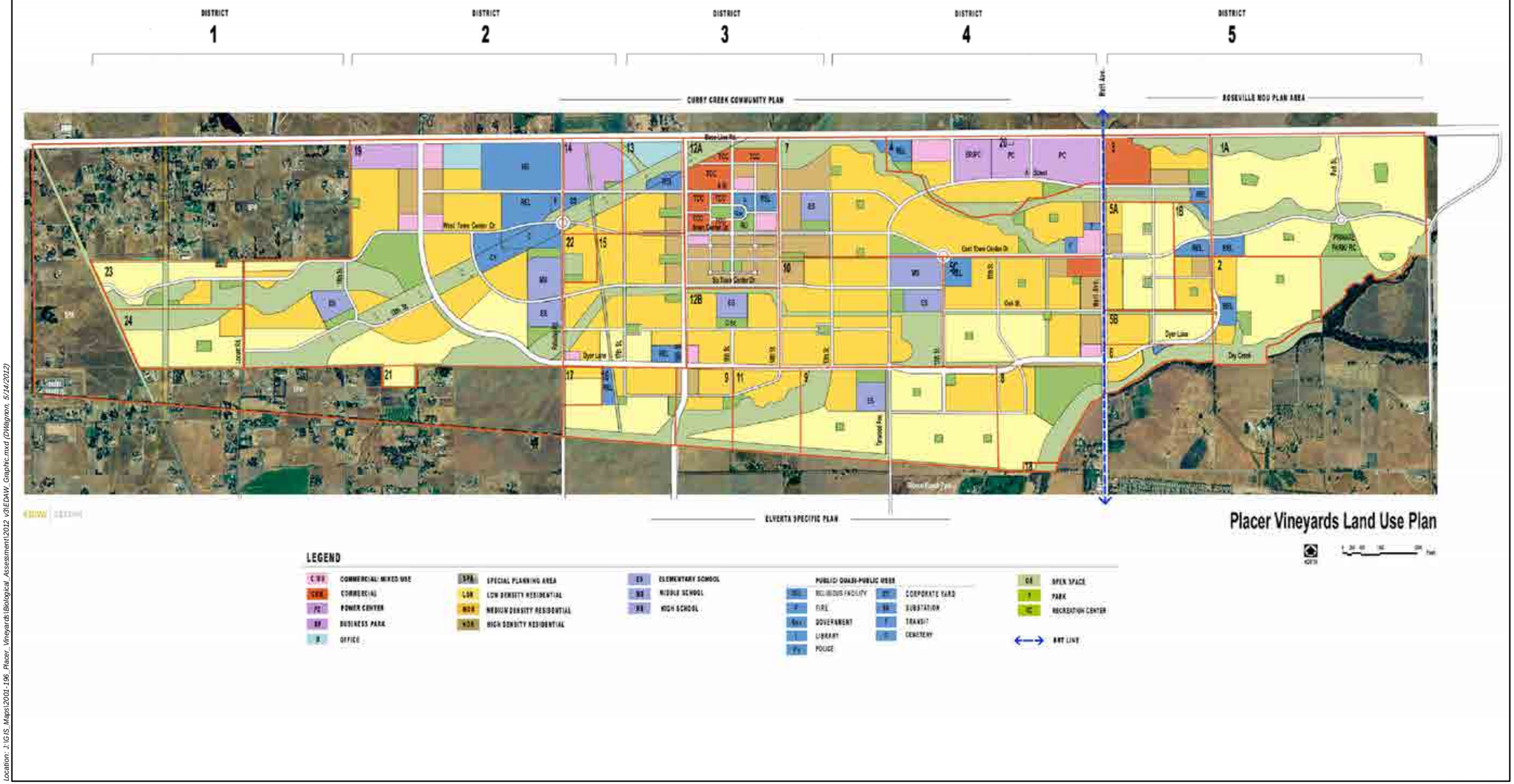

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Map Date: 5/14/2012

Figure 3. Placer Vineyards Specific Plan - Approved Development Plan

2001-196.1 Placer Vineyards

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dwagnon

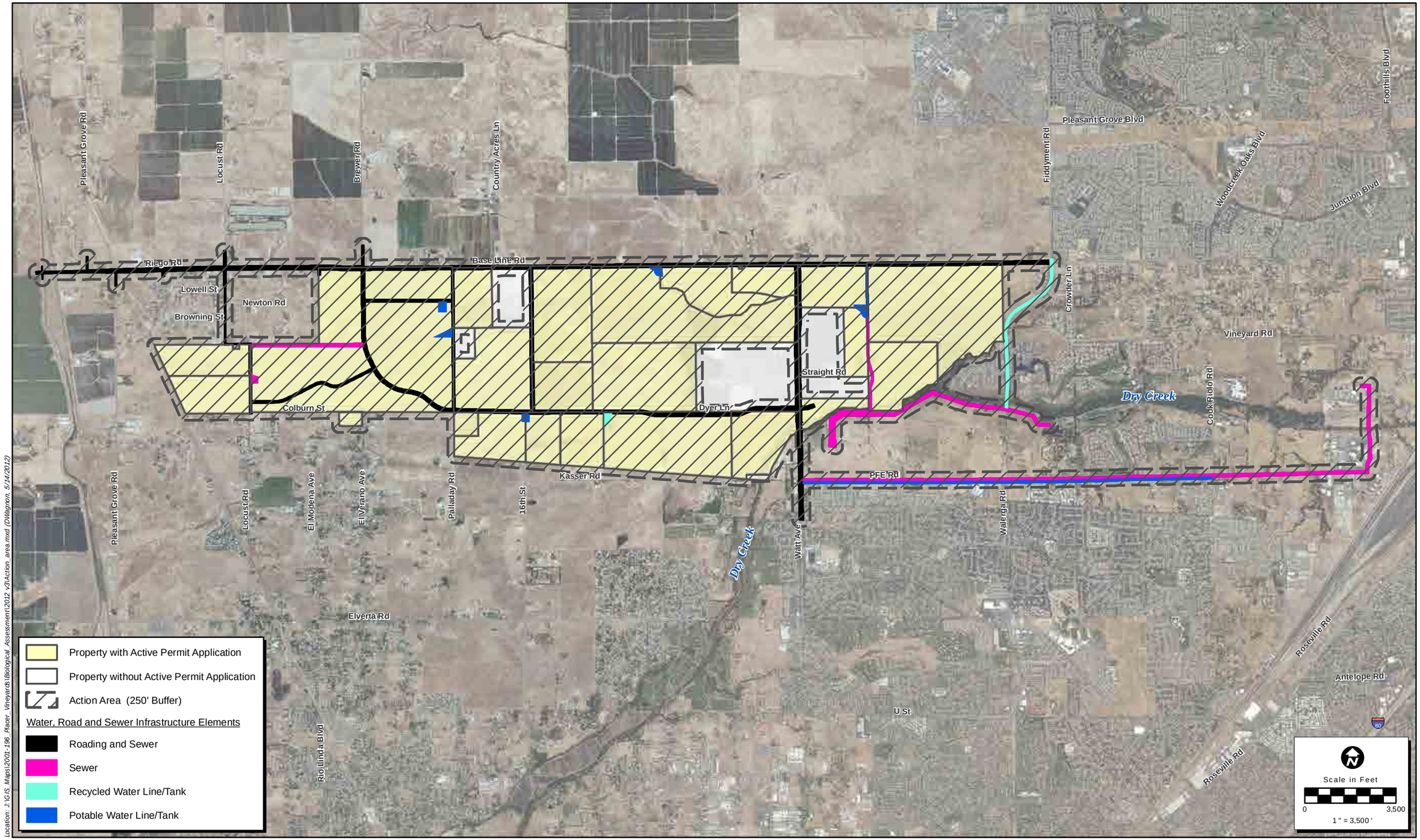

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Figure 4. Action Area

2001-196.1 Placer Vineyards

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dwagnon

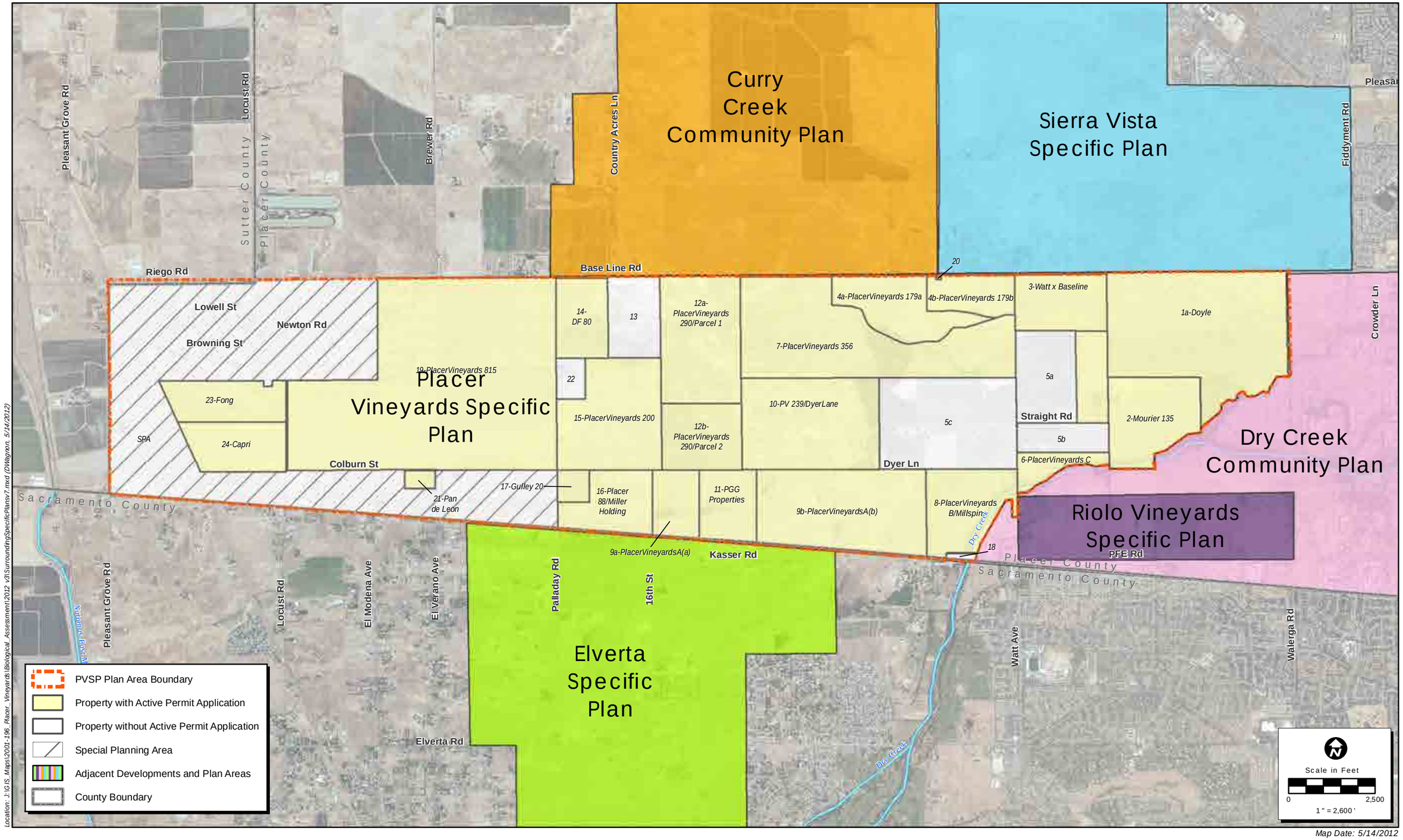

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Figure 5. Adjacent Existing and/or Proposed Developments and Plan Areas

2001-196.1 Placer Vineyards

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dwagnon

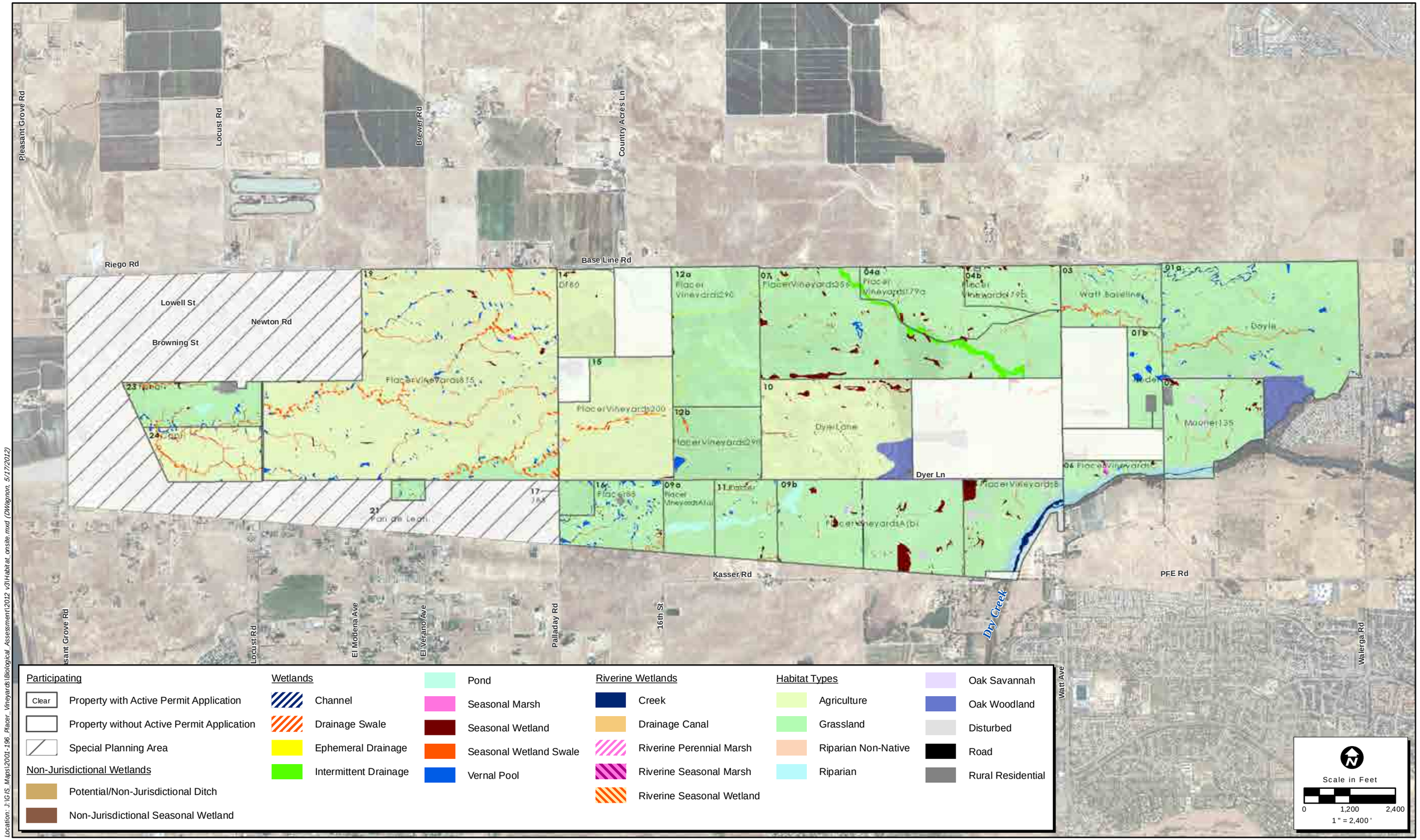

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Figure 6. Existing Habitat Types within the Active Development Area

2001-196.1 Placer Vineyards

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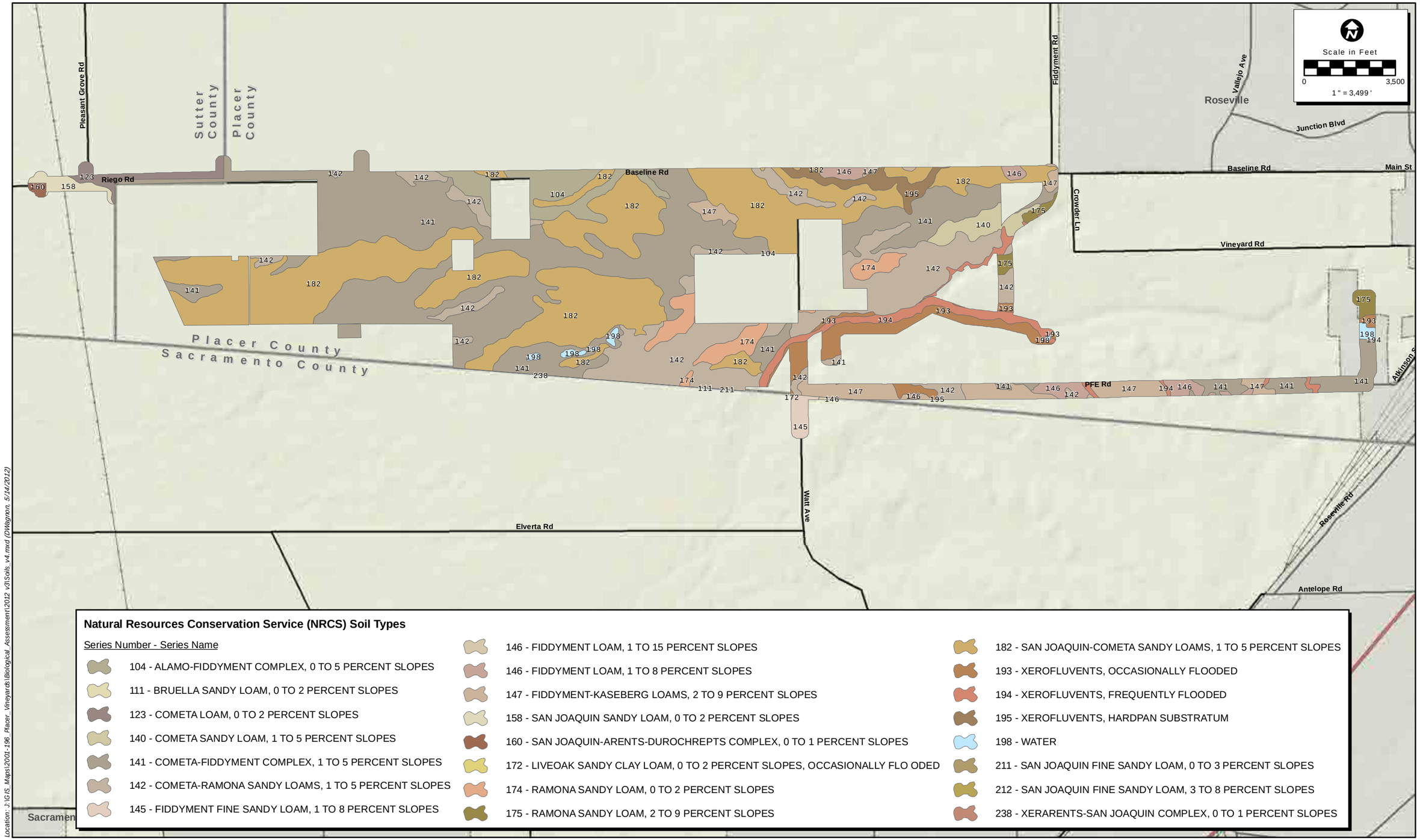

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Map Date: 5/14/2012

Figure 7. Natural Resources Conservation Service Soil Types

2001-196.1 Placer Vineyards

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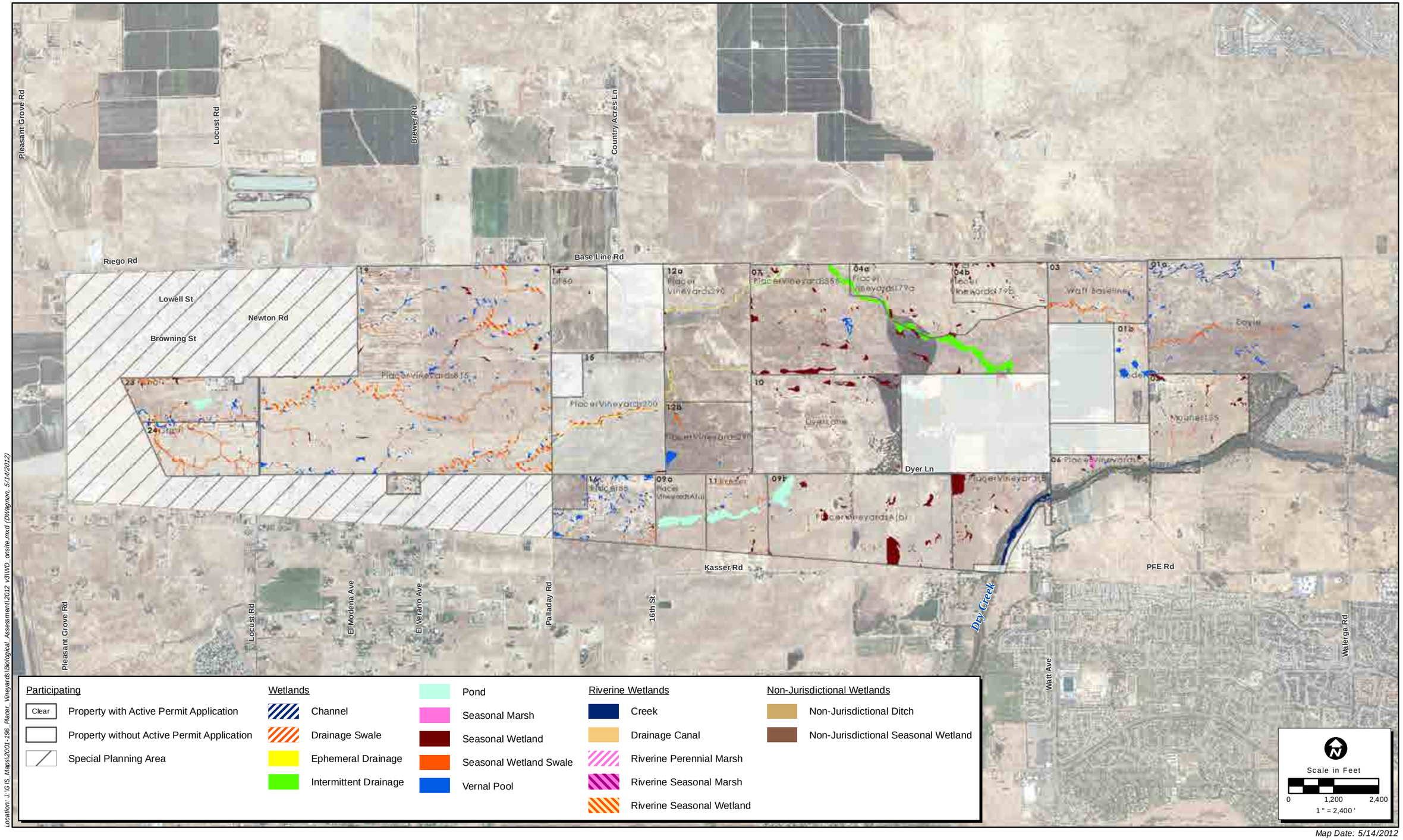

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Map Date: 5/14/2012

Figure 8. Composite Wetland Delineation

2001-196.1 Placer Vineyards

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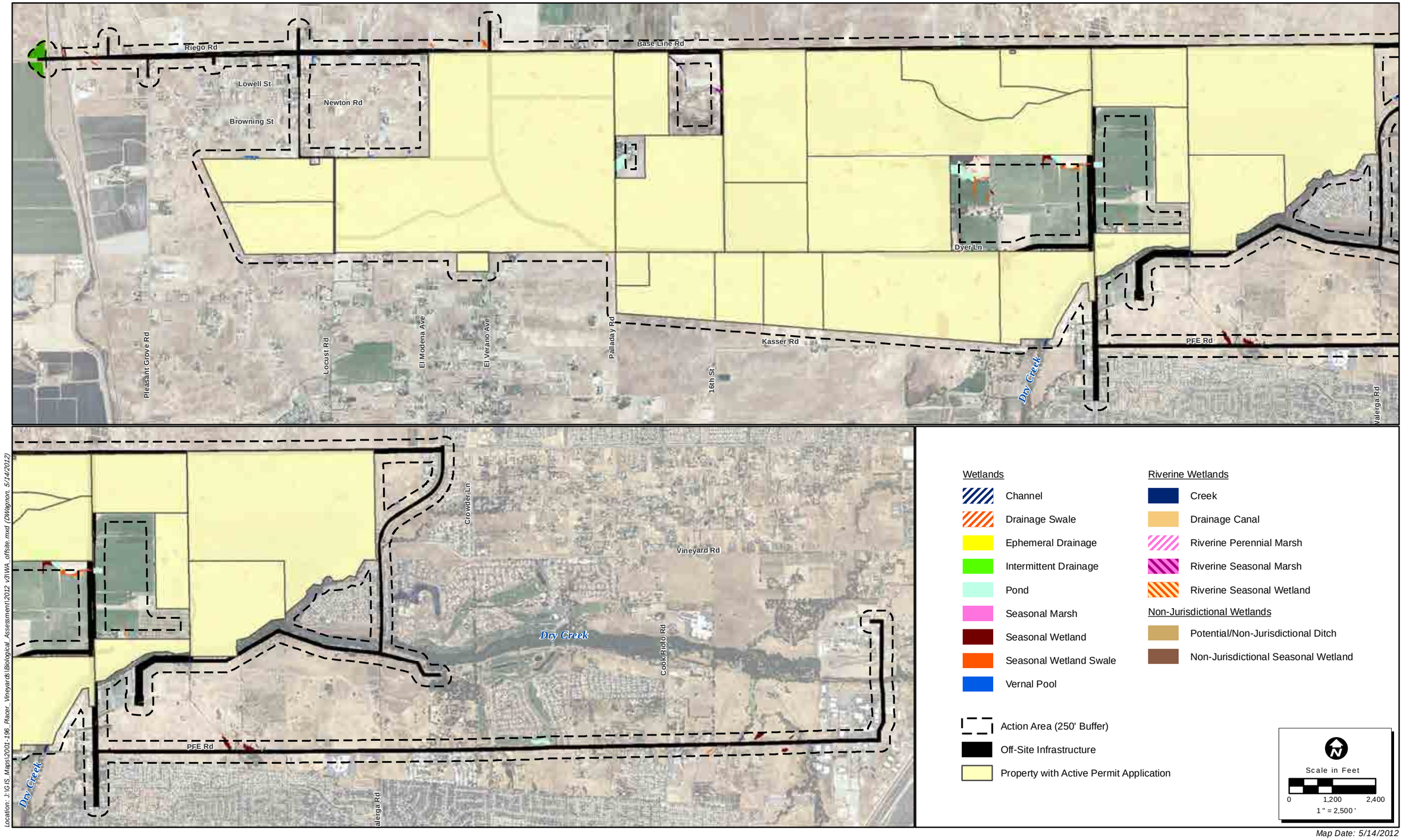

Map Date: 5/14/2012

Figure 9. Wetland Assessment - Off-Site Area for Infrastructure Elements

2001-196.1 Placer Vineyards

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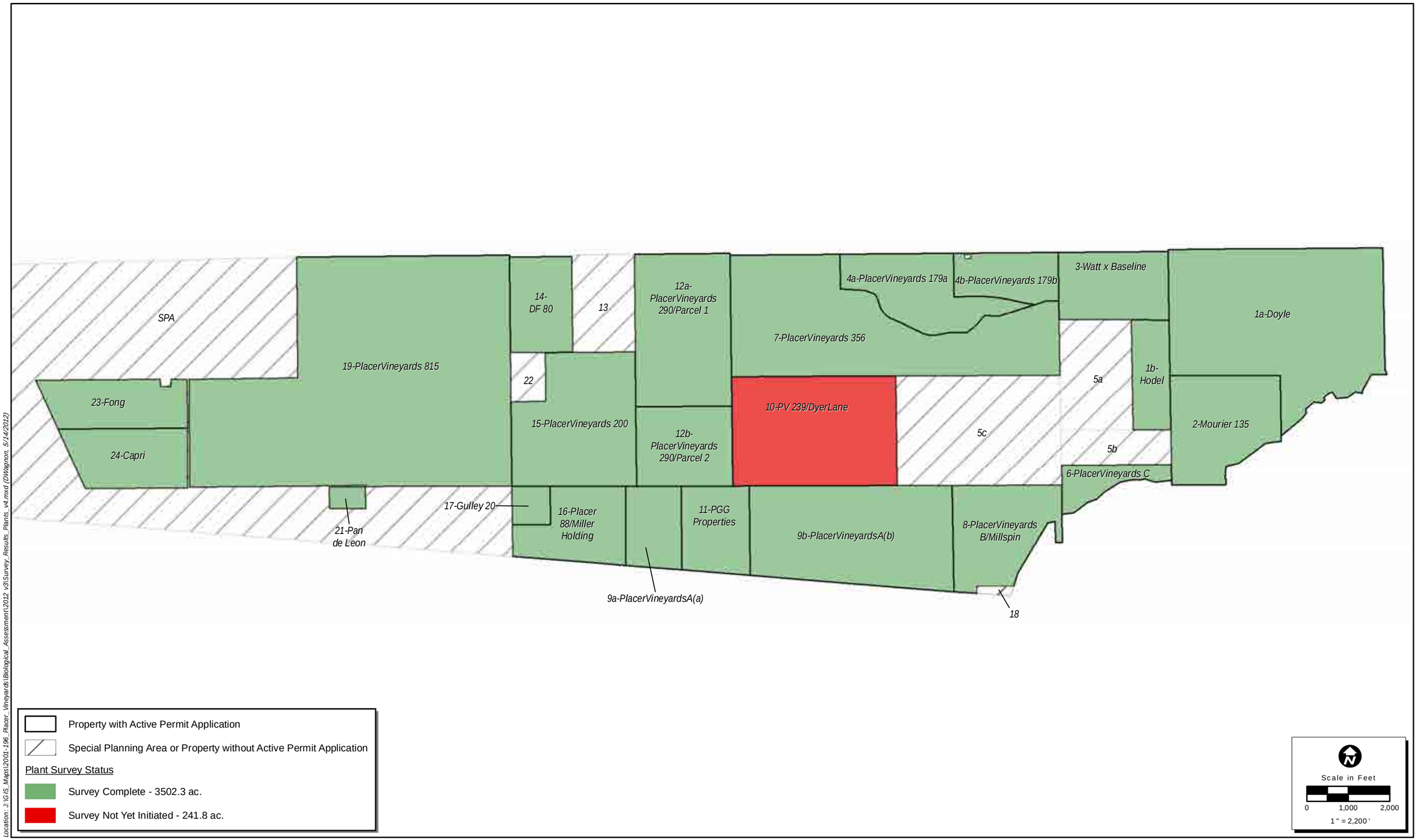
dwagnon



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Map Date: 5/14/2012

Figure 10. Surveyed Properties - Potentially-Occuring Federally-Listed Proposed and/or Candidate Plants

2001-196.1 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
dwagnon

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Map Date: 5/14/2012

Figure 11. Placer Vineyards Specific Plan - Open Space Plan

2001-196.1 Placer Vineyards

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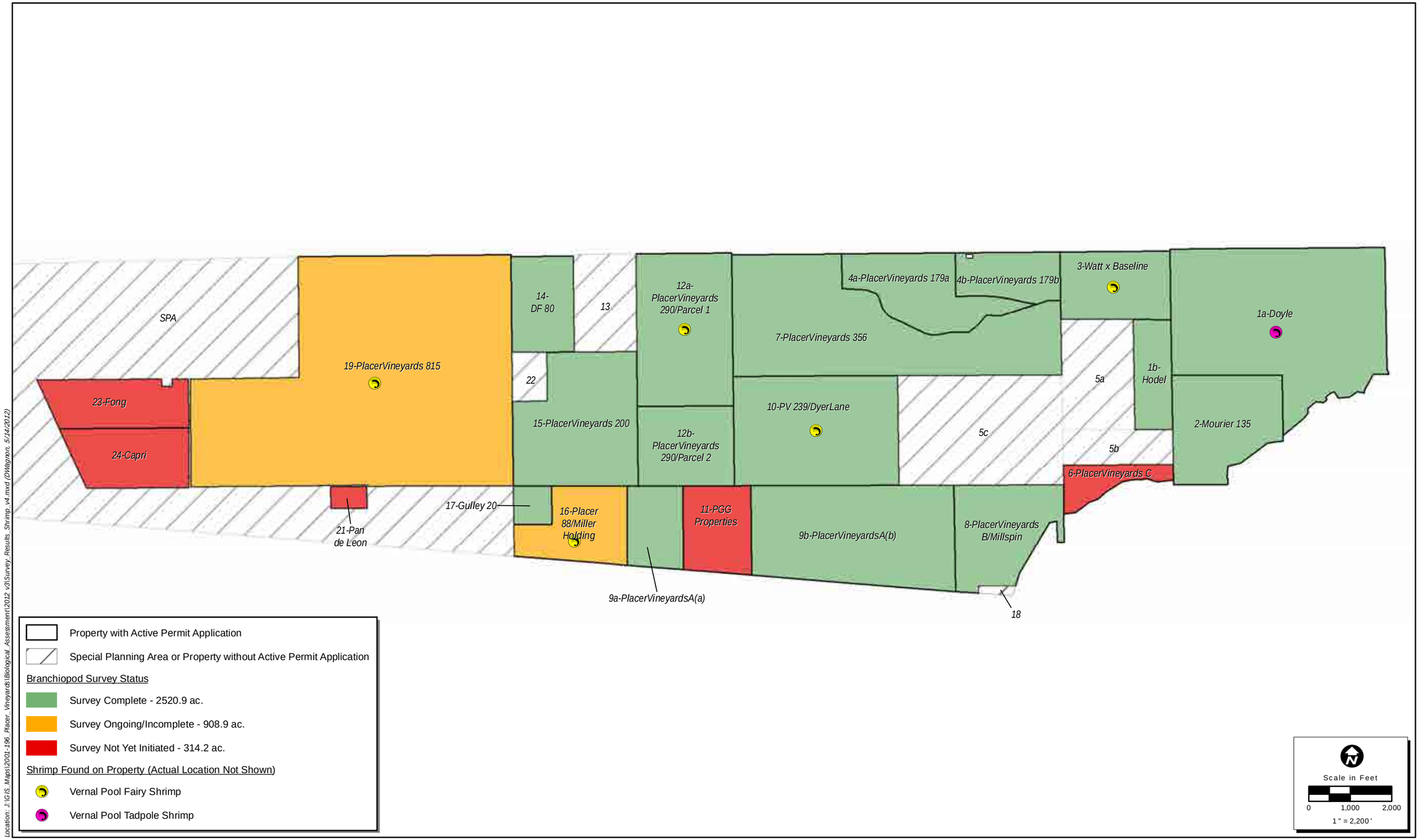

Map Date: 5/14/2012

Figure 12. Surveyed Properties - Potentially-Occurring Vernal Pool Branchiopods

2001-196.1 Placer Vineyards

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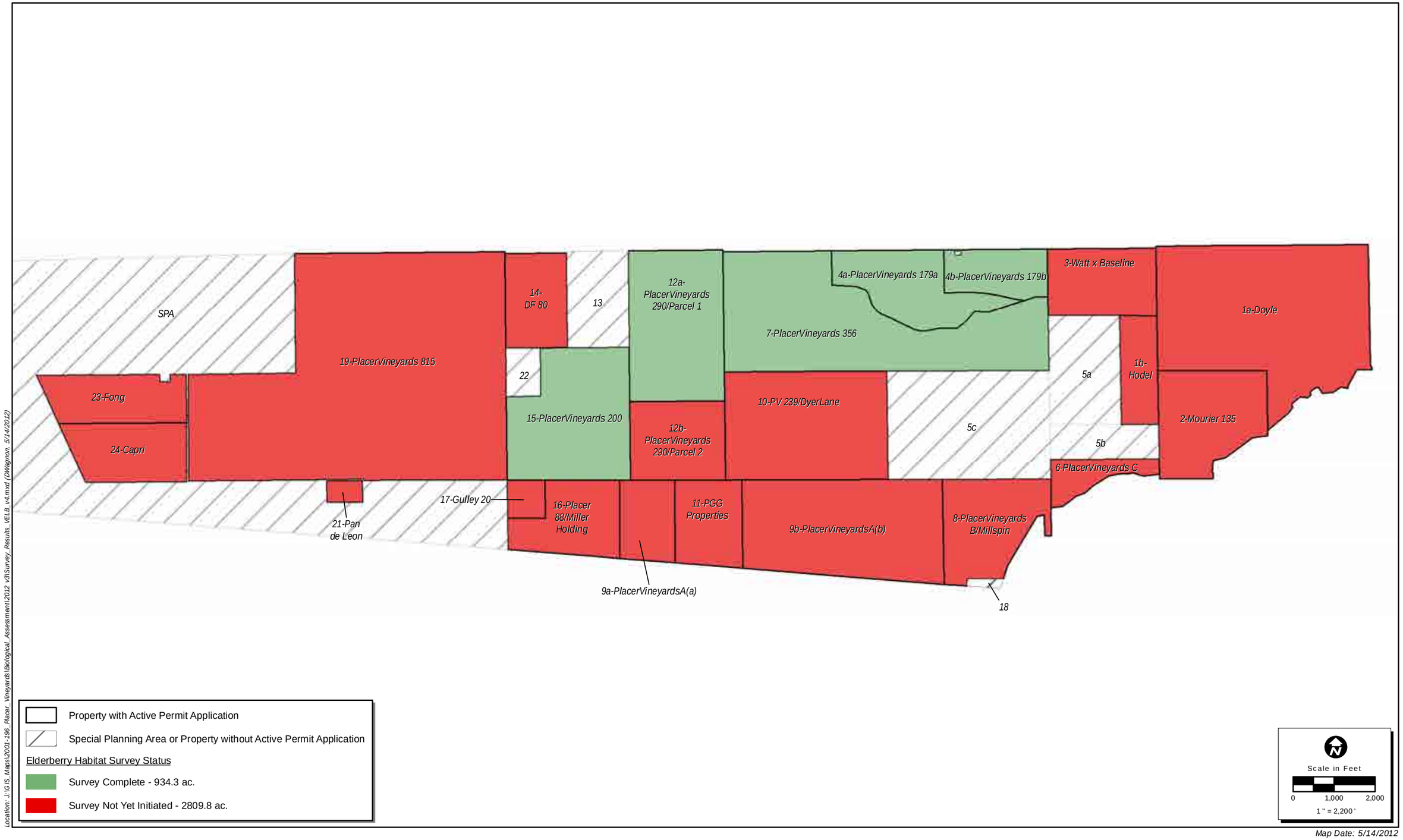
dwagnon



Map Date: 5/14/2012

Figure 13. Surveyed Properties - Valley Elderberry Longhorn Beetle Habitat

2001-196.1 Placer Vineyards

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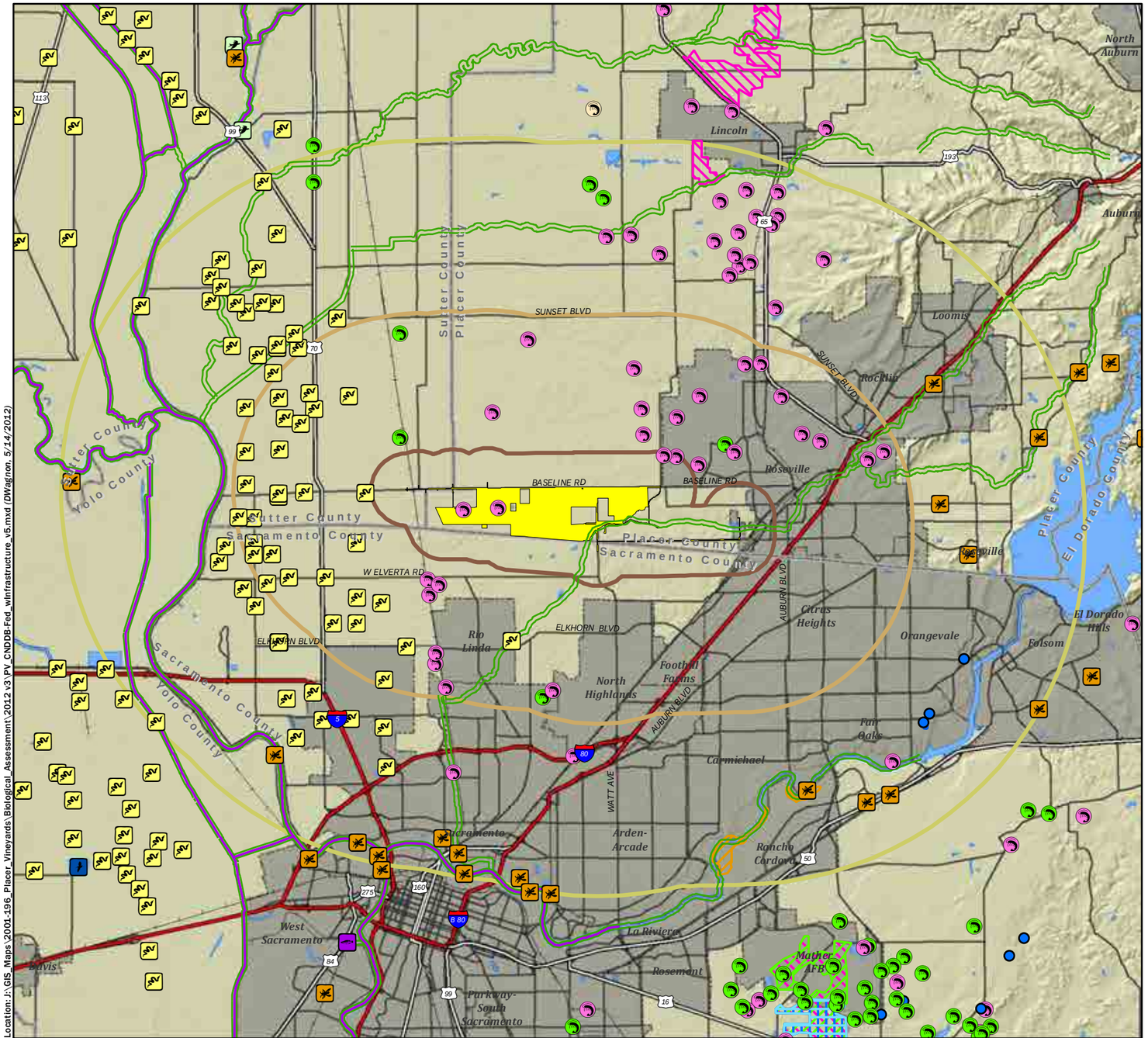

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Map Date: 5/14/2012
GIS Specialist: DW

Figure 14. California Natural Diversity Database Federal Special-Status Species Occurrences

2001-196.1 Placer Vineyards

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Map Features

Administrative Boundaries
- [1] Project Boundary
- City Boundary
- County Boundary

Distance From Project
- 1 mile
- 5 mile
- 10 mile

Transportation
- Interstate
- State Highway
- Roads
- Railroads

Aquatic Features
- Lakes and Reservoirs
- Rivers

[2] CNDDB Occurrences

Endangered
- Sacramento Orcutt Grass *(Orcuttia viscida)*
- Conservancy Fairy Shrimp *(Branchinecta conservatio)*
- Vernal Pool Tadpole Shrimp *(Lepidurus packardi)*
- Chinook Salmon - Winter-run Sacramento River *(Oncorhynchus tshawytscha)*

Candidate
- Western Yellow-billed Cuckoo *(Coccyzus americanus occidentalis)*

Threatened
- Slender Orcutt Grass *(Orcuttia tenuis)*
- Vernal Pool Fairy Shrimp *(Branchinecta lynchi)*
- Chinook Salmon - Spring-run Klamath-trinity Rivers *(Oncorhynchus tshawytscha)*
- Giant Garter Snake *(Thamnophis gigas)*
- Valley Elderberry Longhorn Beetle *(Desmocerus californicus dimorphus)*
- Western Snowy Plover *(Charadrius alexandrinus nivosus)*

Critical Habitat
- [3] Sacramento Orcutt Grass
- [3] Slender Orcutt Grass
- [3] Vernal Pool Fairy Shrimp
- [3] Vernal Pool Tadpole Shrimp
- [4] Valley Elderberry Longhorn Beetle (VELB)
- [5] Steelhead
- [6] Spring-run Chinook Salmon

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

Scale in Miles
0 1 2 3
1 " = 3.4 mi.

NOTES

[1] Project Boundary: ECORP Wetland Delineation
[2] CDFG California Natural Diversity Database (CNDDB), April 2012 Update (GIS Shapefile)
[3] USFWS Vernal Pool Species Final Critical Habitat, February 2006.
[4] USFWS Valley Elderberry Longhorn Beetle (VELB) Final Critical Habitat, 1980
[5] NOAA/NMFS Steelhead Final Critical Habitat, June 2005.
[6] NOAA/NMFS Spring-run Chinook Salmon Final Critical Habitat, June 2005.

Map Extents Located on USGS 7.5' Quadrangles: Sutter Causeway, Nicolaus, Sheridan, Lincoln, Gold Hill, Aubum, Knights Landing, Verona, Pleasant Grove, Roseville, Rocklin, Pilot Hill, Grays Bend, Taylor Monument, Rio Linda, Citrus Heights, Folsom, Clarksville, Davis, Sacramento West, Sacramento East, Carmichael Buffalo Creek and Folsom SE

LIST OF ATTACHMENTS

Attachment A – United States Fish and Wildlife Service Official Species List for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-minute Quadrangles

Attachment B – California Natural Diversity Database Records

Attachment C – Placer Vineyards Mitigation Strategy

Attachment D – Potential Effects Analysis Tables:

- Potential Species Effects Analysis Summary Table
- Slender Orcutt Grass – Potential Effects Analysis Table
- Sacramento Orcutt Grass – Potential Effects Analysis Table
- Hartweg's Golden Sunburst – Potential Effects Analysis Table
- Vernal Pool Fairy Shrimp – Potential Effects Analysis Table
- Vernal Pool Tadpole Shrimp – Potential Effects Analysis Table
- Conservancy Fairy Shrimp – Potential Effects Analysis Table
- Valley Elderberry Longhorn Beetle – Potential Effects Analysis Table
- Delta Smelt – Potential Effects Analysis Table
- California Tiger Salamander – Potential Effects Analysis Table
- California Red-Legged Frog– Potential Effects Analysis Table
- Giant Garter Snake – Potential Effects Analysis Table
- Western Yellow-billed Cuckoo – Potential Effects Analysis Table

ATTACHMENT A

United States Fish and Wildlife Service Official Species List for the Citrus Heights, Rio Linda, Pleasant Grove and Roseville, CA Quadrangles

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

March 6, 2012

Document Number: 120306091040

Tom Scofield
ECORP Consulting Inc.
2525 Warren Drive
Rocklin, CA 95677

Subject: Species List for Placer Vineyards Biological Assessment

Dear: Mr. Tom Scofield

We are sending this official species list in response to your March 6, 2012 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 04, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found here.

Endangered Species Division

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 120306091040

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
  - Conservancy fairy shrimp (E)
- Branchinecta lynchi
  - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)
- Lepidurus packardi
  - vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha

- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)
- Rana draytonii
  - California red-legged frog (T)

Reptiles

- Thamnophis gigas
  - giant garter snake (T)

Candidate Species

Birds

- Coccyzus americanus occidentalis
  - Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

CITRUS HEIGHTS (512A)

RIO LINDA (512B)

PLEASANT GROVE (528C)

ROSEVILLE (528D)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of

the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 04, 2012.

ATTACHMENT B

California Natural Diversity Database Records

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 3 Map Index: 23049 EO Index: 16973

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-02-11
Site: 1993-02-11
Record Last Updated: 1993-03-24

Quad Summary: Rio Linda (3812164/5128)
County Summary: Sacramento

Lat/Long: 38.70682° / -121.48263°
UTM: Zone-10 N4286335 E631918
Area:
Elevation: 35 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 10N
Range: 05E
Section: 19 Qtr: W
Meridian: M

Location: 0.5 MILE WEST OF THE JUNCTION OF WEST 6TH STREET AND "U" STREET, RIO LINDA.
Ecological: HABITAT CONSISTS OF TWO DISTURBED VERNAL POOLS. BURROWING OWLS ALSO FOUND AT THIS LOCATION.
Threat: POSSIBLY THREATENED BY PROPOSED CONSTRUCTION OF AN ACCESS ROAD LEADING TO A NEW POWER PLANT.
General: FAIRY SHRIMP IDENTIFIED BY STEPHANIE MYERS (JSA); ALTHOUGH NOT COMMON, THERE WERE TOO MANY TO COUNT.
Owner/Manager: PVT

Occurrence No. 4 Map Index: 23050 EO Index: 29284

Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1996-02-13
Site: 1996-02-13
Record Last Updated: 1996-09-04

Quad Summary: Rio Linda (3812164/5128)
County Summary: Sacramento

Lat/Long: 38.71310° / -121.48367°
UTM: Zone-10 N4286031 E631833
Radius: 1/5 mile
Elevation: 35 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 10N
Range: 05E
Section: 19 Qtr: NW
Meridian: M

Location: EAST SIDE OF WESTERN PACIFIC RR TRACKS, SOUTH OF JUNCTION OF ELVERTA RD/SORENTO RD, 2.0 KM WEST OF ELVERTA.
Location Detail: 1993: 1 DISTURBED POND ADJACENT TO RR TRACKS SAMPLED, SHRIMP ID'D BY S. MEYERS (JSA); ALTHOUGH NOT COMMON, TOO MANY TO COUNT. 1996: 3 POOLS SAMPLED BY S. LEAGH; TOTAL APPROX. SIZE OF POOLS AND SWALES ARE 250 SQ. METERS.
Ecological: HABITAT IS COMPLEX OF SEASONAL POOLS AND SWALES; SAN JOAQUIN SOIL SERIES; ASSOCIATED PLANTS: TILLAEA AQUATICA, LOLIUM MULTIFLORUM, CALLITRICHE MARGINATA, LILAEA SCILLOIDES, LYTHRUM HYSSOPIFOLIUM, MIMULUS GUTTATUS, MOUTIA FONTANA ET AL.
Threat: THREAT: HIGH POTENTIAL FOR DEGRADATION OF WATER QUALITY; POSSIBLE HERBICIDE USE; SEDIMENTATION OF POOLS, RR ROW, ET AL.
General: 1993: SHRIMP OBS BY S. MEYERS. 2/13/1996: >50 ADULTS OBS IN SMALL (93 SQ. METERS) ISOLATED POOL ABOUT 1000 FT S OF ELVERTA RD; 50-100 ADULTS OBS IN POOL 800 FT E OF SORENTO RD; 50-100 ADULTS OBS IN 92 SQ. METER POOL 230 FT S OF ELVERTA RD.
Owner/Manager: PVT, UNKNOWN

Occurrence No. 29 Map Index: 33250 EO Index: 2571

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-12-28
Site: 1994-12-28
Record Last Updated: 1996-02-23

Quad Summary: Roseville (3812173/5280)
County Summary: Placer

Lat/Long: 38.86173° / -121.29715°
UTM: Zone-10 N4302810 E647744
Radius: 80 meters
Elevation: 140 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 27 Qtr: NW
Meridian: M

Location: EAST SIDE OF HWY 65, 0.4 MILE SOUTH OF THE LINCOLN RODEO GROUNDS, 2 MILES SOUTH OF LINCOLN.
Ecological: HABITAT CONSISTS OF VERNAL POOLS IN ROLLING GRASSLAND.
Threat: THREATENED BY PROPOSED DEVELOPMENT.
General: MANY SHRIMP OBSERVED/COLLECTED (DEPOSITED AT CAS) ON 28 DECEMBER 1994.
Owner/Manager: PVT

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 30 Map Index: 33251 EO Index: 2570

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-12-28
Site: 1994-12-28
Record Last Updated: 1995-06-30

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84669° / -121.26971°
UTM: Zone-10 N4301186 E650156
Radius: 80 meters
Elevation: 195 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 35 Qtr: NE
Meridian: M

Location: 2 MILES SE OF THE LINCOLN RODEO GROUNDS, ~3 MILES SSE OF LINCOLN.
Ecological: HABITAT CONSISTS OF VERNAL POOLS WITHIN ROLLING GRASSLAND.
Threat: THREATENED BY PROPOSED DEVELOPMENT.
General: MANY SHRIMP OBSERVED/COLLECTED (DEPOSITED AT CAS) ON 28 DECEMBER 1994.
Owner/Manager: PVT

Occurrence No. 41 Map Index: 32449 EO Index: 1022

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2003-01-29
Site: 2005-01-21
Record Last Updated: 2005-10-18

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.78926° / -121.29294°
UTM: Zone-10 N4294775 E648259
Area: 12.9 acres
Elevation: 150 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 22 Qtr: XX
Meridian: M

Location: 0.8 KM E OF HWY 65; 1.5 MILES SSW OF INTERSECTION PLEASANT GROVE CREEK AND PLACER BLVD/SUNSET BLVD; N OF ROSEVILLE.
Location Detail: HIGHLAND RESERVE SOUTH; POOL NUMBERS N10, N42, N8, NA & N6. THE ECORP 2000 SURVEY LAT/LONG GIVEN ARE NOT AT THE LOCATION THEY MAPPED; REPORT HAS TEMP, DEPTH, & SURFACE AREA OF POOLS. NONE OBSERVED IN THE POOLS SURVEYED DURING 2005.
Ecological: CONSTRUCTED & HISTORIC VERNAL POOLS WITHIN A NON-NATIVE ANNUAL GRASSLAND; WETLAND COMPENSATION/MITIGATION PRESERVE. 2/6/95: POOL HAD SURFACE AREA OF 94 SQUARE METERS & DEPTH OF 17 CM. SURROUNDING AREA COMPRISED OF URBAN/DEVELOPMENT.
General: POOL #N8: 50+ ADULTS OBS, 1995; 1 ADULT COLL. & DEP. IN CAS. 10'S OBS IN 2000, POOL #VPN10; LINDERIELLA OCCIDENTALIS IN 2 POOLS NOT IDENT IN PRESERVE. 100'S IN POOLS NA, N8, N42 4 JAN 2002. 100'S IN POOL NA 29 JAN 2003. NOT PRESENT JAN 2005
Owner/Manager: PVT-ROSEVILLE PROPERTIES

Occurrence No. 42 Map Index: 47451 EO Index: 17819

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Fluctuating

Dates Last Seen
Element: 2001-02-16
Site: 2005-01-21
Record Last Updated: 2011-07-08

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.77348° / -121.28207°
UTM: Zone-10 N4293039 E649236
Area: 28.7 acres
Elevation: 160 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 26 Qtr: SW
Meridian: M

Location: HIGHLAND RESERVE SOUTH OPEN SPACE JUST N & E OF DIAMOND OAKS MUNINCIPAL GOLF COURSE, ROSEVILLE.
Location Detail: HIGHLAND RESERVE SOUTH. BOTH NATURAL AND MANMADE VERNAL POOLS PRESENT. 2005: SELECT POOLS FROM NORTHERN PORTION OF FEATURE SURVEYED. MAPPED TO PROVIDED MAPS.
Ecological: HARDPAN VERNAL POOLS IN ANNUAL GRASSLAND; WETLAND COMPENSATION/MITIGATION PRESERVE SURROUNDED BY DEVELOPMENT AS OF 2002. ON 31 JAN 1995 THE SURFACE AREA WAS 59 (U22) & 64 (U26) SQUARE METERS & THE DEPTH WAS 35 (U22) & 14 (U26) CM.
General: OBSERVED IN 5 OF 32 SURVEYED POOLS 11 FEB 1993. 50+ OBS IN 2 POOLS 31 JAN 1995; 2 AD DEPOSITED IN CAS. 0 OBS APR 1996. 10S IN 4 POOLS, 100S IN 1 POOL 9 JAN 1997, 0 OBS FEB 1998. 100S IN 1 POOL 16 FEB 2001. 0 OBS FEB 2004. 0 OBS JAN 2005.
Owner/Manager: CITY OF ROSEVILLE

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 44 Map Index: 32456 EO Index: 1903

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1995-03-XX
Site: 1997-02-25
Record Last Updated: 2011-07-08

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.76087° / -121.33772°
UTM: Zone-10 N4291553 E644427
Area: 44.0 acres
Elevation: 120 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 32 Qtr: NW
Meridian: M

Location: SILVERADO OAKS MITIGATION SITE, NW OF THE WOODCREEK OAKS BLVD & JUNCTION BLVD JCT, ABOUT 3 MI WNW OF ROSEVILLE PO.

Location Detail: 1995: 15 WETLANDS SAMPLED AMONG PARCELS 72 (EO#44, THIS OCCURRENCE) & 32 (EO#635). 1996: 10 SAMPLED. 1997: 13 SAMPLED. PROVIDED MAP GRAPHIC APPEARED SHIFTED WEST OF TRUE LOCATION; MAPPED TO AERIAL IMAGE MATCHING PRESERVED HABITAT.

Ecological: CONSTRUCTED AND SEASONAL HARDPAN VERNAL POOLS WITH NON-NATIVE ANNUAL GRASSLAND. PROTECTED WETLAND SURROUNDED BY RESIDENTIAL DEVELOPMENT.

General: 1995: BRANCHINECTA LYNCHI OBSERVED IN CONSTRUCTED VERNAL POOLS. 1996: NO B. LYNCHI OBSERVED, BUT LINDERIELLA OCCIDENTALIS PRESENT. 1997: NO B. LYNCHI OBSERVED, BUT L. OCCIDENTALIS PRESENT.

Owner/Manager: CITY OF ROSEVILLE

Occurrence No. 45 Map Index: 32457 EO Index: 1899

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1995-03-14
Site: 1995-03-14
Record Last Updated: 1995-10-11

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.76950° / -121.32354°
UTM: Zone-10 N4292533 E645842
Radius: 1/5 mile
Elevation: 130 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 06E
Section: 29 Qtr: SE
Meridian: M

Location: BETWEEN KASEBERG CREEK & SOUTH BRANCH PLEASANT GROVE CREEK, 1.8 KM WEST OF SOUTHERN PACIFIC RR X HWY 65.

Location Detail: WOODCREEK OAKS MITIGATION SITES. 14 WATER BODIES WERE SAMPLED ON FEB 9, 10, 27 & MARCH 14, 1995. B. LYNCHI FOUND IN ONLY 1 POOL & ONLY ON 3/14/95.

Ecological: HARDPAN VERNAL POOL IN ANNUAL NON-NATIVE GRASSLAND. ON 3/14 THE SURFACE AREA WAS 129 SQ METERS & THE DEPTH WAS 18 CM. WETLAND COMPENSATION/MITIGATION PRESERVE.

General: POOL #C2: 50+ ADULTS OBSERVED; 1 ADULT COLLECTED & DEPOSITED IN CAS. THE INFORMATION PROVIDED BY THE CONSULTANT HAS CONFLICTING DATA ON THE LOCATION OF THIS POOL; THIS SITE WAS MAPPED ACCORDING TO THE MAP THEY PROVIDED, NOT THE T-R-S GIVEN.

Owner/Manager: PVT-SARES REGIS GROUP

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 48 Map Index: 32458 EO Index: 9535

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1996-01-29
Site: 1996-01-29
Record Last Updated: 2008-04-29

Quad Summary: Roseville (3812173/526D)
County Summary: Placer

Lat/Long: 38.85840° / -121.31539°
UTM: Zone-10 N4302411 E648168
Area: 19.0 acres
Elevation: 130 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 06E
Section: 28 Qtr: SW
Meridian: M

Location: INGRAM SLOUGH; 3.2 KM ESE OF MOORE ROAD X FIDDYMENT ROAD; SSW OF LINCOLN.

Location Detail: LINCOLN CROSSING MITIGATION SITE. 1995: 10 TOTAL WETLANDS SAMPLED. THE INFORMATION FROM CONSULTANT HAD DISCREPANCIES BETWEEN FIELD SURVEY FORMS & MAP - MAPPED ACCORDING TO THEIR MAP. 1996: 42 TOTAL WATERBODIES WERE SURVEYED.

Ecological: CONSTRUCTED HARDPAN VERNAL POOL IN ANNUAL NON-NATIVE GRASSLAND. WETLAND COMPENSATION/MITIGATION PRESERVE.

General: 1995: <50 ADULTS OBSERVED IN POOL #211. 1996: <50 ADULTS OBSERVED IN 5 POOLS (101, 204, 206, 216 & 220). LINDERIELLA OCCIDENTALIS ALSO PRESENT IN MOST OF SITE DURING 1995 & 1996.

Owner/Manager: PVT-STERLING PACIFIC ASSETS

Occurrence No. 90 Map Index: 32510 EO Index: 2067

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1996-01-22
Site: 1996-01-22
Record Last Updated: 1997-08-07

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.66650° / -121.41664°
UTM: Zone-10 N4280958 E637733
Radius: 80 meters
Elevation: 50 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 09N
Range: 05E
Section: 24 Qtr: NW
Meridian: M

Location: MCCLELLAN AFB; 0.25 MILE SE OF ASCOT ROAD X 20TH STREET, SACRAMENTO.

Location Detail: SMALL POOL: 15-FT X 25-FT.

Ecological: VERNAL POOL WITH ALGAE AND GRASS BOTTOM. POOL ESTIMATED TO BE 25 FEET LONG AND 15 FEET WIDE WITH A MAXIMUM DEPTH OF 10 INCHES. SURROUNDING AREA IS ANNUAL GRASSLAND. OSTRACODS, COPEPODS, AND LINDERIELLA OCCIDENTALIS ALSO PRESENT.

Threat: EXPANSION OF BASE FACILITIES; MODIFICATION OF WATERSHED; AIRCRAFT REPAIR, LIGHT INDUSTRIAL, RESIDENT, COMMERCIAL.

General: POOL #M95B (AKA MCC95B) MANY ADULTS OBSERVED ON 2/10 & 3/16/95, BUT NO STANDING WATER ON 3/2/95; 2 COLLECTED ON 2/10 (CAS #102856); 8 COLLECTED ON 3/16 (CAS-#102856). 100'S OBSERVED ON 22 JAN 1996 (COLLECTION-CAS #106746).

Owner/Manager: DOD-MCCLELLAN AFB

Occurrence No. 91 Map Index: 32518 EO Index: 1892

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1998-02-04
Site: 1998-02-04
Record Last Updated: 1998-09-29

Quad Summary: Roseville (3812173/526D)
County Summary: Placer

Lat/Long: 38.86505° / -121.29394°
UTM: Zone-10 N4303184 E648016
Area:
Elevation: 140 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 06E
Section: 27 Qtr: NW
Meridian: M

Location: EASTRIDGE SOUTHERN WETLAND PRESERVE, JUST EAST OF HWY 65 (AT THE LINCOLN RODEO GROUNDS), 0.5 MILE SE OF LINCOLN

Ecological: NORTHERN HARDPAN VERNAL POOL HABITAT WITH CONSTRUCTED VERNAL POOLS (3.95 ACRES), CONSTRUCTED SEASONAL WETLANDS (1.95 ACRES), AND REFERENCE VERNAL POOLS IN ANNUAL GRASSLAND.

Threat: FUTURE RESIDENTIAL DEVELOPMENT PLANNED IN ADJACENT AREA; DIRT ROADS BISECT PRESERVE; GRAZING; RODEO GROUNDS TO THE NW.

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

General: 1995 (SECOND MONITORING YEAR): OBS IN 7 REFERENCE VERNAL POOLS, IN 17 CONSTRUCTED VERNAL POOLS, IN 2 1996 (THIRD YEAR): OBS IN 21 OF 45 CONSTRUCTED POOLS, 6 OF 10 REFERENCE POOLS. PRESENT ON-SITE IN 1997 AND 1998.

Owner/Manager: PVT-PLACER HOLDINGS

Occurrence No. 130 Map Index: 34789 EO Index: 14402

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1992-04-01
Site: 1992-04-01
Record Last Updated: 1996-08-18

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.68218° / -121.47949°
UTM: Zone-10 N4282605 E632253
Radius: 80 meters
Elevation: 40 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 10N
Range: 05E
Section: 31 Qtr: N
Meridian: M

Location: ALONG UNION PACIFIC RR (USED TO BE WESTERN PACIFIC RR?); 0.2 MILES SOUTH OF ELKHORN BLVD, RIO LINDA.

General: KOFORD OBSERVED B. LYNCHI DURING SURVEY IN SPRING OF 1992; LINDERIELLA OCCIDENTALIS ALSO OBSERVED.

Owner/Manager: PVT-UNION PACIFIC RR

Occurrence No. 137 Map Index: 34810 EO Index: 2496

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-02-25
Site: 1999-02-25
Record Last Updated: 2011-07-08

Quad Summary: Pleasant Grove (3812174/528C)
County Summary: Placer

Lat/Long: 38.78337° / -121.44842°
UTM: Zone-10 N4293880 E634768
Area: 59.8 acres
Elevation: 60 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 05E
Section: 20 Qtr: SW
Meridian: M

Location: NORTHEAST OF CURRY CREEK AT SOUTH BREWER ROAD, ABOUT 3 MILES SOUTHEAST OF PLEASANT GROVE.

Location Detail: BASELINE BREWER MITIGATION SITE; A TOTAL OF 46 WATERBODIES WERE SURVEYED IN FEBRUARY/MARCH 1996. PROPERTY MANAGER: EVERGREEN MANAGEMENT.

Ecological: CONSTRUCTED AND EXISTING SEASONAL WATERBODIES WITHIN NON-NATIVE ANNUAL GRASSLAND. LASTHENIA FREMONTII, NAVARRETIA LEUCOCEPHALA, & ELOCHARIS MACROSTACHYA DOMINANT. LINDERIELLA OCCIDENTALIS ALSO PRESENT IN MITIGATION SITE.

General: 1996: B. LYNCHI OBS IN 7 POOLS (#105, 122, 140 & 143 OBS >50; POOLS #131, 133 & 148 OBS <50). 1997: 10'S OBS IN #107 & 142. 1998: 100'S OBS IN VP# 121, 142 & 143; 1000'S OBS IN VP# 122. 1999: 100'S OBS IN MANY POOLS WITHIN MONITORED AREA.

Owner/Manager: PVT-ROSEVILLE 150 PARTNERSHIP

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status — Federal: Threatened; State: None

NDDB Element Ranks — Global: G3; State: S2S3

Other Lists — CDFG Status:

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS. IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 139 — Map Index: 34813 — EO Index: 1874

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1996-01-30; Site: 1996-03-11; Record Last Updated: 2002-03-22

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.80312° / -121.30397°
UTM: Zone-10 N4296296 E647273
Area: 33.4 acres
Elevation: 105 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N; Range: 06E; Section: 16; Meridian: M; Qtr: NE

Location: NORTH OF ROSEVILLE; BETWEEN HWY 65 AND INDUSTRIAL AVENUE; 0.3 KM WSW OF HWY 65 X PLEASANT GROVE CREEK.

Location Detail: FOOTHILL BUSINESS PARK MITIGATION SITE, PARCEL 1. 1995: 12 WATERBODIES SURVEYED. 1996: 14 WATERBODIES SURVEYED. 1997: 29 WATERBODIES SURVEYED.

Ecological: CONSTRUCTED VERNAL POOLS WITHIN NON-NATIVE ANNUAL GRASSLAND. POOL #VP32-1995: SURFACE AREA WAS 0, DEPTH WAS 39.0 CM; 1996: SURFACE AREA WAS 461 SQ METERS, DEPTH WAS 19.0 CM.

General: 1/14/1997: 10'S SEEN IN 2 POOLS (VP12 & 29). 1/30/1996: >50 FAIRY SHRIMP OBSERVED IN POOL #VP32; LINDERIELLA OCCIDENTALIS ALSO PRESENT.

Owner/Manager: PVT-STANFORD RANCH

Occurrence No. 141 — Map Index: 34919 — EO Index: 17500

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1996-01-30; Site: 1996-01-30; Record Last Updated: 1996-07-17

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.86474° / -121.30580°
UTM: Zone-10 N4303130 E646987
Radius: 80 meters
Elevation: 140 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N; Range: 06E; Section: 28; Meridian: M; Qtr: NE

Location: NNW OF ROSEVILLE IN INGRAM SLOUGH; 0.4 KM WEST OF HWY 65 X INDUSTRIAL BLVD.

Location Detail: LICOLN CROSSING MITIGATION SITE. 1996: 42 TOTAL WATERBODIES SURVEYED.

Ecological: CONSTRUCTED HARDPAN VERNAL POOL WITHIN NON-NATIVE ANNUAL GRASSLAND. WETLAND COMPENSATION/MITIGATION PRESERVE.

General: 1996: <50 ADULTS OBSERVED IN POOL #222; SURFACE AREA=574 SQ METERS, WATER DEPTH=32.0 CM, TEMPERATURE= 11.5 DEGREES C, CONDUCTIVITY=75.80, TURBIDITY WAS LOW. LINDERIELLA ALSO PRESENT IN POOL AND IN SURROUNDING AREAS.

Owner/Manager: PVT-STERLING PACIFIC ASSETS

Occurrence No. 145 — Map Index: 28339 — EO Index: 29428

Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1995-01-14; Site: 1995-01-14; Record Last Updated: 1996-09-24

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.63202° / -121.47038°
UTM: Zone-10 N4277052 E633139
Area: 14.6 acres
Elevation: 25 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 09N; Range: 05E; Section: 03; Meridian: M; Qtr: SW

Location: 200 FEET NORTH OF SILVER EAGLE ROAD BRIDGE, ADJ. TO NATOMAS MAIN DRANIAGE CANAL LEVEE ROAD; 1.1 KM SOUTH OF HWY 80.

Location Detail: EAST SIDE OF LEVEE ROAD, WEST SIDE OF WESTERN PACIFIC RR TRACKS IN ROW.

Ecological: LONG POOL (14 FEET WIDE AND 275 FEET LONG, DEPTH=0.15M) IN TIRE RUTS FROM VEHICLES; TEMP=16.5 DEGREES CELSIUS, VERY TURBID WATER. INUNDATED AREA DEVOID OF VEGETATION; SOIL IS SANDY CLAY LOAM; SITE HAS 0% SLOPE AND A FLAT ASPECT.

Threat: MAINTENANCE ROAD FRO WESTERN PACIFIC RR, AREA IMPACTED BY SACRAMENTO AREA FLOOD CONTROL AGENCY.

General: 2 SITES IN SAME POOL WERE SAMPLED: IN SOUTHERN SITE FEW (<50) ADULTS WERE OBSERVED, & A VOUCHER SPECIMEN WAS COLLECTED & DEPOSITED IN CAS. IN NORTHERN SITE MANY (>50) ADULTS WERE OBSERVED, & 3 VOUCHER SPECIMENS COLLECTED & DEPOSITED IN CAS.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: PVT-WESTERN PACIFIC RR

Occurrence No. 146 — Map Index: 28338 — EO Index: 29127

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1995-02-22 — Site: 1995-02-22 — Record Last Updated: 1996-09-24

Quad Summary: Rio Linda (3812164/5128)
County Summary: Sacramento

Lat/Long: 38.66796° / -121.47418° — Township: 09N
UTM: Zone-10 N4281035 E632742 — Range: 05E
Radius: 80 meters — Mapping Precision: SPECIFIC — Section: 05 — Qtr: NW
Elevation: 20 ft — Symbol Type: POINT — Meridian: M

Location: APPROX. 1500 FEET NORTHEAST OF NATOMAS EAST MAIN DRAINAGE CANAL X DRY CREEK; 700 FEET SE OF ASCOT AVE X WEST 6TH ST.

Ecological: SEASONAL POND (500 FEET LONG X 45 FEET WIDE); AVERAGE DEPTH=6 INCHES; MAX. DEPTH=20 INCHES; TEMP=21.5 DEGREES CELSIUS; TURBIDITY=88%; CONDUCTIVITY=98 MICROHOS/CM.

Threat: CATTLE GRAZING AND CITY PLANS FOR GOLF COURSE DEVELOPMENT (HANSEN RANCH).

General: <10 ADULTS OBSERVED IN POND, NO VOUCHER SPECIMENS TAKEN.

Owner/Manager: CITY OF SACRAMENTO

Occurrence No. 154 — Map Index: 33672 — EO Index: 30807

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2005-XX-XX — Site: 2005-XX-XX — Record Last Updated: 2006-03-23

Quad Summary: Roseville (3812173/5280), Pleasant Grove (3812174/5280)
County Summary: Placer

Lat/Long: 38.80163° / -121.37194° — Township: 11N
UTM: Zone-10 N4296023 E641373 — Range: 05E
Area: 1,972.8 acres — Mapping Precision: SPECIFIC — Section: 13 — Qtr: XX
Elevation: 95 ft — Symbol Type: POLYGON — Meridian: M

Location: NORTH OF PHILLIP ROAD IN THE VICINITY OF PLEASANT GROVE CREEK, NORTHWEST OF ROSEVILLE.

Location Detail: VERNAL POOLS ARE FOUND IN T11N, R05E, SECTIONS 13, 14 & 24 & IN T11N, R06E, SECTION 18. THIS AREA IS IN THE WEST ROSEVILLE SPECIFIC PLAN. PART OF THE AREA IS BEING DEVELOPED & PART IS AN OPEN SPACE PRESERVE.

Ecological: NATURAL VERNAL POOLS.

Threat: AREA IS BEING DEVELOPED.

General: 1993: OBS IN 16 OF 52 POOLS IN SEC 13, IN 4 OF 9 POOLS IN SEC 14, & IN 3 POOLS IN SEC 18. NO LEPIDURUS PACKARDI OBS. SUGNET RECORD #'S 87, 88 & 91. 2005: OBS IN NW 1/4 OF SEC 24 IN POOLS #273, 277, 287 & 291 & IN SEC 13 POOL #15.

Owner/Manager: UNKNOWN

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 155 Map Index: 33674 EO Index: 30608

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-01-27
Site: 1993-01-27
Record Last Updated: 2006-03-23

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.77370° / -121.35736°
UTM: Zone-10 N4292930 E641825
Area: 610.4 acres
Elevation: 110 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 05E
Section: 25
Meridian: M
Qtr: XX

Location: SOUTH OF PHILLIP ROAD AND WEST OF FIDDYMENT ROAD, WNW OF ROSEVILLE.

Location Detail: VERNAL POOLS LOCATED SOMEWHERE IN SECTION 25.

Ecological: NATURAL VERNAL POOLS.

General: B. LYNCHI OBSERVED IN 6 OF 31 FEATURES INSPECTED. NO LEPIDURUS PACKARDI OBSERVED. SUGNET RECORD NUMBER 89.

Owner/Manager: UNKNOWN

Occurrence No. 156 Map Index: 33673 EO Index: 30606

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-02-18
Site: 1993-02-18
Record Last Updated: 1997-04-07

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.80288° / -121.31238°
UTM: Zone-10 N4296266 E646544
Radius: 3/5 mile
Elevation: 100 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 06E
Section: 16
Meridian: M
Qtr: XX

Location: WEST OF HWY 65 & NORTH OF SCOW ROAD, NNW OF ROSEVILLE.

Location Detail: VERNAL POOLS LOCATED SOMEWHERE IN SECTION 16.

Ecological: NATURAL VERNAL POOLS.

General: B. LYNCHI WAS FOUND IN 5 OF 54 FEATURES INSPECTED. NO LEPIDURUS PACKARDI OBSERVED. SUGNET RECORD #90.

Owner/Manager: UNKNOWN

Occurrence No. 157 Map Index: 33676 EO Index: 30431

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-01-18
Site: 1993-01-18
Record Last Updated: 1997-03-12

Quad Summary: Lincoln (3812183/526A), Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.87538° / -121.29395°
UTM: Zone-10 N4304331 E647993
Radius: 3/5 mile
Elevation: 160 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 22
Meridian: M
Qtr: XX

Location: SOUTH OF AUBURN RAVINE, ON BOTH SIDES OF HWY 65, SOUTH OF LINCOLN.

Location Detail: VERNAL POOLS LOCATED SOMEWHERE IN SECTION 22.

Ecological: NATURAL VERNAL POOLS.

General: B. LYNCHI OBSERVED IN 2 OF 5 FEATURES INSPECTED. NO LEPIDURUS PACKARDI OBSERVED. SUGNET RECORD #95.

Owner/Manager: UNKNOWN

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 167 Map Index: 33694 EO Index: 30606

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1992-04-01
Site: 1992-04-01
Record Last Updated: 1997-03-20

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.67805° / -121.47978°
UTM: Zone-10 N4282147 E632235
Area:
Elevation: 30 ft.

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 10N
Range: 05E
Section: 31 Qtr: XX
Meridian: M

Location: SOUTH OF ELKHORN BLVD, WEST OF WEST 6TH ST, EAST OF NATOMAS EAST MAIN DRAINAGE CANAL, SOUTHWEST OF RIO LINDA.
Location Detail: LOCATED SOMEWHERE IN SECTION 31.
Ecological: MANMADE ROADSIDE DITCH.
General: UNKNOWN NUMBER OF B. LYNCHI OBSERVED IN THE ONE FEATURE INSPECTED. SUGNET RECORD #82. NO LEPIDURUS PACKARDI OBSERVED.
Owner/Manager: UNKNOWN

Occurrence No. 175 Map Index: 33707 EO Index: 30604

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-03-12
Site: 1993-03-12
Record Last Updated: 1997-03-11

Quad Summary: Pleasant Grove (3812174/528C), Verona (3812175/529D)
County Summary: Sutter

Lat/Long: 38.77305° / -121.49794°
UTM: Zone-10 N4292663 E630483
Radius: 3/5 mile
Elevation: 35 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 04E
Section: 26 Qtr: XX
Meridian: M

Location: SOUTHWEST OF THE INTERSECTION OF PLEASANT GROVE ROAD AND SANKEY ROAD.
Location Detail: ROADSIDE DITCHES SOMEWHERE IN SECTION 26.
Ecological: MANMADE ROADSIDE DITCHES.
General: B. LYNCHI OBSERVED IN THE ONE FEATURE INSPECTED. SUGNET RECORD #86. LEPIDURUS PACKARDI ALSO OBSERVED.
Owner/Manager: UNKNOWN

Occurrence No. 182 Map Index: 36118 EO Index: 31113

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-01-22
Site: 1997-01-22
Record Last Updated: 1997-07-15

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.71116° / -121.47762°
UTM: Zone-10 N4285824 E632363
Radius: 80 meters
Elevation: 31 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 10N
Range: 05E
Section: 19 Qtr: NW
Meridian: M

Location: 0.25 MILE SOUTH OF ELVERTA ROAD AND 0.4 MILE EAST OF SORENTO ROAD, WEST OF ELVERTA
Ecological: HABITAT CONSISTS OF A VERNAL POOL (12-14 INCHES DEEP); ASSOCIATED PLANT SPECIES INCLUDE CALLITRICHE MARGINATA, ELEOCHARIS MACROSTACHYA, LASTHENIA GLABRATA, LILEA SCILLOIDES, LIMNANTHES ALBA, AND OTHERS. LINDERIELLA OCCIDENTALIS ALSO PRESENT
Threat: POSSIBLY THREATENED BY CONTAMINATED RUNOFF FROM A CEMENT MIXING FACILITY SE OF THE SITE.
General: 30 ADULTS OBSERVED ON 22 JAN 1997.
Owner/Manager: WESTERN AREA POWER ADMIN

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 191 Map Index: 36947 EO Index: 31944
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-01-17
Site: 1997-01-17
Record Last Updated: 2006-04-29

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84424° / -121.31478°
UTM: Zone-10 N4300841 E646250
Radius: 1/5 mile
Elevation: 115 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 33 Qtr: SW
Meridian: M

Location: ORCHARD CREEK AREA, 0.25 MILE NORTH OF ATHENS AVENUE (PLEASANT GROVE BLVD) AND WEST OF SPRR TRACKS, NORTH OF ROSEVILLE.

Location Detail: SITE IS LOCATED ON A 632-ACRE MITIGATION BANK PRESERVE. THIS UNDEVELOPED PASTURELAND IS BEING ESTABLISHED AS A MITIGATION BANK.

Ecological: HABITAT CONSISTS OF NORTHERN HARDPAN VERNAL POOLS.

Threat: DEVELOPMENT

General: AN UNSPECIFIED NUMBER OF FAIRY SHRIMP WERE OBSERVED ON 17 JAN 1997.

Owner/Manager: PVT-WILDLANDS INC

Occurrence No. 195 Map Index: 38258 EO Index: 33263
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-01-16
Site: 1997-01-16
Record Last Updated: 1998-03-02

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.78083° / -121.34926°
UTM: Zone-10 N4293749 E643384
Area:
Elevation: 120 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 30 Qtr: XX
Meridian: M

Location: EAST OF FIDDYMENT ROAD, WEST OF FOOTHILLS BLVD, AND NORTH OF BASELINE ROAD, NW OF ROSEVILLE.

Ecological: HABITAT CONSISTS OF SEASONAL WETLANDS, REFERENCE VERNAL POOLS, AND CONSTRUCTED VERNAL POOLS WITHIN A DESIGNATED WETLAND MITIGATION AREA. SURROUNDING UPLAND CONSISTS OF NON-NATIVE ANNUAL GRASSLAND/MIXED OAK WOODLAND.

Threat: THREATENED BY SURROUNDING DEVELOPMENT (GOLF COURSES AND RESIDENTIAL DEVELOPMENT).

General: VERNAL POOL FAIRY SHRIMP WERE IDENTIFIED WITHIN 71 CONSTRUCTED VERNAL POOLS AND SEASONAL WETLANDS. LINDERIELLA OCCIDENTALIS ALSO OBSERVED.

Owner/Manager: PVT

Occurrence No. 198 Map Index: 38629 EO Index: 33838
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-11-06
Site: 1997-11-06
Record Last Updated: 1998-04-20

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.85775° / -121.37303°
UTM: Zone-10 N4302249 E641167
Radius: 60 meters
Elevation: 100 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 05E
Section: 25 Qtr: SW
Meridian: M

Location: MOORE RANCH PROPERTY, 0.8 MILE NORTH OF PLEASANT VALLEY ROAD, SOUTH OF AUBURN RAVINE, 7 MILES NNW OF ROSEVILLE.

Ecological: HABITAT CONSISTS OF A VERNAL POOL IN GRAZED ANNUAL GRASSLAND.

General: SITE WAS HISTORICALLY (SINCE AT LEAST 1937) DISKED; HAS ONLY BEEN GRAZED OVER THE PAST SEVERAL YEARS. 8 CYSTS FOUND IN POOL #3 (PRESUMED TO BE BRANCHINESTA LYNCHI, SINCE THAT IS THE ONLY MEMBER OF THAT GENUS KNOWN TO OCCUR IN THIS AREA).

Owner/Manager: UNKNOWN

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 235 Map Index: 42745 EO Index: 42745
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-01-17
Site: 1997-01-17
Record Last Updated: 2000-04-12

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84578° / -121.30699°
UTM: Zone-10 N4301021 E646749
Radius: 80 meters
Elevation: 120 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 33
Meridian: M
Qtr: SE

Location: 0.5 MILE N OF PLEASANT GROVE RD & SP RR, 1.7 MILES ESE OF ORCHARD CREEK & INGRAM SLOUGH CONFLUENCE, NNW OF ROSEVILLE.

Location Detail: FOUND IN THE SOUTHEAST PORTION OF THE ORCHARD CREEK MIDIGATION BANK. MAJORITY OF VERNAL POOLS ARE ON SAN JOAQUIN SANDY LOAM AND ALAMO-FIDDYMENT COMPLEX SOILS.

Ecological: VERNAL POOLS ENDEMIC VEGETATION: RANUNCULUS ALVEOLATUS, ERYNGIUM VASEYI, PLAGIOBOTHRYS STIPITAUS, PSILICARPHUS ZIZYPHOROIDES, DESCHAMPSIA DAMTHONIOIDES, NAVARRETIA LEUCOCEPHALA

General: OBSERVED SHRIMP IN 2 OF THE 170 SURVEY POOLS SAMPLED. THIS POOL WAS RATED AS LOW IN ABUNDANCE (LESS THAN ONE INDIVIDUAL PER PULL).

Owner/Manager: UNKNOWN

Occurrence No. 236 Map Index: 42746 EO Index: 42746
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1997-01-17
Site: 1997-01-17
Record Last Updated: 2000-04-12

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84043° / -121.32009°
UTM: Zone-10 N4300410 E645798
Radius: 80 meters
Elevation: 115 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 33
Meridian: M
Qtr: SW

Location: 0.7 MILE W OF PLEASANT GROVE RD & SP RR, 1.3 MILES SE OF ORCHARD CREEK & INGRAM SLOUGH CONFLUENCE, NNW OF ROSEVILLE.

Location Detail: FOUND IN THE SOUTHWEST PORTION OF THE ORCHARD CREEK MIDIGATION BANK. MAJORITY OF VERNAL POOLS ARE ON SAN JOAQUIN SANDY LOAM AND ALAMO-FIDDYMENT COMPLEX SOILS.

Ecological: VERNAL POOLS ENDEMIC VEGETATION: RANUNCULUS ALVEOLATUS, ERYNGIUM VASEYI, PLAGIOBOTHRYS STIPITAUS, PSILICARPHUS ZIZYPHOROIDES, DESCHAMPSIA DAMTHONIOIDES, NAVARRETIA LEUCOCEPHALA

General: OBSERVED SHRIMP IN 2 OF THE 170 SURVEY POOLS SAMPLED. THIS POOL WAS RATED MEDIUM IN ABUNDANCE (1 TO 5 INDIVIDUALS PER PULL).

Owner/Manager: UNKNOWN

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 247 Map Index: 43395 EO Index: 43395

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-08
Site: 2001-03-08
Record Last Updated: 2004-06-22

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.92671° / -121.29569°
UTM: Zone-10 N4298927 E647942
Radius: 80 meters
Elevation: 150 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 06E
Section: 03
Meridian: M
Qtr: SW

Location: STANFORD RANCH NORTH, 0.75 MILES NNE JCT OF SUNSET BLVD & HWY 65, 1.8 MILES WSW OF TELEGRAPH HILL, ~4 MILES N OF ROCKLIN

Location Detail: VERNAL POOL AT THIS SITE NUMBERED VP42, MAX SURFACE AREA ~10 METERS BY 13 METERS & 35 CM DEEP. B. LYNCHI FOUND IN 1 OF 65 SEASONAL WATERBODIES SURVEYED BETWEEN 28 JAN & 24 MAR 2000.

Ecological: HABITAT CONSISTS OF FORMERLY GRAZED, NON-NATIVE ANNUAL GRASSLAND, INTERSPERSED WITH VERNAL POOLS.

Threat: DISTURBED FIELD (SOURCE OF DISTURBANCE NOT GIVEN)

General: VPFS NUMBERING IN THE 10'S OBSERVED ON 11 FEB 2000 (2 FEMALES) AND ON 25 FEB 2000 (2 MALES) IN VERNAL POOL #VP42. 8 MAR 2001: 1 MALE OBSERVED WITHIN POOL #42.

Owner/Manager: PVT

Occurrence No. 293 Map Index: 45435 EO Index: 45435

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-01-10
Site: 2006-01-10
Record Last Updated: 2006-03-22

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.77040° / -121.27237°
UTM: Zone-10 N4292715 E650085
Area: 13.3 acres
Elevation: 185 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 26
Meridian: M
Qtr: SE

Location: HIGHLAND RESERVE SOUTH OPEN SPACE, ON THE WEST SIDE OF EAST ROSEVILLE PARKWAY, ROSEVILLE.

Location Detail: FOUND IN POOLS #5, #8, AND #27 IN 2003; IN POOL LVP IN 2006.

Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND INTERSPERSED WITH BOTH CONSTRUCTED AND HISTORIC VERNAL POOLS.

General: 10'S OBSERVED IN POOL #8 AND 100'S OBSERVED IN POOL #27 ON 16 FEB 2001. ONLY 2 FEMALES OBSERVED IN POOL #5 ON 4 JAN 2002. 10'S OF ADULTS OBSERVED 24 JAN 2003 IN POOL #5.

Owner/Manager: CITY OF ROSEVILLE

Occurrence No. 304 Map Index: 46034 EO Index: 46034

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2003-01-17
Site: 2003-01-17
Record Last Updated: 2004-10-28

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.76449° / -121.34970°
UTM: Zone-10 N4291935 E643379
Radius: 80 meters
Elevation: 125 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 06E
Section: 31
Meridian: M
Qtr: NW

Location: WOODCREEK WEST WETLAND COMPENSATION AREA, 2.7 MILES NW OF WEST EDGE OF ROSEVILLE.

Location Detail: 0.9 MILES NORTH OF THE INTERSECTION OF FIDDYMENT ROAD AND BASE LINE ROAD AND THEN NEAR 0.8 MILES DIRECTLY EAST.

Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND INTERSPERSED WITH CONSTRUCTED AND HISTORIC VERNAL POOLS.

General: MORE THAN 10 ADULTS OBSERVED IN POOL 55 ON 15 FEB 2001. 10'S OF ADULTS OBSERVED IN POOLS 49 AND 55 ON 17 JAN 2003.

Owner/Manager: CITY OF ROSEVILLE

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 307 Map Index: 46096 EO Index: 46096

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-09
Site: 2001-03-09
Record Last Updated: 2001-10-10

Quad Summary: Roseville (3812173/526D)
County Summary: Placer

Lat/Long: 38.87145° / -121.32514°
UTM: Zone-10 N4303844 E645295
Radius: 80 meters
Elevation: 120 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 20 Qtr: SE
Meridian: M

Location: SW OF LINCOLN; 0.15 MILES SOUTH OF MOORE ROAD AND 0.25 MILES NW OF INGRAM SLOUGH.
Ecological: HABITAT CONSISTS OF LAND WHICH HAS BEEN DRY-FARMED (DISKED ETC.)
Threat: AGRICULTURE - DRY-FARMING.
General: 10'S OF ADULTS OBSERVED. 5 INDIVIDUALS COLLECTED TO BE DEPOSITED AT CAL ACADEMY OF SCIENCES.
Owner/Manager: UNKNOWN

Occurrence No. 308 Map Index: 46098 EO Index: 46098

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-09
Site: 2001-03-09
Record Last Updated: 2001-10-10

Quad Summary: Roseville (3812173/526D)
County Summary: Placer

Lat/Long: 38.85475° / -121.32838°
UTM: Zone-10 N4301988 E645048
Radius: 80 meters
Elevation: 120 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 12N
Range: 06E
Section: 29 Qtr: SE
Meridian: M

Location: SW OF LINCOLN. 1.1 MILES EAST FIDDYMENT RD & 1.1 MILES NORTH PLEASANT GROVE RD BETWEEN INGRAM SLOUGH & ORCHARD CREEK.
Location Detail: 375 FT SOUTH OF POND.
Ecological: HABITAT CONSISTS OF GRAZED NON-NATIVE GRASSLAND. LINDERIELLA OCCIDENTALIS ALSO FOUND HERE.
General: 10'S OF ADULTS OBSERVED. 8 COLLECTED TO BE DEPOSITED AT CAL ACADEMY OF SCIENCES.
Owner/Manager: UNKNOWN

Occurrence No. 309 Map Index: 46106 EO Index: 46106

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-07
Site: 2005-01-07
Record Last Updated: 2005-10-17

Quad Summary: Roseville (3812173/526D)
County Summary: Placer

Lat/Long: 38.78973° / -121.33683°
UTM: Zone-10 N4294757 E644445
Area:
Elevation: 115 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 20 Qtr: NW
Meridian: M

Location: 1 MILE SW OF THE INTERSECTION OF FIDDYMENT ROAD AND PLEASANT GROVE CREEK, ROSEVILLE
Location Detail: WOODCREEK NORTH OPEN SPACE PRESERV/WETLAND COMPENSATION AREA; POOL #6.
Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND WITH CONSTRUCTED AND HISTORIC VERNAL POOLS SURROUNDED BY OAK WOODLAND. LINDERIELLA OCCIDENTALIS ALSO FOUND HERE.
General: MORE THAN 100 INDIVIDUALS OBSERVED IN POOL #6 ON 7 MAR 2001. NONE OBSERVED DURING A SURVEY CONDUCTED ON 28 FEB 2002. NONE OBSERVED 7 JAN 2005.
Owner/Manager: CITY OF ROSEVILLE

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 315 Map Index: 64299 EO Index: 47900

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2005-03-02
Site: 2005-03-02
Record Last Updated: 2011-04-25

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84960° / -121.35766°
UTM: Zone-10 N4301369 E642515
Area:
Elevation: 100 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 06E
Section: 31 Qtr: NW
Meridian: M

Location: IN THE GENERAL AREA NW OF FIDDYMENT RD AT E CATLETT RD, S OF ORCHARD CREEK, 4.5 MILES SW OF LINCOLN PO.

Location Detail: IN 2002, B. LYNCHI FOUND IN POOLS #49 & 135. IN 2003, B. LYNCHI FOUND IN POOLS #31, 156, 161 & 210. IN 2005, B. LYNCHI FOUND IN POOLS #116 & 210. LOCATED IN NW1/4 SEC 31 & NE1/4 SEC 36.

Ecological: HABITAT CONSISTS OF A GRASSLAND/VERNAL POOL RESTORATION SITE. LINDERIELLA OCCIDENTALIS ALSO FOUND AT THIS SITE.

General: NONE OBSERVED IN 1997. 10'S - 100'S OBSERVED ON 14 JAN 2002. 10'S OBSERVED IN EACH POOL DURING SURVEYS ON 17 & 23 JAN 2003. 10'S OBSERVED 2 MAR 2005.

Owner/Manager: MOORE RANCH CONSERVANCY

Occurrence No. 319 Map Index: 47287 EO Index: 48240

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2002-01-21
Site: 2002-01-21
Record Last Updated: 2002-07-12

Quad Summary: Pleasant Grove (3812174/528C)
County Summary: Placer

Lat/Long: 38.85698° / -121.38635°
UTM: Zone-10 N4302143 E640013
Area:
Elevation: 90 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 05E
Section: 26 Qtr: XX
Meridian: M

Location: AITKEN RANCH MITIGATION BANK. ALONG AUBURN RAVINE S OF MOORE RD, N OF PLEASANT GROVE BLVD & WEST OF DOWD AVE.

Ecological: HABITAT CONSISTS OF LIGHTLY GRAZED ANNUAL GRASSLAND & VERNAL POOL LANDSCAPE. SWAINSON'S HAWK OBSERVED FORAGING (SPRING, SUMMER, FALL) IN VICINITY. SITE IS A CONSERVATION BANK. SURROUNDING LAND COMPRISED OF RICE FARMING & CATTLE GRAZING.

General: 21 JAN 2002: POPULATION OF POOL ESTIMATED TO BE IN 100'S; 1 MALE AND 1 FEMALE COLLECTED.

Owner/Manager: PVT-WILDLANDS INC

Occurrence No. 320 Map Index: 48242 EO Index: 48242

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2002-01-10
Site: 2002-01-10
Record Last Updated: 2002-07-15

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.84871° / -121.31724°
UTM: Zone-10 N4301333 E646027
Area:
Elevation: 120 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 06E
Section: 33 Qtr: XX
Meridian: M

Location: ORCHARD CREEK CONSERVATION SITE; 6 MILES NORTH OF ROSEVILLE.

Location Detail: 0.8 MILE SOUTH OF MOORE ROAD AND 1.2 MILES EAST OF FIDDYMENT ROAD. BORDERED TO THE SOUTH BY PLEASANT GROVE BLVD AND TO THE EAST BY RAILROAD TRACKS.

Ecological: HABITAT CONSISTS OF NATURALLY OCCURRING VERNAL POOLS, SEASONAL WET SWALES, EMERGENT MARSH, SEASONAL WETLANDS AND INTERMITTANT/SEASONAL STREAMS. MAJORITY OF VERNAL POOLS LOCATED ON SAN JOAQUIN SANDY LOAM AND ALAMO-FIDDYMENT COMPLEX SOILS.

General: 100'S OF ADULTS OBSERVED WITHIN UNKNOWN NUMBER OF POOLS ON 10 JAN 2002. VERNAL POOLS CONCENTRATED THROUGHOUT THIS SITE.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: PVT-WILDLANDS INC

Occurrence No. 329 Map Index: 48419 EO Index: 48419
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2005-01-10
Site: 2005-01-10
Record Last Updated: 2005-12-28

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.76501° / -121.38644°
UTM: Zone-10 N4291982 E642792
Radius: 80 meters
Elevation: 130 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 11N
Range: 06E
Section: 31 Qtr: NW
Meridian: M

Location: 3.5 MILES WNW OF ROSEVILLE. JUST NORTH OF POWER LINES, 0.1 MILE EAST OF FIDDYMENT ROAD.
Location Detail: WOODCREEK WEST WETLAND COMPENSATION AREA, POOLS #17 (2002), #9, #22 (2003), #22 (2005).
Ecological: HABITAT CONSISTS OF CONSTRUCTED AND HISTORIC VERNAL POOLS WITHIN AN ANNUAL GRASSLAND HABITAT; WETLAND COMPENSATION AREA. POOL DEPTH: 15CM. SURROUNDING LAND IS DEVELOPMENT.
General: 10'S OBSERVED ON 18 JAN 2002 IN A POOL CONSTRUCTED IN 1990. ON 17 JAN 2003 10'S OBSERVED IN POOL #9 AND HUNDREDS OBSERVED IN POOL #22. 10 JAN 2005: 10'S OBS IN POOL #22 (FOUND IN 1 OF 22 POOLS SAMPLED).
Owner/Manager: CITY OF ROSEVILLE

Occurrence No. 412 Map Index: 64328 EO Index: 64407
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2005-02-10
Site: 2005-02-10
Record Last Updated: 2006-03-23

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.78444° / -121.36623°
UTM: Zone-10 N4294120 E641729
Radius: 80 meters
Elevation: 90 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 11N
Range: 05E
Section: 24 Qtr: XX
Meridian: M

Location: ABOUT 0.6 MILES WNW OF INTERSECTION OF FIDDYMENT AND PHILLIPS ROADS.
Location Detail: POOL #590
Ecological: IN AGRICULTURAL AND RESIDENTIAL AREA.
General: 10S OBSERVED.
Owner/Manager: PVT

Occurrence No. 420 Map Index: 66815 EO Index: 66972
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-01-06
Site: 2006-01-06
Record Last Updated: 2006-10-26

Quad Summary: Rio Linda (3812164/512B)
County Summary: Placer

Lat/Long: 38.74321° / -121.44538°
UTM: Zone-10 N4289428 E635107
Radius: 1/10 mile
Elevation: 63 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 10N
Range: 05E
Section: 09 Qtr: NW
Meridian: M

Location: ABOUT 0.35 MILES WEST OF PALLADAY ROAD AND 0.58 MILES SOUTH OF BASE LINE ROAD.
Ecological: SITE CONSISTS OF ANNUAL GRASSLAND COMPRISED OF NATURALIZED MEDITERRANEAN GRASSES AND NUMEROUS ASSOCIATED VERNAL POOLS (OVER 200), SEASONAL WETLANDS, AND SEASONAL WETLAND SWALES.
Threat: COMMERCIAL & RESIDENTIAL DEVELOPMENT. SITE IS DISTURBED BY DUMPED GARBAGE AND NUMEROUS TIRE TRACKS FROM ORV ACTIVITY.
General: ABOUT 10 ADULTS OBSERVED IN VP-29.
Owner/Manager: PVT

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 421 Map Index: 66816 EO Index: 66973

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-01-05
Site: 2006-01-05
Record Last Updated: 2006-10-26

Quad Summary: Rio Linda (3812164/512B)
County Summary: Placer

Lat/Long: 38.74249° / -121.46410°
UTM: Zone-10 N4289320 E633479
Radius: 1/10 mile
Elevation: 48 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 10N
Range: 05E
Section: 06
Meridian: M
Qtr: NW

Location: JUST EAST OF LOCUST ROAD ABOUT 0.63 MILE SOUTH OF BASE LINE ROAD.

Ecological: SITE CONSISTS OF ANNUAL GRASSLAND COMPRISED OF NATURALIZED MEDITERRANEAN GRASSES AND NUMEROUS ASSOCIATED VERNAL POOLS (OVER 200), SEASONAL WETLANDS, AND SEASONAL WETLAND SWALES. SITE APPEARS TO BE DISCED ANNUALLY FOR VEGETATION CONTROL.

Threat: COMMERCIAL AND RESIDENTIAL DEVELOPMENT. SITE IS DISTURBED BY GARBARGE DUMPING AND ORV ACTIVITY.

General: ABOUT 1000 ADULTS OBSERVED IN SW-281 AREA.

Owner/Manager: PVT

Occurrence No. 429 Map Index: 68132 EO Index: 68278

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-01-08
Site: 2007-01-08
Record Last Updated: 2007-02-15

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.63980° / -121.40682°
UTM: Zone-10 N4277878 E638745
Radius: 80 meters
Elevation: 59 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 09N
Range: 05E
Section: 14
Meridian: M
Qtr: NE

Location: SOUTH SIDE RAILROAD DITCH, SOUTH OF DUDLEY BOULEVARD, MCCLELLAN PARK, SACRAMENTO.

Ecological: HABITAT CONSISTS OF A DISTURBED ROADSIDE DITCH, SURROUNDED BY RELATIVELY UNDISTURBED NON-NATIVE GRASSLAND WITHIN AN INDUSTRIAL AREA OF FORMER MCCLELLAN AIR FORCE BASE (NOW MCCLELLAN PARK). LINDERIELLA OCCIDENTALIS FOUND AT THE SAME SITE.

General: APPROXIMATELY 200 ADULTS AND 50 JUVENILES OBSERVED ON 8 JAN 2007; 10 VOUCHER SPECIMENS COLLECTED (ACCESSION LOCATION TO BE DETERMINED BY USFWS).

Owner/Manager: PVT-MCCLELLAN PARK

Occurrence No. 626 Map Index: 78877 EO Index: 79848

Occ Rank: Excellent
Origin: Natural/Naive occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2010-02-23
Site: 2010-02-23
Record Last Updated: 2010-05-19

Quad Summary: Pleasant Grove (3812174/528C)
County Summary: Placer

Lat/Long: 38.81402° / -121.42889°
UTM: Zone-10 N4297310 E636403
Area:
Elevation: 65 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 05E
Section: 09
Meridian: M
Qtr: SW

Location: REASON FARMS ENVIRONMENTAL PRESERVE, WEST OF PETTIGREW ROAD AND NORTH OF PLEASANT GROVE CREEK.

Location Detail: THE PRESERVE EXTENDS NORTH TO SUNSET BLVD WEST. HOWEVER, THE NORTHERN PORTION CONSISTS OF FALLOW AG FIELDS. ONLY THE VERNAL POOL AREA IS MAPPED.

Ecological: HABITAT IS VERNAL POOL GRASSLAND AND FALLOW AGRICULTURAL FIELDS. INCLUDES CREATED/RESTORED WETLANDS AND VERNAL POOLS AS WELL AS NATURAL/HISTORIC VERNAL POOLS AND WETLANDS.

General: 8 CONSTRUCTED VERNAL POOLS, 4 CONSTRUCTED SEASONAL WETLANDS & 5 HISTORIC VERNAL POOLS WERE SAMPLED 29 JAN & 23 FEB 2010. 100'S TO 1,000'S OBSERVED IN ALL OF THE CONSTRUCTED POOLS & SEASONAL WETLANDS. NONE FOUND IN HISTORIC POOLS.

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: CITY OF ROSEVILLE

Occurrence No. 635 Map Index: 82419 EO Index: 83441

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1995-02-06
Site: 1995-03-02
Record Last Updated: 2011-04-29

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.78601° / -121.31850°
UTM: Zone-10 N4292153 E646088
Area: 14.0 acres
Elevation: 130 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 11N
Range: 06E
Section: 33 Qtr: NW
Meridian: M

Location: OPEN AREA BETWEEN RESIDENTIAL HOUSING NE OF COUNTRY CLUB DR AT ACTON WAY, CENTERED ABOUT 2.2 MI NW OF ROSEVILLE PO.

Location Detail: 1995: 15 TOTAL WETLANDS SAMPLED BETWEEN PARCELS 32 (EO#635, THIS OCCURRENCE) & 72 (EO#44). PROVIDED MAP GRAPHIC APPEARED SHIFTED WEST OF TRUE LOCATION; MAPPED TO AERIAL IMAGE MATCHING PRESERVED HABITAT.

Ecological: CONSTRUCTED AND SEASONAL HARDPAN VERNAL POOLS WITH NON-NATIVE ANNUAL GRASSLAND.

General: BRANCHINECTA LYNCHI OBSERVED IN CONSTRUCTED VERNAL POOLS SOMETIME BETWEEN 6 FEB AND 2 MAR 1995.

Owner/Manager: CITY OF ROSEVILLE

Desmocerus californicus dimorphus

valley elderberry longhorn beetle

Element Code: IICOL48011

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3T2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: OCCURS ONLY IN THE CENTRAL VALLEY OF CALIFORNIA, IN ASSOCIATION WITH BLUE ELDERBERRY (SAMBUCUS MEXICANA).
Micro: PREFERS TO LAY EGGS IN ELDERBERRRIES 2-8 INCHES IN DIAMETER; SOME PREFERENCE SHOWN FOR "STRESSED" ELDERBERRIES.

Occurrence No. 1 Map Index: 11640 EO Index: 14459

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2008-04-18
Site: 2008-04-18
Record Last Updated: 2009-01-16

Quad Summary: Carmichael (3812163/512D), Folsom (3812162/511B), Citrus Heights (3812163/512A)
County Summary: Sacramento

Lat/Long: 38.62353° / -121.28062°
UTM: Zone-10 N4276403 E649674
Area:
Elevation: 60 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 09N
Range: 06E
Section: 23 Qtr: XX
Meridian: M

Location: ALONG THE AMERICAN RIVER, FROM NIMBUS FLAT AREA OF LAKE NATOMA SOUTH TO DOWNSTREAM END OF RIVER BEND PARK (GOETHE PARK).

Location Detail: FOUND ALONG AMERICAN R PKWY TO LOWER SE SHORE OF LAKE NATOMA; INCLUDES CRITICAL & ESSENTIAL HABITAT AREAS. 2008: OBS AT MITIGATION SITE DEVELOPED NEAR RIVER BEND PARK. SHRUBS TRANSPLANTED FROM NEAR FOLSOM DAM, FOR FOLSOM BRIDGE CONSTRUCTION

Ecological: LARVAE ARE STEM AND ROOT BORERS OF ELDERBERRY; EXIT HOLES ARE ROUND. BUPRESTID LARVAE ALSO BORE INTO ELDERBERRY; EXIT HOLES ARE OVAL. ADULTS FEED ON FOLIAGE AND FLOWERS.

Threat: POPULATIONS OF VELB ARE REDUCED AS ELDERBERRY GROVES ARE REDUCED IN NUMBER.

General: 3 MAY 1982: 1-10 OBS AT ROSSMOOR BAR. 23 APR 1987: SURVEY OF NIMBUS FLATS FOUND BOTH OLD & NEW EXIT HOLES. 18 APR 2008: 2 FEMALES OBS ON SHRUB & FLYING TO THE GROUND AT RIVER BEND PARK.

Owner/Manager: SAC COUNTY, DPR

Lepidurus packardi

vernal pool tadpole shrimp

Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 24 Map Index: 32457 EO Index: 1900

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1995-02-09
Site: 1995-02-09
Record Last Updated: 1997-03-04

Quad Summary: Roseville (3812173/528D)
County Summary: Placer

Lat/Long: 38.76950° / -121.32354°
UTM: Zone-10 N4292533 E645842
Radius: 1/5 mile
Elevation: 130 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 05E
Section: 29 Qtr: SE
Meridian: M

Location: BETWEEN KASEBERG CREEK & SOUTH BRANCH PLEASANT GROVE CREEK; 1.8 KM WEST OF SOUTHERN PACIFIC RR X HWY 65.

Location Detail: WOODCREEK OAKS MITIGATION SITES. 14 WATER BODIES WERE SAMPLED ON FEB 9, 10, 27 & MARCH 14, 1995. LEPIDURUS PACKARDI FOUND IN ONLY 1 POOL & ONLY ON 2/9/95. SUGNET OBSERVED TADPOLE SHRIMP IN A MANMADE VERNAL POOL SOMEWHERE IN SEC 29 ON 2/4/93

Ecological: HARDPAN VERNAL POOL IN ANNUAL NON-NATIVE GRASSLAND. ON 2/9/95 THE SURFACE AREA WAS 129 SQ METERS & THE WATER DEPTH WAS 18 CM. WETLAND COMPENSATION/MITIGATION PRESERVE. ALSO, A MANMADE VERNAL POOL SOMEWHERE IN SEC 29.

General: POOL #C2: 50+ ADULTS OBSERVED; 3 ADULTS COLLECTED & DEPOSITED IN CAS. THE INFORMATION PROVIDED BY THE CONSULTANT HAS CONFLICTING DATA ON THE LOCATION OF THIS POOL: THIS SITE WAS MAPPED ACCORDING TO THE MAP THEY PROVIDED, NOT THE T-R-S GIVEN

Owner/Manager: PVT-SARES REGIS GROUP

Occurrence No. 27 Map Index: 32503 EO Index: 30805

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1996-02-15
Site: 1996-02-15
Record Last Updated: 1997-03-27

Quad Summary: Pleasant Grove (3812174/528C)
County Summary: Placer

Lat/Long: 38.87335° / -121.38788°
UTM: Zone-10 N4303957 E639850
Area: 15.2 acres
Elevation: 93 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 12N
Range: 05E
Section: 23 Qtr: SW
Meridian: M

Location: USAF LINCOLN COMMUNICATIONS FACILITY; 1.1 KM WNW OF MOORE ROAD X DOWD AVENUE.

Location Detail: FACILITY ~231 ACRES W/ABOUT 236 VERNAL POOLS. 36 POOLS SAMPLED IN 1995, 15 POOLS SAMPLED IN 1994 & 2 POOLS SAMPLED IN 1993. ONLY 1 LIVE TADPOLE SHRIMP FOUND IN 1 POOL DURING THESE 3 YEARS. IN 1996 100'S FOUND IN 4 POOLS IN NE CORNER OF SITE

Ecological: ANNUAL GRASSLAND & OAK SAVANNAH WITH VERNAL POOLS INTERSPERSED AMONG THESE HABITATS. TADPOLES, OSTRACODS, COPEPODS, FLATWORMS, BEETLES & INSECT LARVAE ALSO FOUND.

Threat: DISKING OF POOLS; POSSIBLE HERBICIDE RUNOFF FROM ANTENNA PADS; AGRICULTURE-CATTLE & SHEEP GRAZING, RICE FARMING NEARBY.

General: POOL #215: GRASS & ALGAE BOTTOM. POOL EST TO BE 160 X 20 FT, & 10 INCHES DEEP. 1 INDIVIDUAL FOUND 2/9/95, NONE FOUND 3/1 OR 3/15/95. ONLY DISSOLVED CARAPACES FOUND IN 1994. 100'S FOUND IN POOLS 180, 140, 141 & 143 ON 2/15/96.

Owner/Manager: DOD-LINCOLN COMMUNICATIONS FAC

Lepidurus packardi

vernal pool tadpole shrimp

Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS. COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 103 Map Index: 33706 EO Index: 30603
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-03-12
Site: 1993-03-12
Record Last Updated: 1997-03-11

Quad Summary: Pleasant Grove (3812174/528C), Verona (3812175/529D)
County Summary: Sutter

Lat/Long: 38.81675° / -121.49758°
UTM: Zone-10 N4297513 E630435
Radius: 3/5 mile
Elevation: 40 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 04E
Section: 11
Meridian: M
Qtr: XX

Location: SOUTHWEST OF THE INTERSECTION OF PLEASANT GROVE ROAD AND HOWSLEY ROAD.
Location Detail: ROADSIDE DITCHES SOMEWHERE IN SECTION 11.
Ecological: MANMADE ROADSIDE DITCHES.
General: LEPIDURUS PACKARDI OBSERVED IN THE 2 FEATURES INSPECTED. SUGNET RECORD #185. NO B. LYNCHI OBSERVED.
Owner/Manager: UNKNOWN

Occurrence No. 104 Map Index: 33707 EO Index: 30605
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-03-12
Site: 1993-03-12
Record Last Updated: 1997-03-11

Quad Summary: Pleasant Grove (3812174/528C), Verona (3812175/529D)
County Summary: Sutter

Lat/Long: 38.77305° / -121.49794°
UTM: Zone-10 N4292663 E630483
Radius: 3/5 mile
Elevation: 35 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 11N
Range: 04E
Section: 26
Meridian: M
Qtr: XX

Location: SOUTHWEST OF THE INTERSECTION OF PLEASANT GROVE ROAD AND SANKEY ROAD.
Location Detail: ROADSIDE DITCHES SOMEWHERE IN SECTION 26.
Ecological: MANMADE ROADSIDE DITCHES.
General: LEPIDURUS PACKARDI OBSERVED IN THE ONE FEATURE INSPECTED. SUGNET RECORD #186. B. LYNCHI ALSO OBSERVED.
Owner/Manager: UNKNOWN

Occurrence No. 147 Map Index: 11427 EO Index: 42235
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1998-07-10
Site: 1998-07-10
Record Last Updated: 2000-01-20

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.66358° / -121.42226°
UTM: Zone-10 N4280626 E637256
Area: 320.6 acres
Elevation: 50 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 09N
Range: 05E
Section: 19
Meridian: M
Qtr: NE

Location: WEST OF MCCLELLAN AIR FORCE BASE BETWEEN MAGPIE CREEK & ASCOT AVE, DEL PASO, NORTH OF SACRAMENTO.
Location Detail: SEASONAL WETLANDS, INNUNDATED APPROXIMATELY >30 DAYS DURING WINTER 1998. LOCATION GIVEN ONLY AS T9N, R5E, SEC 19. SNAPPED TO EXISTING MAPPED VERNAL POOLS.
Ecological: SURROUNDING LAND USE: AGRICULTURE AND FALLOW FIELDS
Threat: DISKING, DEVELOPMENT.
General: 10 CYSTS WERE FOUND IN THE SURVEYS IN JUNE AND JULY, 1998.
Owner/Manager: PVT

Thamnophis gigas

giant garter snake

Element Code: ARADB36150

Status
Federal: Threatened
State: Threatened

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: PREFERS FRESHWATER MARSH AND LOW GRADIENT STREAMS; HAS ADAPTED TO DRAINAGE CANALS & IRRIGATION DITCHES.
Micro: THIS IS THE MOST AQUATIC OF THE GARTER SNAKES IN CALIFORNIA.

Occurrence No. 88 Map Index: 21510 EO Index: 19146

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2008-09-19
Site: 2008-09-19
Record Last Updated: 2009-11-16

Quad Summary: Rio Linda (3812164/512B), Taylor Monument (3812165/513A)
County Summary: Sutter, Sacramento

Lat/Long: 38.72883° / -121.52158°
UTM: Zone-10 N4287722 E626511
Area:
Elevation: 15 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON

Township: 10N
Range: 04E
Section: 14 Qtr: NW
Meridian: M

Location: ELVERTA CANAL, NORTH & EAST DRAINAGE CANAL & INTERSECTING CANALS, FROM SACRAMENTO/SUTTER COUNTY LINE S TO ELVERTA RD.

Location Detail: NORTH MAIN CANAL IS THE BEST KNOWN AREA IN THE AMERICAN BASIN FOR GIANT GARTER SNAKE. 1990: T10N R4E NW1/4 NW1/4 SEC 14. 1998-2003: CAPTURED THROUGHOUT. 2004: NORTH MAIN CANAL.

Ecological: HABITAT IS SERIES OF IRRIGATION CANALS IN A RICE FARMING AREA.

Threat: HABITAT DISTURBANCE IS THE MAIN THREAT; WETLAND RECLAMATION; URBANIZATION; FLOODING; INTRODUCED PREDATOR; POLLUTION.

General: OBSERVED 1986-87. 1990: 1 OBS. 1999: 2 OBS. 1998 - 2003: 377 (216 FEMALES, 131 MALES, 30 UNKNOWN). 2004: 15 OBS. 2005-2006: 149 OBS (62 F, 73 M, 4 UNK). 2007: 131 OBS (61 F, 47 M, 3 UNK). 2008: 131 OBS (78 F, 44 M, 2 UNK).

Owner/Manager: NATOMAS BASIN CONS. RD 1000

Occurrence No. 145 Map Index: 36594 EO Index: 31591

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1996-09-27
Site: 1996-09-27
Record Last Updated: 1997-09-04

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

Lat/Long: 38.68530° / -121.49512°
UTM: Zone-10 N4282929 E630669
Radius: 80 meters
Elevation: 15 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 10N
Range: 04E
Section: 36 Qtr: NW
Meridian: M

Location: ELKHORN ROAD, 0.5 MILE WEST OF EAST LEVEE ROAD

Ecological: SURROUNDING HABITAT CONSISTS OF RICE FIELDS TO THE SOUTH, PLOWED AGRICULTURAL FIELDS TO THE NORTH, AND RUDERAL VEGETATION ALONG THE ROADWAY.

Threat: POSSIBLE THREAT OF URBAN DEVELOPMENT.

General: 1 INDIVIDUAL (3 FEET IN LENGTH) WAS FOUND DOR ON ELKHORN ROAD ON 27 SEPTEMBER 1996.

Owner/Manager: PVT, SAC COUNTY

Occurrence No. 238 Map Index: 64529 EO Index: 64608

* SENSITIVE *

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2003-05-16
Site: 2003-05-16
Record Last Updated: 2006-04-20

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

* SENSITIVE *

Lat/Long:
UTM:
Radius:
Elevation:

Mapping Precision:
Symbol Type:

Township:
Range:
Section: Qtr:
Meridian:

Location: "SENSITIVE" Location information suppressed.

Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information (916) 324-3812.

Owner/Manager:

Thamnophis gigas

giant garter snake

Element Code: ARADB36150

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G2G3	CDFG Status:
State: Threatened	State: S2S3	

Habitat Associations

General: PREFERS FRESHWATER MARSH AND LOW GRADIENT STREAMS. HAS ADAPTED TO DRAINAGE CANALS & IRRIGATION DITCHES.

Micro: THIS IS THE MOST AQUATIC OF THE GARTER SNAKES IN CALIFORNIA.

Occurrence No. 239 Map Index: 64531 EO Index: 64610

* SENSITIVE *

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1998-06-02
Site: 1998-06-02
Record Last Updated: 2006-04-20

Quad Summary: Rio Linda (3812164/512B)
County Summary: Sacramento

* SENSITIVE *

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.

Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological: DRAINAGE CANAL

Owner/Manager:

ATTACHMENT C

Placer Vineyards Mitigation Strategy

PLACER VINEYARDS MITIGATION STRATEGY

NOVEMBER 2012

I. Overview of Open Space, Agricultural Land and Biological Resource Mitigation Strategy

The Placer Vineyards Specific Plan (the "Plan or "Plan Area") is a very large plan encompassing many properties under separate and distinct ownership that will be developed independently over a period of decades in association with numerous individual Clean Water Act permitting actions. Current ownership includes a diverse mix of participating and non-participating developers, investors, and farmers, including many who are unlikely to be involved in the physical development of the property. The cumulative development of property within the Plan provides a substantial portion of the long-term residential and employment growth envisioned for unincorporated Placer County in both the County's General Plan and SACOG's Sustainable Communities Strategy. Accordingly, mitigation planning for Placer Vineyards is an important component of long-term conservation planning for both Placer County and the Sacramento Region.

This Mitigation Strategy was developed in consultation with Placer County, SACOG, the Sierra Club and the Audubon Society to mitigate for the development of individual properties within the Plan Area in a manner that will also be cumulatively effective and supportive of long-term conservation planning goals. The Mitigation Strategy reflects the best available science regarding the aquatic resources and associated habitat known to exist in the Plan Area and Southwest Placer County, including biological information and conservation strategies developed in conjunction with the proposed Placer County Conservation Plan (PCCP). However, any such information utilized from the PCCP planning effort has been carefully reviewed and adapted for the specific purpose of providing effective mitigation that meets all applicable regulatory requirements for development of Placer Vineyards in the absence of an adopted PCCP. At the same time, the proposed Mitigation Strategy is also intended to provide a relatively seamless transition in the event that the proposed PCCP, County in-lieu fee, or other similar conservation plan is adopted during the build-out of the Plan Area.

The cumulative development of the Placer Vineyards Specific Plan is expected to result in substantial, irreversible conversion of the existing natural and semi-natural landscape to urban and suburban use. Although elements of the existing landscape show varying degrees of disturbance and are no longer functioning as a natural ecosystem, the mosaic of open lands in the Plan area cumulatively provides habitat and connectivity for several species. Even loss of intensively farmed land will diminish these regional values.

Most of the natural communities represented in the Plan Area require large contiguous and intact habitat to retain maximum biological function. Avoidance of small patches of

communities such as vernal pool grassland may result in short-term avoidance of take of species present, but is generally inconsistent with long-term maintenance of stable species populations due to multiple factors such as reduced population size, loss of contributing hydrology, edge effects, increased non-native species, lack of management oversight, inability to implement management activities due to adjacent land uses, etc. (Placer County 2011). Similarly, compatible agriculture that is important for long-term management of preserved lands is best served by large contiguous blocks of land that can minimize edge effects from surrounding urbanization. For this reason, impacts to agricultural land and biological resources at the natural community level are addressed by designating large areas for conservation outside of the area planned for future growth. Lands designated for conservation through this mitigation measure (the "open space, agricultural land and biological resource mitigation strategy," "mitigation strategy," or "strategy") will include substantial amounts of agricultural land and habitat for affected species, as well as natural communities important for maintaining regional biological diversity. Land designated for conservation will be acquired from willing sellers in fee title and/or protected through establishment of conservation easements.

This strategy mitigates for irreversible land conversion through permanent conservation of large tracts of land with similar land cover, habitat, and agricultural value strategically located off-site in the area described on attached Figure A-1 (the "Reserve Acquisition Area" or "RAA"). The RAA was selected in collaboration with Placer County, SACOG, Sierra Club and Audubon based upon the best available information as the area with the greatest opportunity to create a regionally important expanse of private and public land that will continue to support aquatic functions and meet species needs in the long term with minimal edge effect and fragmentation from urbanization. The mitigation obligations set forth in this Mitigation Strategy are intended to meet all regulatory requirements while, to the greatest extent possible, advancing effective long-term conservation planning. This approach to conservation of agricultural land, wetlands and habitat complements efforts to avoid and/or minimize impacts on-site for key components of the aquatic system, rare habitat, and individual species and is strongly encouraged by the responsible local planning agencies and environmental stakeholders.

The Reserve Acquisition Area where land will be preserved under this mitigation measure is largely comprised of "Important Farmland," as defined by the State of California Department of Conservation. Most of this land is designated Farmland of Local Importance or Grazing. Many ongoing agricultural activities are consistent with, and essential to, the protection and enhancement of the natural communities that are supported by this land. Accordingly, ongoing agricultural use will be an integral component of the long-term management of preserved lands. The required conservation easements recorded on such lands will specifically encourage compatible agricultural use. As a result, the land preserved under this mitigation measure will also preserve opportunity for agricultural use, thus mitigating for the impacts of lost agricultural land and open space within the Project site, in addition to mitigating for impacts on vernal pool complexes and other ecological features.

The grassland vernal pool land type is mitigated by any grassland without regard to wetted area density. Actual wetted area is accounted for by the separate requirement for wetland mitigation. The wetland mitigation described below can only be carried out if in

fact much of the grassland acquired to mitigate land conversion does in fact have a high density of preserved and restored vernal pool. Thus, application of the two measures – land area and wetland area – will jointly provide for conservation of wetland-dependent natural communities. The intent here is to approach the mitigation needs of the Plan through a more holistic approach that better responds to the regional landscape. This approach is similar to the landscape-level approach developed in connection with the PCCP effort, which places emphasis on the value of these resources as an ecosystem, rather than as individual features, while still addressing regulatory requirements for no net loss. As such, this approach reflects the best available scientific evidence relative to the mitigation of wetland impacts in Southwest Placer County. Given the large acreage of the Placer Vineyards Plan Area and the broad impact assumptions that require preservation of large amounts of vernal pool grassland regardless of the wetland density of impacted sites, this approach will ensure acquisition of significant portions of the RAA.

Under this strategy, mitigation to minimize impacts to natural and semi-natural communities falls into three categories:

1. **Mitigation Ratios for Land Cover**. Off-site mitigation is accomplished mainly through mitigation ratios requiring conservation or restoration of a set amount of land calculated as a proportion of land cover conversion or "take." The term "land cover take" as used herein means the conversion of natural or semi-natural lands to urban or suburban use.

2. **Mitigation Ratios for Wetland Area**. Because of their particular regulatory status and their biological importance, wetlands are accounted for separately through mitigation ratios requiring preservation and restoration or creation of a set amount of wetted area calculated as a proportion of wetland "take." It is intended that all of the wetted area mitigation along with all associated upland will be counted towards mitigation required for land cover "take." Likewise, all wetted acres contained within land cover mitigation shall be counted towards wetted area mitigation.

3. **Site Specific Avoidance and Minimization**. Protection of existing resources on site is accomplished through specific avoidance, restoration, and enhancement measures incorporated into the Specific Plan. In addition, separate mitigation measures will be implemented to avoid or minimize on-site impacts to individual species.

The areas included in the RAA, described above, are similar to those targeted for conservation in the proposed PCCP (Figure 5-3). The intent of this mitigation strategy is to contribute towards a regionally-important expanse of contiguous private and public land that will continue to support important aquatic functions, meet species needs in the long term and aid recovery objectives for a broad variety of species, including those targeted for conservation by the County's Biological Working Group (stakeholder group formed by the County to analyze biological information and make recommendations for the conservation strategy of the PCCP) and included in the proposed PCCP (Table 1

below). This regional approach to conservation of agricultural land, wetlands and habitat complements efforts to avoid and/or minimize impacts on site for key components of the aquatic system, rare habitat, and individual species.

Regardless of whether the PCCP is adopted, this Mitigation Plan represents the most sound approach towards mitigation of a very large plan area such as Placer Vineyards. However, the Mitigation Plan has the added benefit of being compatible with the Conservation Strategy being proposed for the PCCP. Thus, if the PCCP is adopted during the build-out of Placer Vineyards, development projects within the Specific Plan may fulfill mitigation requirements by compliance with the terms of the adopted PCCP in lieu of this mitigation strategy, creating a relatively seamless transition. Such compliance shall constitute sufficient mitigation that will obviate the need to comply with the measures herein.

Table 1 – PCCP Covered Species Expected to Benefit from Vernal Pool Grassland Complex and Grassland Conservation

Vernal Pool Species	Grassland Species
Vernal pool fairy shrimp	Swainson's hawk
Vernal pool tadpole shrimp	American peregrine falcon
Conservancy fairy shrimp	Western burrowing owl
Western spadefoot	Loggerhead shrike
Bogg's Lake hedge-hyssop	Northern harrier
Dwarf downingia	Ferrunginous hawk
Legenere	Grasshopper sparrow
Ahart's dwarf rush	Tricolored blackbird
Red Bluff dwarf rush	Western spadefoot

This measure is intended to be compatible with all required state and federal permits related to land conversion, or other regulated activity within habitat covered by state or federal jurisdiction specifically including Federal Clean Water Act Section 404 permits, federal Endangered Species Act Section 7 "incidental take statements," state Endangered Species Act compliance, state "stream bed alteration agreements" and state certification under Clean Water Act Section 401. Any and all conservation, restoration, enhancement, and creation of land cover, natural communities, and wetland features required by any state or federal permitting agency, either in conformity with this strategy or in addition to

it, shall be fully credited towards the obligations of this mitigation strategy, regardless of whether such mitigation is achieved through the acquisition of land and/or conservation easements or through the purchase of credits from an approved mitigation bank.

In order to preserve land for agriculture, compatible agricultural use that supports and enhances wildlife value is encouraged on lands conserved under this measure. The goal of conservation easements on farmlands will be to maintain viable agricultural operations while also meeting the biological objectives of this mitigation measure.

This mitigation strategy shall serve as mitigation for all land conversion impacts, specifically including impacts to vernal pools and other wetlands, vernal pool grasslands, grasslands, Swainson's hawk foraging habitat, agricultural land, and open space. No additional mitigation shall be required for these impacts. This strategy shall not apply to the Special Planning Area (SPA) where no urban development is proposed.

II. Land Cover Mitigation

A. Mitigation Ratio

For every 1.0 acres of land cover taken, 1.35 acres of land will be conserved. The take area shall be calculated to the nearest one-tenth (0.1) acre. The total amount of required acreage will be automatically reduced by any and all off-site conservation or mitigation land required by any permitting agency, specifically including upland areas required in association with wetland mitigation, whether acquired through mitigation bank credits or other means.

B. Calculation of Land Cover Take

All land within the Specific Plan (not including the SPA area) is included in the calculation of take, with the exception of land that will be maintained in or restored to a natural or semi-natural condition as required by the County and/or any state or federal permitting agency. Figure A-2 and Table A-3 show the take area and take calculation by property based upon the proposed land use and avoidance required for compliance with County standards through adoption of the Specific Plan, prior to consideration of any additional avoidance that may be required by a permitting agency. For purposes of this mitigation measure, the take acreage may only be reduced below that shown on Figure A-2 and Table A-3 to the extent that additional avoidance is required by the County and/or any state or federal permitting agency. Similarly, the take acreage and corresponding mitigation requirements will be increased to the extent that the County and the state and federal permitting agencies allow future development of any area not included in the take calculations as shown in Figure A-2 and Table A-3.

C. Mitigation Land Criteria

Land conserved under this measure shall, to the fullest extent feasible, be located within the Reserve Acquisition Area (Figure A-1).

Impacts to annual grassland, vernal pool grassland, and pasture lands shall be mitigated on existing or restorable grassland (as identified in Figure A-4). All other land cover impacts may be mitigated on any natural or semi-natural land within the RAA, specifically including agricultural land. Vernal pool grassland is mitigated by any grassland without regard to wetted area density. Actual wetted area is accounted for by the separate requirement for wetland mitigation discussed below. The wetland mitigation described below can only be carried out if much of the grassland acquired to mitigate land conversion does in fact have a high density of preserved and restored vernal pool habitat. Application of the two measures – land area and wetland area – will jointly provide for conservation of wetland-dependent natural communities.

In general, the minimum area for a vernal pool conservation site is 200 acres if the site is not contiguous with other reserve lands. Sites of less than 200 acres may be allowed if it is determined that the proposed site has key strategic value for the County's overall conservation strategy or has especially high resource value that can be reasonably protected from edge effects. The area may consist of one or more properties. There is no minimum size for conservation sites that are adjacent to other reserve lands or the Stream System (as identified in Figure A-5). There is also no minimum size for conservation sites incorporating vernal pools that occur on Mehrten Formations. Mehrten vernal pools will only be excluded from consideration if it is determined that existing or future hydrologic, land use, or other characteristics threaten long-term viability.

The vast majority of land targeted for conservation in the RAA is suitable for agriculture and continued agricultural use will be encouraged by the conservation easements required under this mitigation measure. Accordingly, no additional agricultural mitigation will be required beyond the 1.35 to 1 requirement for the take of land cover noted above. Likewise, the land cover mitigation criteria is such that it will also provide suitable foraging habitat mitigation for Swainson's hawk. No additional land mitigation will be required beyond the 1.35 to 1 requirement for the take of land cover noted above for these impacts.

D. Conservation Easement / Management Plans

Conservation sites shall be subject to recorded conservation easements and management plans with an identified funding source for long-term management of conserved lands. The conservation easements and management plans are subject to approval and shall provide for the long-term maintenance of biological functions and values while, whenever feasible, also providing for compatible agricultural use.

E. Use of Mitigation Bank Credits or In-Lieu Fees

Project applicants may use credits from approved conservation or mitigation banks to meet all or a part of the conservation required by this strategy. Specifically, the uplands associated with any bank wetland preservation, restoration, enhancement or creation may be applied towards the Land Cover mitigation requirement provided that the uplands are subject to an appropriate conservation easement and the applicant can demonstrate that the approved mitigation credits include both wetland and upland land cover. Similarly, all or a part of the conservation required by this strategy may be met through an approved in-lieu fee, including both wetland and upland acreage acquired through the in-lieu fee program.

Mitigation and conservation banks must be approved. Credits can count toward mitigation obligations if the banks are consistent with the requirements of state and federal natural resource agencies. Any out-of-county bank must have a service area that extends into the Plan area.

F. Use of Excess Mitigation Assigned from Other Projects in Specific Plan

It is anticipated that, depending on the availability and relative parcel size of potential conservation sites, some projects within the Specific Plan may provide land cover mitigation in excess of the acreage required by this strategy. Excess mitigation may be freely assigned by private agreement between projects within the Specific Plan. Such assignment will be documented and tracked. Project applicants may apply excess mitigation assigned from other projects in the Specific Plan to meet all or a part of the land cover mitigation required by this measure provided proof of assignment can be provided.

G. Out-of-County Mitigation

A limited amount of out-of-county mitigation may be allowed that meets the biological intent of this mitigation strategy. In addition, credits from out-of-county conservation or mitigation banks may be accepted towards full or partial compliance with this measure, if the project is within the agency-approved service area for the credits. Such mitigation will be fully credited towards any mitigation required by this mitigation strategy.

In order to receive credit towards the obligations of this Mitigation Strategy, any conservation outside the RAA, including the purchase of credits from a mitigation bank, must adhere to the criteria, below:

It is intended that the main part of the Reserve System will be established within the RAA. There are several places outside the RAA where conservation management activities to improve watershed integrity would serve the mitigation strategy. Cooperative conservation actions in these areas could also benefit the reserve system by expanding the resource available for a reserve, increasing contiguous reserve size, or improving connectivity, particularly in a high priority watershed. Figure A-6 depicts the

location where acquisition and management of conservation could occur. Lands that may meet these needs are:

- Land along the Placer/Sutter County border, in particular, the lower portion of the Coon Creek and Auburn Ravine.
- Portions of the floodplain along the Bear River that is within the Coon Creek watershed within Sutter County.
- Lands contained within the levees of the Natomas East Main Drainage, Cross Canal, Pleasant Grove Creek Canal, and East Side Canal for conservation actions which improve fish passage and water quality for salmonids in Placer County.
- Mitigation and Conservation Banks approved by the Wildlife Agencies and/or the ACOE that contain the Plan area within the service boundary. Mitigation and Conservation Banks locations are not depicted on Figure A-6.

III. Wetland Mitigation

A. Overlap with Land Cover Mitigation

Because of their particular regulatory status and their biological importance, wetlands are accounted for separately through mitigation ratios requiring preservation and/or restoration of a set amount of wetted area calculated as a proportion of wetland take. These wetted acres, along with any upland area that is conserved in association with the wetted acres, are fully credited towards the required land cover mitigation. In other words, it is intended that all of the wetland mitigation will be counted towards land cover mitigation requirements. Likewise, all wetted acres contained within land cover mitigation shall be counted towards wetland mitigation.

B. Calculation of Wetland Take

Wetland take is calculated as all wetland area that falls in the Land Cover take area as defined in Section II.B. above.

In practice, certain wetland types are not easily distinguished and often intergrade. This mitigation strategy minimizes the effect of field interpretation by applying the same ratios for all wetland types and by allowing broad latitude for out-of-kind mitigation. For the purposes of applying mitigation requirements, the definition of vernal pool wetland habitat includes vernal pools and depressional areas within vernal swales, ephemeral drainages, and other seasonal wetlands.

Any wetland area required to be avoided, restored, and/or enhanced on site by the County and/or any permitting agency is automatically excluded from the take calculation.

Mitigation at the time of impact will be subject to a finding of baseline consistency with land cover conditions as of 2009/11 (based upon 2009 LIDR and 2011 air photos). If the County suspects, based on inconsistency with this information or other similar information, that wetland area may have changed from baseline conditions, it may require that a baseline consistency analysis be prepared and submitted to the County for review and approval. The baseline consistency finding requires all of the following:

a. Property land uses are essentially the same property land uses present in 2009/11 as determined by available data.
b. There is no evidence that the property has been mass-graded without proper authorization.
c. The micro-topography and hydrology of the property are substantially unchanged from 2009/2011conditions.
d. Creeks, swales and other drainage in same location (within 100 feet).
e. At least 70 percent of ponded water and/or other wetlands are still present on the property.
f. The proportion of parcel area in a topographic depression (depressional index) has not been diminished by more than 20 percent from the 2009/2011 index.

The baseline consistency finding establishes a comparison of resources. A finding of non-consistency does not establish responsibility for changes to the land-cover type. Foreseeable changes such as drought, arson fire or flood may result in non-consistency. However, if an apparent significant change in baseline land-cover is detected, the changes will be reviewed to determine if baseline land-cover information was inaccurate in 2009/11 or if land-cover conditions have in fact changed significantly. If land-cover conditions have changed significantly, the baseline land-cover conditions will be used as the basis for determining these mitigation strategy requirements. If a mapping error occurred, then mitigation will be based on existing land cover type at the time the consistency finding was requested.

C. Mitigation Ratio: Preservation

For each 1.00 acres of vernal pool take, 1.00 acres of vernal pool will be preserved. For the purposes of both take and mitigation under this measure, vernal pools include seasonal depressional wetlands. For each 1.00 acres of take of any other wetland type, the preservation requirement may be met by preserving 1.00 acres of any wetland type without regard for in-kind mitigation. The preservation requirement for open water may be met through preservation of 1.00 acres of open water or any wetland type for each 1.00 acres of take. The total amount of required wetland preservation under this strategy will be automatically reduced by any and all wetland preservation required by any permitting agency. For the purposes of calculating the amount of preservation, the take calculation shall include any identifiable quantity of the resource affected.

D. Mitigation Ratio: Restoration, Enhancement and Creation

As indicated in Table 2 below, for each 1.00 acres of vernal pool take, 1.25 acres of compensatory wetlands will be restored, enhanced or created, including a minimum of 0.75 acres of vernal pool and no more than 0.50 acres of other wetlands. For the purposes of both take and mitigation under this strategy, vernal pools include seasonal depressional wetlands. For each 1.00 acres of take of any other wetland type, the compensatory restoration, enhancement and creation requirement may be met by restoring, enhancing and/or creating 1.25 acres of any wetland type without regard for in-kind mitigation. The compensatory requirement for open water may be met through restoration, enhancement or creation of 1.25 acres of open water or any wetland type for each 1.00 acres of take. The total amount of required compensatory wetland restoration, enhancement, or creation under this strategy may be reduced by wetland preservation required by a permitting agency greater than the wetland preservation amount required by this mitigation strategy. However, in no event shall the compensatory requirement be reduced to below 1.00 by excess preservation. For the purposes of calculating the amount of restoration, enhancement, or creation, the take calculation shall include any identifiable quantity of the resource affected.

In some circumstances, enhancement of existing wetland habitat may add greater wetland function and value to the aquatic system and conserved natural communities than restoration of previously existing or degraded features or creation of new wetland habitat. Consistent with the criteria below, enhancement may be allowed to apply towards the restoration requirement, provided that the enhanced features may not also be applied towards the preservation requirement. In limited circumstances, creation of new wetland features may also be appropriate and beneficial. If approved, created wetlands will apply towards the restoration requirement.

Restored, enhanced and created wetland habitat can help expand and link existing high quality vernal pool complexes that have been become fragmented in the landscape, losing some of their native community value.

Table 2. Mitigation Ratios for Impacts to Wetlands: Valley and Foothills

	Preservation Ratio	Restoration Ratio	Mitigation Community Type
Vernal pool (1)	1:1	1.25:1	Preservation: All vernal pool Restoration: 0.75 minimum vernal pool up to 0.50 may be any wetland
Open water	1:1	1.25:1	Open-water or any wetland type
Fresh emergent wetland	1:1	1.25:1	Any wetland (2)
Other seasonal wetland Spring and seep	1:1	1.25:1	Any wetland

1) Vernal pools include seasonal depressional wetland.
2) California Black rail habitat must be mitigated in-kind where it occurs.

E. Restoration

Vernal pool complexes have been degraded in western Placer County and throughout their range by direct disturbance, invasion of non-native species, or by alteration of hydrological patterns, primarily due to agricultural use. For many complexes, habitat restoration may be necessary to regain proper functioning of a vernal pool ecosystem (USFWS 2005). Furthermore, vernal pools and other wetlands will be restored and created to provide compensatory mitigation for take and to ensure no net loss of wetted area. The goal of restoration is to return natural wetland functions to areas where historic wetland landscapes and features have been converted or heavily degraded.

Vernal pool habitat will be restored where soils and hydrologic conditions will support long-term viability, natural topography can be reproduced and evidence indicates the historical presence of vernal pools. Restoration plans will use nearby, natural, high-quality pools as well as historical evidence as models. Restoration plans will consider the size and depth of pools to be constructed, hydrologic connections within complexes, depth from soil surface to hardpan, and upland area to pool-area ratios (USFWS 2005).

Restoration of previously disturbed vernal pool complexes is to be based on whether restoration is likely to increase vernal pool density (as measured in wetted-per-total acre) without exceeding the density present in 1937 aerial photos or other information approved by USFWS and/or CDFG and without harming existing vernal pools. Additional criteria will include whether or not sites occur outside of the Stream System, historically supported vernal pools (based on 1937 and 1938 aerial photos or other information approved by USFWS and/or CDFG), have hydrological conditions that ensure vernal pool complexes can be restored and protected in perpetuity, and have not been laser-leveled for agriculture or other uses.

Clearly defined objectives will be identified for all restoration projects. Success criteria will be established before each restoration plan is implemented. Monitoring of restored and created vernal pools in Placer County indicates that future restoration in the proposed locations has a high potential for success. It is essential that the Mitigation Strategy require an effective monitoring and adaptive management program in order to ensure the success of vernal pool restoration, enhancement and creation.

F. Enhancement

The goal of enhancement is to improve wetland functions and values in areas where they have been degraded, but not entirely lost. Although qualifying enhancement actions will be determined by the County on a case-by-case basis, they will be conducted to ameliorate the specific threats that occur on each site. Specific threats to vernal pool grasslands include modification to the duration of inundation and hydro-period due to changes in the hydrology of surface flows and perched groundwater flows; non-native vegetation (including annual grasses and noxious weeds); impacts from recreational use; impacts to water quality; non-native predators; and decreased pollination and dispersal of vernal pool species due to impacts to vernal pool uplands. Therefore, actions for maintaining and enhancing preserves with vernal pool grasslands may include restoration

of vernal pool topography; restoration of vernal pool isolation; re-introduction of vernal pool cysts, seeds and/or plants; restoring and enhancing vernal pool water quality; and invasive plant control.

G. Creation

Creation is generally considered more appropriate for other wetland types than for vernal pools. In some cases creation of wetland habitat may be necessary to mitigate for lost resources. Creation is the construction of wetland features where none have existed historically (as compared to restoration which can include the construction of wetland habitat in areas that historically contained wetlands).

Little data exists to assess the long-term success of the creation of vernal pools. Preliminary results indicate that some created vernal pools have vernal pool fairy shrimp, vernal pool tadpole shrimp and other invertebrates and plants native to vernal pools (De Weese 1998; EcoAnalysts 2009). Creation of vernal pools within a vernal pool complex of existing pools is not recommended by the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005) because it may alter the hydrology of the existing pool system and may have an adverse effect on ground nesting bees and other upland plant and animal species. Therefore, the use of vernal pool creation as a strategy to mitigate for lost resources will be minimized. Rather, conservation efforts will focus on preservation and enhancement of existing high quality vernal pools, with restoration serving to supplement preservation to protect and restore vernal pool complexes at the levels of the landscape and local watershed and to mitigate for resources lost. Creation of vernal pools must be approved by the appropriate resource agencies to receive credit for mitigation under this measure. Vernal pool creation credits from an approved mitigation bank may apply towards this mitigation requirement. The bank must be acceptable and consistent with the requirements of state and federal natural resource agencies. Any out-of-county bank must include a service area that extends into the Placer Vineyards Specific Plan area.

H. Uplands and Buffer Requirements

Wetland preservation, restoration, enhancement and creation shall be accompanied by the associated uplands and hydrology necessary to sustain long-term viability in a natural or restored environmental setting. To minimize edge effects from adjacent urban and suburban land, vernal pools should be no closer than 250 feet from existing or planned urban or suburban development or located such that adequate hydrology can be maintained in the event of future development.

I. Conservation Easements / Management Plans

It is anticipated that most wetland preservation, restoration, enhancement and creation will be accomplished on land conserved to meet the land cover mitigation requirement and will be subject to the required conservation easements and management plans. However, if additional lands are conserved to meet the wetland mitigation requirement, the same requirements for conservation easements and management plans apply.

J. Use of Mitigation Bank Credits and In-Lieu Fee

Consistent with the requirements listed above, project applicants may use credits from approved conservation or mitigation banks or in-lieu fees to meet all or a part of the wetland mitigation required by this strategy.

K. Use of Excess Mitigation Assigned from Other Projects in Specific Plan

It is anticipated that, depending on the density of wetlands on land conserved to meet the land cover mitigation requirement, some projects within the Specific Plan may provide wetland mitigation in excess of the acreage required by this strategy. Excess mitigation may be freely assigned by private agreement between projects within the Specific Plan. Such assignment will be documented and tracked. Project applicants may apply excess mitigation assigned from other projects in the Specific Plan to meet all or a part of the wetland mitigation required by this strategy provided proof of assignment can be demonstrated.

L. Out-of-County Mitigation

A limited amount of out-of-county mitigation may be allowed that advances the conservation goals and meets the biological intent of this mitigation strategy. In addition, credits from out-of-county conservation or mitigation banks shall be accepted towards full or partial compliance with this strategy, if the project is within the agency-approved service area for the credits.

In order to receive credit towards the obligations of this mitigation strategy, any conservation outside the RAA, including the purchase of credits from a mitigation bank, must adhere to the criteria below.

It is intended that the main part of the Reserve System will be established within the RAA. There are several places outside the RAA where conservation management activities to improve watershed integrity would serve the mitigation strategy. Cooperative conservation actions in these areas could also benefit the reserve system by expanding the resource available for a reserve, increasing contiguous reserve size, or improving connectivity, particularly in a high priority watershed. Figure A-6 depicts the

location where acquisition and management of conservation could occur. Lands that may meet these needs are:

- Land along the Placer/Sutter County border, in particular, the lower portion of the Coon Creek and Auburn Ravine.

- Portions of the floodplain along the Bear River that is within the Coon Creek watershed within Sutter County.

- Lands contained within the levees of the Natomas East Main Drainage, Cross Canal, Pleasant Grove Creek Canal, and East Side Canal for conservation actions which improve fish passage and water quality for salmonids in Placer County.

- Mitigation and Conservation Banks approved by the Wildlife Agencies and/or the ACOE that contain the Plan area within the service boundary. Mitigation and Conservation Banks locations are not depicted on Figure A-6.

IV. Site Specific Avoidance and Minimization

The Specific Plan design incorporates measures for preserving and enhancing critical aquatic resources on-site. The Specific Plan Area incorporates a 709-acre open space area that restores historic habitat linkages and habitat quality through the Plan Area. Specific areas that exhibit habitat degradation through historic land use were identified and will be enhanced under the Specific Plan. Large contiguous areas that exhibited habitat integrity have been preserved with adequate buffers to protect aquatic function. The Specific Plan incorporates minimization and low-impact development strategies to minimize long-term habitat degradation within avoided open space areas. This Specific Plan level avoidance and minimization is reflected in Figure A-2. Additional on-site avoidance of habitat is not encouraged and is generally considered to be inconsistent with the core strategy of creating large-scale preserves located in areas that can be more readily linked and expanded to create a sustainable ecosystem at a landscape level.

ATTACHMENT D

Potential Effects Analysis Tables:

- Potential Species Effects Analysis Summary Table
- Slender Orcutt Grass – Potential Effects Analysis Table
- Sacramento Orcutt Grass – Potential Effects Analysis Table
- Hartweg's Golden Sunburst – Potential Effects Analysis Table
- Vernal Pool Fairy Shrimp – Potential Effects Analysis Table
- Vernal Pool Tadpole Shrimp – Potential Effects Analysis Table
- Conservancy Fairy Shrimp – Potential Effects Analysis Table
- Valley Elderberry Longhorn Beetle – Potential Effects Analysis Table
- Delta Smelt – Potential Effects Analysis Table
- California Tiger Salamander – Potential Effects Analysis Table
- California Red-Legged Frog– Potential Effects Analysis Table
- Giant Garter Snake – Potential Effects Analysis Table
- Western Yellow-billed Cuckoo – Potential Effects Analysis Table

Potential Species Effects Analysis Summary Table

Effect Type	Specific Effect	FEDERALLY LISTED SPECIES - PLAN AREA												FEDERALLY LISTED STATUS SPECIES - OFF-SITE AREA FOR INFRASTRUCTURE ELEMENTS											
		Slender Orcutt Grass	Sacramento Orcutt Grass	Hartweg's Golden Sunburst	Vernal Pool Fairy Shrimp	Vernal Pool Tadpole Shrimp	Conservancy Fairy Shrimp	Valley Elderberry Longhorn Beetle	Delta Smelt	California Tiger Salamander	California Red-legged Frog	Giant Garter Snake	Western Yellow-Billed Cuckoo	Slender Orcutt Grass	Sacramento Orcutt Grass	Hartweg's Golden Sunburst	Vernal Pool Fairy Shrimp	Vernal Pool Tadpole Shrimp	Conservancy Fairy Shrimp	Valley Elderberry Longhorn Beetle	Delta Smelt	California Tiger Salamander	California Red-legged Frog	Giant Garter Snake	Western Yellow-Billed Cuckoo
Direct	Kill / Take of Individuals	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	L	NL
	Grading / Conversion of Habitat	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	L	NL
	Hazardous Spills	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Sedimentation Event	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Erosion Event	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Dust Emissions	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Uncontrolled Trespass of Equipment / Personnel	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
Indirect	Habitat Fragmentation	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Risk of Future Hazardous Spills	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Introduction of Non-Natives	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Long-Term Sedimentation	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Long-Term Erosion	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Altered Hydrology +/-	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Non-Point Source Pollution (e.g., channel run-off)	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Increased Competition from Non-Natives	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	L	L	M-NL	L	NL	NL	NL	M-NL	NL
	Thatch Build-up / Fuel	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL
	Air Pollution	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL	L	L	M-NL	M-NL	M-NL	M-NL	L	NL	NL	NL	M-NL	NL

NL = Not Likely to Adversely Affect
M-NL = May Affect, Not Likely to Adversely Affect
L = May Affect, Likely to Adversely

Slender Orcutt Grass - Potential Effects Analysis Table

			Plan Area		Off-Site Area for Infrastructure Elements
Effect Type	**Specific Effect**	**Slender Orcutt Grass**	**Rationale**	**Slender Orcutt Grass**	**Rationale**
Direct	**Kill / Take of Individuals**	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be killed/taken in the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and this species was not observed. As such, slender Orcutt grass is considered likely to adversely affect to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by grading/conversion of habitat in the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to adversely affected by grading/conversion in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered likely to adversely affect to be affected by hazardous spills within the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area have not observed slender Orcutt grass. As such, this species is considered likely to adversely affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered likely to adversely affect to be affected by sedimentation within the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to adversely affected by a sedimentation event in the Off-Site Area for Infrastructure Elements.
	Erosion Event	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered likely to adversely affect to be affected by erosion within the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to adversely affected by an erosion event in the Off-Site Area for Infrastructure Elements.
	Dust Emissions	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from dust emmissions. As such, this species is considered likely to adversely affect to be affected by dust emmissions within the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to adversely affected by dust emmissions in the Off-Site Area for Infrastructure Elements.
	Uncontrolled Trespass of Equipment / Personnel	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from uncontrolled trespass. As such, this species is considered likely to adversely affect to be affected by uncontrolled trespass within the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by uncontrolled trespass of equipment/personnel in the Plan Area.

NL = likely to adversely affect to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Slender Orcutt Grass - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Slender Orcutt Grass**	**Rationale**	**Slender Orcutt Grass**	**Rationale**
Indirect	**Habitat Fragmentation**	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by habitat fragmentation in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by risk of future hazardous spills in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by risk of future hazardous spills in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by introduction of non-natives in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by long-term sedimentation in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by long term erosion in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by increased human/domestic animal activity in adjacent habitats to the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by increased human/domestic animal activity in adjacent habitats to the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by altered hydrology.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by altered hydrology Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by Non-Point Source Pollution (e.g., channel run-off).	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by Non-Point Source Pollution (e.g., channel run-off) within Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by increased competition from non-natives in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Off-Site Area for Infrastructure Elements and none have been observed. As such, this species is considered likely to adversely affect to be affected by increased competition from non-natives in Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by thatch build up/fuel in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by thatch build up/fuel in Off-Site Area for Infrastructure Elements.

Slender Orcutt Grass - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Slender Orcutt Grass**	**Rationale**	**Slender Orcutt Grass**	**Rationale**
	Air Pollution	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by air pollution in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the nearby Plan Area and none have been observed. As such, this species is considered likely to adversely affect to be affected by air pollution in Off-Site Area for Infrastructure Elements.

NL = likely to adversely affect to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Sacramento Orcutt Grass - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Sacramento Orcutt Grass**	**Rationale**	**Sacramento Orcutt Grass**	**Rationale**
Direct	**Kill / Take of Individuals**	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be killed/taken in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of vernal pools in the vicinity of these areas. In addition, surveys for Sacramento Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to be adversely affect to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by grading/conversion of habitat in the Plan Area.	L	Slender Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. As such, this species is considered likely to be adversely affected by grading/conversion in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. In addition, measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered likely to be adversely affect to be affected by hazardous spills within the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area have not observed Sacramento Orcutt grass. This species is therefore considered likely to be adversely affect to occur in the Off-Site Area for Infrastructure Elements, and measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered likely to be adversely affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered likely to be adversely affect to be affected by sedimentation within the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered likely to be adversely affected by a sedimentation event in the Off-Site Area for Infrastructure Elements.
	Erosion Event	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered likely to be adversely affect to be affected by erosion within the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for slender Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. In addition, measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered likely to be adversely affected by an erosion event in the Off-Site Area for Infrastructure Elements.
	Dust Emissions	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from dust emmissions. As such, this species is considered likely to be adversely affect to be affected by dust emmissions within the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by dust emmissions in the Plan Area.
	Uncontrolled Trespass of Equipment / Personnel	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. This species is therefore considered likely to be adversely affect to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from uncontrolled trespass. As such, this species is considered likely to be adversely affect to be affected by uncontrolled trespass within the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the relatively shallow and disturbed nature of the vernal pools in the vicinity of these areas. In addition, surveys for Sacramento Orcutt grass were conducted on approximately 3503.3 acres within the nearby Plan Area and none were observed, and measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from uncontrolled trespass. As such, this species is considered likely to be adversely affected by uncontrolled trespass in the Off-Site Area for Infrastructure Elements.

NL = likely to be adversely affect to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Sacramento Orcutt Grass - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Sacramento Orcutt Grass**	**Rationale**	**Sacramento Orcutt Grass**	**Rationale**
Indirect	**Habitat Fragmentation**	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to occur and likely to be adversely affect to be affected by habitat fragmentation in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to occur and be affected by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. Surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. In addition, measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered likely to be adversely affect to be affected by risk of future hazardous spills in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). Surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Off-Site Area for Infrastructure Elements and none have been observed. In addition, measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills As such, this species is considered likely to be adversely affect to be affected by risk of future hazardous spills in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by introduction of non-natives in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Off-Site Area for Infrastructure Elements and none have been observed. As such, this species is considered likely to be adversely affect to be affected by introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by long-term sedimentation in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by long term erosion in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by increased human/domestic animal activity in adjacent habitats in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by increased human/domestic animal activity in adjacent habitats in the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by altered hydrology in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by altered hydrology Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by Non-Point Source Pollution (e.g., channel run-off).	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by Non-Point Source Pollution (e.g., channel run-off) in Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by increased competition from non-natives in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by increased competition from non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by thatch build up/fuel in the Plan Area.	L	Slender Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for slender Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Plan Area. In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the Specific Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by air pollution in the Plan Area.	L	Sacramento Orcutt grass is unlikely to occur due to the relatively shallow and disturbed nature of the vernal pools in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). In addition, surveys for Sacramento Orcutt grass have been conducted on approximately 3503.3 acres within the adjacent Plan Area and none have been observed. As such, this species is considered likely to be adversely affect to be affected by air pollution in the Off-Site Area for Infrastructure Elements.

NL = likely to be adversely affect to Adversely Affect This Species
M-NL = May Affect Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Hartweg's Golden Sunburst - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Hartweg's Golden Sunburst**	**Rationale**	**Hartweg's Golden Sunburst**	**Rationale**
Direct	**Kill / Take of Individuals**	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered not likely to be killed/taken in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered not likely to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by grading/conversion of habitat in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered unlikely to be affected by grading/conversion in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered may affect, not likely to adversely affect by hazardous spills within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered may affect, not likely to adversely affect by a hazardous spill in the Off-site infrastructure Elements Area.
	Sedimentation Event	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered may affect, not likely to adversely affect by sedimentation within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered may affect, not likely to adversely affect by a sedimentation event in the Off-site infrastructure Elements Area.
	Erosion Event	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered may affect, not likely to adversely affect by erosion within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered may affect, not likely to adversely affect by an erosion event in the Off-site infrastructure Elements Area.
	Dust Emissions	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from dust emmissions. As such, this species is considered may affect, not likely to adversely affect by dust emmisssions within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from uncontrolled trespass. As such, this species is considered may affect, not likely to adversely affect by dust emmissions in the Off-site infrastructure Elements Area.
	Uncontrolled Trespass of Equipment / Personnel	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from uncontrolled tresspass. As such, this species is considered may affect, not likely to adversely affect by uncontrolled trespass within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur in the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) due to the disturbed nature of the vernal pool landscape within the vicinity of these areas and because these areas are outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by uncontrolled trespass in the Off-site infrastructure Elements Area.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Indirect	**Habitat Fragmentation**	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by habitat fragmentation in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered may affect, not likely to adversely affect by future hazardous spills within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Off-Site Area for Infrastructure Elements. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from hazardous spills. As such, this species is considered may affect, not likely to adversely affect by future hazardous spills within the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by introduction of non-natives in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements, and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered may affect, not likely to adversely affect by long-term sedimentation in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements, and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from sedimentation. As such, this species is considered may affect, not likely to adversely affect by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Plan Area. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered may affect, not likely to adversely affect by long-term erosion within the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements, and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). This species is therefore considered not likely to occur in the Off-Site Area for Infrastructure Elements. Measures will be adopted and implemted to reduce or minimize the potential for affects to this species resulting from erosion. As such, this species is considered may affect, not likely to adversely affect by long-term erosion within the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by increased human/domestic animal activity in adjacent habitats in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by increased human/domestic animal activity in adjacent habitats in the Off-Site Area for Infrastructure Elements.

Hartweg's Golden Sunburst - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Hartweg's Golden Sunburst**	**Rationale**	**Hartweg's Golden Sunburst**	**Rationale**
	Altered Hydrology +/-	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by altered hydrology.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by altered hydrology.
	Non-Point Source Pollution (e.g., channel run-off)	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by Non-Point Source Pollution (e.g., channel run-off).	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by Non-Point Source Pollution (e.g., channel run-off) in Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by increased competition from non-natives in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by increased competition from non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by thatch build up/fuel in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001). As such, this species is considered may affect, not likely to adversely affect by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Plan Area, and because the Plan Area is outside the known range of previously recorded observations for this species (CNPS 2001).As such, this species is considered may affect, not likely to adversely affect by air pollution in the Plan Area.	M-NL	Hartweg's golden sunburst has a very low potential to occur due to the disturbed nature of the vernal pool landscape within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), and because the Off-Site Area for Infrastructure Elements is outside the known range of previously recorded observations for this species (CNPS 2001).As such, this species is considered may affect, not likely to adversely affect by air pollution in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Vernal Pool Fairy Shrimp - Potential Effects Analysis Table

		Plan Area		Off-site Area Elements	
Effect Type	**Specific Effect**	**Vernal Pool Fairy Shrimp**	**Rationale**	**Vernal Pool Fairy Shrimp**	**Rationale**
Direct	**Kill / Take of Individuals**	L	Direct kill/take of vernal pool fairy shrimp is likely due to grading and conversion of habitat. This species is known to occur within the Plan Area. As such, this species is considered likely to be killed/taken in the Plan Area.	L	Direct kill/take of vernal pool fairy shrimp is likely since the Off-site Elements Area infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) may occur in suitable habitat for this species. As such, this species is considered likely to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	L	Direct kill/take of vernal pool fairy shrimp is likely due to grading and conversion of habitat. This species is known to occur within the Plan Area. As such, this species is considered likely to be killed/taken in the Plan Area by grading/conversion of habitat.	L	Potentially suitable habitat for vernal pool fairy shrimp occurs in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) . As such, this species is considered likely to be affected by grading/conversion of habitat in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by hazardous spills.	M-NL	Vernal pool fairy shrimp is known to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by hazardous spills.
	Sedimentation Event	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would be directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by a sedimentation event.	M-NL	Vernal pool fairy shrimp is known to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) . This species would be directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by a sedimentation event.
	Erosion Event	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would be directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by an erosion event.	M-NL	Vernal pool fairy shrimp is known to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) . This species would be directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by an erosion event.
	Dust Emissions	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would be directly be affected if dust emmissions increased sedimentation in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by dust emmissions.	M-NL	Vernal pool fairy shrimp is known to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would be directly be affected if dust emmissions increased sedimentation in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by dust emmissions.
	Uncontrolled Trespass of Equipment / Personnel	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would directly be affected if uncontrolled trespass of equipment, construction personnel, or long-term public access occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented in the project's Open Space Mitigation Management Plans. As such, this species is may affect, not likely to be adversely affected by uncontrolled trespass.	M-NL	Vernal pool fairy shrimp is known to occur within theOff-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if uncontrolled trespass of equipment, construction personnel, or long-term public access occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented in the project's Open Space Mitigation Management Plans. As such, this species is may affect, not likely to be adversely affected by uncontrolled trespass.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Indirect	**Habitat Fragmentation**	L	Vernal pool fairy shrimp may be affected by conversion of habitat and associated habitat fragmentation. This species is known to occur within the Plan Area. As such, this species is considered likely to be affected by habitat fragmentation.	L	Vernal pool fairy shrimp may be affected by conversion of habitat and associated habitat fragmentation. This species is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by future hazardous spills.	M-NL	Vernal pool fairy shrimp is known to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by future hazardous spills in the Off-site Infrasructure Area Elements.
	Introduction of Non-Natives	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool fairy shrimp since this species is known to occur within the Plan Area. As such, this species is considered likely to be affected by the introduction of non-natives in the Plan Area.	L	Introduction of non- native plant and animal species may affect remaining habitat that supports vernal pool fairy shrimp since this species is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by the introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would be directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this affect, however, will be mandated and implemented. As such, this species is considered may affect, not likely to be adversely affected by long-term sedimentation in the Plan Area.	M-NL	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would be directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this affect, however, will be mandated and implemented. As such, this species is considered may affect, not likely to be adversely affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species would be directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by long-term erosion.	M-NL	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would be directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to be adversely affected by long-term erosion in the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	Vernal pool fairy shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by increased human/domestic animal activity in adjacent habitats to the Plan Area.	L	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by increased human/domestic animal activity in the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	L	Vernal pool fairy shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by altered hydrology within the Plan Area.	L	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by altered hydrology within the Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	L	Vernal pool fairy shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by non-point pollution within the Plan Area.	L	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by non-point pollution within the Off-Site Area for Infrastructure Elements.

Vernal Pool Fairy Shrimp - Potential Effects Analysis Table

		Plan Area		Off-site Area Elements	
Effect Type	**Specific Effect**	**Vernal Pool Fairy Shrimp**	**Rationale**	**Vernal Pool Fairy Shrimp**	**Rationale**
	Increased Competition from Non-Natives	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool fairy shrimp since this species is known to occur within the Plan Area. As such, this species is considered likely to be affected by the introduction of non-natives in the Plan Area.	**L**	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool fairy shrimp since this species is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by the introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. Mitigation measures to control thatch in preserve areas will be mandated and implemented in the project's Open Space Mitigation and Management Plans. As such, this species is considered may affect, not likely to be adversely affected by thatch build up/fuel in the Plan Area.	**M-NL**	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). Mitigation measures to control thatch in preserve areas will be mandated and implemented. As such, this species is considered may affect, not likely to be adversely affected by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	M-NL	Vernal pool fairy shrimp is known to occur within the Plan Area. This species, however, is not expected to be affected by air pollution.	**M-NL**	Vernal pool fairy shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species, however, is not expected to be affected by air pollution.

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M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Vernal Pool Tadpole Shrimp - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Vernal Pool Tadpole Shrimp**	**Rationale**	**Vernal Pool Tadpole Shrimp**	**Rationale**
Direct	**Kill / Take of Individuals**	L	Direct kill/take of vernal pool tadpole shrimp is likely due to grading and conversion of habitat. This species is known to occur within the Plan Area. As such, this species is likely to be affected in the Plan Area.	L	Direct kill/take of vernal pool tadpole shrimp is likely since the Off-Site Area for the Infrastructure Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) may occur in suitable habitat for this species. As such, this species is considered likely to be killed/taken in the Off-site Elements infrastructure Area.
	Grading / Conversion of Habitat	L	Direct kill/take of vernal pool tadpole shrimp is likely due to grading and conversion of habitat. This species is known to occur within the Plan Area. As such, this species is likely to be affected in the Plan Area.	L	Potentially suitable habitat for vernal pool tadpole shrimp occurs in the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) . As such, this species is considered likely to be affected by grading/conversion of habitat in the Off-site Elements infrastructure Area
	Hazardous Spills	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by hazardous spills.	M-NL	Vernal pool tadpole shrimp is known to occur within the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) . This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by hazardous spills.
	Sedimentation Event	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by a sedimentation event.	M-NL	Vernal pool tadpole shrimp is known to occur within the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by a sedimentation event.
	Erosion Event	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by an erosion event.	M-NL	Vernal pool tadpole shrimp is known to occur within the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by an erosion event.
	Dust Emissions	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would be directly be affected if dust emmissions increased sedimentation in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by dust emmissions.	M-NL	Vernal pool tadpole shrimp is known to occur within the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would be directly be affected if dust emmissions increased sedimentation in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by dust emmissions.
	Uncontrolled Trespass of Equipment / Personnel	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if uncontrolled trespass of equipment, construction personnel, or long-term public access occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented in the project's Open Space Mitigation and Management Plans. As such, this species is may affect, not likely to adversely affected by uncontrolled trespass.	M-NL	Vernal pool tadpole shrimp is known to occur within the Off-site Elements infrastructure Area elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if uncontrolled trespass of equipment, construction personnel, or long-term public access occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by uncontrolled trespass.
Indirect	**Habitat Fragmentation**	L	Vernal pool tadpole shrimp may be affected by conversion of habitat and associated habitat fragmentation. This species is known to occur within the Plan Area. As such, this species is considered likely to be affected by habitat fragmentation.	L	Vernal pool tadpole shrimp may be affected by conversion of habitat and associated habitat fragmentation. This species is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by habitat fragmentation.
	Risk of Future Hazardous Spills	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by hazardous spills.	M-NL	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if a hazardous spill event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by hazardous spills.
	Introduction of Non-Natives	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool tadpole shrimp since this species is known to occur within the Plan Area. As such, this species is considered likely to be affected by the introduction of non-natives in the Plan Area.	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool tadpole since this species is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by the introduction of non-natives in Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by a long-term sedimentation.	M-NL	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if a sedimentation event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by long-term sedimentation event in Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species would directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by long-term erosion.	M-NL	Vernal pool tadpole shrimp is known to occur within thevicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species would directly be affected if an erosion event occurred in habitat that supports this species. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is may affect, not likely to adversely affected by long-term erosion in Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	Vernal pool tadpole shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by increased human/domestic animal activity in adjacent habitats to the Plan Area.	L	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by increased human/domestic animal activity in adjacent habitats to Off-Site Area for Infrastructure Elements.
	Altered Hydrology +/-	L	Vernal pool tadpole shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by altered hydrology within the Plan Area.	L	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by altered hydrology within the Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	L	Vernal pool tadpole shrimp is known to occur within the Plan Area. As such, this species is considered to potentially be affected by non point pollution within the Plan Area.	L	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered to potentially be affected by non point pollution within the Plan Area.

Vernal Pool Tadpole Shrimp - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Vernal Pool Tadpole Shrimp**	**Rationale**	**Vernal Pool Tadpole Shrimp**	**Rationale**
	Increased Competition from Non-Natives	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool tadpole shrimp since this species is known to occur within the Plan Area. As such, this species is considered likely to be affected by the introduction of non-natives in the Plan Area.	L	Introduction of non native plant and animal species may affect remaining habitat that supports vernal pool tadpole shrimp since this species is known to occur within the vicinity of the Off-site Elements infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). As such, this species is considered likely to be affected by the introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. Mitigation measures to control thatch in preserve areas will be mandated and implemented in the project's Open Space Mitigation and Management Plans. As such, this species is considered may affect, not likely to adversely affected by thatch build up/fuel in the Plan Area.	M-NL	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). Mitigation measures to control thatch in preserve areas will be mandated and implemented in the project's Open Space Mitigation and Management Plans. As such, this species is considered may affect, not likely to adversely affected by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	M-NL	Vernal pool tadpole shrimp is known to occur within the Plan Area. This species is may affect, not likely to adversely affected by air pollution.	M-NL	Vernal pool tadpole shrimp is known to occur within the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). This species, however, is not expected to be affected by air pollution in Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Valley Elderberry Longhorn Beetle - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Valley Elderberry Longhorn Beetle**	**Rationale**	**Valley Elderberry Longhorn Beetle**	**Rationale**
Direct	**Kill / Take of Individuals**	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may be killed/taken if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle may be killed/taken if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed.
	Grading / Conversion of Habitat	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may be killed/taken by grading/conversion of habitat if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by grading/habitat conversion if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed.
	Hazardous Spills	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by a hazardous spill. Mitigation to minimize hazardous spills will be mandated and implemented. As such, this speices is considered likely to adversely affect to be affected by hazardous spills.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by hazardous spills if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Sedimentation Event	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by a sedimentation event. Mitigation to minimize sedimentation events will be mandated and implemented. As such, this speices is considered likely to adversely affect to be affected by a sedimentation event.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by a sedimentation event if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Erosion Event	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by an erosion event. Mitigation to minimize erosion events will be mandated and implemented. As such, this speices is considered likely to adversely affect to be affected by erosion events.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by erosion if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Dust Emissions	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by dust emmissions. Mitigation to minimize dust emmissions will be mandated and implemented. As such, this speices is considered likely to adversely affect to be affected by dust emmissions.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by dust emmissions if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged.
	Uncontrolled Trespass of Equipment / Personnel	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by uncontrolled trespass of equipment, construction personnel, or long-term public access. Mitigation to minimize uncontrolled trespass will be mandated and implemented. As such, this speices is considered likely to adversely affect to be affected by uncontrolled trespass.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be in the Off-Site Area for Infrastructure Elements, Valley elderberry longhorn beetle likely to adversely affected by uncontrolled trespass if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
Indirect	**Habitat Fragmentation**	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by fragmentation of habitat.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by fragmentation of habitat.
	Risk of Future Hazardous Spills	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed as a result of a hazardous spill.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank), although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed as a result of a hazardous spill.
	Introduction of Non-Natives	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if non native plants outcompete/shade elderberry shrubs (with one or more single stems having a 1 inch or greater diameter).	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if non native plants outcompete/shade elderberry shrubs (with one or more single stems having a 1 inch or greater diameter).
	Long-Term Sedimentation	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by a potential sedimentation event if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is considered likely to adversely affect to be affected by long-term sedimentation in the Plan Area.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected by a potential sedimentation event if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are removed. Mitgation measures to minimize the potential for this potential affect, however, will be mandated and implemented. As such, this species is considered likely to adversely affect to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by long-term erosion if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by long-term erosion if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by increased human/domestic animal activities if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by increased human/domestic animal activities if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Altered Hydrology + / -	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by altered hydrology if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by altered hydrology if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.
	Non-Point Source Pollution (e.g., channel run-off)	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by non-point source pollution if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by non-point source pollution if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/removed.

Valley Elderberry Longhorn Beetle - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Valley Elderberry Longhorn Beetle**	**Rationale**	**Valley Elderberry Longhorn Beetle**	**Rationale**
	Increased Competition from Non-Natives	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if non native plants outcompete/shade elderberry shrubs (with one or more single stems having a 1 inch or greater diameter).	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species likely to adversely affected if non native plants outcompete/shade elderberry shrubs (with one or more single stems having a 1 inch or greater diameter).
	Thatch Build-up / Fuel	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by thatch buildup if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/outcompeted/shaded.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. If elderberry shrubs are found to be on-site, this species may affected by thatch buildup if elderberry shrubs (with one or more single stems having a 1 inch or greater diameter) are damaged/outcompeted/shaded.
	Air Pollution	L	No habitat (elderberry shrubs) have been recorded within the Plan Area, although not all areas have been surveyed. This species is not expected to be impacted by air pollution in the Plan Area.	L	No habitat (elderberry shrubs) have been recorded within the Off-Site Area for Infrastructure Elements, although not all areas have been surveyed. This species is not expected to be impacted by air pollution in the Off-Site Area for Infrastructure Elements.

NL = likely to adversely affect to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adersely Affect
L = Likely to Adversely Affect This Species

Delta Smelt - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Delta Smelt**	**Rationale**	**Delta Smelt**	**Rationale**
Direct	**Kill / Take of Individuals**	NL	Delta Smelt is unlikely to be killed/taken since it is unlikely to occur in the vicinity of the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. As such, this species is considered not likely to be killed/taken in the Plan Area.	NL	Delta Smelt is unlikely to be killed/taken since it is unlikely to occur in the vicinity of the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. As such, this species is considered not likely to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	NL	Delta smelt is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the vicinity of the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by grading/conversion of habitat in the Plan Area.	NL	Delta smelt is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the vicinity of the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by grading/conversion of habitat in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	NL	Delta smelt is unlikely to be affected by hazardous spills since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by hazardous spills in the Plan Area.	NL	Delta smelt is unlikely to be affected by hazardous spills since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	NL	Delta smelt is unlikely to be affected by a sedimentation event since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by a sedimentation event in the Plan Area.	NL	Delta smelt is unlikely to be affected by a sedimentation event since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by a sedimentation event in the Off-Site Area for Infrastructure Elements.
	Erosion Event	NL	Delta smelt is unlikely to be affected by an erosion event since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by an erosion event in the Plan Area.	NL	Delta smelt is unlikely to be affected by an erosion event since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by an erosion event in the Off-Site Area for Infrastructure Elements.
	Dust Emissions	NL	Delta Smelt is unlikely to be affected by dust emissions since it is unlikely to occur in the vicinity of the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. As such, this species is considered not likely to be affected by dust emissions in the Plan Area.	NL	Delta Smelt is unlikely to be affected by dust emissions since it is unlikely to occur in the vicinity of the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. As such, this species is considered not likely to affected by dust emissions in the Off-Site Area for Infrastructure Elements.
	Uncontrolled Trespass of Equipment / Personnel	NL	Delta smelt is unlikely to be affected by affected by uncontrolled trespass of equipment, construction personnel, or long-term public access since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. As such, this species is considered not likely to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access in the Plan Area.	NL	Delta smelt is unlikely to be affected by affected by uncontrolled trespass of equipment, construction personnel, or long-term public access since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site areas are approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access in Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Indirect	**Habitat Fragmentation**	NL	The Plan Area is approximately 50 miles outside the range of previously recorded observations for Delta smelt (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. This species is considered not likely to be affected by habitat fragmentation in the Plan Area.	NL	The Off-site Infrastructure Area Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are approximately 50 miles outside the range of previously recorded observations for Delta smelt (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. This species is considered not likely to be affected by habitat fragmentation in the Off-site Infrastructure Area Elements.
	Risk of Future Hazardous Spills	NL	Delta smelt is unlikely to be affected by the risk of future hazardous spills since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by the risk of future hazardous spills in the Plan Area.	NL	Delta smelt is unlikely to be affected by the risk of future hazardous spills since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by the risk of future hazardous spills in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	NL	The proposed Plan Area project would not contribute to the introduction of non-native species that could affect Delta smelt.	NL	The proposed Offsite infrastructure elements would not contribute to the introduction of non-native species that could affect Delta smelt.
	Long-Term Sedimentation	NL	Delta smelt is unlikely to be affected by long-term sedimentation since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by long-term sedimentation in the Plan Area.	NL	Delta smelt is unlikely to be affected by long-term sedimentation since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements .
	Long-Term Erosion	NL	Delta smelt is unlikely to be affected by long-term erosion since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by long-term erosion in the Plan Area.	NL	Delta smelt is unlikely to be affected by long-term erosion since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements .
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	NL	Increased human/domestic animal activity in adjacent habitats to the Plan Area would not affect Delta smelt.	NL	Increased human/domestic animal activity in adjacent habitats to the Off-site Infrastructure Area Elements would not affect Delta smelt.
	Altered Hydrology + / -	NL	The Plan Area is approximately 50 miles outside the range of previously recorded observations for Delta smelt (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. BMP's designed to minimize potential water quality and supply impacts resulting from altered hydrology in the Plan Area will be mandated and implemented, and will result in less than significant impacts to this species.	NL	The Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are approximately 50 miles outside the range of previously recorded observations for Delta smelt (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. BMP's designed to minimize potential water quality and supply impacts resulting from altered hydrology in the Off-Site Area for Infrastructure Elements will be mandated and implemented, and will result in less than significant impacts to this species.
	Non-Point Source Pollution (e.g., channel run-off)	NL	Delta smelt is unlikely to be affected by non-point source pollution since it is unlikely to occur in the Plan Area. The Plan Area is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected by non-point source pollution in the Plan Area.	NL	Delta smelt is unlikely to be affected by non-point source pollution since it is unlikely to occur in the Off-Site Area for Infrastructure Elements elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is approximately 50 miles outside the range of previously recorded observations for this species (Moyle 1976), and none have been reported from the adjacent Dry Creek watershed. In addition, BMP's designed to minimize potential water quality and supply impacts will be mandated and implemented. As such, this species is considered not likely to be affected bynon-point source pollution in the Off-Site Area for Infrastructure Elements elements.
	Increased Competition from Non-Natives	NL	The proposed Plan Area project would not contribute to the increased competition from non-native species that could affect Delta smelt.	NL	The Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) project would not contribute to the increased competition from non-native species that could affect Delta smelt.
	Thatch Build-up / Fuel	NL	Thatch build up/fuel in the Plan Area would not affect Delta smelt.	NL	Thatch build up/fuel in the Offsite Infrastructure Elements Area would not affect Delta smelt.
	Air Pollution	NL	Air pollution in the Plan Area is not expected to affect Delta smelt.	NL	Air pollution in the Off-site Infrastructure Area Elements is not expected to affect Delta smelt.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

California Tiger Salamander - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**California Tiger Salamander**	**Rationale**	**California Tiger Salamander**	**Rationale**
Direct	**Kill / Take of Individuals**	NL	California tiger salamander is unlikely to be killed/taken since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be killed/taken in the Plan Area.	NL	California tiger salamander is unlikely to occur within the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site elements are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003). As such, this species is considered not likely to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be grading/conversion of habitat in the Plan Area.	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). Thein Off-Site Area for Infrastructure Elements are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by grading/conversion of habitat in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	NL	California tiger salamander is unlikely to be affected by hazardous spills since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize hazardous spills will be mandated and implemented. As such, this species is considered not likely to be affected by hazardous spills in the Plan Area.	NL	California tiger salamander is unlikely to be affected by hazardous spills since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize hazardous spills will be mandated and implemented. As such, this species is considered not likely to be affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	NL	California tiger salamander is unlikely to be affected by a sedimentation event since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize potential sedimentation events will be mandated and implemented. As such, this species is considered not likely to be affected by sedimentation events in the Plan Area.	NL	California tiger salamander is unlikely to be affected by a sedimentation event since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements area outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize potential sedimentation events will be mandated and implemented. As such, this species is considered not likely to be affected by sedimentation events in the Off-Site Area for Infrastructure Elements.
	Erosion Event	NL	California tiger salamander is unlikely to be affected by an erosion event since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize erosion events will be mandated and implemented. As such, this species is considered not likely to be affected by erosion events in the Plan Area.	NL	California tiger salamander is unlikely to be affected by an erosion event since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site Areas are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize erosion events will be mandated and implemented. As such, this species is considered not likely to be affected by erosion events in Off-Site Area for Infrastructure Elements.
	Dust Emissions	NL	California tiger salamander is unlikely to be affected by dust emmissions since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize dust emmisssions will be mandated and implemented. As such, this species is considered not likely to be affected by dust emmissions in the Plan Area.	NL	California tiger salamander is unlikely to be affected by dust emmissions since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site areas are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. In addition, mitigation measures to minimize dust emmisssions will be mandated and implemented. As such, this species is considered not likely to be affected by dust emmissions in Off-Site Area for Infrastructure Elements.
	Uncontrolled Trespass of Equipment / Personnel	NL	California tiger salamander is unlikely to be affected by affected by uncontrolled trespass of equipment, construction personnel, or long-term public access since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access in the Plan Area.	NL	California tiger salamander is unlikely to be affected by ffected by uncontrolled trespass of equipment, construction personnel, or long-term public access since it is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site areas are outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access in Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Indirect	**Habitat Fragmentation**	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by habitat fragmentation in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by habitat fragmentation in the Off-site Infrastructure Area Elements.
	Risk of Future Hazardous Spills	NL	California tiger salamander is unlikely to is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by a future hazardous spill in the Plan Area.	NL	California tiger salamander is unlikely to is unlikely to occur in the Off-site Infrastructure Area Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by a future hazardous spill in the Off-site Infrastructure Area Elements.
	Introduction of Non-Natives	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by introduction of non-natives in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by introduction of non-natives in the Off-site Infrastructure Area Elements.
	Long-Term Sedimentation	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by long-term sedimentation in the Plan Area.	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by long-term sedimentation in the Off-site Infrastructure Area Elements.
	Long-Term Erosion	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by long-term erosion in the Plan Area.	NL	California tiger salamander is unlikely to be affected by grading/conversion of habitat since it is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by long-term erosion in the Off-site Infrastructure Area Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by increased human/domestic animal activity in adjacent habitats in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by increased human/domestic animal activity in adjacent habitats in the Off-site Infrastructure Area Elements.
	Altered Hydrology + / -	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by altered hydrology.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by altered hydrology.
	Non-Point Source Pollution (e.g., channel run-off)	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by non-point source pollution in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by non-point source pollution in the Off-site Infrastructure Area Elements.
	Increased Competition from Non-Natives	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by increased competition from non-natives in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by increased competition from non-natives in the Off-site Infrastructure Area Elements.
	Thatch Build-up / Fuel	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by thatch build up/fuel in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by thatch build up/fuel in the Off-site Infrastructure Area Elements.
	Air Pollution	NL	California tiger salamander is unlikely to occur in the Plan Area. The Plan Area is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by air pollution in the Plan Area.	NL	California tiger salamander is unlikely to occur in the Off-site Infrastructure Area Elements. The Off-site Infrastructure Area Elements is outside the range of previously recorded observations for this species (Jennings and Hayes 1994, CDFG 2003), and none have been reported from the project vicinity. As such, this species is considered not likely to be affected by air pollution in the Off-site Infrastructure Area Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

California Tiger Salamander - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	Specific Effect	California Tiger Salamander	Rationale	California Tiger Salamander	Rationale

California Red-legged Frog - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**California Red-legged Frog**	**Rationale**	**California Red-legged Frog Effects Analysis Table**	**Rationale**
Direct	**Kill / Take of Individuals**	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be killed/taken since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be killed/taken in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be killed/taken since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Grading / Conversion of Habitat	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by grading/conversion of habitat in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be killed/taken in the Plan Area due to grading/conversion of habitat.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by grading/conversion of habitat since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Hazardous Spills	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by a hazardous spill in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by hazardous spills since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Sedimentation Event	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by a sedimentation event in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). Also, mitigation measures to minimize sedimentation events will be mandated and implemented. As such, this species is considered not likely to be affected by sedimentation in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by a sedimentation event since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Erosion Event	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by an erosion event in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). Also, mitigation measures to minimize erosion events will be mandated and implemented. As such, this species is considered not likely to be affected by erosion events in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by an erosion event since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Dust Emissions	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by dust emmissions in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). Also, mitigation measures to minimize dust emmissions will be mandated and implemented. As such, this species is considered not likely to be affected by dust emmisssions in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by dust emmissions since it is unlikely to occur within or near the Off-site Elements. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).
	Uncontrolled Trespass of Equipment / Personnel	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by by uncontrolled trespass of equipment, construction personnel, or long-term public access in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek (spanned by Watt Ave. that will have associated road improvements), this species is not likely to be affected by uncotrolled trespass since it is unlikely to occur within or near the Off-site Element. Each Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000).

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

	Habitat Fragmentation	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by habitat fragmentation in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to occur within or near the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by risk of future hazardous spills in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by a future hazardous spill in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to occur in the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank). The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by a future hazardous spill in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by introduction of non-natives since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by introduction of non-natives in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be killed/taken since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by introduction of non-natives in the Off-Site Area for Infrastructure Elements.

California Red-legged Frog - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**California Red-legged Frog**	**Rationale**	**California Red-legged Frog Effects Analysis Table**	**Rationale**
Indirect	**Long-Term Sedimentation**	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by long-term sedimentation in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by long-term sedimentation in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by long-term erosion in the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by long-term erosion in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is unlikely to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by increased human/domestic animal activity since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by increased human/domestic animal activity in adjacent habitats in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by increased human/domestic animal activity since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by increased huma/domestic animal activity in adjacent habitats in the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be altered hydrology +/- since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by altered hydrology in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be altered hydrology +/- since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by altered hydrology in the Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by non-point source pollution since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by non-point source pollution in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by non-point source pollution since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by non-point source pollution in the Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by increased competition from non-natives since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by increased competition from non-natives in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by increased competition from non-natives since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by increased competition from non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by thatch build-up/fuel since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by thatch build up/fuel in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by thatch build-up/fuel since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

	Air Pollution	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by air pollution since it is unlikely to occur within or near the Plan Area. The Plan Area is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by air pollution in the Plan Area.	NL	Although marginally suitable habitat for California red-legged frog occurs along Dry Creek, this species is not likely to be affected by air pollution since it is unlikely to occur within or near the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of California red-legged frog (Jennings and Hayes 1994, CDFG 2003). In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated (USFWS 2000). As such, this species is considered not likely to be affected by air pollution in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Giant Garter Snake - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Giant Garter Snake**	**Rationale**	**Giant Garter Snake**	**Rationale**
Direct	**Kill / Take of Individuals**	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is not likely to be killed/taken since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely killed/taken in the Plan Area.	L	Giant garter snake is not likely to be killed/taken in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species will be mandated and implemented. As such, this species is considered may afffect, likely to adversely be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by grading/conversion of habitat within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by grading/conversion of habitat in the Plan Area.	L	Giant garter snake is may affect, not likely to adversely affect by grading/conversion of habitat in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species will be mandated and implemented. As such, this species is considered may afffect, likely to adversely affected by grading/habitat conversion in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by hazardous spills of habitat within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by hazardous spills in the Plan Area.	M-NL	Giant garter snake is not likely to be potentially affected by hazardous spills in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species, and BMP's to minimize the risk of hazardous spills will be mandated and implemented. As such, this species is considered not likely to be affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by a sedimentation event within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by a sedimentation event in the Plan Area.	M-NL	Giant garter snake is may affect, not likely to adversely affect by a sedimentation event in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species, and BMP's to minimize sedimentation risks will be mandated and implemented. As such, this species is considered not likely to be affected by a sedimentation event in the Off-Site Area for Infrastructure Elements.
	Erosion Event	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by an erosion event within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by an erosion event in the Plan Area.	M-NL	Giant garter snake is may affect, not likely to adversely affect by erosion events in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species and BMP's to minimize the potential for erosion events will be mandated and implemented. As such, this species is considered not likely to be affected by an erosion event in the Off-Site Area for Infrastructure Elements infrastructure elements.
	Dust Emissions	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by dust emmissions within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by dust emmissions in the Plan Area.	M-NL	Giant garter snake is may affect, not likely to adversely affect by dust emmissions in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species and BMP's to minimize dust emmissions will be mandated and implemented. As such, this species is considered not likely to be affected by dust emmisssions in the Off-Site Area for Infrastructure Elements.
	Uncontrolled Trespass of Equipment / Personnel	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered not affected by uncontrolled trespass of equipment, construction personnel, or long-term public access.	M-NL	Giant garter snake is may affect, not likely to adversely affect by unctrolled trespass in three of the 4 elements of the Off-Site Area for Infrastructure Elements (i.e., sewer, potable water line/tank, and recycled water line/tank) since these elements are outside the range of previously recorded observations of this species. The road element, however, extends into the Natomas Basin and improvements to Base Line/Rieggo Road may affect this species. Provisions set forth in the Natomas Basin Habitat Conservation Plan (NBHCP) to minimize impacts to this species and BMP's to minimize the potential effects of uncontrolled trspass will be mandated and implemented. As such, this species is considered not likely to be uncontrolled trespass of equipment/personnel in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

	Habitat Fragmentation	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is not likely to occur. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by habitat fragmentation in the Plan Area.	M-NL	Although the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) provides marginally suitable habitat for Giant Garter Snake, this species is not likely to occur. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by a future hazardous spill within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by a future hazardous spill in the Plan Area.	M-NL	Although the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) provides marginally suitable habitat for Giant Garter Snake, this species is unlikely to be affected by future hazardous spills within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by a future hazardous spill in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by introduction of non-natives since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by introduction of non-natives in the Plan Area.	M-NL	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by introduction of non-natives since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by long-term sedimentation within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by long-term sedimentation in the Plan Area.	M-NL	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by long-term sedimentation within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by long-term erosion within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by long-term erosion in the Plan Area.	M-NL	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is is unlikely to be affected by long-term erosion within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by long-term erosion in the Off-Site Area for Infrastructure Elements.

Giant Garter Snake - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Giant Garter Snake**	**Rationale**	**Giant Garter Snake**	**Rationale**
Indirect	**Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)**	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by increased human/domestic animal activity since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by increased human/domestic animal activity in adjacent habitats in the Plan Area.	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by increased human/domestic animal activity since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by increased human/domestic animal activity in adjacent habitats in the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by altered hydrology since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by altered hydrology.	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by altered hydrology since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by altered hydrology in the Off-Site Area for Infrastructure Elements.
	Non-Point Source Pollution (e.g., channel run-off)	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is not likely to be killed/taken since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by non-point source pollution	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is not likely to be killed/taken since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by non-point source pollution in the Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by increased competition from non-natives since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by increased competition from non-natives in the Plan Area.	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by increased competition from non-natives since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by increased competition from non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by thatch build up/fuel since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by thatch build up/fuel in the Plan Area.	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by thatch build up/fuel since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this Off-Site Area for Infrastructure Elements. As such, this species is considered may affect, not likely to adversely affect by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	M-NL	Although the Plan Area provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by air pollution since it is unlikely to occur within the Plan Area. The Plan Area is outside the range of previously recorded observations of this species, and none have been observed within this area. As such, this species is considered may affect, not likely to adversely affect by air pollution in the Plan Area.	**M-NL**	Although the Off-Site Area for Infrastructure Elements provides marginally suitable habitat for Giant Garter Snake, this species is may affect, not likely to adversely affect by air pollution since it is unlikely to occur within the Off-Site Area for Infrastructure Elements. The Off-Site Area for Infrastructure Elements is outside the range of previously recorded observations of this species, and none have been observed within this Off-Site Area for Infrastructure Elements. As such, this species is considered may affect, not likely to adversely affect by air pollution in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Western Yellow-Billed Cuckoo - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Western Yellow-Billed Cuckoo**	**Rationale**	**Western Yellow-Billed Cuckoo**	**Rationale**
Direct	**Kill / Take of Individuals**	NL	Western yellow-billed cuckoo is not expected to be killed/taken since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be killed/taken in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be killed/taken in the Off-Site Area for Infrastructure Elements.
	Grading / Conversion of Habitat	NL	Western yellow-billed cuckoo is not expected to be affected by grading/conversion of habitat since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by grading/conversion of habitat in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by grading/habitat conversion in the Off-Site Area for Infrastructure Elements.
	Hazardous Spills	NL	Western yellow-billed cuckoo is not expected to be affected by hazardous spills since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by hazardous spills in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by hazardous spills in the Off-Site Area for Infrastructure Elements.
	Sedimentation Event	NL	Western yellow-billed cuckoo is not expected to be affected by a sedimetnation event since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by a sedimentation event in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by sedimentation events in the Off-Site Area for Infrastructure Elements.
	Erosion Event	NL	Western yellow-billed cuckoo is not expected to be affected by an erosion even since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by an erosion event in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by erosion events in the Off-Site Area for Infrastructure Elements.
	Dust Emissions	NL	Western yellow-billed cuckoo is not expected to be affected by dust emmisssions since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by dust emmissions in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by dust emmissions in the Off-Site Area for Infrastructure Elements.
	Uncontrolled Trespass of Equipment / Personnel	NL	Western yellow-billed cuckoo is not expected to be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered to not be affected by uncontrolled trespass of equipment, construction personnel, or long-term public access.	NL	Western yellow-billed cuckoo is not expected to occur in the Off-Site Area for Infrastructure Elements since the project's infrastructure elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) are outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging. No such riparian habitat occurs within the Off-site Area Elements. As such, this species is considered not likely to be affected by uncontrolled trespass in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
L = Likely to Adversely Affect This Species

Indirect	**Habitat Fragmentation**	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by habitat fragmentation in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by habitat fragmentation in the Off-Site Area for Infrastructure Elements.
	Risk of Future Hazardous Spills	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by a future hazardous spill in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements (i.e., roads, sewer, potable water line/tank, and recycled water line/tank) is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by a future hazardous spill in the Off-Site Area for Infrastructure Elements.
	Introduction of Non-Natives	NL	Western yellow-billed cuckoo is not expected to occur sincr the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by introduction of non-natives in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur sincr the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by introduction of non-natives in the Off-Site Area for Infrastructure Elements.
	Long-Term Sedimentation	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by long-term sedimentation in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by long-term sedimentation in the Off-Site Area for Infrastructure Elements.
	Long-Term Erosion	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by long-term erosion in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by long-term erosion in the Off-Site Area for Infrastructure Elements.
	Increased Human / Domestic Animal Activity in Adjacent Habitats (e.g., compaction, bicycling - OHV use - hiking)	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by increased human/domestic animal activity in adjacent habitats in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by increased human/domestic animal activity in adjacent habitats in the Off-Site Area for Infrastructure Elements.
	Altered Hydrology + / -	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by altered hydrology in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by altered hydrology in the Off-Site Area for Infrastructure Elements.

Western Yellow-Billed Cuckoo - Potential Effects Analysis Table

		Plan Area		Off-Site Area for Infrastructure Elements	
Effect Type	**Specific Effect**	**Western Yellow-Billed Cuckoo**	**Rationale**	**Western Yellow-Billed Cuckoo**	**Rationale**
	Non-Point Source Pollution (e.g., channel run-off)	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by non-point source pollution in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by non-point source pollution in the Off-Site Area for Infrastructure Elements.
	Increased Competition from Non-Natives	NL	Western yellow-billed cuckoo is not expected to occur sincr the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by increased competition from non-natives in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur sincr the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by increased competition from non-natives in the Off-Site Area for Infrastructure Elements.
	Thatch Build-up / Fuel	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by thatch build up/fuel in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by thatch build up/fuel in the Off-Site Area for Infrastructure Elements.
	Air Pollution	NL	Western yellow-billed cuckoo is not expected to occur since the Plan Area is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by air pollution in the Plan Area.	NL	Western yellow-billed cuckoo is not expected to occur since the Off-Site Area for Infrastructure Elements is outside this species known nesting range. Furthermore, this species requires large blocks (25+ acres) of riparian vegetation for nesting and foraging and the riparian area along Dry Creek provides only marginally suitable habitat. As such, this species is considered not likely to be affected by air pollution in the Off-Site Area for Infrastructure Elements.

NL = Not Likely to Adversely Affect This Species
M-NL = May Affect, Not Likely to Adversely Affect
L = Likely to Adversely Affect This Species

Applicant's Submittal in Support of a Biological Assessment,
National Marine Fisheries Service

Revised National Oceanographic and Atmospheric Administration, National Marine Fisheries Service Endangered Species Act Consultation, Biological Assessment

for the

Placer Vineyards Specific Plan Project

Placer County, California

March 27, 2013

Prepared For:

Placer Vineyards Development Group, LLC.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment A – U.S. Fish and Wildlife Service Official Species List for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-Minute Quadrangles
Attachment B – National Marine Fisheries Service Official Species List for the Project Site and Action Area
Attachment C – Dry Creek Fish Habitat Assessment - Photographs
Attachment D – Dry Creek Fish Habitat Assessment – Results

BACKGROUND / HISTORY

The purpose of this Biological Assessment is to review the proposed Placer Vineyards Specific Plan project (Project), including off-site infrastructure elements, in sufficient detail to allow the National Oceanographic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) to determine the impact of proposed actions on federally protected species of interest. This Biological Assessment is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act [16 U.S.C. 1536 (c)]. The ESA Consultation and Initiation Template (downloaded from the NOAA Fisheries Southwest Region website) was used as the framework for preparing the Biological Assessment.

Project History

The only relevant correspondence that has occurred relative to potential fisheries issues and implementation of the Project have been requests to the U.S. Fish and Wildlife Service (USFWS) and NMFS for species lists. These lists were received on May 22, 2001 (Attachment A) and June 18, 2007 (Attachment B), respectively.

The purpose of the Specific Plan is to establish a coordinated and comprehensive approach towards land use development consisting of residential, employment, commercial, recreational and public/quasi-public land uses, and required infrastructure, as well as open space. Additional supplemental information is available in the Revised Draft Environmental Impact Report (RDEIR) (Quad Knopf 2006).

Certain property owners within the Placer Vineyards Specific Plan Area have submitted federal Clean Water Act (CWA) Section 404 permit applications for development in the unincorporated area of western Placer County. The Placer County Board of Supervisors approved the Specific Plan and certified the Project EIR on July 16, 2007. The Draft *Placer Vineyards Specific Plan*, originally prepared by The Spink Corporation (in association with Fehr & Peers Associates and Sugnet and Associates) was first submitted to the County of Placer in December, 1996. Subsequent revisions were incorporated in the Specific Plan by G.C. Wallace in 2003 (in association with MacKay & Somps, Inc.; Fehr & Peers Associates; Civil Solutions and ECORP

Consulting) and most recently by EDAW, Inc. in 2005 (in association with MacKay & Somps, Inc.; Fehr & Peers Associates; Civil Solutions and ECORP Consulting). While the approved Specific Plan area includes 5,230± acres, only 4,251 acres are planned for urban development under the proposed Specific Plan. Of the 4,251 acres, projects within the Specific Plan area totaling 3,746 acres have submitted CWA Section 404 permit applications (not including the off-site infrastructure alignments which are also being processed by the Corps as a separate permit application). Approximately 979 acres are reserved as a Special Planning Area (the "SPA") which will continue to be used for large lot rural residential development, consistent with current zoning under the proposed Specific Plan, unless individual landowners apply for zone changes in the future. The SPA is not part of the federal CWA permit applications bundle now being considered by the Corps. It is estimated that full build out of the 4,251 acres of the Specific Plan will occur over a 20- to 30-year time period. The proposed development includes residential, employment, commercial, open space, recreational and public/quasi-public land uses.

The August, 1994 *Placer County General Plan* identified this area as appropriate for urbanization following adoption and implementation of a comprehensive Specific Plan. The Specific Plan area is currently designated "Urban" on the Generalized Land Use Diagram within the *Placer County General Plan*, and "West Placer Specific Plan" in the *Dry Creek/West Placer Community Plan*. As part of the countywide General Plan Update, the Placer County Board of Supervisors adopted Resolution 94-238 on August 16, 1994 designating the Specific Plan area as "West Placer Specific Plan" and adding to the *Dry Creek/West Placer Community Plan* a list of development standards to be incorporated into the future *West Placer Specific Plan*. This section of the General Plan is referred to as "Exhibit 1." Exhibit 1 is included as Appendix D to the Revised Draft EIR, as well as in Section 4.1 of the Revised Draft EIR. The County has determined that Exhibit 1 supersedes the other goals and policies of the *Dry Creek/West Placer Community Plan* for the area identified as "West Placer Specific Plan" (the Placer Vineyards Specific Plan area).

In its environmental review of the PVSP, Placer County evaluated a range of development densities, from 14,132 dwelling units up to 21,631 dwelling units within the 5230-acre PVSP area. The "bookends" of this range are represented by the lower density "Base Plan" and a

higher density version known as the "Blueprint Scenario", due to its consistency with the 2005 Sacramento Area Council of Governments' (SACOG's) "Preferred Blueprint Scenario." Under this higher density scenario, the development footprint would remain essentially the same, but the density of residential and commercial land uses would be increased to accommodate an estimated population of approximately 49,000 people (increased from approximately 33,000 at the lower end of the density range). The higher density scenario would also result in minor land use shifts within the plan to accommodate the higher densities. There is some potential that, during the 20-to 30-year buildout of the PVSP, local policy makers may determine that the plan area is suitable for the higher densities. Accordingly, the applicants have requested that the EIS evaluate, and the Corps' 404 permits reflect, the potential for development throughout the continuum between low and high densities analyzed in the Specific Plan EIR. That is, the Corps' permits and NEPA review will allow local policy makers to adjust the densities of the plan, within these "bookends," without the need for further Corps permitting or environmental review, as long as the development footprint remains unchanged.

At full build-out at the lower end of the density range, the PVSP area would support a population of 33,000 persons in 14,132 dwelling units. The newly-developed 4,251-acre area[1] would include approximately 2,382 acres of residential uses, 309 acres of commercial uses, 640 acres of quasi-public (public facilities/services, religious facilities, schools, and major roadways) land uses, and 211 acres of park and 709 acres of open space land (Figure 3. *Placer Vineyards Specific Plan –Approved Development Plan*). There would be approximately 13,982 new dwelling units[2]. The 709 acres of open space would include corridors with drainage infrastructure elements to be constructed as part of the plan. The PVSP is expected to develop over a 20 to 30-year time frame.

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[1] The "newly-developed" area is the portion of the Placer Vineyards Specific Plan area not designated as "Special Planning Area", which is predominated by existing rural residential development.

[2] The total dwelling unit count for the Placer Vineyards Specific Plan is 14,132 which is the total of 13,721 new dwelling units within the newly-developed 4,251 acres, plus an allowance for 150 existing dwelling units and 261 new dwelling units in the 979-acre Special Planning Area.

All of the proposed development that would be allowed under the currently-pursued permit actions would occur within approximately 3,746 acres. When complete, this portion of the development would consist of approximately 2,005.5 acres of residential uses; 277.7 acres of office/business park/commercial uses; 50.5 acres of public facilities and services uses; 74 acres of religious facilities; 167 acres of elementary, middle, and high school uses; 199 acres of park (neighborhood, community and "mini" parks, as well as a recreational center); 296.5 acres of major roadways; and 675.5 acres of open space. Consistent with the Placer County General Plan, the Placer Vineyards Specific Plan allocates 11,585 of the 14,132 allowable dwelling units to these 3,746 acres. As discussed above, build-out is anticipated to occur over a 20 to 30-year period.

At full-buildout at the higher end of the density range, the development footprint would remain the same, but the density of residential and commercial land uses would increase to accommodate 21,631 dwelling units and an estimated population of 49,000 people. Like at the lower end of the density-range, there would be new development of approximately 4,251 acres within the 5,230-acre Placer Vineyards Specific Plan area. The remaining 979 acres are within a Special Planning Area (SPA) where there is existing rural residential land use, and only very limited additional development (i.e., 261 new dwelling units) would occur.

Higher density would require minor land use shifts within the plan area, but the development footprint would remain the same with 709 acres of open space at full-buildout, regardless of density. There would be a maximum of approximately 21,481[3] new dwelling units and a population of approximately 49,000 persons that would develop over a 20 to 30-year time frame. As with the low end of the density range, the 709 acres of open space would include corridors with drainage infrastructure elements to be constructed as part of the plan.

[3] The total dwelling unit count for the Placer Vineyards Specific Plan Blueprint Scenario is 21,631 which is the total of 21,220 new dwelling units within the newly-developed 4,251 acres, plus an allowance for 150 existing dwelling units and 261 new dwelling units in the 979-acre Special Planning Area.

Federal Action History

This document is intended to support the initiation of consultation with the NMFS pursuant to Section 7 of the Federal Endangered Species Act.

On May 22, 2007, a threatened, endangered, and candidate species list was requested and received from the USFWS (Attachment A). On May 24, 2007, a letter was sent from Mr. Craig Seltenrich of ECORP to Rodney McInnis, Regional Administrator for the NMFS, requesting a formal species list for the project region. On June 18, 2007, Mr. Seltenrich received the species list from Mr. McInnis, identifying the threatened Central Valley steelhead and designated Critical Habitat as occurring within the Dry Creek Watershed (Attachment B).

ACTION AND ACTION AREA

Federal Action and Legal Authority / Agency Discretion

The U.S. Army Corp of Engineers (Corps) is the federal action agency and legal authority for approval of the CWA Section 404 permits that comprise the Placer Vineyards Specific Plan project. As described above, the permit before the Corps is a "bundled" application comprising all of the currently participating projects, inclusive of off-site and on-site infrastructure requirements. The permit applicants, represented by the Placer Vineyards Property Owner's Group, will formally request that they be involved in the consultation process once consultation has been initiated.

With implementation of the appropriate protective measures and Best Management Practices (BMPs), this project and/or agency actions relative to the federal approval are "not likely to adversely affect" (NLAA) Central Valley steelhead or Critical Habitat.

Project Purpose and Objectives

As described above, the purpose of the Placer Vineyards Specific Plan (PVSP) is to establish a coordinated and comprehensive approach towards land use development consisting of residential, employment, commercial, recreational and public/quasi-public land uses, and required infrastructure and open space. While the PVSP area totals approximately 5,230 acres, only about 3,746 are currently participating in the planned development, and are the subject of the current permit action by the Corps (Figure 1. *Placer Vineyards Specific Plan Area and Properties with Active Permit Applications,* and Figure 2. *Placer Vineyards Specific Plan – Approved Development Plan*). The remaining approximate 1,484 acres, which includes 979 acres designated as Special Planning Area (SPA), are non-participating properties in the context of the CWA section 404 process. Thus, the 3,746 acres of participating properties defines the on-site project area as addressed in this Biological Assessment (BA).

Infrastructure improvements, both within the PVSP area and off-site, would be necessary to support the proposed development. These infrastructure improvements include road improvements (e.g., widening of lanes and the addition of intersection controls), the addition of utility lines and routes for trunk sewer and water lines, and recycled water storage facilities and transmission lines. Regarding off-site infrastructure improvements, where possible, utility lines would be placed within existing roadways or other disturbed areas, so as to minimize environmental impacts. Due to then-uncertainties regarding the precise path/alignment for each of these off-site infrastructure elements, six different scenarios were presented in the 2006 bundled Clean Water Act, Section 404 Permit Application package. Scenario #3 was identified as the most likely to be implemented, and was incorporated into the bundled permit application package. Since that time, uncertainties have been removed. The location of the off-site infrastructure elements are identified in Figure 3. *Off-Site Area for Infrastructure Elements.* The Placer Vineyards Specific Plan area and the area for off-site infrastructure elements together constitute the basis for the Action Area defined, below.

Project Description; Activities to be Authorized, Funded, or Carried Out by the Federal Action Agency

Project Activities

The PVSP encompasses approximately 5,230 acres in unincorporated southwestern Placer County, approximately 15 miles north of Sacramento. While the PVSP area includes approximately 5,230 acres, only approximately 3,746 acres are currently participating in the planned development, and are the subject of the current permit action by the Corps. The remaining approximate 1,484 acres in the PVSP, inclusive of the SPA, are non-participating, although some infrastructure improvements are expected to occur on these properties, such as road construction and improvements and utility construction and maintenance activities required for development of the projects seeking Corps authorization.

With the exception of off-site infrastructure development and certain interdependent and interrelated actions, proposed development that is part of the current federal action would occur within the 3,746 acres of properties with active applications.

The Project area is under multiple ownerships so the timing of the development of a specific property is not according to a phasing plan, but according to the market-driven and personal criteria that each owner utilizes to decide timing of property development. However, the development of these individual properties has been planned as part of the PVSP and all of the properties with active applications are part of the federal action under review.

As part of the infrastructure requirements, the Project includes: "jack and bore" activities adjacent to Dry Creek to support installation of utilities; removal and replacement of the Watt Avenue Bridge; and connection to the Dry Creek Waste Water Treatment Plant (DCWWTP). These project-related components are discussed in more detail since they have the potential to affect listed anadromous fish species such as Central Valley steelhead.

Section 7 of the Endangered Species Act [16 U.S.C. 1536 (c)] requires all Federal agencies to conserve threatened and endangered species and, in consultation with the USFWS and/or NMFS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify Critical Habitat. Section 7 applies to Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal permits, licenses, or other actions. Based on the applicant's request for authorization under Section 404 of the CWA, the Corps has initiated consultation with the NOAA, NMFS. This Biological Assessment has been prepared for the proposed Project to allow NMFS to determine the impact of proposed actions on federally protected species of interest.

Installation of Utilities

"Jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek, unless otherwise specified by California Department of Fish and Game (CDFG). Streambed Alteration Agreement measures to protect stream channel banks from erosion and related effects of construction would be included in all related construction contracts.

Proposed "jack and bore" construction could occur at five locations along Dry Creek to support installation of utilities; however, the actual number may vary according to future design improvements. The proposed crossing locations and associated utilities are listed below:

- Sanitary sewer force main crossing at Watt Avenue;
- Potable water crossing at Watt Avenue;
- Gravity sewer pipeline crossing located approximately 1500' east of Watt Avenue;
- Recycled water pipeline crossing located approximately 1500' east of watt Avenue; and
- Force main crossing into the Dry Creek Wastewater Treatment Plant at east side of existing City Corporation Yard.

Bore pits will be constructed on both sides of Dry Creek outside of the riparian corridor and at least 50 ft from the channel margin (Figure 4. *Representative Schematic for Jack and Bore Utility Crossings on Dry Creek*).

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

The existing Watt Avenue Bridge at the Dry Creek crossing will be removed and replaced during development of the Placer Vineyards project. The existing two-lane structure will be demolished and a new structure, designed to serve six travel lanes, will be constructed in its place. Construction of the new bridge may involve the removal of some riparian vegetation and the temporary modification of edgewater habitat associated with the installation of bridge support structures at the Watt Avenue crossing.

The conceptual bridge design (Figure 5. *Conceptual Plan for the Proposed Watt Avenue Bridge Replacement at Dry Creek*) and foundation plan (Figure 6. *Proposed Foundation Plan for the Watt Avenue Bridge Replacement at Dry Creek*) was developed based, at least partially, on the following requirements:

- Watt Avenue should remain open and passable during construction of the new structure. For this reason, the structure will consist of two bridges that will be constructed adjacent to each other. One bridge will be constructed to carry three lanes of traffic in the southbound direction. This bridge will lie to the west of the existing bridge and will be installed first allowing the existing bridge to remain open. The second bridge will be constructed to carry three lanes of traffic in the northbound direction and lie east of the first bridge, in the general location of the existing bridge. The second bridge will be constructed after existing two-way traffic is diverted to travel over the first bridge, allowing the existing structure to be removed. Upon completion of the second bridge traffic will be rerouted to allow northbound and southbound traffic to cross on the separate bridges.
- The new bridge profile should provide adequate freeboard between the 100-year floodplain and the bottom of the bridge structure. The 100-year water surface for Dry Creek in the vicinity of the new bridge has been calculated to be at an elevation of approximately 85.5 ft. The bridge will be constructed at an elevation 93± ft at the center of the normal channel. Assuming a bridge depth of 3.0± ft, the freeboard between the 100-year floodplain and the bottom of the bridge would be approximately 4.4 ft. The elevation of the bridge near its southern terminus, its lowest point, would be

92± ft. Approximately 3.2 ft of freeboard would be provided between the bottom of the bridge and the floodplain at this location.

During construction of the proposed bridge structures, it is not anticipated that the entire Dry Creek channel section will need to be blocked and the flow diverted. However, a cofferdam, or similar water barrier, may be required to isolate small construction zones to facilitate placement of some of the bridge foundations and piers.

A water barrier such as sheet piling or a waterproof membrane supported by a frame structure would be placed parallel to the stream flow to reduce the creek width and create an isolated area between the barrier and the creek bank, which would be dewatered to create a temporary work space. At the conclusion of construction the barrier would be removed and the full creek width restored.

If the installation of a coffer dam along the stream bank is required during bridge construction, a qualified fish biologist (with expertise in handling salmonids, especially special-status species) shall be present on-site during any dewatering activities at construction sites to minimize impacts to special-status species (i.e., prevent stranding of Central Valley steelhead or fall-run Chinook salmon). A fish salvage plan will be prepared and sent to the NFMS for approval prior to construction and dewatering activities. Individual fish collected during dewatering shall be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

Stormwater Drainage System

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the Project Area (Dry Creek shed) naturally drains to Dry Creek (Figure 7. *Placer Vineyards Regional Watersheds (Pre-Project)*). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Development of the project would include on-site drainage facilities consisting of drainage inlets and pipes (Figure 8. *Placer Vineyards Drainage Schematic*) and would be designed to meet Placer County drainage requirements. Within the Dry Creek shed, collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins prior to entering Dry Creek (Figure 9. *Placer Vineyards Storm Water Quality Basins*). The BMPs include installation of petroleum absorbing insert assemblies in the project drop inlets and placement of water quality interceptor devices. Within the Dry Creek drainage shed, a total of seven trunk storm drains and associated structural BMPs and four water quality basins are currently proposed for installation. The final number of discharge locations may vary depending on the final design of project drainage improvements.

All stormwater runoff from the Dry Creek shed would be pre-treated through roadway catch-basin filters and continuous deflection system (CDS) units. Most of this runoff would then be discharged directly to Dry Creek or conveyed to water quality basins and released into grassy swales prior to entering Dry Creek. The catch-basin filters and CDS units would function as the primary treatment BMPs.

The water quality basins would not function in a detention capacity, since the Placer Vineyards Master Drainage Study (PVMDS) (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project. The Dry Creek Watershed Flood Control Plan (DCWFCP) (1992?) states that in certain areas of the watershed, on-site detention will not be effective in reducing flows in the major streams and may aggravate the existing problem. During a major storm event, runoff from the portion of the Project Area containing the Dry Creek drainage shed would naturally enter Dry Creek well before peak flows from upstream areas. A separate analysis, conducted by Civil Solutions to evaluate the hydrologic impacts at Dry Creek, determined that on-site detention in the project area may increase peak flow rates downstream of the project by 15 cfs (Quad Knopf 2006). As a result, the DCWFCP (1992?) does not recommend any detention at Dry Creek for the Placer Vineyard project. However, the project is subject to regional mitigation fees for its impacts.

The water quality basins would be designed to provide water quality treatment to further reduce potential pollutants in stormwater through infiltration, settling, and biological uptake in accordance with the Guidance Document for Volume and Flow-Based Sizing of Permanent Post-construction BMPs for Stormwater Quality Protection by the Placer Regional Stormwater Coordination Group (PRSCG) (May 2005). These facilities would provide the preferred "treatment train" system.

Connection to the Dry Creek Waste Water Treatment Plant

The construction of facilities and pipelines necessary for connection to the DCWWTP will be required as part of the Project. In this case, the Project would direct all of its wastewater to the DCWWTP. The conveyance to deliver wastewater to the DCWWTP would include construction of a gravity system delivering wastewater to the western end of the Project are, a lift station, and two 16 to 20 inch diameter force mains to pump wastewater easterly to the DCWWTP.

Operational Characteristics of the Proposed Project

Water supply, wastewater conveyance, electrical service, natural gas, and cable and telephone services will be addressed by connection to existing infrastructure and therefore do not represent additional potential impacts. Maintenance of stormwater discharge infrastructure (detention / water quality basin and associated drainage facilities) represents a potential ongoing impact associated with possible erosion, and discharge of sediment and contaminants into Dry Creek.

Proposed Avoidance, Minimization, and Conservation/Protection Measures

The Action Area (defined and illustrated below) includes a 250-foot buffer zone that envelops both the Project Area and the Off-Site Area for Infrastructure Elements (see Figure 3). The establishment of a 250-foot buffer is intended to address potential indirect impacts of the project on adjacent habitats (e.g., wetlands, streams, and riparian habitat) that may support federally listed species. The following proposed avoidance, minimization, and conservation/ protection measures will be implemented as part of the PVSP to ensure that Dry Creek and

associated aquatic habitat is not adversely affected by construction and operation of the Project.

To protect Dry Creek and adjacent habitat, planned setbacks along Dry Creek average over 240 ft. The setback will preserve the riparian corridor along Dry Creek, thereby minimizing adverse effects of the Project on Central Valley steelhead and Critical Habitat.

The Placer Vineyards Specific Plan Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. The Avoidance and Open Space Plan incorporates 709 acres of open space preserves within the Project land use plan with a goal of establishing interconnected preserves. The open space preserves include significant wetland/swale corridors. These corridors, which are central to the open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, and avoid natural occurring wetlands over those created artificially through agricultural manipulation, and are designed to promote avoidance efficiency by maximizing wetlands avoided per total open space area.

In addition to on-site preservation and avoidance within 709 acres of open space within the PVSP, off-site mitigation for project impacts will require the preservation of more open space including preserved and restored/created waters of the U.S. (comprised of vernal pool complex habitat and other wetlands/waters) within that acreage. Avoidance and open space along the Dry Creek corridor will protect the channel and associated riparian resources.

The following measures have been designed to avoid or minimize potential impacts associated with the development and operation of the Project.

Project Construction

- Prior to initiation of construction activities, the Project developer/project proponent will submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan will address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities will be constructed to Placer County specifications. BMPs will be implemented throughout the construction process.
- During construction, BMPs will be provided to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs will generally consist of a combination of the following measures: minimizing soil disturbance, inlet protection, stabilized construction access, covering of exposed areas with mulch, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding, etc. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards.
- Concurrent with construction of site improvements, stormwater BMPs will be constructed and maintained in accordance with the SWPPP as approved by the Central Valley Regional Water Quality Control Board (CVRWQCB). During construction of the project, specific BMPs will be implemented to control erosion, runoff, and sedimentation and include: soil stabilizers, fiber rolls, inlet filters, and gravel bags to prevent pollutants from being carried off-site in stormwater generated on the project site. The erosion control plan will ensure that proper control of siltation, sedimentation, and other pollutants will be implemented per the NPDES permit requirements and County ordinance standards. Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into Dry Creek. Furthermore, the Stormwater Pollution Prevention Plan (SWPPP) will specify the pollutants that are likely to be used during construction and that could be present in

stormwater drainage and non-stormwater discharges; and to ensure the BMPs are effective, a sampling and monitoring program will be included in the stormwater pollution prevention plan (SWPPP) that meets the requirements of the State Water Resources Control Board (SWRCB) Order 99-08-DWQ. Installation of these BMPs will reduce the potential for runoff, erosion, and sedimentation impacts to Dry Creek and Central Valley steelhead.

- Other BMPs will involve prompt re-vegetation of disturbed areas.

To help protect and maintain Dry Creek and associated riparian habitat, educational signs will be posted in prominent locations along riparian areas to inform property owners and the public about Central Valley steelhead and Dry Creek as designated Critical Habitat. Post and cable fencing will be installed along the northern edge of the preserve along Dry Creek to prevent access to the creek. Posted signs will identify waterways, elevation, latitude and longitude, presence of special-status species and Critical Habitat, and other pertinent information.

In addition to the general conservation measures discussed above, other specific measures will be instituted as part of the build-out and operation of the Project including:

- On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat will minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.
- The use of water-conserving landscaping and other residential conservation measures will be encouraged.

Implementation of the following avoidance and conservation/protection measures would reduce impacts from construction and grading activities associated with implementation of the proposed Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

- All construction within approximately 150 ft of Dry Creek will be restricted to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Project Area is expected to be minimal or absent. If construction occurs during this time period, steelhead are not likely to be adversely affected, directly or indirectly. Furthermore, potential impacts to the movement of anadromous fishes through the Project Area should be minimal during this time.
- Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the state. In addition, the Project will institute BMPs as identified in the Project's stormwater management plan. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per the NPDES permit requirements and County ordinance standards.

Installation of water quality basins and implementation of the appropriate BMPs would reduce potential stormwater runoff impacts to water quality in Dry Creek and to Central Valley steelhead associated with implementation and operation of the proposed Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

To maximize effectiveness, the selected BMPs will be based on finalized site-specific hydrologic conditions, with consideration for the type and location of development. Mechanisms to maintain the BMPs will be identified in the conditions of approval and on the improvement plans. Typical BMPs and Best Available Technologies (BATs) that could be used in the proposed Project include, but are not limited to, the following:

- Application of a street sweeping program to remove potential contaminants from street and roadway surfaces before they reach drainages.
- Minimize sources of concentrated flow by maximizing use of natural drainages to decelerate flows, collect pollutants and suspended sediment.

- Placement of velocity dissipaters, rip-rap, and/or other appropriate measures to slow runoff, promote deposition of waterborne particles, and reduce the erosive potential of storm flow.
- Soil protection and slope stabilization practices will be promptly applied to all disturbed areas.
- Creation of water quality basins to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake.
- Use of fossil filters consisting of small filters that are placed like troughs around the inside top drain inlets or at ditch outlets.
- Use of rock-lined ditches, which are surface ditches lined with rock, with or without filter material, with the rock lining material designed to allow water to filter into the ground.

NPDES Stormwater Phase II requires installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. Under the provisions of NPDES II, the Project will be required to design and install such BMPs as are determined to be appropriate.

It is likely that the project will be required to comply with the NPDES Phase II regulations through coverage under the State's General Permit. The Phase II General Permit contains four basin requirements: discharge prohibition, effluent limitations, stormwater management program requirements, and reporting requirements. The General Permit prohibits discharges of waste that are otherwise prohibited under State and regional water quality control plans. In addition, the General Permit prohibits discharges that cause or threaten to cause a nuisance, discharges that contain a reportable quantity of specified hazardous substances, and any other discharge except as allowed under the NPDES permit. The General Permit requires permittees to reduce pollutants in stormwater by developing and implementing a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants through the storm drain to the Maximum Extent Practicable (MEP) to protect water quality. The MEP standard is a technology-based standard and is acceptable in lieu of numeric effluent limitations. The MEP is an evolving, flexible, and advancing concept, which considers technical and economic feasibility. The SWMP describes how pollutants in stormwater will be controlled

by means of BMPs that address six (6) minimum control measures (MCM) specified in the General Permit. These six MCMs are as follows:

- Public education and outreach;
- Public participation;
- Illicit discharge detection and elimination;
- Construction site stormwater runoff control;
- Post-Construction stormwater management; and
- Pollution preventing/good housekeeping for municipal operations.

Each BMP has specified measurable goals and a timetable for implementation to help measure program effectiveness.

The SWMP will comply with various Design Standards as required by the Regional Water Quality Control Board (RWQCB) for the following issues:

1. Conservation of natural areas.
    - Development will be concentrated or clustered on portions of the site and the remaining land will be left in a natural undisturbed condition.
    - Clearing and grading of native vegetation will be limited at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
    - Trees and other vegetation will be maximized at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
    - The use of natural vegetation will be promoted by using parking lot islands and other landscaped areas.
    - Riparian areas along Secret Ravine Creek will be preserved.

2. Minimization of stormwater pollutants of concern
    - The development will be designed to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas

(DCIA), to the stormwater conveyance system as approved by the building official.

- To meet this requirement, minimization of the "pollutants of concern", will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in the runoff to the maximum extent practicable.

3. Protection of slopes and channels
    - Runoff will be conveyed safely from the tops of slopes and disturbed slopes will be stabilized.
    - Natural drainage systems will be utilized to the maximum extent practicable.
    - Slopes will be vegetated with native or drought tolerant vegetation, as appropriate.
    - Energy dissipaters, such as rip-rap, will be installed at the outlets of new storm drains, culverts, conduits, or channels according to applicable specifications to minimize erosion.

4. Provide storm drain system stenciling and signage
    - Storm drain stencils will be placed directly adjacent to storm drain inlets. The stencil will contain a brief statement prohibiting the dumping of improper materials into the storm drain conveyance system.

5. Proper design of outdoor material storage areas
    - Materials with the potential to contaminate stormwater will be placed in an enclosure that prevents contact with runoff or spillage to the stormwater conveyance system; or protected by secondary containment structures such as berms or curbs.
    - The storage area will be paved and impervious to contain leaks and spills.
    - The storage area will have a roof or awning to minimize collection of storm water within the secondary containment area.

6. Proper design of trash storage areas
    - Trash container areas will have drainage from adjoining roofs and pavement diverted around the area(s).
    - Trash container areas will be screened or walled to prevent off-site transport of trash.

7. Provide proof of ongoing BMP maintenance
    - If the project is required to include Structural or Treatment Controls BMPs in the project plans, a verification of maintenance will be provided through such means as may be appropriate; including but not limited to, legal agreements, covenants, CEQA mitigation requirements and/or conditional use permits.

Installation of Utilities

To avoid creek disturbance, "jack and bore" construction techniques would be used wherever proposed utility lines cross Dry Creek. All stream crossings shall be performed using a "jack and bore" construction technique, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction would be included in all related construction contracts.

Protective fencing and straw wattles will be placed between the bore pits and Dry Creek at least 25 ft from the channel margin to contain any runoff from the construction site. When boring beneath Dry Creek, a minimum clearance of 5.0 ft will be maintained below the deepest part of the stream channel.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

Avoidance and minimization measures and BMPs will be implemented during construction to reduce impacts to Dry Creek and aquatic life. Central Valley steelhead will be protected from potential construction-related activities within approximately 150 ft of Dry Creek by restricting construction activities to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Action Area is expected to be

minimal or absent. Additional measures to protect steelhead resources include use of BMPs to minimize and localize siltation and other water quality impacts and to provide for riparian restoration activities. These BMPs may include the use of cofferdams / water barriers and other structures during dewatering and construction activities. Water quality monitoring will also be performed to ensure that state and federal water quality standards are met.

If cofferdams / water barriers are required during bridge construction, a dewatering and fish salvage plan will be developed and approved by the NMFS prior to the initiation of construction activities. A qualified fish biologist will be present on-site during any dewatering activities at construction sites to minimize impacts to Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project Area (i.e., prevent stranding of special-status species). Individual fish collected during dewatering will be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

Protection, avoidance, and conservation measures will be implemented to minimize impacts to the Dry Creek riparian corridor during demolition of the existing bridge and construction of the new bridge. These measures would include, but not limited to, the following:

- The design of the new bridge will minimize impacts to the Dry Creek riparian corridor. The conceptual bridge layout provides for a span of sufficient length over the active channel to avoid the placement of piers and bridge foundations in the creek.
- Protective fencing shall be placed between the construction zone and the active channel area to prevent the movement of equipment and material from the construction zone into the creek. Silt fence, straw wattles, or an equivalent silt barrier shall be constructed adjacent to the protective fencing to prevent sediment from entering the creek.
- Access routes shall be designed so that construction equipment, material, and workers enter the construction zone from the bank sides.
- Netting or an equivalent barrier shall be placed beneath the existing bridge during demolition to prevent debris from falling into the active creek channel. A temporary barrier shall be placed beneath the proposed bridges during construction to prevent construction material from falling into the active creek channel.

- Construction material shall be stockpiled behind the protective fencing, away from the channel area, to prevent material from entering the creek zone.
- Dust palliatives shall be applied to disturbed earth surfaces to minimize dust.
- Disturbed surfaces shall be re-vegetated at the conclusion of construction to minimize erosion and sedimentation.
- Construction activities during the winter months when stream flows are typically higher, shall be avoided.
- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented during bridge construction activities.

At the conclusion of construction all disturbed areas will be re-contoured, stabilized, and re-vegetated to minimize potential sedimentation problems.

Stormwater Drainage System

On-site drainage facilities, consisting of drainage inlets and pipes (see Figure 8), would be designed to meet Placer County drainage requirements including water quality treatment of runoff. The treatment will consist of the following actions:

- Directing some of the flow to sheet discharge onto grassy areas or open space.
- The installation of "Fossil Filter" or equivalent petroleum absorbing inserts in the Project drop inlets.
- The placement of water quality interceptor devices.
- The placement of water quality sediment basins within channels.
- Use of rock-lined ditches below pipe outlets.

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Within the Dry Creek shed (see Figure 7), collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) to trunk storm drains or into the on-site water quality basin before entering Dry Creek (see Figure 9).

Stormwater runoff from the Dry Creek shed would be pre-treated through roadway catch-basin filters and continuous deflection system (CDS) units and then either discharged to Dry Creek or conveyed to water quality basins and discharged into grassy swales prior to entering Dry Creek. The use of grassy swales and other designed features are intended to further reduce pollutant concentrations to comply with existing water quality criteria and to minimize the potential for impacting Dry Creek. The catch-basin filters and CDS units would function as the primary treatment BMPs. Design standards for structural or treatment control BMPs will incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, to mitigate stormwater runoff.

The water quality basins will be designed to provide water quality treatment to further reduce potential pollutants in stormwater through infiltration, settling, and biological uptake in accordance with the Guidance Document for Volume and Flow-Based Sizing of Permanent Post-construction BMPs for Stormwater Quality Protection by the Placer Regional Stormwater Coordination Group (PRSCG) (May 2005). These facilities would provide the preferred "treatment train" system. Associated BMPs may consist of several effective methods including the installation of petroleum absorbing insert assemblies. With the installation of water quality basins and associated BMPs, runoff from the Dry Creek shed portion of the Project Area is not likely to result in adverse effects to migrating Central Valley steelhead or to Critical Habitat.

The incorporation of water quality basins would ensure that the estimated pollutant concentrations (for evaluated pollutants) would comply with existing water quality criteria. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region (RWQCB) identifies narrative criteria for oil and grease. Numerical criteria are not identified; however, the CRWQCB has imposed, by order, discharger-specific limits ranging from 10-20 mg/L.

Prior to issuance of a grading permit for the site, these BMPs will be reviewed for adequacy to ensure that they will effectively remove pollutants from stormwater runoff. At that time, if technologies as effective as, or more effective than, catch-basin filters and CDS units are available, they can be considered.

Implementation of the proposed Project would ensure that on-site riparian areas along Dry Creek would be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat would minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Project Operation

- Water-conserving landscaping and other conservation measures will be encouraged.
- The Placer County General Plan encourages the use of natural stormwater drainage systems to preserve and enhance natural features and supports efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state. The General Plan also states that the County will ensure that new storm drainage systems are designed in conformance with the Placer County Stormwater Management Manual and the County Land Development Manual, and provides that the County will strive to improve quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures, including artificial wetlands, detention ponds, grassy swales, infiltration/ sedimentation basins, riparian setbacks, oil/grease separators, and other BMPs.
- Federal and State policies require that stormwater BMPs be included as a part of Project development. The goal of BMPs is to reduce sediment and pollutants in stormwater runoff at their origin prior to the runoff discharging into drainage systems. Whereas BMPs traditionally have focused on the post-development process, the goal of Placer County is to integrate BMPs throughout the project development. This approach

provides two benefits. First, stormwater management improvements are disbursed throughout the Project area and provide treatment to runoff before it enters the drainage collection systems. This helps maintain a higher quality of runoff discharge without needing large regional treatment basins. Second, by integrating the stormwater management elements throughout the Project area, each individual parcel can provide the stormwater management elements that best respond to the particular constraints of the individual site. This will promote the removal of the various constituents on each parcel prior to discharging into the drainage system. A comprehensive stormwater management plan will minimize potential impacts of the Project to Central Valley steelhead and to Critical Habitat within the Action Area.

- National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II requires installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. Under the provisions of NPDES II, the Project will be required to design and install such BMPs as are determined to be appropriate. These BMPs will reduce or eliminate the potential for water quality impacts to Dry Creek and to Central Valley steelhead and Critical Habitat.
- Storm drain inlet cleaning will occur semi-annually (at a minimum) and parking lots shall include the installation of oil/sand/grit separators or as otherwise approved by the Placer County Department of Public Works. The Project will include a method for financing the long-term maintenance of the proposed facilities and BMPs. The Project will conform to the Master Project Drainage Study and the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the Department of Public Works). BMPs will reflect improvements in techniques and opportunities made available over time and shall also reflect site-specific limitations. The County will make the final determination as to the appropriate BMPs for each project.

Mitigation (If Any) Required Under Other Federal, State, or Local Permits (e.g. Corps Wetland Mitigation)

Mitigation measures have been developed for the Project to avoid or minimize potential impacts to Dry Creek and Critical Habitat. Specifically, mitigation measures have been developed for temporary modification of stream bank and edgewater habitat (if necessary) associated with bridge removal and replacement activities.

The proposed Watt Avenue bridge replacement is designed to span the active Dry Creek channel with no foundations or piers required within the channel. Short-term construction-related impacts are expected to be minimal and not likely to adversely affect Central Valley steelhead or Critical Habitat due to the absence of spawning and rearing habitat. Within the Project and Action areas, adult and juvenile steelhead use Dry Creek primarily as a migration corridor, although juveniles may use edgewater habitat for feeding when migrating to the Pacific Ocean. However, the area of potential disturbance is small (approximately 180 linear feet along one bank of the creek) relative to existing edgewater habitat within either the Project and Action Areas. No long-term impacts to Dry Creek, Central Valley steelhead, or Critical Habitat are anticipated as a result of removal and construction of the new bridge.

During bridge construction, a cofferdam / water barrier may be required to isolate areas around the bridge foundations. If the installation of cofferdams / water barriers along the stream bank is required during bridge construction, a qualified fish biologist (with expertise in handling salmonids, especially special-status species) shall be present on-site during any dewatering activities at construction sites to minimize impacts to special-status species (i.e., prevent stranding of Central Valley steelhead or fall-run Chinook salmon). A fish salvage plan will be prepared and sent to the NFMS for approval prior to construction and dewatering activities. Individual fish collected during dewatering shall be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

To protect Central Valley steelhead, construction activities within approximately 150 ft of Dry Creek will be restricted to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Action Area is expected to be

minimal or absent. Further measures to protect Central Valley steelhead include use of BMPs to minimize and localize siltation and water quality impacts and to provide for riparian restoration activities. Such BMPs may include the use of cofferdams / water barriers and other structures during dewatering and construction activities. Water quality monitoring shall also be performed to ensure that state and federal water quality standards are met.

Wastewater Treatment

Mitigation measures will be implemented to ensure an adequate system to treat wastewater flows generated by the proposed Specific Plan. Implementation of mitigation measures will reduce impacts associated with the treatment plant capacity.

For each increment of new development with the Specific Plan area, the County shall confirm that all necessary permits (*e.g.*, NPDES) are in place for either the DCWWTP or the SRWTP to discharge additional treated effluent in the amounts associated with the new development.

The proposed Specific Plan could result in an accidental discharge to the Dry Creek drainage shed or other drainage sheds within or downstream of the Specific Plan area and adversely affect adjacent ecosystems including plant and animal species and their habitat. To prevent accidental discharge from the sewage delivery system, implementation of the following mitigation measures for the wastewater delivery system will ensure proper pipeline design and access to pipelines for maintenance and reduce impacts:

- Design of on- and off-site sewer pipelines shall have watertight joints and be in accordance with design standards adopted by Placer County in order to minimize the potential for accidental discharge.
- Paved access shall be provided to all sewer system access points to allow for pipeline maintenance and repair.

Underlying Action / Broader Context / Interdependent and Interrelated Actions

There are no interdependent and/or interrelated actions to the proposed action. The participating projects within the PVSP area are adjacent to rural residential development to the west (the SPA) and to the south (Elverta). There are no current plans to develop the SPA area. Open rural lands are to the north of the PSVP.

Ongoing and Previous Projects in the Action Area, if Available

In addition to the PVSP, several residential, commercial, and industrial developments occur or are planned within or adjacent to some locations of the Action Area; including existing and/or proposed developments, such as the Dry Creek Community Plan Area and the Riolo Vineyards Specific Plan Area (Figure 10. *Adjacent Existing and/or Proposed Developments and Plan Areas*). Since these projects are on-going or are in separate consultations, their effects are not evaluated as part of this project's BA. Potential impacts to special aquatic habitats in these areas would be permitted through separate Federal Actions (Section 7 or 10) specific to each area/project.

Several additional residential and commercial developments (two golf courses, parks, farms, etc.) are present along Dry Creek downstream of the Project near the Action Area. Additional activities include the expansion of the Dry Creek Wastewater Treatment Plant (which will service the proposed project as well as other projects within Western Placer County), and the Sacramento River diversion which is subject to its own consultation as a separate federal action.

Project Area and Action Area Defined

The Project Area includes the properties participating in the planned development and subject to the current permit action by the Corps, and the area of the associated off-site (outside the participating properties) infrastructure elements (Off-Site Area for Infrastructure Elements) (Figure 11. *Project Area*).

The Action Area includes: the Project Area; a 250-foot zone that envelops both the Project area and the Off-Site Area for Infrastructure Elements; and Dry Creek within the Project boundaries and downstream of the Project area to the confluence with the Natomas East Main Canal (a.k.a. Steelhead Creek) (Figure 12. *Action Area*). Several residential, commercial, and industrial developments occur or are planned in the vicinity of the Action Area as defined above. The 250-foot zone around the Project area and Off-Site Infrastructure Elements is intended to address potential indirect impacts to adjacent habitats (e.g., wetlands and riparian habitat) that may support federally listed species.

The Action Area includes all areas where Central Valley steelhead or Critical Habitat could potentially be directly or indirectly affected by the proposed agency Action (permitting under CWA Section 404), and was determined based on the distribution and occurrence of steelhead and Critical Habitat within and downstream of the Project Area. Potential downstream effects are primarily associated with the discharge of surface water runoff from the Project site and increased wastewater input into Dry Creek. At the point where Dry Creek enters the Natomas East Main Canal, water quality is affected by inputs from Auburn Ravine Creek, Curry Creek, and several other drainages which are already affected by wastewater treatment facility discharges. As a result, the incremental effect of the increased DCWWTP discharge on water quality in the Natomas East Main Canal would be extremely difficult to determine, and would vary with season.

Project Footprint and all Areas Potentially Affected

The entire PVSP area encompasses approximately 5,230 acres in unincorporated southwestern Placer County, approximately 15 miles north of Sacramento. While the PVSP area includes approximately 5,230 acres, only 3,746 acres are currently participating in the planned development, and are the subject of the current permit action by the Corps. The remaining approximate 1,484 acres in the PVSP are non-participating, although some infrastructure improvements are expected to occur on these properties covered by the Specific Plan (not including the SPA).

The Project Area is bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line, and Pleasant Grove Road, and on the east by Dry Creek and Walerga Road. East to west, the Project Area spans approximately six miles. North to south, at its widest point, it spans approximately two miles. Coordinates for the approximate center of the Project Area are 38° 45′ 00″ N and 121° 24′ 30″ W. The Project Area coincides with portions of Township 10 North, Range 4 East, Section 1, Township 10 North, Range 5 East, Sections 1-12, and Township 10 North, Range 6 East, Sections 6-10 of the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA" 7.5-minute quadrangles (U.S. Department of the Interior, Geological Survey, photo revised 1992, 1981, 1992, and 1992, respectively; (see Figure 1). There are 22 separate parcels under different ownerships participating in this comprehensive permit action. Each is depicted in Figure 1. The Project Area is within the Lower American River Watershed (#18020111, U.S. Department of Interior, Geological Survey 1978).

Included in the proposed Project Area are off-site infrastructure improvements that would be necessary to support the development of the Project. These infrastructure improvements include road improvements (e.g., widening of lanes and the addition of stop lights), the addition of utility lines and routes for sewer trunk and water lines, and recycled water storage facilities and transmission lines. In most instances, utility lines would be placed within existing roadways or other disturbed areas, so as to minimize environmental impacts. The locations of these off-site infrastructure elements are identified in Figure 3.

Surrounding land uses include agricultural land with cultivated crops, irrigated pastures, rice fields, and scattered rural residences. Land to the east (City of Roseville) and southwest (Natomas Basin) is currently being developed for residential and commercial uses.

Project Area and Action Area Maps

Maps denoting the Project Area and Action Area are provided in Figures 11 and 12, respectively.

STATUS OF SPECIES AND CRITICAL HABITAT

Species Lists from National Marine Fisheries Service and U. S. Fish and Wildlife Service

A list of federally listed, proposed and candidate species was created for the Project Area, Project Area vicinity (within a 10-mile radius of the site), and Off-Site Area for Infrastructure Elements based on the following sources:

- The USFWS official species list for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-minute quadrangles (Attachment A);
- The National Marine Fisheries Service official species list for the Project (Attachment B);

The combined and comprehensive list is presented below.

U.S. Fish and Wildlife Service Species List

Federal Endangered Species

- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Sacramento Orcutt grass (*Orcuttia viscida*)
- Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*)
- Hartweg's golden sunburst (*Pseudobahia bahiifolia*)
- Conservancy fairy shrimp (*Branchinecta conservatio*)

Federal Threatened Species

- California tiger salamander (*Ambystoma californiense*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Central Valley steelhead (*Oncorhynchus mykiss*)
- Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*)
- Delta smelt (*Hypomesus transpacificus*)

- Slender Orcutt grass (*Orcuttia tenuis*)
- California red-legged frog (*Rana aurora draytonii*)
- Giant garter snake (*Thamnophis gigas*)

Federal Candidate Species

- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- Central Valley fall/late fall-run Chinook salmon (*Oncorhynchus tshawytscha*)

National Marine Fisheries Service Species List

Federal Threatened Species

- Central Valley steelhead (*Oncorhynchus mykiss*)

The scope of this Biological Assessment is to address federally protected fish and their habitat identified by NMFS (see Attachment B) within the Project Area and vicinity, and in the Off-site Area for Infrastructure Elements for consultation with NMFS. Species information is provided specifically for Central Valley steelhead (threatened) which is the only species identified in the official list of endangered and threatened species received from NMFS on June 18, 2007, as occurring within the vicinity of the Project Area. Fall and late-fall run Chinook salmon, a species of concern, also occur in Dry Creek, but are not addressed in this document. However, avoidance, minimization, and conservation measures implemented as part of the PVSP to protect Central Valley steelhead will also protect Chinook salmon.

All discussions of plants, terrestrial animals, and non-anadromous fishes within the Orihect Area and vicinity, and in the Off-Site Area for Infrastructure Elements are addressed in a separate Biological Assessment prepared for the USFWS.

Designated Critical Habitat

U.S. Fish and Wildlife Service

Three Critical Habitat units were identified from the USFWS list as occurring within the vicinity of the Project Area. These units are:

- Valley elderberry longhorn beetle
- Vernal pool (Critical Habitat Unit 11C, as identified by USFWS in the 2005 Critical Habitat Final Rule)
- California Central Valley steelhead

National Marine Fisheries Service

One Critical Habitat unit was identified from the NMFS list as occurring within the vicinity of the Project Area. This unit is:

- California Central Valley steelhead

As discussed above, the scope of this Biological Assessment is to address designated Critical Habitat for federally protected fish for consultation with NMFS. Based on the official list of Critical Habitats received from NMFS on June 18, 2007, only Central Valley steelhead designated Critical Habitat is addressed relative to impacts of the Project on special-status anadromous fish.

All discussions of plants, terrestrial animals, and non-anadromous fishes within the Project Area and vicinity, and in the Off-Site area for Infrastructure Elements will be addressed in a separate Biological Assessment prepared for the USFWS.

Species Descriptions

Central Valley Steelhead Evolutionarily Significant Unit, Distinct Population Segment

The California Central Valley steelhead (*Oncorhynchus mykiss*) evolutionarily significant unit (ESU), Distinct Population Segment (DPS) is federally listed as threatened (63 FR13347; March 19, 1998, and January 5, 2006) under the Endangered Species Act (ESA). The DPS includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman National Fish Hatchery and Feather River Hatchery steelhead hatchery programs. The Nimbus Hatchery on the American River and the Mokelumne River Hatchery steelhead stocks were also excluded from the California Central Valley steelhead ESU (NMFS 1998c).

NMFS's Pacific Salmonid Biological Review Team (BRT) (comprised of an expert panel of scientists from several federal agencies including NMFS, USFWS, and the U.S. Geological Survey) reviewed the viability and extinction risk of naturally spawning populations in the ten steelhead DPSs that are the subject of this final rule (Good *et al.*, 2005). Although the ESUs reviewed by the BRT included co-occurring populations of resident *O. mykiss*, little or no population data are available for most resident *O. mykiss* populations. The BRT's findings regarding extinction risk are based on the status of the steelhead populations in the ESUs reviewed. Where available, the BRT incorporated information about resident populations into their analyses of extinction risk, and in some instances the BRT noted the presence of speculatively abundant resident populations. However, the BRT concluded that the contribution of the resident life-history form to the viability of an *O. mykiss* ESU in-total is unknown and may not substantially reduce extinction risks to an ESU in-total. Therefore, the BRT's extinction risk findings directly inform evaluations of extinction risk for the steelhead DPSs under consideration.

Life History

Central Valley (ESU) steelhead, the anadromous form of rainbow trout, typically spawn in tributaries to mainstem rivers from December through March, often ascending significant distances. The eggs typically hatch in three to four weeks (at 10 to 15°C), and fry generally emerge from the gravel two to three weeks later and initially inhabit quiet water areas close to shore. Following spawning, adults normally migrate back to the ocean. Non-migratory populations of rainbow trout that are not of hatchery origin also belong to this ESU, as would populations of presumably "residualized" steelhead that live in reservoirs above dams and migrate into tributary streams (Moyle 2002).

The life history of steelhead is similar to that of Chinook salmon with the exception of two major differences: steelhead do not necessarily die after spawning; and juveniles may spend up to four years in freshwater before migrating to the ocean. Chinook salmon juvenile emigration through the Sacramento River and the Sacramento-San Joaquin Delta typically occurs from November through May. The emigration of juvenile steelhead smolts normally occurs from late March through May.

Young steelhead trout spend the first one to two years in permanent streams and rivers. There are strong shifts in habitat with size and season. The smallest fish occur in riffles, intermediate size fish inhabiting runs, and large fish in pools. Steelhead can spend from one to three years in freshwater prior to migration to the ocean. Most emigrate during spring when smoltification occurs. Age at maturity depends upon the combination of years in fresh water (1 to 3 years) plus years at sea (1 to 4 years). Adults and sub-adults (jacks) can return after one year at sea, or just months in terms of 'jacks' (precocial males).

Biological/Habitat Requirements

Steelhead require gravel and cobble substrates (0.6 to 13 cm diameter) with limited amounts of fine sediments (sand, silt, and clay) for spawning. In general, water temperatures less than 16.1 °C (61 °F) are necessary for successful incubation and hatching of steelhead eggs. Fry

and older juveniles require adequate instream cover (cobble or boulders, large woody debris, undercut banks, or submerged and overhanging vegetation for protection from predators). Habitat requirements for life stages and activities of steelhead trout are summarized in Table 1.

Table 1 – Habitat Requirements for California Central Valley Steelhead

Condition or Activity	Water Velocity (m/s)	Water Depth (m)	Substrate Size (cm)	Cover (%)	Preferred Water Temperature (°C)
Upstream Migration	0.4 – 1.8	>0.18	--	--	7.0 – 17.0(23.9*)
Fry Rearing	<0.21	0.12 – 0.60	0.2 - 400	--	6.1 - 20
Juvenile Rearing	0 – 0.36	>0.30	0.2 - 400	--	5.0 – 25.6
Spawning	0.36 – 1.55	0.18 – 2.49	0.6 - 13	--	3.3 – 16.1

Young steelhead trout spend the first one to two years in cool, clear, fast-flowing permanent streams and rivers, where riffles dominate pools, and there is ample cover from riparian vegetation or undercut banks, and where invertebrate life is diverse and abundant. Water temperature is an important limiting factor since rainbow trout can only tolerate stream temperatures up to 26 to 27° C in summer.

Factors of Decline

Historical Factors / Reasons for Listing

Steelhead were once widespread throughout the Central Valley (CACSS 1988, Reynolds *et al.* 1993). Where steelhead are still extant, natural populations are subject to habitat degradation, including various effects of water development and land use practices. Steelhead on the west coast of the United States have experienced dramatic declines in abundance during the past several decades as a result of human-induced and natural factors. Scientific literature is replete with information documenting the decline of steelhead populations and anadromous salmonid habitat.

There is no single factor solely responsible for the decline of West Coast steelhead stocks, and prior listing determinations and technical reports concluded that all of the following factors have played a role: water storage, withdrawal, conveyance, and diversions for agriculture, flood control, domestic, and hydropower purposes have greatly reduced or eliminated historically accessible habitat; modification of natural flow regimes have resulted in increased water temperatures, changes in fish community structures, depleted flows necessary for migration, spawning, rearing, flushing of sediments from spawning gravels, gravel recruitment and transport of large woody debris; physical features of dams, such as turbines and sluiceways, have resulted in increased mortality of both adults and juvenile salmonids. Given the complexity of this species life history and the ecosystem in which it resides, it is difficult to accurately quantify the relative contribution of any one factor to the decline of a given steelhead ESU. Rather, the list above serves to highlight those factors which have significantly affected the status of a particular ESU. This list will expand and contract as more information becomes available. It is important to note that in reviewing this list that recovery efforts must focus on those areas which are within human influence and control. Therefore, of these factors, the destruction and modification of habitat, over utilization for recreational purposes, and natural and man-made factors have been identified as the primary causes for the decline of West Coast steelhead.

The BRT's concerns include extirpation from most of the historical range, a monotonic decline in the single available time series of abundance, declining proportion of wild fish in spawning runs, substantial opportunity for deleterious interactions with hatchery fish (including out-of-basin-origin stocks), various habitat problems, and lack of ongoing population assessments.

Although it appears that steelhead remain widely distributed in Sacramento River tributaries, the vast majority of historical spawning areas are currently above impassable dams. The primary limiting factor to the Central Valley steelhead DPS is the inaccessibility of more than 95 percent of its historic spawning and rearing habitat due to the presence of these impassable dams. Where steelhead are still extant, natural populations are subject to habitat degradation and various impacts from water development activities and land use activities. This DPS requires cool water found at higher elevations, now largely located above impassable dams. The lack of monitoring of steelhead populations has limited NMFS ability to adequately

determine the abundance, trends and distribution of this DPS and their ability to determine how steelhead populations may have interacted before the dams were built. The geographically wide stocking of hatchery trout may have deleterious effects on native wild Central Valley steelhead populations, but this cannot be assessed. Many of the threats that affect Chinook salmon may also negatively impact steelhead, such as inadequately screened water diversions, excessively high water temperatures, and predation by non-native species on the native fish (NMFS 2006).

Natural resource use and extraction leading to habitat modification can have significant direct and indirect impacts to steelhead populations. Land use activities associated with logging, road construction, urban development, mining, agriculture, and recreation have significantly altered fish habitat quantity and quality. Associated impacts of these activities include: alteration of streambank and channel morphology; alteration of ambient stream water temperatures; degradation of water quality; elimination of spawning and rearing habitat; fragmentation of available habitats; elimination of downstream recruitment of spawning gravels and large woody debris; removal of riparian vegetation resulting in increased stream bank erosion; and increased sedimentation input into spawning and rearing areas resulting in the loss of channel complexity, pool habitat, suitable gravel substrate, and large woody debris.

Studies indicate that in most western states, about 80 to 90 percent of the historic riparian habitat has been eliminated. Further, it has been estimated that during the last 200 years, the lower 48 United States have lost approximately 53 percent of all wetlands.

The degree of spatial and temporal connectivity between and within watersheds is an important consideration for maintaining aquatic riparian ecosystem functions. Loss of connectivity and complexity, such as the loss of deep pool habitats, has contributed to the decline of steelhead.

Steelhead have been, and continue to be, an important recreational fishery resource throughout their range. During periods of decreased habitat availability, the impacts of recreational fishing on native anadromous stocks may be heightened. While not generally targeted in commercial fisheries in the ocean, high seas driftnet fishing may have been partially responsible for declines in steelhead abundance. Research has estimated that unauthorized high seas driftnet fisheries

may have harvested between 2 and 28 percent of the steelhead that were destined to return to the Pacific coast of North America. However, such fisheries cannot account for the total declines in steelhead abundance observed in North America.

Introduction of non-native species and modification of habitat have resulted in increased predator populations and salmonid predation in numerous river systems. Marine predation is also of concern in some areas, given the dwindling steelhead run-size in recent years. In general, predation rates on steelhead are considered by most investigators to be an insignificant contribution to the large declines observed in west coast populations. However, predation may significantly influence salmonid abundance in some local populations when other prey is absent and physical habitat conditions lead to the concentration of adults and juveniles.

Natural environmental conditions have served to exacerbate the problems associated with degraded and altered riverine and estuarine habitats. Recent floods and persistent drought conditions have reduced already limited spawning, rearing, and migration habitat. Furthermore, climatic conditions appear to have resulted in decreased ocean productivity which may help offset degraded freshwater habitat conditions to some degree. Environmental conditions such as these have gone largely unnoticed until recently, when salmonid populations have reached critical low levels.

The BRT also expressed concern about the effects of significant production of out-of-DPS hatchery steelhead in the American (Nimbus Hatchery) and Mokelumne (Mokelumne River Hatchery) Rivers. In an attempt to mitigate for lost habitat and reduced fisheries, extensive hatchery programs have been implemented throughout the range of steelhead on the West Coast. While some of these programs have been successful in providing fishing opportunities, the impacts of these programs on wild stocks are not well understood. Competition, genetic introgression, and disease transmission resulting from hatchery introductions may significantly impact the production and survival of wild steelhead. Furthermore, displacement of wild fish for broodstock purposes may result in additional negative impacts to small or dwindling natural populations. It is important to note however that the use of hatcheries will likely play an important role in reestablishing depressed stocks of Pacific salmonids. Alternative uses of supplementation, such as for the creation of terminal fisheries, must be fully explored to limit

negative impacts to remaining wild populations. This use must be tempered with the understanding that protection of wild fish and their habitats is critical to maintaining healthy, fully-functioning ecosystems.

Current Pressures on the Species

The same reasons for listing, identified above, for the decline of West Coast steelhead ESUs continue to exert pressure on this species. The destruction and modification of habitat, over-utilization for recreational purposes, and natural and man-made factors have been identified as the primary causes for the decline of West Coast steelhead.

The last two status reviews conducted by the BRT have concluded that the California Central Valley steelhead ESU continues to be in danger of extinction (Busby *et al.* 1996, NMFS 1997b and 1998b, Good 2005).

Limiting Factors for Recovery

A Public Draft Recovery Plan for Central Valley steelhead was completed in 2009 (NMFS 2009); this document is a draft multi-species recovery plan including this DPS along with winter-run and spring-run Central Valley Chinook salmon.

The more important stressors include: barriers to historic habitat, predation of Chinook salmon and steelhead from introduced species such as striped bass and black bass, and the high demand for limited water supply resulting in reduced instream flows, increased water temperatures and highly altered hydrology in the Sacramento-San Joaquin Delta. The inability to reverse or minimize the cumulative effects of these factors will limit the ability of the Central Valley steelhead ESU to recover to pre-listing population levels.

During 2004–2006, progress was made toward addressing some of the limiting factors and threats to this DPS, largely through Endangered Species Act (ESA), Section 7 consultations and other ESA-related conservation efforts in the Central Valley. The Central Valley Project Section 7 consultation with the Bureau of Reclamation likely contributed to habitat improvements, such

as flow and temperature improvements, benefiting the Central Valley steelhead DPS. In addition, two large, comprehensive conservation programs in the Central Valley provide a wide range of ecosystem and species-specific protective efforts that benefit steelhead – the CALFED Bay-Delta Program and the Central Valley Project Improvement Act (CVPIA). CALFED works with local communities to improve water quality and reliability for California's water supplies, and to restore the San Francisco Bay-Delta ecosystem. Although not fully implemented, CALFED's Ecosystem Restoration Program has funded projects involving habitat restoration; floodplain restoration and/or protection; instream habitat restoration; riparian habitat restoration/protection; fish screening and passage projects, research on and eradication of nonnative species, as well as on contaminants; research and monitoring of fishery resources; and watershed stewardship and outreach. The Environmental Water Account is used to offset losses of juvenile fish at the Delta pumps, and to provide higher instream flows in the Yuba, Stanislaus, American, and Merced Rivers to benefit salmonids (NMFS 2006).

Ongoing measures to protect steelhead in the State of California include 100 percent marking of all hatchery steelhead, zero bag limits for unmarked steelhead, gear restrictions, closures, and size limits designed to protect smolts. The State also works closely with NMFS to review and improve inland fishing regulations.

Local Empirical Information

Central Valley steelhead are known to occur within both Secret and Miners Ravine creeks, and steelhead juveniles have been documented in Secret Ravine Creek on a number of occasions by CDFG. Survey methodologies employed included electrofishing, seining, and trapping (perforated plate trap). Table 2 summarizes steelhead occurrences in Secret Ravine Creek between 1965 and 1984.

Table 2 – Summary of Steelhead Occurrences in Secret Ravine Creek, 1965-1984

Date	Method	Location	Number	Size Range (mm)	Comments
2/16 to 3/04/1965	Trap	50m upstream of Sierra College Bvld.	N/A	N/A	Only salmon juveniles counted
08/08/1966	Electrofishing	Penryn Rd. Crossing	3	84-109	
08/02/1967	Electrofishing	Below Rustic Hills	3	58-76	Water temp was 23.3 °C
03/30/1972	Electrofishing	"West of I-80"	3	N/A	2 fish classified as "adults"
05/02/84	Seine	Rocklin Rd.	2	N/A	
05/02/84	Seine	Brace Rd.	1	N/A	

During the period from 1965-1984, the survey results indicate that steelhead juveniles likely reared in Secret Ravine Creek.

In 1998-2000, CDFG Biologist Rob Titus conducted electrofishing surveys (presence/absence) for steelhead and Chinook salmon in at various sites in Secret Ravine Creek. A total of 58 steelhead were captured (all surveys), with a size range from 21 to 310 mm (mean = 117 mm). Table 3 presents date, site location, and presence/absence of juvenile steelhead captured in surveys from 1998-2000.

Table 3 –Juvenile Steelhead Occurrences in Secret Ravine Creek, 1998-2000

Date	Location	Present/Absent
11/5/1998	Loomis Basin Park south, reach 1	Absent
11/5/1998	Loomis Basin Park south, reach 2	Absent
11/5/1998	L.D.S. Recreation Park off Penryn Road	Present
3/30/1999	Upstream from confluence with Miners Ravine	Absent
3/31/1999	Downstream of East Roseville Parkway crossing	Absent
3/31/1999	Upstream of East Roseville Parkway crossing	Absent
4/01/1999	Behind Sierra College	Absent
4/01/1999	Brace Road crossing	Present
5/07/1999	Brace Road crossing	Present
6/08/1999	Brace Road crossing	Present
5/05/1999	Horseshoe Bar Road crossing	Present
4/02/1999	Loomis Basin Park south, reach 1	Present
4/02/1999	Loomis Basin Park south, reach 2	Present
4/27/1999	Loomis Basin Park north at King Road	Present
4/29/1999	L.D.S. Recreation Park off Penryn Road	Present
5/04/1999	China Mine Road crossing	Present
4/27/1999	Buckeye Road off Penryn-Rock Springs Road	Present
4/28/1999	Upstream of Gilardi Road crossing	Present
10/28/2000	Upstream of East Roseville Parkway crossing	Absent
10/28/2000	Upstream of Gilardi Road crossing, reach 1	Present
10/28/2000	Upstream of Gilardi Road crossing, reach 2	Present

These data indicate the presence of young-of-the-year steelhead, and 1 to 2 year-old steelhead rearing from the Brace Road crossing upstream to at least the Gilardi Road crossing. No steelhead were captured between the confluence with Miners Ravine and Sierra College Boulevard. No sampling occurred between Sierra College Boulevard and Brace Road.

A rotary screw trap was placed in Dry Creek 100 m downstream from the confluence of Secret Ravine Creek and Miners Ravine Creek. The trap was fished from 06 November 1998 through 02 June 1999, and from 09 January 2000 through 08 June 2000. Table 4 presents number of fish caught per month.

Table 4 – Temporal Distribution of Steelhead Catches in the Rotary Screw Trap, 1999-2000

Month	1999 Steelhead Catch	2000 Steelhead Catch
January	0	0
February	0	0
March	1	8
April	2	2
May	0	0
June	0	0
Total:	**3**	**10**

Current Local Population Information

Very few surveys or sampling efforts have been conducted for steelhead within the Dry Creek Watershed. The most recent sampling efforts (electrofishing and screw trapping conducted in Dry Creek below the confluence with Miners Ravine and Secret Ravine) by Rob Titus of CDFG from 1998 through 2000 to determine the distribution and emigration timing of juvenile steelhead and Chinook salmon. Results indicated that young-of-the-year steelhead as well as yearling and older fish were present within both streams (Bailey Environmental 2003).

Ongoing Monitoring Programs

The inability to adequately conduct viability assessments for the Central Valley steelhead DPS is largely due to the lack of comprehensive abundance and trend data for steelhead in the Central Valley. Recently, the CALFED program identified a proposal for development (but not implementation) of a Central Valley steelhead monitoring program for directed action funding. Development and implementation of a monitoring and assessment program for Central Valley steelhead is critical for assessing population viability and responses to extensive habitat restoration efforts funded by CALFED and CVPIA (NMFS 2006).

CALFED's Battle Creek Restoration Project is a priority action that has already restored many stream reaches in the 42 miles of Upper Battle Creek suitable for steelhead. The upper reach will be fully restored under an agreement between Pacific Gas and Electric (which operates nine

hydroelectric dams in this reach) and several resource agencies. The intent is to remove five of the dams and dedicate the water rights to the environment. The remaining dams will have increased instream flows, thereby increasing habitat by 500 to 800 percent. The remaining dam structures would be modified with optimally designed fish ladders and screens, and meander belt and riparian forest would be restored. Continued funding and implementation of CALFED's Ecosystem Restoration Program and the CVPIA remain an overall priority for continuation of habitat restoration efforts, screening of diversions, flow and temperature monitoring, status and trends research monitoring, modification of structures to improve fish passage, and overall water quality improvements (NMFS 2006).

The CDFG has monitored both adult steelhead escapement and juveniles in the Central Valley since the early 1950s, and in some cases since the 1940s (CDFG 2007). Programs have evolved over the years, and vary in methods used, intensity of sampling effort, and reliability of estimates. While mark-recapture carcass surveys are now widely used as the standard method to estimate in-river spawning escapement of most Chinook races, historic data were based on a variety of methods, including carcass surveys, extrapolation based on spatial and/or temporal subsets of an entire run, and expert judgment. The original purpose of the escapement surveys was to provide data for ocean harvest management, but purposes have now expanded to:

- Providing a sound basis for assessing recovery of listed stocks,
- Monitoring the success of restoration programs,
- Evaluating the contribution of hatchery fish to Central Valley populations, and
- Sustainably managing ocean and inland harvest.

In response to the need to coordinate and improve escapement monitoring programs in the Central Valley, the Interagency Ecological Program (IEP) Salmonid Escapement Project Work Team (SEPWT) was formed in 2001. The team, which includes biologists working on salmon escapement monitoring surveys throughout the Central Valley, is a satellite team of the IEP Central Valley Salmonid Project Work Team (CVSPWT).

In 2004, the SEPWT completed a proposal for the development of a comprehensive monitoring plan for Central Valley adult Chinook escapement.

The goal of this plan will be to improve monitoring survey data for use in assessing the success of restoration activities, evaluating progress toward recovery of listed stocks, and sustainably managing ocean and inland fisheries.

In addition to the adult escapement monitoring efforts, juvenile monitoring studies have been conducted in the Central Valley since the 1920s. Programs have evolved over the years, in response to development of new sampling technology and changes in program objectives. Early studies in the tributary and mainstem rivers used primarily fyke net, beach seine, and trawl gear to monitor juveniles rearing and emigrating from the rivers. Currently, most surveys in the tributary and mainstem rivers use rotary screw trap gear to monitor juvenile emigration. To monitor rearing, habitat use, growth, and stranding of juveniles, snorkel, beach seine, and electrofishing gear are also used. In the Sacramento-San Joaquin Delta, beach seine and trawl gear are used to monitor juveniles rearing and emigrating through the system. Data from juvenile monitoring programs are used to:

- Evaluate the success of habitat restoration programs;
- Evaluate the impacts of water project operations on salmonid survival;
- Manage water project operations for the protection of salmonids on a real-time basis; and
- Evaluate hatchery propagation programs.

In response to the need to coordinate and improve juvenile salmonid monitoring programs in the Central Valley, the IEP Juvenile Monitoring Project Work Team (JMPWT) was formed in 2004. The team, which includes biologists working on juvenile monitoring surveys throughout the Central Valley, is a satellite team of the IEP (CVSPWT). This summary was developed by members of the team, including staff from the California Department of Fish and Game, Department of Water Resources, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Stockton East Water District, S.P. Cramer and Associates, The Fishery Foundation, Turlock Irrigation District, and East Bay Municipal Utility District.

The following monitoring information was obtained from the Program Summary for *Central Valley Salmon and Steelhead Monitoring Programs* (CDFG 2007).

Annual Monitoring Efforts for Central Valley Steelhead (Adult Escapement) include:

Mainstem Sacramento River

- Ladder counts at Red Bluff Diversion Dam

Upper Sacramento River Basin Tributaries

- Redd mapping on Clear Creek
- Snorkel surveys and redd surveys in upper Battle Creek and adult passage monitoring at the barrier weir at the Coleman National Fish Hatchery
- Snorkel surveys on Butte and Big Chico creeks

Lower Sacramento River Basin Tributaries

- Adult passage monitoring on the Yuba River at the Daguerre Point Dam
- Redd surveys and adult counts on the American River

Delta Tributaries

- Video monitoring, live trapping, and redd surveys on the Mokelumne River

In addition to the above monitoring efforts, CDFG also conducts Central Valley-wide angler surveys for steelhead.

Annual Monitoring Efforts for Central Valley Steelhead Juvenile Rearing and Emigration include:

Mainstem Sacramento River

- Rotary screw trapping at Red Bluff Diversion Dam and Glenn/Colusa Irrigation Diversion

Upper Sacramento River Basin Tributaries

- Rotary screw trapping on Clear, Battle, Deer, Mill, and Butte creeks
- Beach seining and Fyke netting on Stony Creek

Lower Sacramento River Basin

- Rotary screw trapping at Knights Landing on mainstem Sacramento River
- Kodiak and mid-water trawling 5 km downstream from Sacramento on mainstem

Sacramento River

- Rotary screw trapping on the Feather, Yuba, and American rivers

Delta Tributaries

- Rotary screw and incline plane trapping on the Mokelumne River
- Beach seining and electrofishing on the Mokelumne River
- Rotary screw trapping on the Calaveras River

San Joaquin River Basin

- Kodiak trawling on the San Joaquin River at Mossdale
- Rotary screw trapping on the Stanislaus River at Oakdale and Caswell State Park
- Snorkel surveys on the Stanislaus River
- Beach seining and snorkel surveys on the Tuolumne River

Population Trend of the Species

Little information is available regarding the viability of the naturally spawning component of the California Central Valley steelhead DPS, as this species is known to be data deficient. Steelhead, spawning above the Red Bluff Diversion Dam (RBDD), have a small population size (the most recent 5-year mean is less than 2,000 adults) and exhibit strongly negative trends in abundance and productivity. However, there have not been any escapement estimates made for the area above RBDD since the mid-1990s. The only recent DPS-level estimate of abundance is a crude extrapolation from the incidental catch of out-migrating juvenile steelhead captured in a midwater-trawl sampling program for juvenile Chinook salmon below the confluence of the Sacramento and San Joaquin Rivers. The extrapolated abundance of naturally spawning female steelhead involves broad assumptions about female fecundity (number of eggs produced per female) and egg-to-smolt survival rates. Based on this extrapolation, it is estimated that on average during 1998–2000, approximately 181,000

juvenile steelhead were produced naturally each year in the Central Valley by approximately 3,600 spawning female steelhead. It is estimated that there were 1 to 2 million spawners in the Central Valley prior to 1850, and approximately 40,000 spawners in the 1960s.

One source of new abundance information since the last status review comes from mid-water trawling below the confluence of the Sacramento and San Joaquin Rivers at Chipps Island (Table 5). This trawling targets juvenile Chinook salmon; catches of steelhead are incidental. In a trawling season, over 2,000 20-minute tows are made. Trawling occurred from the beginning of August through the end of June in 1997–1998 and 1998–1999, after which trawling has occurred year round. Usually, 10 tows are made per day, and trawling occurs several days per week. Since the 1998 broodyear, all hatchery steelhead have been ad-clipped (i.e., the *adipose fin* has been clipped). Trawl catches of steelhead provide an estimate of the proportion of wild to hatchery fish, which, combined with estimates of basin-wide hatchery releases, provide an estimator for wild steelhead production. The accuracy of the estimate is based on the assumption that hatchery and natural steelhead are equally vulnerable to trawl gear. If hatchery fish are more vulnerable to the gear, natural production is underestimated.

Table 5 – Estimated Natural Production of Steelhead Juveniles from the Central Valley

				Wild Female Spawners		
Year	***Cw/Ch*** [a]	***Nr* (millions)** [b]	***Nw* (thousands)** [c]	**ESS** [d] **= 1%**	**ESS** [d] **= 5%**	**ESS** [d] **= 10%**
1998	0.300	1.12	336	6,720	1,344	672
1999	0.062	1.51	94	1,872	374	187
2000	0.083	1.38	115	2,291	458	229
Average	0.148	1.34	181	3,628	726	363

A) Cw/Ch = ratio of unclipped to clipped steelhead.
b) Nr = total hatchery releases.
c) Nw = estimated natural production.
d) ESS = egg-to-smolt survival.

Based on the above calculations, it appears that about 100,000 to 300,000 steelhead juveniles (roughly, smolts) are produced naturally each year in the Central Valley. Assuming that average fecundity is 5,000 eggs per female, 1% of eggs survive to reach Chipps Island, and 181,000 smolts are produced (the 1998–2000 average); about 3,628 female steelhead spawn naturally in the entire Central Valley (NOAA 2005). This can be compared with McEwan's

(2001a) estimate of 1 million to 2 million spawners before 1850 and 40,000 spawners in the 1960s. Table 5 above shows the effects of different assumptions about survival on estimates of female spawner abundance.

Another source of information comes from screw trap operations at Knights Landing on the lower Sacramento River, just above the confluence with the Feather River (Snider and Titus 2000a, 2000b, 2000c). Over the period 1995–1999, estimates of the natural production for areas above Knights Landing averaged 9,800 yearling steelhead outmigrants (range of 7,260–11,700). This level of production is about 5% of the total production as estimated above, and may be a substantial underestimate associated with trap efficiency estimates generated from recaptures of marked Chinook juveniles, which are likely less able to avoid traps.

Compared to most Chinook salmon populations in the Central Valley, steelhead spawning above RBDD had a fairly strong negative population growth rate and small population size at the time of last census (1993).

Recent spawner surveys of small Sacramento River tributaries (Mill, Deer, Antelope, Clear, and Beegum creeks) (Moore 2001) and incidental captures of juvenile steelhead during Chinook salmon monitoring (Calaveras, Cosumnes, Stanislaus, Tuolumne, and Merced rivers) confirmed that steelhead are widespread, if not abundant, throughout accessible streams and rivers.

Critical Habitat Designation for each Evolutionarily Significant Units / Distinct Population Segment

Central Valley Steelhead

On September 2, 2005, final Critical Habitat designations (70 FR 52488) were established for 19 West Coast salmon and steelhead ESUs, including the California Central Valley ESU. The final Critical Habitat designations are restricted to the species' anadromous range, and are coextensive with the steelhead-only Distinct Population Segment (DPS) delineations.

Geographical Extent of Designated Critical Habitat

Designated Critical Habitat for the Central Valley Steelhead includes all or portions of the following counties: Tehama, Butte, Glenn, Shasta, Yolo, Sacramento, Solano, Yuba, Sutter, Placer, Calaveras, San Joaquin, Stanislaus, Tuolumne, Merced, Alameda, and Contra Costa (Figure 13. *Central Valley Steelhead Evolutionarily Significant Unit (ESU)*). Specifically, designated Critical Habitat includes the stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line (33 CFR 329.11). In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain and is reached at a discharge which generally has a recurrence interval of one to two years on the annual flood series. Critical habitat in estuaries (*e.g.* San Francisco-San Pablo-Suisun Bay, Humboldt Bay, and Morro Bay) is defined by the perimeter of the water body as displayed on standard 1:24,000 scale topographic maps or the elevation of extreme high water, whichever is greater.

Dry Creek is designated as Critical Habitat for Central Valley steelhead. Dry Creek is a mid-sized stream that drains the lower foothills of Placer County and forms the southeastern boundary for the Project area. The Dry Creek Watershed covers approximately 101 square miles, originating near the community of Newcastle and extending downstream about 25 miles to the point where Dry Creek enters Steelhead Creek (Natomas East Main Canal) in North Sacramento, Sacramento County, California. Steelhead Creek eventually flows into the Sacramento River approximately 0.5 mi west of Interstate 5. Most of the watershed (84%) is located within Placer County with the remainder in Sacramento County (ECORP Consulting 2003). Substantial developed areas occur in the upper reaches of the Dry Creek watershed, upstream of the Project Area.

Primary Constituent Elements

Within these areas, the primary constituent elements essential for the conservation of these ESUs are those sites and habitat components that support one or more life stages, including: (1) freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development; (2) freshwater rearing sites; (3) freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival; and (4) estuarine areas free of obstruction and excessive predation. Freshwater rearing sites have water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks. Estuarine areas have water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation. Critical Habitat does not include occupied habitat areas on Indian lands.

The Project Area is located within the Valley American Hydrologic Unit 5519—(i) *Lower American Hydrologic Sub-area 551921.* Outlet(s) = American River (Lat 38.5971, –1121.5088) upstream to endpoint(s) in: American River (38.6373, –1121.2202); Natomas East Main Canal (38.6646, –1121.4770); Dry Creek (38.7554, –1121.2676); Miner's Ravine Creek (38.8429, –1121.1178); and Secret Ravine Creek (38.8541, –1121.1223).

Essential Elements of Designated Critical Habitat

Steelhead require gravel and cobble substrates (0.6 to 13 cm diameter) with limited amounts of fine sediments (sand, silt, and clay) for spawning. In general, water temperatures less than 16.1 °C (61 °F) are necessary for successful incubation and hatching of steelhead eggs. Fry

and older juveniles require adequate instream cover (cobble or boulders, large woody debris, undercut banks, or submerged and overhanging vegetation for protection from predators). Habitat requirements for various life stages and activities of steelhead trout are summarized in Table 1.

Young steelhead spend the first one to two years in cool, clear, fast-flowing permanent streams and rivers where riffles dominate pools and there is ample cover from riparian vegetation or undercut banks, and where invertebrate life is diverse and abundant. Water temperature is an important limiting factor since rainbow trout can only tolerate stream temperatures up to 26 to 27° C in summer.

ENVIRONMENTAL BASELINE

The effects of past and present human and natural factors leading to the current status of Central Valley steelhead, its habitat (including designated Critical Habitat), and the ecosystem within the Action Area is provided in the *Species Descriptions* section.
There are no completed Biological Opinions from NMFS available for the Dry Creek watershed.

Species and habitat information relative to Central Valley steelhead and designated Critical Habitat within the Action Area is provided in the *Baseline Conditions Justification* section of this document.

Project Area and Action Area

The Project Area includes the properties participating in the planned development and subject to the current permit action by the Corps, and the associated off-site (outside the Project Area) infrastructure elements (Off-Site Area for Infrastructure Elements) (see Figure 11).

The Action Area includes: the Project Area; the 250-foot zone that envelops both the Project Area and the Off-Site Area for Infrastructure Elements; Dry Creek within the project boundaries and downstream of the Project Area to the confluence with the Natomas East Main Canal (a.k.a. Steelhead Creek) (see Figure 12). Numerous residential, commercial, and

industrial developments are already present or are planned within or adjacent to the Action Area as defined above.

The Action Area was determined based on the consideration of all direct and indirect effects of the federal action (CWA Section 404 permitting) and the distribution and occurrence of federally listed anadromous fish species (i.e., Central Valley steelhead) within the region, and on potential direct and indirect impacts on aquatic resources in Dry Creek downstream of the Project. Potential downstream effects are associated primarily with increased wastewater input into Dry Creek via the DCWWTP, and stormwater runoff from a portion of the PVSP area. The downstream limit of the Action Area was determined based on water quality in the Natomas East Main Canal, which is affected by inputs from Auburn Ravine Creek, Curry Creek, and several other drainages which are already affected by wastewater treatment facility discharges. As a result, the incremental effect of the increased DCWWTP discharge and stormwater runoff from a portion of the PVSP area on water quality in the Natomas East Main Canal would be extremely difficult to determine, and would vary with season.

Description of the Environmental Baseline

Suitable spawning and rearing habitat for Central Valley steelhead is currently not present within the mainstem of Dry Creek (Vanicek 1993b, and data obtained from CDFG Region 2 files) due primarily to the lack of suitable spawning substrates and to warm summer water temperatures which generally exceed the thermal limit for steelhead rearing. Most of the Dry Creek channel is dominated by sand and silt; although small patches of cobble and gravel substrate are present in limited areas in the upper reaches of the creek in the vicinity of the City of Roseville. However, these substrates are generally embedded from 25-50%, or greater. Pool habitats are also dominated by sand, resulting in lack of depth and reduced instream cover. In general, instream cover for fish is poor to moderate throughout most of the lower reaches of Dry Creek due to the paucity of rocky substrates, undercut banks, large woody debris, root wads, attached aquatic vegetation, turbulence or bubbles, or other cover items. Food sources for rearing steelhead are also generally limited due to the lack of boulder, cobble, and gravel substrates and that BMI communities in Dry Creek are characterized by a high

percentage of tolerant organisms and low to moderate diversity (consisting primarily of terrestrial insects) due primarily to the dominance of fine sediments.

Dry Creek currently functions primarily as a migration/emigration corridor for anadromous salmonids (steelhead and fall-run Chinook salmon). Current local population information for Central Valley steelhead within the Dry Creek Watershed is not available, due to the lack of systematic or comprehensive surveys within the Dry Creek Watershed. Very few surveys or sampling efforts have been conducted for steelhead within the Dry Creek Watershed; however, they are known to spawn and rear within both Secret and Miners Ravine creeks. The most recent sampling efforts (electrofishing and screw trapping conducted in Dry Creek below the confluence with Miners Ravine and Secret Ravine creeks) were conducted by CDFG from 1998 through 2000 to determine the distribution and emigration timing of juvenile steelhead and Chinook salmon. Results of the electrofishing and screw trap surveys indicated that young-of-the-year steelhead as well as yearling and older fish were present within both streams (Bailey Environmental 2003). A total of 58 steelhead were captured (all surveys), with a size range from 21 to 310 mm (mean = 117 mm). No steelhead were captured between the confluence with Miners Ravine Creek and Sierra College Boulevard.

Even though the majority of Dry Creek including portions of the Action Area has been degraded by fine sediments and other effects of urbanization within the watershed (e.g., discharge from wastewater treatment plants, stormwater runoff from roads and populated areas), the creek provides a migration corridor for both Central Valley steelhead and Chinook salmon to access suitable spawning and rearing habitat in the upper watershed. Available literature indicates that steelhead do not typically spawn or rear in Dry Creek, especially areas downstream of the City of Roseville. It is also doubtful that Dry Creek within or adjacent to the Action Area, even historically, had suitable stream conditions to support steelhead spawning and rearing due to low summer flows and warm summer water temperatures.

Based on the results of habitat typing conducted by ECORP (2007), essential fish habitat (EFH) is generally limited within and adjacent to the Project Area. An evaluation of aerial photography of Dry Creek from the Project Area downstream to the Natomas East Main Canal indicated that EFH also appears to be limited within the Action Area. EFH is defined in the Magnuson-Stevens

Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical, and biological properties used by fish which may include aquatic areas historically used by fish where appropriate; and substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. As described below under *Inventories and Surveys for Site-Specific Habitat Types and Quantities in the Action Area*, suitable spawning and rearing habitat for steelhead is absent within the Action Area due primarily to the lack of gravel and cobble substrates and unsuitable summer water temperatures. Holding areas for fish are limited due to the predominance of open sand areas, limited instream structures, and lack of deep pools and attached aquatic vegetation. Additionally, cover for fish is generally sparse (average of 15% within the Project reach) and restricted mostly to overhanging vegetation and a few isolated locations with undercut banks and/or large woody debris. Available food sources for steelhead and other fish species also appears to be limited within the Project and Action Areas due to the lack of rocky substrates, abundance of fine sediments, and relatively depauperate BMI communities dominated by tolerant organisms and a high percentage of terrestrial insects.

Dry Creek is also designated as Critical Habitat for Central Valley steelhead. The four primary constituent elements considered essential habitat components for supporting one or more life stages of Central Valley steelhead include (1) freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development; (2) freshwater rearing sites; (3) freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival; and (4) estuarine areas free of obstruction and excessive predation. However, only portions of element 3 are present in the Action Area.

Within the Action Area, Dry Creek appears to provide an unobstructed migration corridor for salmonids, even during low flow periods. Based on the limited amount of natural cover (i.e., large woody debris, aquatic vegetation, large rocks and boulders, and undercut banks) for fish within the Project Area and the lack of rearing habitat for salmonids, it is doubtful that

excessive predation on steelhead juveniles or Chinook salmon smolts occurs during outmigration. Within the Action Area, water quantity is adequate year-round (stream flow is augmented by wastewater treatment discharges and other urban inputs) to sustain fish and other aquatic organisms. Based on available data, there is no indication that existing water quality conditions in Dry Creek, which is influenced by wastewater treatment plant discharges and other urban runoff, has a negative effect on steelhead migration or movement patterns through the Action Area. Additionally, since steelhead passage through the Action Area generally occurs during the winter and spring when stream outflows are naturally high, water quality is affected to a lesser degree by urban runoff and wastewater treatment plant discharges.

Impacts of Previous Action on Species and Habitat

A query of the NMFS Southwest Region documents library did not locate any completed actions, Section 7, Section 10, or Biological Opinions for Dry Creek or the Action Area. Specific impacts of previous actions on species and habitat are not available; however, historic urbanization and agricultural activities within the Dry Creek Watershed has resulted in degradation of anadromous fish habitat within Dry Creek and its tributaries.

Several residential and commercial developments (two golf courses, parks, farms, etc.) are present along Dry Creek downstream of the Project within or adjacent to the Action Area. It is unknown whether some or all of these developments have had an effect on Dry Creek habitat and/or species within the Action Area.

Baseline Conditions Justification

Baseline conditions reported in this document are supported by available data from CDFG, NMFS, Dry Creek Conservancy, Bailey Environmental, ECORP Consulting, Inc., and various other sources.

Inventories and Surveys for Site-Specific Habitat Types and Quantities in the Action Area

The special-status fish habitat assessment for the portion of Dry Creek adjacent to the proposed Project was conducted on November 16 and 17, 2006. The area surveyed is depicted in Attachment C. Within the area surveyed, the Dry Creek channel is moderately incised with some areas of active erosion. The riparian corridor is relatively well developed along most of the channel, varying in width from approximately 60 to 150 meters (200 to 500 feet). Tree species within this corridor include Valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), Interior live oak (*Q. wislizenii*), Oregon ash (*Fraxinus latifolia*), California black walnut (*Juglans californica*), and willow (*Salix* sp.). The understory vegetation is relatively dense along most of the reach, and includes Himalayan blackberry (*Rubus discolor* = *R. armeniacus*), button willow (*Cephalanthus occidentalis*), poison oak (*Toxicodendron diversilobum*), bunchgrass (*Juncus* sp.), and sedges (*Carex* sp.).

Dry Creek Habitat Assessment

The stream habitat assessment was initiated at the downstream end of Dry Creek adjacent to the southeastern corner of the Project Area and extended upstream (generally northeasterly) to the northeastern end of the Project Area. During stream habitat typing, a total of 89 habitat units were recorded within this 2.00 km (1.24 mi) reach of Dry Creek. However, due to the presence of numerous split channels, side channels, and backwater pools; the actual length of aquatic habitat available for fish totals 3.00 km (1.87 mi). Representative photographs of Dry Creek within the Project Area are provided in Attachment C. A complete list of Dry Creek habitat units and associated characteristics within the Project Area and a summary of the total amount of in-stream habitat are presented in Attachment D.

Within the Project Area, the Dry Creek channel is of low gradient, and is moderately to deeply incised with earthen banks. Stream attributes are generally similar throughout the reach, though large woody debris is more common in the upper portion of the reach.

Instream habitats are dominated by runs and glides (58%) and various pool types (40%), with very few riffles (2%). Pool habitats consist primarily of main channel, lateral scour, corner, log dammed, and backwater pools. Sand and silt are the dominant stream channel substrates (77% combined), and also appear to dominate substrates upstream and downstream of the Project Area. Gravel, which comprises approximately 15% of the substrate composition, occurs primarily at pool tail-outs and in isolated patches immediately downstream of instream structures (e.g., large woody debris). A small amount of clay hardpan (7.5%) is also present within the reach. Boulder and cobble substrates are generally lacking (< 1%) within the reach, except for small pockets behind several instream structures (2 weirs and the Watt Avenue Bridge abutment). The few cobble and boulder habitats are comprised primarily of broken concrete and brick.

Instream cover for fish is generally sparse within the reach, except for isolated areas with undercut banks and/or large woody debris that provide deeper water and overhead cover. Canopy cover ranges from 0 to 95% with an average of 35% for the reach.

Table 6 summarizes the average habitat width, water depth, substrate composition, canopy, and instream cover documented in the Project reach of Dry Creek during habitat typing.

Table 6 – Average Stream Habitat Characteristics Recorded During Stream Habitat Typing Dry Creek 2006

	Average Width (m)	**Average Substrate (%)**						**Average Cover (%)**	
Dry Creek Reach		Silt	Sand	Gravel	Cobble	Boulder	Clay Hardpan	Canopy	Instream
	10	18	59	15	0.2	0.3	7.5	35	15

Within the reach of Dry Creek adjacent to the proposed project, run and glide habitats comprise more than 58% of the total linear distance. These habitat types are common in most "valley" streams that flow through predominantly low gradient earthen channels. Run and glide habitats are dominated by sand and silt substrates (74%) with smaller amounts of gravel (18%)

and some clay hardpan (~ 8%). Channel widths in run habitats average 9.5 m (31 ft) wide. The average maximum depth for all runs and glides is about 67 centimeters (26 inches) with a mean depth of approximately 37 cm (~14 in). Canopy cover in run and glide habitats ranges from 0 to 85%, with an average of 32%. Instream cover, which consists primarily of overhanging vegetation, undercut banks, and water depth, is relatively low, averaging between 15 and 20%.

Pool habitats account for approximately 40% of available stream habitat. Similar to the other stream habitats, pools have relatively high percentages of silt and sand (averaging 81% of the total substrate) with a small amount of gravel (12%) and clay hardpan (7%). Main channel pools, including corner pools, are generally the widest areas of the creek, averaging slightly less than 11.0 m (36 ft) in width. Other pool habitats present within the reach include lateral scour pools, backwater pools, dammed pools, secondary channel pools, and a single plunge pool. These additional pool types account for 46% of the total pool habitat. Due to the abundance of fine sediments, pool depths are generally shallow, with a maximum depth of 1.5 m (5 ft) recorded in a single pool. Main channel and corner pools combined have an average maximum depth of 1 m (3.3 ft) and an average depth of 0.5 m (1.6 ft). Canopy cover for main channel and corner pools ranges from 5 to 95%, averaging 36%. Instream cover is low to moderate; averaging 25%, and consists primarily of overhanging vegetation, undercut banks, object cover, turbulent water, and water depth.

Riffle habitats are sparse throughout the reach, due primarily to the lack of rocky substrates. They account for less than 2% of the stream habitats. Only one short high-gradient riffle, which averages slightly more than 7 m (23 ft) in width, was observed within the lower reach. Gravel and hardpan were the dominant substrate types observed, comprising approximately 90% of the substrate with only a small amount of silt and sand (~ 9%). The presence of hardpan substrate (29%) at this location has allowed the riffle to form in an area of predominantly fine sediments. The average maximum depth of this riffle at the time of the assessment was about 35 cm (14 in), though average depths were substantially shallower (~ 18 cm; ~ 7 in). Canopy cover in riffle habitats averages slightly greater than 50%, and instream cover for fish is extremely limited (< 5%).

In addition to habitat typing conducted within and adjacent to the Project Area, a reconnaissance survey within the Action Area (where access was available) indicated that stream habitats, substrate types and condition, riparian and instream cover, and other habitat characteristics were similar to that observed within the Project Area.

During habitat mapping, surveyors observed some downstream movement of sand in virtually all habitats, even though flows were relatively low. This continual sand movement likely reduces the potential for rooted aquatic vegetation to become well established within the stream channel, and is likely responsible for the embeddedness of cobble and gravel substrates within and downstream of the Project Area. Active erosion was also observed within the reach, especially in areas where sharp bends occur in the channel and at off-road vehicle crossings.

Most of Dry Creek flows through an alluvial floodplain comprised primarily of small substrates. In general, bank substrates within and downstream of the Project reach consist of sand and gravel, with a small percentage of cobble and larger substrates, including clay hardpan. As a result, bank stability throughout much of the reach is relatively low, especially in areas where stream banks are steep, there are sharp bends in the channel, and/or vegetation is either thin or absent. Based on the composition of the dominant streambed and bank substrates throughout much of Dry Creek, and the habitat upstream of the Project Area, it is likely that the Project reach and downstream areas have always been dominated by sand and gravel substrates.

During the summer, a low dam constructed of uncemented rock and broken concrete is present across Dry Creek immediately downstream of the Watt Avenue Bridge. The dam causes water to pool under and upstream of the bridge. An electric pump and intake structure occurs on the north bank of the Creek, and water is intermittently withdrawn from the Creek to irrigate pasture land on the north side of Dyer Lane. Upon conversion of the pasture land in accordance with the Specific Plan, the current practice of utilizing Dry Creek flows for irrigation would cease within the Plan area.

Since construction activities will not occur within Dry Creek channel and EFH is limited within and adjacent to the Project Area (as determined from the analysis of fish habitat assessment data collected during fall 2006), the project as proposed and its conservation measures should minimize potential loss of EFH resulting from implementation of the Project. As a result, construction of the Project is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project Area.

Fish Observations and Water Quality Sampling Results

Due to the presence of anadromous salmonids, fisheries sampling was not conducted. Fish observed during habitat mapping included one fall-run Chinook salmon, one Sacramento sucker, and numerous largemouth bass.

Water quality parameters recorded during the site visit on October 24, 2005, were generally within the normal range for foothill streams in this region. Stream flow (at the stream gage located immediately downstream of the Watt Avenue Bridge) was estimated to be around 20+ cubic feet per second (cfs), water temperature was 20.2 °C, dissolved oxygen was 7.2 milligrams per liter (mg/L), and the pH was 8.8. With the exception of pH, which was slightly elevated, values obtained for temperature and dissolved oxygen met the water quality standards for warm freshwater habitat as stipulated in the Basin Plan (State Water Resources Control Board 2006).

Additional Information from Previous Studies

Stream habitat inventories, water quality monitoring, BMI sampling, and fisheries resource data are available for Dry Creek from several different sources including the CDFG, the CVRWQCB, the Dry Creek Conservancy (DCC), the City of Roseville, Placer County Department of Planning, Bailey Environmental, and David Vanicek from California State University, Sacramento. However, most of these studies and monitoring efforts have been conducted in the middle to upper reaches of Dry Creek; from the Roseville area upstream, including the three major tributary streams Antelope Creek, Secret Ravine Creek, and Miners Ravine Creek.

Surface flows in Dry Creek are often flashy during the winter months, but are relatively stable in the summer. The maximum flow measured at the USGS gauging station #11447293, located at the Vernon Street Bridge, for the period of record (1996 through the present) was 7,950 cfs. During the summer, stream flows are relatively low and consist primarily of groundwater seepage, residential and industrial wastewater, and outflow from the Dry Creek Roseville Wastewater Treatment Plant in Roseville (ECORP 2003).

Physical Habitat Data

Physical habitat data are available for Dry Creek within the Roseville area (Vanicek 1993a), but are unavailable for the lower reaches downstream of Roseville. Vanicek noted that poor rearing conditions exist for juvenile salmonids during the spring and summer months in the lower reaches of the creek, due to a lack of cover and inadequate food producing areas (i.e., boulder, cobble, and gravel substrates for aquatic insects). These habitat deficiencies also impact and restrict resident fish populations.

In general, habitat descriptions for many of the Roseville locations are similar to habitats observed in the Project reach. These stream habitats are mostly flatwater areas consisting primarily of runs and shallow pools and very few riffles, with predominantly sand and silt substrates and limited cover provided mostly by overhanging vegetation. The overall quality of the stream habitats within the Project Area is relatively low for anadromous fish and other native species.

Based on surveys conducted by Vanicek (1993) in the upper portion of Dry Creek, and in Miners Ravine and Secret Ravine creeks, documented stream substrates are dominated by sand, silt, and clay (51% aggregate). Even in riffle areas, where cobble and gravel substrates are present, embeddedness values are generally above 25%, considered unsuitable for spawning salmonids. Additionally, sediment toxicity testing in Secret Ravine Creek indicates potential heavy metal toxicity, which could greatly affect salmonid eggs and emerging young. An ecological risk assessment to determine stressors on fall-run Chinook salmon, conducted in Secret Ravine Creek by Bren School of Environmental Management (Ayres *et al.* 2003), indicates that sediment is the primary stressor for Chinook salmon within the drainage.

Water Quality Data

Selected water quality data obtained from grab samples collected above the Roseville Wastewater Treatment Facility as part of the Northeast Roseville Specific Plan Draft Environmental Impact Report (DEIR) (1986), and the City of Roseville, Roseville Regional Wastewater Treatment Service Area Master Plan DEIR (1996); and at four additional sites within and downstream of the City of Roseville by the Dry Creek Conservancy and the CVRWQCB, is provided in Table 7 below (Bailey Environmental 2003).

Table 7 – Water Quality Results at Two Dry Creek Locations in the Roseville Area

Source	Date Samples Collected	Sampling Results			
		Water Temp. (°C)	***Dissolved Oxygen (mg/l)***	***pH***	***Turbidity (NTU)***
Northeast Roseville Specific Plan DEIR	August 1979 October 1979	21.0 18.0	Range of 7.2 to 8.7	7.4 7.0	
Roseville Regional Waste-water Treatment Service Area Master Plan DEIR	1989	Range of 3.5 to 17.9, avg. 10.8	Range of 7.0 to 13.2, avg. 9.6	Range of 6.7 to 7.9, avg. 7.4	Range of 1.2 to 48, avg. 5.6
Roseville Regional Waste- water Treatment Service Area Master Plan DEIR	1990	Range of 3.4 to 28.5, avg. 14.9	Range of 4.8 to 12.5, avg. 9.1	Range of 6.5 to 7.9, avg. 7.4	Range of 1.3 to 28,0 avg. 6.6
Dry Creek Conservancy/ CVRWQCB from Cook Riolo Road to Rio Linda Bridge	2001	Data Not Available	Data Not Available	Range of 6.5 to 8.8	Data Not Available
City of Roseville at Darling Way and at Riverside Drive	2001 and 2002	Range of 4.0 to 31.5	Data Not Available	Data Not Available	Data Not Available

Data collected in 1999 by CDFG in Dry Creek below the confluence of Secret and Miners Ravine creeks showed peak water temperatures of 26.7 °C (80 F), which is considered to be unsuitable for rearing steelhead. Water temperature data are also available for three stations in the Roseville area (Darling Way, Riverside Drive, and just downstream of the confluence with Secret and Miners Ravine creeks). Hourly water temperature monitoring has been conducted at the Darling Way and Riverside Drive stations since 1998, and recordings every two hours have been

collected at the station below the confluence of Secret and Miners Ravine creeks since 2002. At the Riverside Drive station, temperature data collected from June 2001 to June 2002 ranged from 3.5 to 31.5 °C; and at the Darling Way site, data collected from September 2001 to June 2002 had a temperature range of 4 to 27.5 °C. Temperature data collected below the confluence of Secret and Miners Ravine creeks from September 2002 to September 2003 showed a similar range of 6 to 27 °C. At all three stations, summer water temperatures (June through August) generally ranged from 19 to 30 °C. Steelhead can only tolerate stream temperatures up to 26 to 27° C in summer.

Based on available information, seasonal and often rapid changes in pH have been noted at various sampling stations within Dry Creek. In general, observed pH values have been highest in the winter (January and February) and lowest in the late fall/early winter (October through December). Changes in pH values up to 2 units have been recorded in the Roseville area within periods of less than one month. This unexplained pattern has also been observed in other Sierra foothill watersheds (Bailey Environmental 2003).

In addition to pH, the concentrations of nitrate and orthophosphate in the Roseville area are extremely high and the ratio between the two constituents is out of balance. Normally a ratio of nitrate to orthophosphate of 10:1 is desirable for anadromous fish streams, with nitrate levels at or below 1.0 mg/l. However, data collected at the Rio Linda Bridge in Roseville showed nitrate levels up to 5.5 mg/l and similar or slightly lower values for orthophosphates, with minimum values exceeding 1.0 mg/l for much of the year (Bailey Environmental 2003). Although lower nitrate levels (<1.0 mg/l) were recorded at the Royer Park and Darling Way sampling sites in Roseville, the ratio was still out of balance, with orthophosphate values higher than nitrate levels.

Dissolved oxygen data are available from several sources, including the Northeast Roseville Specific Plan DEIR, and the Roseville Regional Wastewater Treatment Service Area Master Plan DEIR. In general, dissolved oxygen concentrations recorded at stations above the Roseville Wastewater Treatment Facility ranged from 7 to 13 mg/l, though a minimum value of 4.8 was also recorded at one of the stations.

Fisheries Data

Current local population information for steelhead within the Dry Creek Watershed is not available, due to the lack of systematic or comprehensive surveys. The earliest surveys to evaluate salmon spawning activities in Secret Ravine Creek were conducted by CDFG in 1963, with subsequent surveys conducted in 1964-1966, 1968, and 1985. From 1998 through 2000, CDFG (2003) conducted additional surveys to determine the distribution of rearing steelhead and Chinook salmon, and to determine emigration timing of juvenile steelhead and salmon from both Secret and Miners Ravine creeks. Since 2000, the only surveys that have been conducted in Secret Ravine Creek are the one-day salmon counts performed annually (since 1997) by the DCC, and the presence/absence surveys conducted by CDFG in 2004 and 2005.

Fisheries data for Dry Creek and its major tributaries, Secret Ravine Creek, Miners Ravine Creek, and Antelope Creek (Vanicek 1993b) are available from CDFG, Region 2. Fish surveys conducted by Vanicek in a portion of the mainstem of Dry Creek documented the presence of 14 fish species, including six native fishes (Table 8). More recent surveys conducted by Garcia and Associates and CDFG in 1998 and 2002, respectively, documented the presence of the same general fish assemblage.

Table 8 – Fish Species Documented in Dry Creek by David Vanicek (1993)

Common Name	Scientific Name	Native/Non-Native
Black Bullhead	*Ameiurus melas*	Non-Native
Bluegill	*Lepomis macrochirus*	Non-Native
Common Carp	*Cyprinus carpio*	Non-Native
Fall-Run Chinook Salmon	*Oncorhynchus tshawytscha*	Native/Hatchery Origin
Golden Shiner	*Notemigonus crysoleucas*	Non-Native
Green Sunfish	*Lepomis cyanellus*	Non-Native
Hitch	*Lavinia exilicauda*	Native
Largemouth Bass	*Micropterus salmoides*	Non-Native
Pacific Lamprey	*Lampetra tridentata*	Native
Sacramento Pikeminnow	*Ptychocheilus grandis*	Native
Sacramento Sucker	*Catostomus occidentalis*	Native
Smallmouth Bass	*Micropterus dolomieu*	Non-Native
Spotted Bass	*Micropterus punctulatus*	Non-Native
Tule Perch	*Hysterocarpus traski*	Native

From 1998 through 2000, CDFG conducted electrofishing and screw trapping in Dry Creek below the confluence with Miners and Secret Ravine creeks. Sampling results indicated that during all three years of monitoring, young-of-the-year steelhead, yearling, and older fish were present in both Miners and Secret Ravine Creeks (Bailey Environmental 2003).

In 2004 and 2005, CDFG conducted resource assessment surveys in Secret Ravine Creek to determine presence/absence of Central Valley steelhead and Chinook salmon (CDFG 2006). As part of this assessment, CDFG electrofished interspersed sections of the creek from the headwaters near Newcastle downstream to just above the confluence with Miners Ravine Creek. The results of these surveys conducted in October and November 2004, and May 2005 are provided, by stream reach, in Table 9.

Table 9 – Results of Presence/Absence Surveys for Steelhead and Chinook Salmon Conducted by CDFG in 2004 and 2005 in Secret Ravine Creek

	Fall 2004		Spring 2005	
Location	Steelhead	Chinook	Steelhead	Chinook
Upstream of Gilardi Road crossing	+	--	+	--
Buckeye Road off Penryn Rock Spring Road	+	--	+	--
China Mine Road crossing	+	--	+	--
L.D.S. Recreation Park at Penryn Road	+	--	+	+
Loomis Basin Park	--	--	+	+
Horseshoe Bar Road crossing	+	--	+	+
Behind Sierra College at Rocklin Road	--	--	--	+
Greenbrae Road	--	--	--	+
Upstream of East Roseville Parkway	--	--	--	+
Downstream of East Roseville Parkway	--	--	NA	NA
Upstream of confluence with Miners Ravine	--	--	NA	NA

+ - Observed within reach
-- - Not observed within reach

Fish stocking in Dry Creek has apparently only occurred on one occasion. CDFG records indicate that in February 1993, approximately 100,000 fall-run Chinook salmon fry from the Nimbus Fish Hatchery were stocked in Dry Creek in the vicinity of the Southern Pacific Railroad Yard in Roseville (Bailey Environmental 2003). CDFG records also indicate that fish stocking has also occurred in both Secret Ravine and Miners Ravine creeks. On five occasions between 1985 and 1993, Chinook salmon (from the Feather River Hatchery) were stocked in Secret Ravine Creek in several locations including Loomis Basin Park and at Sierra College.

Potential barriers to fish passage occur within Dry Creek and include temporary beaver dams, seasonal flashboard dams, pipeline crossings, concrete dams, and natural falls. According to David Vanicek (1993), several man-made structures and natural barriers exist within the Dry Creek channel that could potentially restrict migration at low flows, especially the pipeline crossing at the Cirby Creek confluence near Riverside Drive in Roseville. However, recent modifications to the pipeline crossing have improved passage conditions (ECORP 2003). The absence of holding pools and the potential presence of barriers at low flows creates inadequate conditions for the upstream movement of adult salmon during the fall spawning run (Vanicek 1993). Even though anadromous species routinely migrate into the watershed to spawn, full access to the upper reaches of the creek may not be possible during low flow periods.

In Miners Ravine Creek, CDFG has identified the dam on Cottonwood Lake as a migration barrier for fall-run Chinook salmon; however, during high flow periods, it is possible for steelhead to potentially migrate around the dam (pers. com., Rob Titus, CDFG, November 2004). This impoundment blocks many miles of usable salmonid spawning and rearing habitat in upstream areas.

Factors Affecting the Environment of the Species or Critical Habitat in the Action Area

Several factors could potentially affect special-status fishes or aquatic habitat present within the Action Area. Effect indicators such as water temperature, flows, and littoral habitat availability were used to evaluate whether the proposed Project would have an adverse effect on the species' habitat and range. The aquatic resources impact assessment addressed all life stages of Central Valley steelhead included in the *Species Description* section of this document, including spawning, incubation and initial rearing, juvenile rearing and emigration, and adult immigration and emigration. The analysis used indicators and methodologies that account for potential effects to Central Valley steelhead and Critical Habitat.

Exceedance of water temperature criteria identified by the NMFS for steelhead and other anadromous fish species is one such effect indicator. As discussed in the *Project Description* section of this document, some water quality degradation, erosion, and sedimentation could occur as a result of connection to the DCWWTP and the associated increased discharge to Dry

Creek. The primary water quality issues associated with increased flows into Dry Creek include increased water temperature and elevated levels of trace metals and organic pollutants. However, installation of additional water treatment facilities at the DCWWTP will ensure that water quality parameters remain at similar levels relative to existing baseline conditions in Dry Creek. As a result, changes in water temperature and levels of trace metals and organic pollutants are not expected as a result of implementation of the Project or connection to the DCWWTP. To ensure that water temperatures in Dry Creek remain at baseline conditions, new cooling towers will be added as necessary to offset increased wastewater flow from the Project Area (Quad Knopf 2006). Additionally, changes in the levels of trace metals and organic pollutants will be minimized by the installation of advanced treatment facilities, and instituting metals source controls/pre-treatment. Following installation of these water treatment facilities, this element of the overall water quality impact is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project Area.

Relationship Between Habitat in the Action Area and the Biological Requirements of the Species

Steelhead require gravel and cobble substrates (0.6 to 13 cm diameter) with limited amounts of fine sediments (sand, silt, and clay) for spawning. In general, water temperatures less than 16.1 °C (61 °F) are necessary for successful incubation and hatching of steelhead eggs. Fry and older juveniles require adequate instream cover (cobble or boulders, large woody debris, undercut banks, or submerged and overhanging vegetation for protection from predators).

Young steelhead spend the first one to two years in cool, clear, fast-flowing permanent streams and rivers where riffles dominate pools, there is ample cover from riparian vegetation or undercut banks, and where invertebrate life is diverse and abundant. There are strong shifts in habitat with size and season: with the smallest fish occurring in riffles, intermediate size fish inhabiting runs, and large fish in pools. Water temperature is an important limiting factor since rainbow trout can only tolerate stream temperatures up to 26 to 27° C in summer. Steelhead can spend from 1 to 3 years in fresh water prior to migration to the ocean. Most emigrate during spring when smoltification occurs. Age at maturity depends upon the combination of years in fresh water (1 to 3 years) plus years at sea (1 to 4 years). Adults and sub-adults (jacks) can return after 1 year at sea, or just months in terms of 'jacks' (precocial males).

Habitat requirements for various life stages and activities of steelhead trout are summarized in Table 1.

Within the Project Area, the Dry Creek channel is low gradient and moderately to deeply incised with earthen banks. Stream attributes are generally similar throughout the reach, though large woody debris and associated fish habitat are more common in the upper portion of the reach. Instream habitats are dominated by runs and glides (58%) and various pool types (40%), with very few riffles (2%). Pool habitats consist primarily of main channel, lateral scour, corner, log dammed, and backwater pools. Sand and silt are the dominant stream channel substrates (77% combined), and also appear to dominate substrates upstream and downstream of the Project Area. Gravel, which comprises approximately 15% of the substrate composition, occurs primarily at pool tail-outs and in isolated patches immediately downstream of instream structures (e.g., large woody debris). A small amount of clay hardpan (7.5%) is also present within the reach. Boulder and cobble substrates are generally lacking (< 1%) within the reach, except for small pockets behind several instream structures (2 weirs and the Watt Avenue Bridge abutment). Much of the existing substrate in some of these areas consists of broken concrete and brick.

Instream cover for fish is generally sparse within the reach, except for isolated areas with undercut banks and/or large woody debris that provide deeper water and overhead cover. Canopy cover ranges from 0 to 95% with an average of 35% for the reach.

Aquatic vegetation is generally absent in all habitat types within the reach, except for several small backwater pools that contain small amounts of *Elodea* sp. During habitat mapping, surveyors observed a constant downstream movement of sand in virtually all habitats, even during a low flow period. This continual sand movement likely reduces the potential for rooted aquatic vegetation to become well established within the stream channel. Active erosion was also observed within the reach, especially in areas where sharp bends occur in the channel.
Within the Action Area, the remaining portion of Dry Creek between the Project Area and the Natomas East Main Canal (a.k.a., Steelhead Creek) has similar habitat characteristics as that described for the Project Area. The Natomas East Main Canal provides a migration corridor from the Sacramento River to Dry Creek.

Based on these species requirements and habitat information collected within the Project and Action Areas, habitat that meets the biological requirements of Central Valley steelhead is highly limited or absent. Limited habitat is present in the upper reaches of Dry Creek (below the confluence of Secret and Miners Ravine creeks); however, these areas are only suitable during the winter and spring when water temperatures are still suitable for rearing.

Use of Properly Functioning Conditions and the Matrix of Pathways and Indicators Approach

The Properly Functioning Conditions (PFC) and the Matrix of Pathways Indicators (MPI) Approach was not used to establish the environmental baseline of the Project.

Vegetation Types and Important Biological Features

A map of the Project Area showing vegetation types and important biological features is provided in Figure 14. *Existing Vegetation Types and Biological Features within the Specific Plan Area.*

Photographs of Dry Creek Keyed to Locations Labeled on Map

Representative photographs of Dry Creek habitat types keyed to locations on the *Existing Vegetation Types and Important Biological Features* map (see Figure 14) are provided in Attachment C.

Habitat Features that May be Affected by the Proposed Action

Potential construction-related effects to steelhead or associated Critical Habitat include temporary modification of edgewater habitat associated with bridge removal and replacement activities (installation of foundations). Edgewater habitat is important to both upstream-migrating adults and downstream-migrating (i.e., emigrating) juvenile ("smolt") steelhead as foraging habitat and cover (i.e., protection from predators). Modification to edgewater habitat may include localized loss of food-producing habitat and associated prey items. In addition, installation of bridge support piles will remove localized benthic

resources associated with river substrates. Potential long-term impacts to steelhead may include a localized degradation of edgewater habitat due to increased human-related activities, including streambed erosion. Utility line crossings will be constructed using "jack and bore" construction techniques and will have no direct impact on edgewater habitat. Development of the Project Area will contribute to increased discharge of treated effluent to Dry Creek.

EFFECTS OF THE ACTION

Direct Effects

While the PVSP area includes approximately 5,230 acres, only approximately 3,746 acres are currently participating in the planned development, and are the subject of the current permit action by the Corps. The remaining approximate 1,484 acres are non-participating, although some infrastructure improvements such as road construction and improvements and utility construction and maintenance activities, are expected to occur on some of these properties.

Within the Dry Creek shed, construction of the proposed project would have the potential to increase erosion within the Project Area, temporarily degrading water quality. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect Central Valley steelhead and designated Critical Habitat, especially during the rainy season when stormwater runoff typically occurs. The Project's regulatory permits will require that appropriate BMPs be employed to prevent soil erosion and resulting sedimentation; and installation of water quality basins to treat runoff from the Project reducing pollutant concentrations through infiltration, settling, and biological uptake. The water quality basins would not function in a detention capacity, since the PVMDS (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project. Discharge from the water quality basins would flow through grassy swales, intended to further remove contaminants, before entering Dry Creek. BMPs are described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

Degradation of water quality during construction of the Project could adversely affect Central Valley steelhead and Critical Habitat within the Action Area. To minimize potential adverse effects, construction activities within the Project Area would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

The Project applicant would be required to obtain a stormwater discharge permit (the Construction General Permit) from the RWQCB. Typically, after project construction is completed, soil erosion should decrease with time, as the disturbed soils are re-established with landscaping and natural growth.

Project Construction and Installation and Maintenance of Infrastructure

Installation of Utilities

Installation of utilities to serve the Project Area development is distinct from site urbanization, and is not anticipated to result in additional impervious surface area or an increase in runoff since most of the off-site infrastructure areas are located along existing roads.

Design and installation of pipelines in off-site utility corridors is anticipated to remove and replace existing surfaces with similar materials. This would include soil and other earthen materials, or replacement of pavement in the case of utility lines within existing roadways. This impact is considered minimal and not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area.

"Jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect stream channel banks from erosion and related effects of construction would be included in all related construction contracts.

Proposed "jack and bore" construction could occur at five locations along Dry Creek to support installation of utilities; however, the actual number may vary according to future design improvements. The proposed crossing locations and associated utilities are listed below:

- Sanitary sewer force main crossing at Watt Avenue;
- Potable water crossing at Watt Avenue;
- Gravity sewer pipeline crossing located approximately 1500' east of Watt Avenue;
- Recycled water pipeline crossing located approximately 1500' east of Watt Avenue; and
- Force main crossing into the Dry Creek Wastewater Treatment Plant at east side of existing City Corporation Yard.

Bore pits will be constructed on both sides of Dry Creek outside of the riparian corridor and at least 50 ft from the channel margin (see Figure 4). The use of "jack and bore" construction techniques for installation of utilities across Dry Creek will not directly impact the Dry Creek channel, stream banks, aquatic habitat including edgewater areas, Central Valley steelhead, or Critical Habitat.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

The existing Watt Avenue Bridge at Dry Creek will be removed and replaced during development of the project. The existing two-lane structure will be demolished and a new structure, designed to serve six travel lanes, will be constructed in its place. The conceptual bridge design and foundation plan are presented in figures 5 and 6, respectively. Construction of the new bridge would involve the removal of some riparian vegetation and the temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers. This bridge design will minimize impacts to Dry Creek and the associated riparian corridor. The conceptual bridge layout provides for a span of sufficient length over the active channel to avoid the placement of piers and bridge foundations in the creek.

Potential construction-related effects include temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers and foundations. Construction of the two bridge foundations on the north side of the creek and the westerly

foundation on the south side of the creek would disturb approximately 1,400 +/- ft^2 of the bank at each location (see Figure 6). It is not anticipated that a coffer dam will be required during installation of the new bridge piers; however, if necessary, cofferdams / water barriers may be needed on the north bank on both the east and west sides of the proposed bridge location (see Figure 6). The cofferdams / water barriers would be installed parallel to shore near each bank and would not obstruct creek flow or fish passage. The areas behind the cofferdams / water barriers would then be dewatered to allow construction of the pier foundations. Installation of the cofferdams / water barriers would potentially affect approximately 90 +/- linear feet of bank and edgewater habitat adjacent to each of the structures (see Figure 6).

Edgewater habitat is important to both upstream-migrating adults and downstream-migrating (i.e., emigrating) juvenile ("smolt") steelhead as foraging habitat and cover (i.e., protection from predators). Modification to edgewater habitat may include localized loss of food-producing habitat and associated prey items. However, based on the results of stream habitat typing (*see Baseline Conditions section*) little food producing habitat is present in the vicinity of the proposed bridge replacement. Both adults and juvenile steelhead use available instream habitat adjacent to off-site infrastructure areas primarily as a migration corridor. Juveniles may use the edgewater habitat for feeding when migrating to the Pacific Ocean. The area of potential disturbance is small (approximately 180 linear feet along one bank of the creek) relative to existing edgewater habitat within either the Project and Action areas.

During construction of the proposed Watt Avenue Bridge, temporary protective fencing will be installed at the limits of construction adjacent to Dry Creek (see Figure 6) to minimize potential impacts to Dry Creek and adjacent habitats. The protective fencing will provide a barrier between construction activities and the creek, preventing equipment, material, and workers from entering the active channel area. Straw wattles, silt fences, or equivalent materials will be placed adjacent to the fence to prevent sediment from leaving the construction site and entering the active channel area. With the possible exception of installation of cofferdams / water barriers adjacent to the north bank, no construction will occur within the main Dry Creek channel.

While the creek will be protected, the area behind the fencing will be disturbed by construction activities. The primary disturbance will consist of clearing and grubbing activities to remove vegetation to create:

- Work areas for construction of bridge piers and foundations;
- Access routes for construction equipment and workers to reach the construction site; and
- Temporary storage areas for construction equipment and materials.

Grading activities and soil excavations within the fenced areas will be limited to locations where the bridge piers and foundations will be constructed. During construction dust palliatives will be applied to disturbed surfaces to minimize dust originating from the site. At the conclusion of construction all disturbed areas will be re-contoured, stabilized, and re-vegetated to minimize potential sedimentation problems.

Potential short-term impacts to Central Valley steelhead and Critical Habitat may include localized bank and streambed erosion, and degradation of water quality and /or edgewater habitat due to construction-related activities. Potential long-term impacts to Central Valley steelhead and/or Critical Habitat are not anticipated as a result of bridge construction since stream banks and potentially affected edgewater habitat would be restored following construction, and the new bridge will span the main channel and will not impede stream flow or fish migration and.

Stormwater Drainage System

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Development of the project would include on-site drainage facilities consisting of drainage inlets and pipes (see Figure 8) and would be designed to meet Placer County drainage requirements. Within the Dry Creek shed, collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins before entering Dry Creek (see Figure 9). Within the drainage shed for Dry Creek, a total of seven trunk storm drains and associated structural BMPs and four water quality basins are currently proposed for installation. The final number of discharge locations may vary depending on the final design of project drainage improvements.

Construction of the proposed project would have the potential to increase erosion within the Project Area, temporarily degrading water quality on-site and potentially within the Action Area. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect Central Valley steelhead and designated Critical Habitat, especially during the rainy season when stormwater runoff typically occurs. The Project's regulatory permits will require that appropriate BMPs be employed to prevent soil erosion and resulting sedimentation, and installation of water quality basins to collect and treat runoff from the Project. The basins proposed for the Dry Creek shed would not function in a detention capacity, since the PVMDS (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project (refer to the Project Description section of this document for supporting information). As a result, the basins would be designed to function as water quality basin to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake. Water from the basins would be discharged into grassy swales, intended to further remove contaminants, before entering Dry Creek. BMPs are described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

The Project applicant would be required to obtain a stormwater discharge permit (the Construction General Permit) from the RWQCB. Typically, after project construction is completed, soil erosion should decrease with time, as the disturbed soils are re-established with landscaping and natural growth.

Degradation of water quality during construction of the Project may adversely affect Critical Habitat and Central Valley steelhead migrating through the Action Area. To minimize potential adverse effects to steelhead and designated Critical Habitat, construction activities would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

Within the Action Area, Dry Creek does not contain spawning or rearing habitat for Central Valley steelhead. Dry Creek is used primarily as a migration corridor during the late fall/winter and spring periods. During these migration periods, flows in Dry Creek are usually higher than normal; as a result, the discharge of treated runoff from a small portion (~ 600 acres) of the Project Area is not likely to adversely affect migration through the Action Area, Central Valley steelhead, or Critical Habitat.

Use of Logical Framework for Analysis

A framework for analyzing effects of the Project relative to special-status fish habitat and species information and water quality, habitat access, habitat elements, channel conditions/dynamics, flow and hydrology, and general watershed conditions, was used for conducting jeopardy analyses under Section 7 of the Endangered Species Act Section 7 (NMFS 2004). Data used in this analysis are provided in the *Environmental Baseline* section of this document.

Potential impacts to both Central Valley steelhead and designated Critical Habitat were evaluated relative to construction and operational activities including "jack and bore" techniques for installation of utilities, and removal and replacement of the Watt Avenue Bridge. Impacts associated with the initial and long-term surface water supply for the Project and the discharge of treated wastewater into Dry Creek are being addressed through programmatic studies on a more regional scale, or are addressed at project level consultations as part of separate federal actions.

Conservation Measures Will Eliminate or Reduce the Adverse Effects of the Proposed Action

Direct Effects

Conservation/mitigation measures have been developed for the Project to reduce construction related impacts associated with implementation of the Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area.

The PVSP Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. The Avoidance and Open Space Plan incorporates 709 acres of open space preserves within the Project land use plan with a goal of establishing interconnected preserves. The open space preserves include significant wetland/swale corridors.

In addition to on-site preservation and avoidance within 709 acres of open space within the PVSP, off-site mitigation and conservation requirements will likely require the preservation of more open space including preserved and restored/created waters of the U.S. (comprised of vernal pool complex habitat and other wetlands/waters). Avoidance measures and open space along the Dry Creek corridor will protect the channel and associated riparian resources.

The following proposed avoidance, minimization, and conservation/protection measures and BMPs have been designed to reduce the impact of short-term surface water quality degradation (e.g. increased sediment input, increased organic pollutants, and increased water temperature) that may occur during the development of the Project Area (Quad Knopf 2006) to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area.

Project Construction

- Prior to initiation of construction activities, the Project developer/project proponent will submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan will address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities will be constructed to Placer County specifications. BMPs will be implemented throughout the construction process.
- Concurrent with construction of site improvements, stormwater BMPs will be constructed and maintained in accordance with the SWPPP as approved by the CVRWQCB. During construction of the project, specific BMPs will be implemented to control erosion, runoff, and sedimentation and include: soil stabilizers, fiber rolls, inlet filters, and gravel bags to prevent pollutants from being carried off-site in stormwater generated on the project site. The erosion control plan will ensure that proper control of siltation, sedimentation, and other pollutants will be implemented per the NPDES permit requirements and County ordinance standards. Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into Secret Ravine Creek. Furthermore, the SWPPP will specify the pollutants that are likely to be used during construction and that could be present in stormwater drainage and non-stormwater discharges; and to ensure the BMPs are effective, a sampling and monitoring program will be included in the SWPPP that meets the requirements of the SWRCB Order 99-08-DWQ. Installation of these BMPs will reduce the potential for runoff, erosion, and sedimentation impacts to Dry Creek and Central Valley steelhead.
- Prior to construction the Project developer/project proponent will submit to the Placer County Department of Public Works for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance

standards. The plan will address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities will be constructed to Placer County specifications and BMPs will be implemented throughout the construction process. During construction, BMPs will be installed to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs will generally consist of a combination of the following measures: minimizing soil disturbance, inlet protection, stabilized construction access, covering of exposed areas with mulch, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding, etc. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards.

It is likely that the project will be required to comply with the NPDES Phase II regulations through coverage under the State's General Permit. The Phase II General Permit contains four basin requirements: discharge prohibition, effluent limitations, stormwater management program requirements, and reporting requirements. The General Permit prohibits discharges of waste that are otherwise prohibited under State and regional water quality control plans. In addition, the General Permit prohibits discharges that cause or threaten to cause a nuisance, discharges that contain a reportable quantity of specified hazardous substances, and any other discharge except as allowed under the NPDES permit. The General Permit requires permittees to reduce pollutants in stormwater by developing and implement a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants through the storm drain to the Maximum Extent Practicable (MEP) to protect water quality. The MEP standard is a technology-based standard and is acceptable in lieu of numeric effluent limitations. The MEP is an evolving, flexible, and advancing concept, which considers technical and economic feasibility. The SWMP describes how pollutants in stormwater will be controlled by means of BMPs that address six (6) minimum control measures (MCM) specified in the General Permit. These six MCMs are as follows:

- Public education and outreach;
- Public participation;
- Illicit discharge detection and elimination;

- Construction site stormwater runoff control;
- Post-Construction stormwater management; and
- Pollution preventing/good housekeeping for municipal operations.

To protect Dry Creek and adjacent habitat, planned setbacks along the creek average over 240 ft. The setback will preserve the riparian corridor along Dry Creek, thereby minimizing adverse effects of the Project on Central Valley steelhead and Critical Habitat. In addition, educational signs will be posted in prominent locations along riparian areas to inform property owners and the public about Central Valley steelhead and Dry Creek as designated Critical Habitat. Fencing will be installed along the northern edge of the open space / preserve along Dry Creek to prevent access to the creek. Posted signs will identify waterways, elevation, latitude and longitude, presence of special-status species and Critical Habitat, and other pertinent information.

In addition to the general conservation measures previously discussed, other specific measures will be instituted as part of the build-out and operation of the Project including:

- On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat will minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.
- The use of water-conserving landscaping and other residential conservation measures will be encouraged.

Implementation of the following avoidance and conservation/protection measures would reduce impacts from construction and grading activities associated with implementation of the proposed Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area:

- All construction within approximately 150 ft of Dry Creek will be restricted to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Project Area is expected to be minimal. If construction occurs during this time period, steelhead are not likely to be adversely affected, directly or indirectly. Furthermore, potential impacts to the movement of anadromous fish through the Action Area should be minimal during this time.
- Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the state. In addition, the Project will institute BMPs as identified in the Project's stormwater management plan. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per the NPDES permit requirements and County ordinance standards.

On-site drainage systems will be designed to provide water quality treatment of runoff from paved and other developed areas prior to release into the swales and streams. The treatment will consist of the following actions:

- Directing some of the flow to sheet discharge onto grassy areas or open space;
- The installation of "Fossil Filter" or equivalent petroleum absorbing inserts in the Project drop inlets;
- The placement of water quality interceptor devices;
- The placement of water quality basins; and
- Use of rock-lined ditches below pipe outlets;
- The Placer County General Plan encourages the use of natural stormwater drainage systems to preserve and enhance natural features and supports efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state. The General Plan also requires that new storm drainage systems be designed in conformance with the Placer County Stormwater Management Manual and the County Land Development Manual, and provides that the County will strive to improve quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures,

including artificial wetlands, detention ponds, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grease separators, and other BMPs.

Federal and State policies require that stormwater BMPs be included as a part of project development. The goal of BMPs is to reduce sediment and pollutants in stormwater runoff at their origin prior to the runoff discharging into drainage systems. Whereas BMPs traditionally have focused on the post-development process, the goal of Placer County is to integrate BMPs throughout the project development. This approach ensures that stormwater management improvements are disbursed throughout the Specific Plan area, and provide treatment to runoff before it enters the drainage collection systems to help maintain a higher quality of runoff discharge without needing large regional treatment basins; and that each individual parcel can provide the stormwater management elements that best respond to the particular constraints of the individual site. This will promote the removal of the various constituents on each parcel prior to discharging into the drainage system.

NPDES Stormwater Phase II requires installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. Under the provisions of NPDES II, the Specific Plan will be required to design and install such BMPs as are determined to be appropriate.

- Storm drain inlet cleaning will occur semi-annually (at a minimum) and parking lots will include the installation of oil/sand/grit separators or as otherwise approved by the Placer County Department of Public Works. The Project will include a method for financing the long-term maintenance of the proposed facilities and BMPs. The Project will conform to the Master Project Drainage Study and the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the Department of Public Works). BMPs will reflect improvements in techniques and opportunities made available over time and will also reflect site-specific limitations. The County will make the final determination as to the appropriate BMPs for each project.

Prior to construction of any off-site infrastructure within Placer County, the Project developer/project proponent will submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan will address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities will be constructed to Placer County specifications and BMPs will be implemented throughout the construction process.
During construction, BMPs will be installed to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs will generally consist of a combination of the following measures: minimizing soil disturbance, inlet protection, stabilized construction access, covering of exposed areas with mulch, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding, etc. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards.

Concurrent with construction of site improvements, stormwater BMPs will be constructed and maintained in accordance with the SWPPP as approved by the CVRWQCB:

- Water-conserving landscaping and other conservation measures will be encouraged.
- Other BMPs would involve prompt re-vegetation of disturbed areas.

Installation of the water quality basins and implementation of the appropriate BMPs would reduce potential stormwater runoff impacts to water quality in Dry Creek and to Central Valley steelhead associated with construction and operation of the proposed Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

To maximize effectiveness, the selected BMPs will be based on finalized site-specific hydrologic conditions, with consideration for the type and location of development. Mechanisms to maintain the BMPs will be identified in the conditions of approval and on the improvement plans. Typical BMPs and Best Available Technologies (BATs) that could be used in the proposed Project include, but are not limited to, the following:

- Application of a street sweeping program to remove potential contaminants from street and roadway surfaces before they reach drainages;
- Minimize sources of concentrated flow by maximizing use of natural drainages to decelerate flows, collect pollutants and suspended sediment;
- Placement of velocity dissipaters, rip-rap, and/or other appropriate measures to slow runoff, promote deposition of waterborne particles, and reduce the erosive potential of storm flow;
- Soil protection and slope stabilization practices will be promptly applied to all disturbed areas;
- Creation of a water quality basin to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake;
- Use of fossil filters consisting of small filters that are placed like troughs around the inside top drain inlets or at ditch outlets; and
- Use of rock-lined ditches, which are surface ditches lined with rock, with or without filter material, with the rock lining material designed to allow water to filter into the ground.

Each BMP has specified measurable goals and a timetable for implementation to help measure program effectiveness.

The SWMP will comply with various Design Standards as required by the Regional Water Quality Control Board (RWQCB) for the following issues:

1. Conservation of natural areas.
    - Development will be concentrated or clustered on portions of the site and the remaining land will be left in a natural undisturbed condition.

- Clearing and grading of native vegetation will be limited at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Trees and other vegetation will be maximized at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- The use of natural vegetation will be promoted by using parking lot islands and other landscaped areas.
- Riparian areas along Dry Creek will be preserved.

2. Minimization of stormwater pollutants of concern
    - The development will be designed to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the stormwater conveyance system as approved by the building official.
    - To meet this requirement, minimization of the "pollutants of concern", will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in the runoff to the maximum extent practicable.

3. Protection of slopes and channels
    - Runoff will be conveyed safely from the tops of slopes and disturbed slopes will be stabilized.
    - Natural drainage systems will be utilized to the maximum extent practicable.
    - Slopes will be vegetated with native or drought tolerant vegetation, as appropriate.
    - Energy dissipaters, such as rip-rap, will be installed at the outlets of new storm drains, culverts, conduits, or channels according to applicable specifications to minimize erosion.

4. Provide storm drain system stenciling and signage
    - Storm drain stencils will be placed directly adjacent to storm drain inlets. The stencil will contain a brief statement prohibiting the dumping of improper materials into the storm drain conveyance system.

5. Proper design of outdoor material storage areas
    - Materials with the potential to contaminate stormwater will be placed in an enclosure that prevents contact with runoff or spillage to the stormwater conveyance system; or protected by secondary containment structures such as berms or curbs.
    - The storage area will be paved and impervious to contain leaks and spills.
    - The storage area will have a roof or awning to minimize collection of storm water within the secondary containment area.

6. Proper design of trash storage areas
    - Trash container areas will have drainage from adjoining roofs and pavement diverted around the area(s).
    - Trash container areas will be screened or walled to prevent off-site transport of trash.

7. Provide proof of ongoing BMP maintenance
    - If the project has included or is required to include Structural or Treatment Controls BMPs in the project plans, a verification of maintenance will be provided through such means as may be appropriate; including but not limited to, legal agreements, covenants, CEQA mitigation requirements and/or conditional use permits.

Installation of Utilities

To avoid creek disturbance, "jack and bore" construction techniques would be used wherever proposed utility lines cross Dry Creek. All stream crossings shall be performed using a "jack and bore" construction technique, unless otherwise specified by CDFG. Streambed Alteration

Agreement measures to protect the channel bank of a stream from erosion and related effects of construction would be included in all related construction contracts.

Protective fencing and straw wattles will be placed between the bore pits and Dry Creek at least 25 ft from the channel margin to contain any runoff from the construction site (see Figure 4). When boring beneath Dry Creek, a minimum clearance of 5.0 ft will be maintained below the deepest part of the stream channel.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

Avoidance and minimization measures and BMPs will be implemented during construction to reduce impacts to Dry Creek and aquatic life. Central Valley steelhead will be protected from potential construction-related activities within approximately 150 ft of Dry Creek by restricting construction activities to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Action Area is expected to be minimal or absent. Additional measures to protect steelhead resources include use of BMPs to minimize and localize siltation and water quality impacts and to provide for riparian restoration activities. These BMPs may include the use of cofferdams / water barriers and other structures during dewatering and construction activities. Water quality monitoring will also be performed to ensure that state and federal water quality standards are met.

If cofferdams / water barriers are required during bridge construction, a dewatering and fish salvage plan will be developed and approved by the NMFS prior to the initiation of construction activities. A qualified fish biologist will be present on-site during any dewatering activities at construction sites to minimize impacts to Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project Area (i.e., prevent stranding of special-status species). Individual fish collected during dewatering will be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

Protection, avoidance, and conservation measures will be implemented to minimize impacts to the Dry Creek riparian corridor during demolition of the existing bridge and construction of the new bridge. These measures would include, but not limited to, the following:

- The design of the new bridge will minimize impacts to the Dry Creek riparian corridor. The conceptual bridge layout provides for a span of sufficient length over the active channel to avoid the placement of piers and bridge foundations in the creek.
- Protective fencing shall be placed between the construction zone and the active channel area to prevent the movement of equipment and material from the construction zone into the creek. Silt fence, straw wattles, or an equivalent silt barrier shall be constructed adjacent to the protective fencing to prevent sediment from entering the creek.
- Access routes shall be designed so that construction equipment, material, and workers enter the construction zone from the bank sides.
- Netting or an equivalent barrier shall be placed beneath the existing bridge during demolition to prevent debris from falling into the active creek channel. A temporary barrier shall be placed beneath the proposed bridges during construction to prevent construction material from falling into the active creek channel.
- Construction material shall be stockpiled behind the protective fencing, away from the channel area, to prevent material from entering the creek zone.
- Dust palliatives shall be applied to disturbed earth surfaces to minimize dust.
- Disturbed surfaces shall be re-vegetated at the conclusion of construction to minimize erosion and sedimentation.
- Construction activities during the winter months when stream flows are typically higher, shall be avoided.
- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented during bridge construction activities.

Following completion of bridge removal and replacement activities including restoration of the stream channel, banks, and associated riparian vegetation, short-term construction-related impacts are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area, due primarily to the absence of spawning and rearing habitat within or adjacent to the Project Area.

Stormwater Drainage System

On-site drainage facilities, consisting of drainage inlets and pipes (see Figure 8), would be designed to meet Placer County drainage requirements including water quality treatment of runoff. The treatment would consist of the following actions:

- Directing some of the flow to sheet discharge onto grassy areas or open space;
- The installation of "Fossil Filter" or equivalent petroleum absorbing inserts in the Project drop inlets;
- The placement of water quality interceptor devices;
- The placement of water quality sediment basins within channels; and
- Use of rock-lined ditches below pipe outlets.

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Within the Dry Creek shed (see Figure 7), collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins before entering Dry Creek (see Figure 9).

Stormwater runoff from the Dry Creek shed would be pre-treated through roadway catch-basin filters and continuous deflection system (CDS) units and then either discharged to Dry Creek or conveyed to water quality basins and discharged into grassy swales prior to entering Dry Creek. The use of grassy swales and other designed features are intended to further reduce pollutant concentrations to comply with existing water quality criteria and to minimize the potential for impacting Dry Creek. The catch-basin filters and CDS units would function as the primary treatment BMPs. Design standards for structural or treatment control BMPs will incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, to mitigate stormwater runoff.

The water quality basins are designed to provide water quality treatment to further reduce potential pollutants in stormwater through infiltration, settling, and biological uptake in accordance with the Guidance Document for Volume and Flow-Based Sizing of Permanent Post-construction BMPs for Stormwater Quality Protection by the Placer Regional Stormwater Coordination Group (PRSCG) (May 2005). These facilities would provide the preferred "treatment train" system. Associated BMPs may consist of several effective methods including the installation of petroleum absorbing insert assemblies. With the installation of water quality basins and associated BMPs, runoff from the Dry Creek shed portion of the Project Area is not likely to result in adverse effects to migrating Central Valley steelhead or to Critical Habitat.
The incorporation of water quality basins would ensure that the estimated pollutant concentrations (for evaluated pollutants) would comply with existing water quality criteria.
The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region (RWQCB) identifies narrative criteria for oil and grease. Numerical criteria are not identified; however, the CRWQCB has imposed, by order, discharger-specific limits ranging from 10-20 mg/L.

Prior to issuance of a grading permit for the site, these BMPs will be reviewed for adequacy to ensure that they will effectively remove pollutants from stormwater runoff. At that time, if technologies as effective as, or more effective than, catch-basin filters and CDS units are available, they can be considered.

Implementation of the proposed Project would ensure that on-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat will minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation which is part of the County's approval of the PVSP will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Indirect Effects

Potential indirect effects on Central Valley steelhead associated with the Project may result from increased human-related activities in Dry Creek and the riparian corridor. Although the Project incorporates a substantial buffer around the Project Area, it is likely that human presence within this buffer adjacent to Dry Creek will increase due to the proximity of residential development. Indirect effects of the Specific Plan could include illegal take (e.g. poaching or harassment) of steelhead, unauthorized construction of dams that could potentially obstruct salmonid migration and emigration, increased erosion caused by creation of trails and crossings, and illegal diversion of water via pumping or channelization. The Project Area could also affect water quality by the introduction of urban pollutants including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas into surface runoff. However, the implementation of appropriate protection measures and BMPs, as described in *Proposed Avoidance, Minimization, and Conservation/Protection Measures*, will reduce surface runoff effects (water quality impacts) to levels that are not likely to adversely affect Central Valley steelhead and/or Critical Habitat within the Action Area.

Indirect effects associated with increased human access have the potential to adversely affect Central Valley steelhead and Critical Habitat (e.g., poaching or harassment, stream channel effects). However, exclusion fencing and educational signs will be installed along the Dry Creek corridor adjacent to developed areas to provide information regarding Central Valley steelhead and Critical Habitat and discourage public access to Dry Creek.

Effects from Interdependent and Interrelated Actions

There are no interdependent and/or interrelated actions to the proposed action. The participating projects within the PVSP area are adjacent to rural residential development to the west (the SPA) and to the south (Elverta). There are no current plans to develop the SPA area. Open rural lands are to the north of the PSVP.

Effects from Ongoing Project Activities

Currently, there are no on-going project activities that could affect the Project Area.

Following build-out of the Project, effects from continued operation and maintenance of the Project Area including Off-Site Infrastructure Elements, would include the discharge of treated wastewater into Dry Creek via the DCWWTP, and maintenance of the storm water runoff system. Since these activities have previously been identified as not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Specific Plan Area following Project completion, it is anticipated that continued operations and maintenance are also not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project Area.

Effects on the Environmental Baseline

Development of the Project including off-site infrastructure is not expected to adversely affect the environmental baseline for either Central Valley steelhead or Critical Habitat. Potential direct impacts to Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project associated with build-out of the Project including installation of utilities and removal and replacement of the Watt Avenue Bridge, have been reduced to levels that are not likely to adversely affect this species or its habitat (refer to *Direct Effects* section of this document). This reduction in potential impacts is due to avoidance and minimization measures as well as conservation efforts and BMPs that will be implemented as part of the Project.

In addition to Project-related effects, interrelated actions including the discharge of treated wastewater from the Specific Plan Area into Dry Creek via the DCWWTP, is not expected to adversely affect the environmental baseline. Potential water quality impacts including increased water temperatures and trace metals and organic pollutants, will be avoided by installing additional cooling towers and advanced treatment facilities, and instituting metals source controls/pre-treatment, which will maintain water quality parameters at existing levels.

Since Dry Creek functions primarily as a migration corridor, especially within the Action Area, it is unlikely that development of the Project would adversely affect the environmental baseline, Critical Habitat, or Central Valley steelhead. Some suitable spawning and rearing habitat occurs in the upper reaches of Dry Creek; however, most of the suitable steelhead spawning and rearing habitat occurs upstream of the confluence of Secret Ravine and Miners Ravine Creeks.

Effects of the Action on Essential Elements of Critical Habitat

Dry Creek is designated as Critical Habitat for Central Valley steelhead; however, the only constituent element present within the Action Area is (#3) an unobstructed freshwater migration corridor that appears to lack excessive predation and has water quantity and quality conditions and natural cover supporting juvenile and adult mobility and survival. However, based on habitat typing conducted within the Project Area, natural cover consisting of submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks is highly limited within the Project Area. The remaining three elements (freshwater spawning sites, freshwater rearing sites, and estuarine areas) are not present within the Action Area.

Dry Creek functions primarily as a migration corridor for anadromous salmonids to reach suitable spawning habitat for steelhead located in the upper watershed in Miners Ravine and Secret Ravine creeks. Based on available information, there do not appear to be any existing obstructions to migration within the Action Area.

Implementation and operation of the Project is not anticipated to impact the Dry Creek channel, aquatic habitats, the riparian corridor, or adjacent habitats. Construction activities associated with removal and replacement of the Watt Avenue Bridge will occur primarily on the terraces on both sides of Dry Creek and will not occur within the main channel. Installation of utilities, which will involve "jack and bore" construction techniques, will not occur within or immediately adjacent to the channel and will not affect aquatic habitats or species.

With implementation of protection and conservation measures as described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* and *Mitigation* sections, respectively, construction and operation of the Project is not likely to result in further degradation of Dry Creek or its functionality as a migration corridor for Central Valley steelhead and other anadromous species.

Use of Best Scientific and Commercially Available Data

Data used to assess the status of Central Valley steelhead and Critical Habitat within the Dry Creek Watershed were obtained from various sources including the NOAA/NMFS, CDFG, Dry Creek Conservancy, Placer County, Bailey Environmental, ECORP Consulting, Inc., numerous researchers and other recognized experts.

Available data regarding the status of Central Valley steelhead and Critical Habitat is provided in the *Species Description* section of this document.

Effects Determination for Listed Species and Designated Critical Habitat

Potential environmental effects addressed in the Direct Effects section are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area. Only the removal and replacement of the Watt Avenue Bridge will occur adjacent to Dry Creek as part of Off-Site Infrastructure Elements; however, no construction will occur within the main channel. Mitigation/conservation measures and BMPs specified for both of these tasks will reduce impacts to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area. To avoid creek disturbance, "jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction will be included in all related construction activities.

On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat within these areas. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Additional analyses of Project-related effects (i.e., connection to the DCWWTP and increased discharge to Cry Creek) on special-status fish or designated Critical Habitat is available in the *Direct and Indirect Effects* section of this document.

Even though Dry Creek is degraded relative to historic conditions, the stream reach within the Action Area continues to provide EFH, albeit limited within the Project Area. Dry Creek is designated as Critical Habitat for Central Valley steelhead; however, the only constituent element within the Action Area is (#3) an unobstructed freshwater migration corridor that appears to lack excessive predation and has water quantity and quality conditions and natural cover supporting juvenile and adult mobility and survival. However, based on habitat typing conducted within the Project Area, natural cover consisting of submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks is highly limited within the Project Area.

If all recommended protection/conservation/mitigation measures and BMPs are instituted as part of the build-out and operation of the Project (as described in the *Description of Mitigation (If Any) Required Under Other Federal, State, or Local Permits*, and *Description of Proposed Conservation Measures* sections of this document) impacts are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek or within the Action Area.

Summary

Direct Effects

Project Construction and Installation and Maintenance of Infrastructure

Installation of Utilities

To avoid creek disturbance, "jack and bore" construction techniques would be used wherever proposed utility lines cross Dry Creek. All stream crossings shall be performed using a "jack and bore" construction technique, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction would be included in all related construction contracts.

Installation of utilities to serve the Project area development is not anticipated to result in significant additional impervious surface area or an increase in runoff. Design and installation of pipelines in off-site utility corridors is anticipated to remove and replace existing surfaces with similar materials. This impact is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

The existing Watt Avenue Bridge at Dry Creek will be removed and replaced during development of the project. The conceptual bridge layout provides for a span of sufficient length over the active channel to avoid the placement of piers and bridge foundations in the creek.

Potential construction-related effects include temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers and foundations. Construction of the two bridge foundations on the north side of the creek and the westerly foundation on the south side of the creek would disturb approximately 1,400 +/- ft^2 of the bank at each location (see Figure 6). It is not anticipated that a coffer dam will be required during

installation of the new bridge piers; however, if necessary, cofferdams / water barriers may be needed on the north bank on both the east and west sides of the proposed bridge location (see Figure 6). The cofferdams / water barriers would be installed parallel to shore near each bank and would not obstruct creek flow or fish passage. The areas behind the cofferdams / water barriers would then be dewatered to allow construction of the pier foundations. Installation of the cofferdams / water barriers would potentially affect approximately 90 +/- linear feet of bank and edgewater habitat adjacent to each of the structures (see Figure 6).

During construction of the proposed Watt Avenue Bridge, temporary protective fencing will be installed at the limits of construction adjacent to Dry Creek (see Figure 6) to minimize potential impacts to Dry Creek and adjacent habitats. The protective fencing will provide a barrier between construction activities and the creek, preventing equipment, material, and workers from entering the active channel area. With the possible exception of installation of cofferdams / water barriers adjacent to the north bank, no construction will occur within the main Dry Creek channel.

The area within the protective fencing will be disturbed by construction activities. Grading activities and soil excavations within the fenced areas will be limited to locations where the bridge piers and foundations will be constructed. The primary disturbance will consist of clearing and grubbing activities to remove vegetation.

Central Valley steelhead will be protected from potential construction-related activities within approximately 150 ft of Dry Creek by restricting construction activities to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Action Area is expected to be minimal or absent. Further measures to protect steelhead resources include use of BMPs to minimize and localize siltation and water quality impacts and to provide for riparian restoration activities.

Potential short-term impacts to Central Valley steelhead and Critical Habitat may include localized bank and streambed erosion, and degradation of water quality and /or edgewater habitat due to construction-related activities. Potential long-term impacts to Central Valley steelhead and/or Critical Habitat are not anticipated as a result of bridge construction since

stream banks and potentially affected edgewater habitat would be restored following construction, and the new bridge will span the main channel and will not impede stream flow or fish migration.

However, with the avoidance, minimization and conservation measures which are a part of the project, both construction-related and long-term impacts are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project, due primarily to the absence of spawning habitat. Juveniles may use the edgewater habitat for feeding when migrating to the Pacific Ocean. However, the area of potential disturbance is small when compared to the abundance of existing edgewater habitat.

Stormwater Drainage System

Only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Development of the project would include on-site drainage facilities consisting of drainage inlets and pipes (see Figure 8) and would be designed to meet Placer County drainage requirements. Within the Dry Creek shed, collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins prior to entering Dry Creek (see Figure 9). Within the drainage shed for Dry Creek, a total of five trunk storm drains and associated structural BMPs and one water quality basin are proposed for installation. The final number of discharge locations may vary depending on the final design of project drainage improvements.

Construction of the proposed project would have the potential to increase erosion within the Project Area, temporarily degrading water quality on-site and potentially within the Action Area. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect Central Valley steelhead and designated Critical Habitat, especially during the rainy season when stormwater runoff typically occurs. The

Project's regulatory permits will require that appropriate BMPs be employed to prevent soil erosion and resulting sedimentation, and installation of a detention / water quality basin to collect and treat runoff from the Project. The one basin would be designed to function as a water quality basin to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake. Water from the basin would be discharged into a grassy swale, intended to further remove contaminants, before entering Dry Creek Creek. BMPs are detailed in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

Degradation of water quality during construction of the Project may adversely affect Critical Habitat and Central Valley steelhead migrating through the Action Area. To minimize potential adverse effects to steelhead and designated Critical Habitat, construction activities would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

Within the Action Area, Dry Creek does not contain spawning or rearing habitat for Central Valley steelhead. Dry Creek is used primarily as a migration corridor during the late fall/winter and spring periods. During these migration periods, flows in Dry Creek are usually higher than normal; as a result, the discharge of treated runoff from a small portion (~ 600 acres) of the Project Area is not likely to adversely affect migration through the Action Area, Central Valley steelhead, or Critical Habitat.

Indirect Effects

Potential indirect effects on Central Valley steelhead associated with the Project may result from increased human-related activities in Dry Creek and the riparian corridor. Although the Project requires a substantial buffer around the Project area, it is likely that human presence within this buffer adjacent to Dry Creek will increase due to the proximity of residential development. Indirect effects of the Project could include illegal take (e.g. poaching or harassment) of steelhead, unauthorized construction of dams that could potentially obstruct salmonid migration

and emigration, increased erosion caused by creation of trails and crossings, and illegal diversion of water via pumping or channelization. However, exclusion fencing and educational signs will be installed along the Dry Creek corridor adjacent to developed areas to provide information regarding Central Valley steelhead and Critical Habitat and discourage public access to Dry Creek.

The Project could also affect water quality by the introduction of urban pollutants including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas into surface runoff. However, the implementation of appropriate protection measures and BMPs, as described in *Proposed Avoidance, Minimization, and Conservation/Protection Measures*, will reduce surface runoff (water quality impacts) to levels that are not likely to adversely affect Central Valley steelhead and/or Critical Habitat in Dry Creek within or downstream of the Action Area.

Effect of the Proposed Action on Tribal Resources or Interests

Implementation of the Project, including all proposed actions, will not affect tribal resources or interests.

CUMULATIVE EFFECTS

Potential cumulative effects of the proposed action include surface water supply from the Sacramento River and the American River and the expansion of the Dry Creek Wastewater Treatment Plant. Both effects are designed to serve other projects within Western Placer County.

Surface Water Supply

PCWA has determined that it has sufficient existing water rights, from various sources including the American River, to provide the initial water supply for the Specific Plan and the anticipated demand of projects likely to be developed in western Placer County through 2030.

The proposed long-term surface water supply for the Specific Plan is from the Sacramento River and is being addressed as part of a larger study associated with regional water diversion projects. The USBR and PCWA are undertaking the Sacramento River Diversion project (also known as the Sacramento River Water Reliability Study project) to meet urban water supply needs within the PCWA water services boundary. The USBR and PCWA's pending Sacramento River water diversion project is separate and independent of the proposed PVSP.

The USBR has been informally consulting with the USFWS and NMFS. USBR initiated informal consultation with USFWS by means of a letter dated January 24, 2004. USFWS responded to USBR on February 5, 2004, with a memorandum requesting more information regarding the Project. Reclamation is providing the requested information. Meetings are being conducted with USFWS and NMFS to identify species of concern, and develop an appropriate approach to addressing listed and proposed species as part of the Section 7 consultations required by the Federal Endangered Species Act (ESA). USBR has prepared a draft biological assessment and submitted that report to USFWS and NMFS along with requests to initiate formal consultation.

DCWWTP

The DCWWTP is presently being analyzed at a programmatic level by the South Placer Wastewater Authority to determine current and possible future capacity. Based on preliminary results of this analysis, sufficient capacity to serve the PVSP area exists at DCWWTP. A discussion of the DCWWTP, operational characteristics, capacity and overall potential effects of Dry Creek are provided below.

The Central Valley Regional Water Quality Control Board (CVRWQCB) issued a National Pollutant Discharge Elimination System (NPDES) permit regulating discharges from the DCWWTP in 2000 (NPDES No. CA00164, Order No. 5-00-164). The permitted capacity of the DCWWTP is 18.0 MGD (ADWF), and these permits must be renewed every five years. Through its development and adoption of NPDES permits every five years, the RWQCB stipulates effluent and receiving water limitations that must be met, thereby assuring compliance with receiving water quality criteria/objectives and protection of beneficial uses (Quad Knopf 2006).

The 1996 Master Plan EIR (City of Roseville 1996) identified the following operational impacts to water quality and aquatic biological resources associated with treatment and discharge of anticipated future DCWWTP discharges in Dry Creek:

- Degradation of water quality in Dry Creek due to increased effluent discharge,
- Erosion and sedimentation,
- Degradation of habitat for anadromous fish (steelhead and Chinook salmon) from the DCWWTP discharge.

The total estimated future flow from the DCWWTP, plus flow from Urban Growth Areas (UGAs) located outside the 2005 service area, is 19.3 MGD. This is 1.3 MGD greater than the current permitted capacity of the DCWWTP, but is 5.6 MGD less than the 24.9 MGD future flow projected in the 1996 Master Plan EIR (City of Roseville 1996). Thus, the impacts assessment for the DCWWTP in the 1996 Master Plan EIR is based on greater flow than is currently projected, including UGA flows such as those resulting from build-out of the PVSP. Several factors indicate that the analysis used to evaluate impacts in the Technical Memorandum (TM) is conservative (Quad Knopf 2007):

- The total estimated future flow of 19.3 MGD from the DCWWTP is 5.6 MGD less than the 24.9 MGD future flow projected and evaluated in the 1996 Master Plan EIR.
- The analysis assumes all of the dry weather flow will be discharged. However, dry season discharge to Dry Creek will be less than average dry weather flow generated, because a portion of the flow will be returned to the UGAs as recycled water for irrigation instead of being discharged to Dry Creek.
- The West Roseville Specific Plan EIR (Quad Knopf 2006) includes mitigation, which conditions issuance of building permits on obtaining all the necessary permits to treat, discharge and reuse flows from the Project. The SPWA, as the responsible CEQA agency, has indicated its intent to request a similar mitigation measure for the UGAs that are the subject of the TM.

Potential water quality impacts associated with increased discharge of treated wastewater into Dry Creek are based on the cumulative effects of future flow of all UGAs projected and

evaluated in the 1996 Master Plan EIR. The actual incremental effect of wastewater flows from the Project would be substantially less than the cumulative effects of wastewater flows from all UGAs as presented below. To avoid or minimize impacts associated with increased wastewater flows into Dry Creek from future UGAs, various measures will be implemented at the DCWWTP to maintain water quality parameters at existing levels. These measures are discussed in association with specific water quality impacts addressed below.

Water Quality Degradation Due to Increased Wastewater Discharge

The 1996 Master Plan EIR identified potential impacts to Dry Creek water quality resulting from increased water temperature and elevated levels of trace metals and organic pollutants. The impact of all UGAs with respect to these constituents is discussed below. Other constituents of potential concern (i.e., toxicity, mercury, pH, biostimulatory substances, dissolved oxygen, and taste and odors) are also evaluated.

Potential water quality impacts associated with increased discharge of treated wastewater into Dry Creek are based on the cumulative effects of future flow of all UGAs projected and evaluated in the 1996 Master Plan EIR. The actual incremental effect of wastewater flows from the Project would be substantially less than the cumulative effects of all wastewater flows from all UGAs. The information presented below reflects the cumulative impact of increased flows from future UGAs within the service area.

Temperature

The 1996 Master Plan EIR identified elevated temperature as a potential impact to water quality in Dry Creek. To avoid or minimize this impact, cooling towers will be installed at the DCWWTP if necessary to reduce water temperatures. Following installation, this element of the overall water quality impact will be reduced to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project.

Consistent with this mitigation measure, the City of Roseville installed temperature cooling units at the DCWWTP, and began operating them in 2004. The City monitors receiving water temperature under the NPDES Permit Monitoring and Reporting Program. Additional flows from the UGAs to the DCWWTP service area would cause additional temperature increases in Dry Creek, downstream of the DCWWTP outfall. The amount of additional thermal load added to Dry Creek would be directly related to the incremental increase in wastewater flow from the UGAs being treated and discharged at the DCWWTP.

As the capacity of the DCWWTP is expanded to accommodate flows from the UGAs, cooling units would be added, as necessary, to address the increased wastewater flow needing cooling, thereby assuring continued compliance with the temperature objectives in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) and thermal protection of aquatic resources. The treatment and discharge of UGA flows from the DCWWTP into Dry Creek would not result in any new thermal impacts not identified in the 1996 Master Plan EIR. Full Implementation of the already identified mitigation will reduce the Dry Creek thermal impact to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project. No new mitigation measures are required in light of the additional UGA flows; rather, mitigation already identified by the City may need to be implemented sooner, or to a greater or expanded level as needed to address the UGA flows plus the flows evaluated in the 1996 Master Plan EIR.

Trace Metals and Organic Pollutants

The 1996 Master Plan EIR identified the introduction of elevated levels of trace metals and organic pollutants as a potential impact to water quality in Dry Creek. To avoid or minimize this impact, the following measures will be implemented at the DCWWTP: 1) the installation of advanced treatment facilities; and 2) instituting metals source controls/pre-treatment as the mitigation for this impact. Following installation of these water treatment facilities, this element of the overall water quality impact is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project.

Additional flows from the UGAs to the DCWWTP service area would cause the percentage of water in the Dry Creek channel composed of treated effluent, downstream of the DCWWTP outfall, to be higher, with all other factors (e.g., creek hydrology) remaining the same. Consequently, instream concentrations of trace metals and organic pollutants downstream of the outfall would increase in proportion to the incremental increase in wastewater flow from the UGAs being treated and discharged at the DCWWTP.

Aquatic Life Toxicity

The DCWWTP currently performs chronic three-species bioassay testing of its effluent quarterly. These bioassays determine a No Observable Effect Concentration (NOEC) and an Inhibition Concentration for a set percentage effect (IC_{25}). For example, the IC_{25} is the concentration of toxicant that would cause a 25% reduction in mean young per female in the *Ceriodaphnia dubia* reproduction test or a 25% reduction in growth for the test population. The IC_{25} is used because it is a very sensitive, non-lethal endpoint, which attempts to be indicative of the "first signs" of an effect on the test population. LC_{50s}, the lethal concentration to 50% of the test population, is a test endpoint showing a much greater level of toxic effect. The NOEC is the lowest dilution ratio (i.e., the largest proportion of effluent) at which no toxic effect is observed. The IC_{25} is a point estimate that approximates the highest dilution ratio (i.e., the smallest proportion of effluent) at which a specified level (25%) of effect is observed. These results are reported in toxicity units (TU), which are defined as:

$$TUc = \frac{100}{NOEC}$$

The three-species bioassay results for the DCWWTP for all four quarterly tests performed in 2003 and 2004, and the first two quarters of 2005 (total = 10 tests) show that the undiluted effluent is non-toxic to aquatic life.

DCWWTP effluent quality under the future cumulative condition would be maintained at essentially equivalent or possibly higher quality levels (if additional or more restrictive NPDES limits are required by the CVRWQCB), relative to current effluent quality. Therefore, no aquatic

life toxicity would be expected in the future, once the DCWWTP is adequately expanded/ upgraded, as necessary, and permitted to treat the incremental flows, including UGA flows.

Mercury

The current NPDES permit contains a mercury (Hg) mass-loading limit of 1.71 pounds per year for the combined discharge of the DCWWTP and the PGWWTP. The average Hg concentration (based on detectable values during this period and upon which the mass loading limit was based) is 0.058 µg/L. The average concentration (based on detectable values using clean techniques) in 2004 through 2005 was 0.012 µg/L. As a result, actual flow could be as much as 0.058/0.012 or 4.9 times greater than the flow upon which the mass loading limit is based without causing the limit to be exceeded. The current NPDES permits have a combined permitted flow of 30 MGD, and the total incremental UGA flow (from areas outside the 1996 EIR area) is 12 MGD, for a total flow of 42 MGD or a 1.4-fold increase. This flow increase factor is less than 4.9, indicating that the combined incremental flow of all UGAs will not cause the Hg mass loading limit to be exceeded.

pH

The NPDES permit for the DCWWTP has an effluent limitation that requires discharges to have a pH between 6.5 and 8.5 units. Based on the current science regarding pH requirements of freshwater aquatic life, the beneficial use most sensitive to creek pH, the CVRWQCB is processing a Basin Plan amendment that will remove the 0.5 unit change requirement of the current pH objective, leaving the component that requires controllable factors affecting water quality to maintain receiving water pH between 6.5 and 8.5 units (CVRWQCB 2002). Because the permit requires effluent discharged to Dry Creek to have a pH between 6.5 and 8.5 and incremental UGA flows will not affect the pH of effluent, future discharges, regardless of volume, would not cause Dry Creek pH to fall outside this range. Once the DCWWTP is expanded to accommodate future cumulative flows, the higher rate of discharge will not cause Dry Creek pH to fall below a pH of 6.5 or be raised above 8.5.

Biostimulatory Substances (Nutrients)

Based on the DCWWTP bioassay data, current undiluted DCWWTP effluent does not contain sufficient biostimulatory substances (i.e., nitrogen and phosphorus) to cause a potential increase in cell production in the *S. capricornutum* bioassay. Under existing conditions, Dry Creek, downstream of the DCWWTP discharge, is not characterized by excess, nuisance level plant or algae communities. Consequently, it is not expected that nuisance level plant or algae communities would develop in Dry Creek, downstream of the DCWWTP outfall, under the future cumulative condition when higher rates of effluent discharge, including UGA flows, result in a greater proportion of creek water containing treated effluent.

Dissolved Oxygen

The 1996 Master Plan EIR identified reduced dissolved oxygen levels associated with increased wastewater flows as a potential impact to water quality in Dry Creek. To avoid or minimize this impact, the following measures will be implemented at the DCWWTP: 1) the installation of advanced treatment facilities, which is assumed to include mitigation for oxygen-related impacts, since dissolved oxygen impacts were not addressed in particular in the 1996 Master Plan EIR; and 2) instituting metals source controls/pre-treatment.

Following installation, this element of the overall water quality impact would be reduced to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Specific Plan Area.

The DCWWTP produces Title 22 quality, tertiary-treated effluent characterized by low biochemical oxygen demand (BOD) and ammonia. As such, the BOD is relatively low. Re-aeration of downstream waters due to physical processes and photosynthesis tends to largely offset the oxygen demand of the effluent as it flows downstream, thereby resulting in small, if any, downstream dissolved oxygen (DO) sags (i.e., reductions in instream DO levels relative to background levels).

As discharge rates increase in the future, the proportion of creek water constituted by effluent also will increase, as will the total oxygen demand of the discharged effluent. As such, a possibility exists that receiving water DO limitations (which derive directly from Basin Plan DO objectives) would not be met even if NPDES effluent BOD and ammonia limits are met. Available data are insufficient to conclusively establish whether the future cumulative discharge rates from the DCWWTP will result in DO sags downstream that will cause Dry Creek DO levels to fall below applicable Basin Plan DO objectives.

Although DO levels in Dry Creek were not specifically addressed in the 1996 EIR, the PVSP EIR's mitigation measure (install advanced treatment facilities) is the same measure that would be implemented to address a DO issue on this Project. The type of advanced treatment facility would, of course, be tailored to the constituent of concern. As the capacity of the DCWWTP is expanded to accommodate flows from the UGAs, any advanced treatment facilities that the City constructs and operates to comply with its NPDES DO limitations would be expanded (or initially constructed for an expanded capacity) to address the increased wastewater flow from the UGAs, thereby assuring continued compliance with all Basin Plan DO objectives. Based on available information, the UGA flows are not expected to create a DO impact where, in the absence of the UGA flows, one would not exist. More likely, the UGA flows would simply further contribute to a cumulative DO impact, should one occur in the future. Consequently, no new mitigation measure(s) would be required in light of the additional UGA flows; rather, the advanced treatment facilities that the City would already have identified to address the potential DO impact may simply need to be implemented sooner, or to a greater or expanded level.

Taste and Odor

The Basin Plan states that "Waters shall not contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses." There is no history of taste and odor problems in Dry Creek, at locations downstream of the DCWWTP discharge. Municipal water supply taste and odor problems are often associated with algae production in source waters.

Effluent quality under the future cumulative condition will be maintained at essentially equivalent or possibly higher quality levels (if additional or more restrictive NPDES limits are required by the RWQCB), relative to current effluent quality. Therefore, no taste and odor problems would be expected in the future, once the DCWWTP is adequately expanded/ upgraded, as necessary, and permitted to treat the incremental flows, including UGA flows.

Stream Flow-Related Effects on Salmonids and Other Aquatic Life

Increasing the flows in Dry Creek through the discharge of additional treated effluent will result in channel conveyance of higher flow volumes with associated higher water velocities which could cause additional bed scour and bank erosion. Bed scour and bank erosion, if it occurs as a result of the incremental flows, would increase water column turbidity and altering substrate composition downstream of the DCWWTP outfall.

Erosion/Sedimentation/Turbidity

Due to the constraints of the NPDES permit's effluent limits, the only mechanism for the discharge to cause erosion, sedimentation and higher turbidities within Dry Creek under future cumulative conditions would be via the hydraulic effects of the higher flows re-suspending creek bed sediments and eroding creek banks near the outfall, and in downstream reaches. The undiluted effluent discharged from the DCWWTP under the future cumulative condition will have very low turbidity (i.e., average < 2 NTU) and suspended matter.

Under high flow conditions, which is the channel forming condition, water velocity is not affected to a measurable extent by the incremental UGA flows. Under low flow conditions, the overall stream velocity regime is much lower than at high flow conditions, indicating much less bed and bank erosion would generally be expected under low flow conditions relative to the high flow condition evaluated in the EIR. As a result, the impact of the incremental UGA flows on velocity and erosion is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project.

Changes in water quality, erosion, and sedimentation (e.g., mercury loading, pH, water temperature, nutrient loading, taste or creation of odors, velocity, bank scour, turbidity) from all UGAs combined could potentially impact Dry Creek. However, installation of additional water treatment facilities at the DCWWTP will ensure that water quality parameters remain at similar levels relative to existing baseline conditions in Dry Creek. As a result, cumulative water quality effects including increased water temperatures, introduction of trace metals and organics, and changes in dissolved oxygen are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project.

Plan Area Development Cumulative Effects

The Project could introduce urban pollutants including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas into surface runoff.

Newly planted vegetation and paved roadways and anticipated combinations of sod/seed activity from planned development in the watersheds of Dry Creek, Curry Creek, and Steelhead Creek could result in long-term water quality degradation. The high use of roads and parking areas daily within the region would contribute vehicle oils and grease to the site stormwater discharge. In commercial areas, stormwater runoff may convey a wide range of pollutants to receiving waters. Vehicles contribute oil, grease, and metals onto roads and parking lots. Excessive use of fertilizers, pesticides, and herbicides on the site can also result in leaching of nutrients and toxic compounds into stormwater runoff. Such compounds are soluble and would not, therefore, be removed by the use of detention basins.

Uncontrolled, these urban pollutants can directly or indirectly affect aquatic life. High concentrations of toxins in runoff can be lethal to aquatic life; chronic, low levels may enter the food chain, affecting the long-term breeding success of populations and lower reproductive potential. Aquatic and wildlife habitat can also be adversely affected by the accumulation of toxins, which can indirectly affect aquatic and wildlife resources. Contaminant levels are typically highest during late summer and fall when pollutants, previously bound to particulates in the sediments, are released during the first large rainfall event ("first flush") of the season.

Since pollutants are typically concentrated, the potential for toxic events is more likely during first flush events since the dilution factor is usually low.

Common pollutants found in urban runoff include trace metals (copper, lead, zinc, cadmium, chromium, arsenic and nickel), PCBs, oil and grease, nutrients, coliform bacteria, organic compounds, and sediment. Generally, the high level of metals can be traced to one of several urban sources, including vehicle operation and maintenance, atmospheric fall-out, and illegal sewage discharges.

BMPs such as detention ponds, wetlands, filters, and vegetated swales have been shown to reduce urban pollutant levels in stormwater. A number of studies have been conducted over the past two decades regarding the pollutant removal effectiveness of urban stormwater BMPs. Wetland BMPs, such as shallow marshes, extended detention wetlands and ponded wetlands have demonstrated median removal rates of 77% for bacteria; 90% for hydrocarbons, including oil and grease; and 69% for cadmium. Ponds have demonstrated median removal rates of 57% and 73% for copper and lead, respectively. Filters have been shown to be 81% effective in removing hydrocarbons, including oil and grease; 80% effective in removing zinc; 87% effective in removing total suspended solids (TSS); and 66% effective in removing organic carbon, based on the median rates of a number of reported studies. Drainage swales have demonstrated median removal efficiencies of 81% for TSS; 67% for organic carbon; and 71% for zinc (Quad Knopf 2006).

The Project would add over 3,700 acres of development that would incrementally contribute to an increase in urban pollutants within the watersheds. Given the extent of proposed development in the Curry Creek, Steelhead Creek, and Dry Creek watersheds (in excess of 30,000 acres) and roadway improvements, the cumulative potential for the generation of urban pollutants, and because drainage from the area is ultimately conveyed into a potable water source (Sacramento River), this potential long-term water quality degradation is considered a cumulative impact. Avoidance, minimization and conservation measures and BMPs have been designed for the Project to reduce the impact of short-term surface water quality degradation that would occur during the development of the Project to a level that is not likely to adversely

affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project.

CONCLUSIONS

Project Description

All of the proposed development that is part of the current federal action would occur within the approximate 3,746 acres of properties with active applications.

Additional areas addressed in this Biological Assessment include off-site infrastructure elements (i.e., a sewer line, a potable water line/tank, a recycled water line/tank, and roads/trails).

Issues Addressed in this Biological Assessment

The primary issues addressed in this Biological Assessment include the connection to the DCWWTP and associated increases in discharge of wastewater into Dry Creek; "jack and bore" activities adjacent to Dry Creek to support installation of utilities; removal and replacement of the Watt Avenue Bridge; and stormwater drainage systems.

Effects Determination

Installation of Utilities

To avoid creek disturbance, "jack and bore" construction techniques would be used wherever the proposed utility lines cross Dry Creek or other stream crossings. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction shall be included in all related construction contracts.

On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. Mitigation measures as already approved by

the County will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Due to avoidance procedures and the use of "jack and bore" construction, impacts to Dry Creek are not expected. As a result, utility line installation is not likely to adversely affect Central Valley steelhead or Critical Habitat within or downstream of the Project.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

Potential construction-related effects include temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers and foundations. Construction of the two bridge foundations on the north side of the creek and the westerly foundation on the south side of the creek would disturb approximately 1,400 +/- ft^2 of the bank at each location (see Figure 6). It is not anticipated that a coffer dam will be required during installation of the new bridge piers; however, if necessary, cofferdams / water barriers may be needed on the north bank on both the east and west sides of the proposed bridge location (see Figure 6). The cofferdams / water barriers would be installed parallel to shore near each bank and would not obstruct creek flow or fish passage. The areas behind the cofferdams / water barriers would then be dewatered to allow construction of the pier foundations. Installation of the cofferdams / water barriers would potentially affect approximately 90 +/- linear feet of bank and edgewater habitat adjacent to each of the structures (see Figure 6).

Conservation and protection measures and BMPs will be implemented prior to and during construction to reduce or avoid sedimentation and minimize erosion associated with bridge construction, and may include sediment control practices such as filtration devices and barriers (e.g., fiber rolls, straw bale barriers, straw wattles, and gravel inlet filters) and/or settling devices (e.g., sediment traps or basins). BMPs will be developed in accordance with applicable federal, state and local agencies.

Riparian habitat that occurs along Dry Creek within the development portion of the Project will be avoided, and no direct adverse effects are anticipated. However, riparian habitat in the Off-

site Infrastructure Area could be adversely affected due to construction of the new Watt Avenue Bridge. Approximately 0.54 acres of riparian habitat will be affected by bridge construction. Indirect impacts to riparian corridors could negatively affect species dependent upon riparian habitat, even though riparian vegetation is not directly impacted. Potential short-term impacts to Central Valley steelhead and Critical Habitat may include localized bank and streambed erosion, and degradation of water quality and /or edgewater habitat due to construction-related activities. Potential long-term impacts to Central Valley steelhead and/or Critical Habitat are not anticipated as a result of bridge construction since stream banks and potentially affected edgewater habitat would be restored following construction, and the new bridge will span the main channel and will not impede stream flow or fish migration.

With the avoidance, minimization and conservation measures which are a part of the project, both construction-related and long-term impacts are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project, due primarily to the absence of spawning habitat. Juveniles may use the edgewater habitat for feeding when migrating to the Pacific Ocean. However, the area of potential disturbance is small when compared to the abundance of existing edgewater habitat.

Stormwater Drainage System

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Construction of the proposed project would have the potential to increase erosion within the Project Area, temporarily degrading water quality on-site and potentially within the Action Area. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect Central Valley steelhead and designated Critical Habitat, especially during the rainy season when stormwater runoff typically occurs. The Project's regulatory permits will require that appropriate BMPs be employed to prevent soil

erosion and resulting sedimentation, and installation of a detention / water quality basin to collect and treat runoff from the Project. The basin proposed for the Dry Creek shed would not function in a detention capacity, since the PVMDS (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project (refer to the Project Description section of this document for supporting information). As a result, the one basin would be designed to function as a water quality basin to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake. Water from the basin would be discharged into a grassy swale, intended to further remove contaminants, before entering Dry Creek Creek. BMPs are detailed in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

Degradation of water quality during construction of the Project may adversely affect Critical Habitat and Central Valley steelhead migrating through the Action Area. To minimize potential adverse effects to steelhead and designated Critical Habitat, construction activities would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

Within the Action Area, Dry Creek does not contain spawning or rearing habitat for Central Valley steelhead. Dry Creek is used primarily as a migration corridor during the late fall/winter and spring periods. During these migration periods, flows in Dry Creek are usually higher than normal; as a result, the discharge of treated runoff from a small portion (~ 462 out of 600 acres) of the Project Area is not likely to adversely affect migration through the Action Area, Central Valley steelhead, or Critical Habitat.

Avoidance, Minimization, and Conservation/Protection Measures and BMPs that will Eliminate or Reduce the Adverse Effects of the Proposed Action

Avoidance, minimization, and conservation/protection measures have been developed to reduce impacts to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

The Action Area includes a 250-foot buffer zone that envelops both the Project area and the Off-Site Area for Infrastructure Elements (see Figure 3). The establishment of a 250-foot buffer is intended to address potential indirect impacts of the project on adjacent habitats (e.g., wetlands, streams, and riparian habitat) that may support federally listed species. The following proposed avoidance, minimization, and conservation/protection measures will be implemented as part of the PVSP to ensure that Dry Creek and associated aquatic habitat is not adversely affected by construction and operation of the Project.

To protect Dry Creek and adjacent habitat, planned setbacks along Dry Creek average over 240 ft. The setback will preserve the riparian corridor along Dry Creek, thereby minimizing adverse effects of the Project on Central Valley steelhead and Critical Habitat.

The Placer Vineyards Specific Plan Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. The Avoidance and Open Space Plan incorporates 709 acres of open space preserves within the Project land use plan with a goal of establishing interconnected preserves. The open space preserves include significant wetland/swale corridors. These corridors, which are central to the open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, and avoid natural occurring wetlands over those created artificially through agricultural manipulation.

In addition to on-site preservation and avoidance within 709 acres of open space within the PVSP, off-site mitigation and conservation measures will require the preservation of more open space including preserved and restored/created waters of the U.S. (comprised of vernal pool

complex habitat and other wetlands/waters). Avoidance and open space along the Dry Creek corridor will protect the channel and associated riparian resources.

Appropriate avoidance, minimization, and conservation measures and BMPs that have been designed to eliminate or reduce the adverse effects of the proposed action are described in detail in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of the report. Specific measures are provides for both construction and operational phases of the project including installation of utilities, removal and replacement of the Watt Avenue Bridge, and treatment of stormwater runoff.

Effects to the Environmental Baseline

Development of the Project including off-site infrastructure is not expected to adversely affect the environmental baseline for either Central Valley steelhead or Critical Habitat. With implementation of appropriate avoidance/minimization/conservation/protection and mitigation measures and BMPs, all potential direct impacts to Central Valley steelhead or Critical Habitat in Dry Creek within or downstream of the Project associated with build-out of the Project including installation of utilities and removal and replacement of the Watt Avenue Bridge, have been reduced to levels that are not likely to adversely affect this species or its habitat (refer to *Direct Effects* section of this document). This reduction in potential impacts is due to avoidance and minimization measures as well as conservation efforts and BMPs that will be implemented as part of the Project.

In addition to Project-related effects, cumulative impacts including the discharge of treated wastewater from the Specific Plan Area into Dry Creek via the DCWWTP, is not expected to adversely affect the environmental baseline. Potential water quality impacts including increased water temperatures and trace metals and organic pollutants, will be avoided by installing additional cooling towers and advanced treatment facilities, and instituting metals source controls/pre-treatment, which will maintain water quality parameters at existing levels.

Since Dry Creek functions primarily as a migration corridor, especially within the Action Area, it is unlikely that development of the Project would adversely affect the environmental baseline, Critical Habitat, or Central Valley steelhead. Some suitable spawning and rearing habitat occurs in the upper reaches of Dry Creek; however, most of the suitable steelhead spawning and rearing habitat occurs upstream of the confluence of Secret Ravine and Miners Ravine Creeks.

Effects on Essential Elements of Critical Habitat

Dry Creek is designated as Critical Habitat for Central Valley steelhead; however, the only constituent element present within the Action Area is (#3) an unobstructed freshwater migration corridor that appears to lack excessive predation and has water quantity and quality conditions and natural cover supporting juvenile and adult mobility and survival. However, based on habitat typing conducted within the Project Area, natural cover consisting of submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks is highly limited within the Project Area. The remaining three elements (freshwater spawning sites, freshwater rearing sites, and estuarine areas) are not present within the Action Area.

Dry Creek functions primarily as a migration corridor for anadromous salmonids to reach suitable spawning habitat for steelhead located in the upper watershed in Miners Ravine and Secret Ravine creeks. Based on available information, there do not appear to be any existing obstructions to migration within the Action Area.

Implementation and operation of the Project is not anticipated to impact the Dry Creek channel, aquatic habitats, the riparian corridor, or adjacent habitats. Construction activities associated with removal and replacement of the Watt Avenue Bridge will occur primarily on the terraces on both sides of Dry creek and will not occur within the main channel. Installation of utilities, which will involve "jack and bore" construction techniques, will not occur within or immediately adjacent to the channel and will not affect aquatic habitats or species.

With implementation of avoidance, minimization and conservation measures as described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* and *Mitigation* sections, respectively, construction and operation of the Project is not likely to result in further degradation of Dry Creek or its functionality as a migration corridor for Central Valley steelhead and other anadromous species.

Effects on Listed Species and Designated Critical Habitat

Direct effects of implementation of the Project are associated primarily with the installation of utilities (under Dry Creek), removal and replacement of the Watt Avenue Bridge, and stormwater runoff effects. Potential environmental effects addressed in the Direct Effects section are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area. Only the removal and replacement of the Watt Avenue Bridge will occur adjacent to Dry Creek as part of Off-Site Infrastructure Elements; however, no construction will occur within the main channel. Avoidance, minimization and conservation measures and BMPs specified for both of these tasks will reduce impacts to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek within the Action Area. To avoid creek disturbance, "jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction will be included in all related construction activities. The proposed new bridge at Watt Avenue will span the creek with no bridge supports or construction activities occurring within the Dry Creek channel.

On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat within these areas. Mitigation measures required by the County will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Additional analyses of Project-related effects (i.e., connection to the DCWWTP and increased discharge to Cry Creek) on special-status fish or designated Critical Habitat is discussed in the *Direct and Indirect Effects* section of this document. The Project could affect water quality by the introduction of urban pollutants. In summary, the implementation of appropriate protection measures and BMPs, as described in *Proposed Avoidance, Minimization, and Conservation/Protection Measures*, will reduce surface runoff effects (water quality impacts) to levels that are not likely to adversely affect Central Valley steelhead and/or Critical Habitat within the Action Area.

Even though Dry Creek is degraded relative to historic conditions, the stream reach within the Action Area continues to provide EFH, albeit limited within the Project Area. Dry Creek is designated as Critical Habitat for Central Valley steelhead; however, the only constituent element within the Action Area is (#3) an unobstructed freshwater migration corridor that appears to lack excessive predation and has water quantity and quality conditions and natural cover supporting juvenile and adult mobility and survival. However, based on habitat typing conducted within the Project Area, natural cover consisting of submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks is highly limited within the Project Area.

If all recommended protection/conservation/mitigation measures and BMPs are instituted as part of the build-out and operation of the Project (as described in the *Description of Mitigation (If Any) Required Under Other Federal, State, or Local Permits*, and *Description of Proposed Conservation Measures* sections of this document) impacts are not likely to adversely affect Central Valley steelhead or Critical Habitat in Dry Creek or within the Action Area.

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ESSENTIAL FISH HABITAT

Description of the Proposed Action

The proposed Placer Vineyards Specific Plan (PVSP) project (Project) area encompasses approximately 5,230 acres in unincorporated southwestern Placer County, approximately 15 miles north of Sacramento. While the PVSP area includes approximately 5,230 acres, only approximately 3,746 acres are currently participating in the planned development.

A detailed description of the Project and proposed actions is provided in the *Project Description; Activities to be Authorized, Funded, or Carried Out by the Federal Action Agency* section of the Biological Assessment.

Addresses EFH for Appropriate Fisheries Management Plans

The only fisheries management plan for California steelhead is the *Restoration and Management Plan for California* (CDFG 1996); however, management objectives are focused on large mainstem rivers (i.e., Sacramento, Yuba, American, Feather, and Mokelumne), several large tributaries to the Sacramento River (i.e., Butte, Deer, Mill, and Antelope creeks), and upper Sacramento River tributaries. A management plan has not been developed for tributaries to the lower Sacramento River (including the Dry Creek Watershed).

Effects of the Proposed Action

Construction of the proposed project would have the potential to increase erosion within the Project Area temporarily degrading water quality. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect Central Valley steelhead and designated Critical Habitat, especially during the rainy season when stormwater runoff typically occurs. The Project's regulatory permits will require that appropriate BMPs be employed to prevent soil erosion and resulting sedimentation; and installation of water quality basins to treat runoff from the Project reducing pollutant concentrations through infiltration, settling, and biological uptake. The water quality basin

would not function in a detention capacity, since the PVMDS (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project. Discharge from the water quality basins would flow through grassy swales, intended to further remove contaminants, before entering Dry Creek. BMPs are described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

Degradation of water quality during construction of the Project could adversely affect Central Valley steelhead and Critical Habitat within the Action Area. To minimize potential adverse effects, construction activities within the Project Area would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

The Dry Creek Watershed, which is tributary to the Sacramento River, provides suitable spawning and rearing habitat for the Evolutionarily Significant Unit (ESU) of Central Valley steelhead. In addition, Dry Creek within the Valley-American Hydrologic Unit has been designated by NOAA Fisheries as Critical Habitat for Central Valley ESU steelhead. Critical Habitat boundaries encompass the stream channel within the designated reaches and include a lateral extent up to the ordinary high-water line [50 CFR Part 226, September 2, 2005 (70FR52488 – 52627)].

Within the Action Area, Dry Creek provides a migration corridor for Central Valley steelhead to reach spawning and rearing habitat in Miners and Secret Ravine creeks located in the upper watershed. Spawning and rearing habitat is not present within the Action Area. Additionally, the results of habitat typing conducted in Dry Creek within and immediately adjacent to the project Area indicated that only limited EFH is present. Reconnaissance surveys conducted downstream of the Project Area but within the Action Area showed the same general stream conditions as that documented in the Project Area.

Direct Effects

Direct adverse effects to Central Valley steelhead, designated Critical Habitat, or Essential Fish Habitat (EFH) within Dry Creek are not anticipated as a result of implementation of the Project. Construction-related impacts, both on-site and off-site, will be minimized by buffering and protecting avoided wetland and habitat elements and by utilization of Best Management Practices (BMPs) as recommended by the project's Storm Water Pollution Prevention Plan (SWPPP) and required by the Central Valley Regional Water Quality Control Board. BMPs will be employed to minimize the potential for the project to result in degradation of water quality within the Project or Action Areas that could have a negative impact on Central Valley steelhead, Critical Habitat, or EFH within Dry Creek. The project's SWPPP will be initiated prior to construction commencement to provide adequate dust, erosion, and sedimentation controls.

Installation of Utilities

Installation of utilities to serve the Project Area development is distinct from site urbanization, and is not anticipated to result in significant additional impervious surface area or an increase in runoff since most of the off-site infrastructure areas are located along existing roads, proposed intersection improvements, and road widenings. Design and installation of pipelines in off-site utility corridors is anticipated to remove and replace existing surfaces with similar materials. This would include soil and other earthen materials, or replacement of pavement in the case of utility lines within existing roadways.

"Jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect stream channel banks from erosion and related effects of construction would be included in all related construction contracts.

Proposed "jack and bore" construction could occur at five locations along Dry Creek to support installation of utilities. Bore pits will be constructed on both sides of Dry Creek outside of the riparian corridor and at least 50 ft from the channel margin (see Figure 4 of the preceding Biological Assessment). The use of "jack and bore" construction techniques for installation of

utilities across Dry Creek is not expected to directly impact the Dry Creek channel, stream banks, aquatic habitat including edgewater areas, or EFH.

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

During development of the project, the existing two-lane Watt Avenue Bridge at Dry Creek will be removed and replaced with a new structure, designed to serve six travel lanes. The conceptual bridge design and foundation plan are presented in figures 5 and 6 of the preceding Biological Assessment, respectively. Construction of the new bridge would involve the removal of some riparian vegetation and the temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers. This bridge design will minimize impacts to Dry Creek and the associated riparian corridor. The conceptual bridge design provides for a span of sufficient length over the active channel to avoid placement of piers and bridge foundations in the creek.

Potential construction-related effects include temporary modification of edgewater habitat and channel banks associated with the installation of bridge support piers and foundations. Construction of the two bridge foundations on the north side of the creek and the westerly foundation on the south side of the creek would disturb approximately 1,400 +/- ft^2 of the bank at each location (see Figure 6 of the Biological Assessment). It is not anticipated that a coffer dam will be required during installation of the new bridge piers; however, if necessary, cofferdams / water barriers may be needed on the north bank on both the east wand west sides of the proposed bridge location (see Figure 6). The cofferdams / water barriers would be installed parallel to shore near each bank and would not obstruct creek flow or fish passage. The areas behind the cofferdams / water barriers would then be dewatered to allow construction of the pier foundations. Installation of the cofferdams / water barriers would potentially affect approximately 90 +/- linear feet of bank and edgewater habitat adjacent to each of the structures (see Figure 6).

Edgewater habitat is important to both upstream-migrating adults and downstream-migrating (i.e., emigrating) juvenile ("smolt") steelhead as foraging habitat and cover (i.e., protection from predators). Modification to edgewater habitat may include localized loss of food-producing

habitat and associated prey items. However, based on the results of stream habitat typing (*see Baseline Conditions section*) little food producing habitat is present in the vicinity of the proposed bridge replacement. Both adults and juvenile steelhead use available instream habitat adjacent to off-site infrastructure areas primarily as a migration corridor. Juveniles may use the edgewater habitat for feeding when migrating to the Pacific Ocean. The area of potential disturbance is small (approximately 180 linear feet along one bank of the creek) relative to existing edgewater habitat within either the Project and/or Action Areas.

During construction of the proposed Watt Avenue Bridge, temporary protective fencing will be installed at the limits of construction adjacent to Dry Creek (see Figure 6) to minimize potential impacts to Dry Creek and adjacent habitats. The protective fencing will provide a barrier between construction activities and the creek, preventing equipment, material, and workers from entering the active channel area. Straw wattles, silt fences, or equivalent materials will be placed adjacent to the fence to prevent sediment from leaving the construction site and entering Dry Creek. While the creek will be protected, the area behind the fencing would be disturbed by construction activities. Grading activities, soil excavations, and vegetation removal within the fenced areas will be limited to locations where the bridge piers and foundations will be constructed, access routes, and equipment and materials storage. With the possible exception of installation of cofferdams / water barriers adjacent to the north bank, no construction will occur within the main Dry Creek channel.

During construction dust palliatives will be applied to disturbed surfaces to minimize dust originating from the site. At the conclusion of construction all disturbed areas will be re-contoured, stabilized, and re-vegetated to minimize potential sedimentation problems.

Potential short-term construction related impacts to Central Valley steelhead and Critical Habitat may include localized bank and streambed erosion, degradation of water quality and /or edgewater habitat due to construction-related activities, and the potential re-distribution of resident fish due to activities adjacent to Dry Creek. Additional localized impacts may include removal of bank vegetation; ground disturbance, vibration, and noise adjacent to the channel; and the potential installation of cofferdams / water barriers along the north bank and de-watering of edgewater habitat.

Potential long-term impacts to EFH are not anticipated as a result of bridge construction since stream banks and potentially affected edgewater habitat would be restored following construction, and the new bridge will span the main channel and will not impede stream flow, fish migration, or connectivity of terrestrial resource habitat.

Stormwater Drainage System

Only a small portion of the Project area lies within the Dry Creek Watershed. Most of the area is undeveloped grazing land with a few scattered stands of native and non-native trees and some agricultural land. Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7 of the Biological Assessment). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Development of the project would include on-site drainage facilities consisting of drainage inlets and pipes (see Figure 8 of the Biological Assessment) and would be designed to meet Placer County drainage requirements. Within the Dry Creek shed, collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins prior to entering Dry Creek (see Figure 9 of the Biological Assessment). Within the drainage shed for Dry Creek, a total of seven trunk storm drains and associated structural BMPs and four water quality basins are proposed for installation. The final number of discharge locations may vary depending on the final design of project drainage improvements.

Construction of the proposed project would have the potential to increase erosion within the Project Area, temporarily degrading water quality on-site and potentially within the Action Area. Soil erosion and resulting sedimentation could potentially contribute to adverse water quality impacts to Dry Creek and subsequently affect EFH, especially during the rainy season when stormwater runoff typically occurs. The Project's regulatory permits will require that appropriate BMPs be employed to prevent soil erosion and resulting sedimentation, and installation of water quality basins to collect and treat runoff from the Project. The basins

proposed for the Dry Creek shed would not function in a detention capacity, since the Placer Vineyards Master Drainage Study (PVMDS) (2006) showed that detention at the project site would have an adverse impact on peak flow rates downstream of the project (refer to the Project Description section of this document for supporting information). As a result, the basins would be designed to function as water quality basins to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake. Water from the basins would be discharged into grassy swales, intended to further remove contaminants, before entering Dry Creek Creek. BMPs are described in the *Proposed Avoidance, Minimization, and Conservation/Protection Measures* section of this document and will be employed during the construction phase of the proposed Project.

Degradation of water quality during construction of the Project may adversely affect Critical Habitat and Central Valley steelhead migrating through the Action Area. To minimize potential adverse effects to EFH, construction activities would be subject to applicable federal and State water quality protection requirements, as required by the RWQCB under the terms of the U.S. Environmental Protection Agency General Construction Permit. The Project applicant will be required to prepare a site-specific SWPPP identifying BMPs to be implemented on the site.

Within the Action Area, Dry Creek does not contain spawning or rearing habitat for Central Valley steelhead. Dry Creek is used primarily as a migration corridor during the late fall/winter and spring periods. During these migration periods, flows in Dry Creek are usually higher than normal; as a result, the discharge of treated runoff from a small portion (~ 600 acres) of the Project Area is not likely to adversely affect EFH, migration through the Action Area or Central Valley steelhead.

Indirect Effects

Indirect effects may also occur to Dry Creek and associated aquatic species as a result of construction and operation of the Project. Some of these indirect effects include increased access and potential use of the creek by both humans and family pets, including potential release of non-native aquatic species, accelerated stream bank erosion due to increased public

use or modifications/alterations of the stream, fish poaching and harassment, and water quality degradation from potential input of toxicants from increased urban runoff into Dry Creek.

As a result of construction of the Project, there is a potential for indirect effects to occur to Central Valley steelhead and the limited EFH present within the Project area. These indirect effects include increased public access to the creek and associated impacts:

- potential release of non-native aquatic species,
- fish poaching and harassment,
- accelerated stream bank erosion due to increased public use, and
- potential input of toxicants from increased urban runoff into Dry Creek.

These types of potential adverse effects are currently present along much of Dry Creek as a result of both residential and commercial development.

The above indirect effects likely have limited influence on steelhead, since Dry Creek functions primarily as a migration corridor for Central Valley steelhead and Chinook salmon. During these migration periods, flows are usually elevated, providing increased stream habitat and reducing the potential for runoff/toxicity effects. Additionally, the potential for adverse effects associated with increased public access to the creek is likely lowest during these high flow periods.

Effects on Essential Fish Habitat

Dry Creek (especially within the Action Area) functions primarily as a migration corridor for anadromous salmonids, with limited EFH present (especially for salmonids) within the Project Area and areas immediately upstream and downstream of the project (based on the results of habitat typing) and throughout most of the Action Area (based on field reconnaissance). With the exception of limited marginal spawning habitat in the upper reaches of Dry Creek in the vicinity of the City of Roseville, spawning and rearing habitat for steelhead is generally lacking within Dry Creek, due primarily to the paucity of riffles and pool tail-outs with suitable substrates. In addition, summer water temperatures in Dry Creek are often above lethal limits

for juvenile steelhead. The limited riffle habitat that occurs in Dry Creek is degraded by an abundance of sand, resulting in embeddedness of cobble and gravel substrates. Pool habitats are also dominated by sand, resulting in lack of depth and reduced instream cover. In general, instream cover for fish is poor to moderate throughout most of the lower reaches of Dry Creek due to the paucity of rocky substrates, undercut banks, large woody debris, root wads, attached aquatic vegetation, turbulence or bubbles, or other cover items.

Food sources for rearing steelhead are also generally limited due to the lack of boulder, cobble, and gravel substrates and that BMI communities in Dry Creek are characterized by relatively poor production, a high percentage of tolerant organisms, and low to moderate diversity (consisting primarily of terrestrial insects) due primarily to the dominance of fine sediments.

Given the relatively limited amount of EFH present within the Project and Action Areas and the proposed avoidance, conservation, and minimization measures, potential loss of EFH resulting from implementation of the Project is not likely to adversely affect Central Valley steelhead within the Action Area.

Effects on Managed Species

Currently, there are no managed species present within the Dry Creek Watershed. Potential adverse effects to Central Valley steelhead and other anadromous and resident fish species are not expected to occur as a result of construction or operation of the Project. Avoidance / conservation / protection and mitigation measures, setbacks, and BMPs will be instituted to reduce potential impacts to a level that is not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

Effects on Associated Species, Including Prey Species

Production of benthic macroinvertebrates in Dry Creek is generally poor due to the lack of suitable substrates. Additionally, gravel substrates present in the limited riffle and pool tail-out habitats are at least 25-50% embedded, reducing the interstitial spaces necessary for benthic macroinvertebrate production.

BMI communities in Dry Creek are characterized by a high percentage of tolerant organisms and low to moderate diversity (consisting primarily of terrestrial insects) due primarily to the dominance of fine sediments. Available food sources for steelhead and other fish species also appears to be limited within the Project and Action Areas due to the lack of rocky substrates, abundance of fine sediments, and relatively depauperate BMI communities dominated by tolerant organisms and a high percentage of terrestrial insects.

Other prey items, such as resident fish species, are present within the Action Area but do not appear to be common. Results of habitat typing indicate that aquatic cover is limited within the Project Area, and field reconnaissance surveys showed the same general conditions throughout most of the Action Area.

With implementation of avoidance, protection, and conservation measures and BMPs proposed for the Project, additional impacts to benthic macroinvertebrate production or fish prey species are not anticipated as a result of Project implementation.

Cumulative Effects

The Project could contribute to a cumulative effect upon water quality due to the introduction of urban pollutants including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas into surface runoff.

Newly planted vegetation and paved roadways and anticipated combinations of sod/seed activity from planned development in the Dry Creek watershed could result in long-term water quality degradation. The high use of roads and parking areas daily within the region would contribute vehicle oils and grease to the site stormwater discharge. In commercial areas, stormwater runoff may convey a wide range of pollutants to receiving waters. Vehicles contribute oil, grease, and metals onto roads and parking lots. Excessive use of fertilizers, pesticides, and herbicides on the site can also result in leaching of nutrients and toxic compounds into stormwater runoff.

Uncontrolled, these urban pollutants can directly or indirectly affect aquatic life. High concentrations of toxins in runoff can be lethal to aquatic life; chronic, low levels may enter the food chain, affecting the long-term breeding success of populations and lower reproductive potential. Aquatic and wildlife habitat can also be adversely affected by the accumulation of toxins, which can indirectly affect aquatic and wildlife resources. Contaminant levels are typically highest during late summer and fall when pollutants, previously bound to particulates in the sediments, are released during the first large rainfall event ("first flush") of the season. Since pollutants are typically concentrated, the potential for toxic events is more likely during first flush events since the dilution factor is usually low.

Common pollutants found in urban runoff include trace metals (copper, lead, zinc, cadmium, chromium, arsenic and nickel), PCBs, oil and grease, nutrients, coliform bacteria, organic compounds, and sediment. Generally, the high level of metals can be traced to one of several urban sources, including vehicle operation and maintenance, atmospheric fall-out, and illegal sewage discharges.

BMPs such as detention ponds, wetlands, filters, and vegetated swales have been shown to reduce urban pollutant levels in stormwater. A number of studies have been conducted over the past two decades regarding the pollutant removal effectiveness of urban stormwater BMPs. Wetland BMPs, such as shallow marshes, extended detention wetlands and ponded wetlands have demonstrated median removal rates of 77% for bacteria; 90% for hydrocarbons, including oil and grease; and 69% for cadmium. Ponds have demonstrated median removal rates of 57% and 73% for copper and lead, respectively. Filters have been shown to be 81% effective in removing hydrocarbons, including oil and grease; 80% effective in removing zinc; 87% effective in removing total suspended solids (TSS); and 66% effective in removing organic carbon, based on the median rates of a number of reported studies. Drainage swales have demonstrated median removal efficiencies of 81% for TSS; 67% for organic carbon; and 71% for zinc (Quad Knopf 2006).

The Project would add over 3,700 acres of urban development that would incrementally contribute to an increase in urban pollutants within the watersheds. Given the extent of proposed development in the Curry Creek, Steelhead Creek, and Dry Creek watersheds (in

excess of 30,000 acres) and roadway improvements, the cumulative potential for the generation of urban pollutants, and because drainage from the area is ultimately conveyed into a potable water source (Sacramento River), this potential long-term water quality degradation has the potential to be considered a significant cumulative impact. However, avoidance, minimization, mitigation/conservation measures and BMPs have been designed for the Project to reduce the impact of both short-term and long-term surface water quality degradation that would occur during and after the development of the Project to a level that is not likely to adversely affect EFH and Central Valley steelhead in Dry Creek within or downstream of the Project. Those measures include improved techniques for installation of utilities, removal and replacement of the Watt Avenue Bridge, improvements to the stormwater drainage system, and many associated BMPs as discussed in *Proposed Avoidance, Minimization and Conservation/Protection Measures,* which together would result in a cumulative impact not likely to adversely affect EFH and Central Valley steelhead in Dry Creek within or downstream of the Project.

The DCWWTP is presently being analyzed at a programmatic level by the South Placer Wastewater Authority to determine current and future capacity. Based on preliminary results of this analysis, sufficient capacity exists at DCWWTP to serve the PVSP area.

The Central Valley Regional Water Quality Control Board (CVRWQCB) issued a National Pollutant Discharge Elimination System (NPDES) permit regulating discharges from the DCWWTP in 2000 (NPDES No. CA00164, Order No. 5-00-164). The permitted capacity of the DCWWTP is 18.0 MGD (ADWF), and these permits must be renewed every five years. Through its development and adoption of NPDES permits every five years, the RWQCB stipulates effluent and receiving water limitations that must be met, thereby assuring compliance with receiving water quality criteria/objectives and protection of beneficial uses (Quad Knopf 2006).

The 1996 Master Plan EIR (City of Roseville 1996) identified the following operational impacts to water quality and aquatic biological resources associated with treatment and discharge of anticipated future DCWWTP discharges in Dry Creek:

- Degradation of water quality in Dry Creek due to increased effluent discharge,
- Erosion and sedimentation,

- Degradation of habitat for anadromous fish (steelhead and Chinook salmon) from the DCWWTP discharge.

The total estimated future flow from the DCWWTP, plus flow from Urban Growth Areas (UGAs) located outside the 2005 service area, is 19.3 MGD. This is 1.3 MGD greater than the current permitted capacity of the DCWWTP, but is 5.6 MGD less than the 24.9 MGD future flow projected in the 1996 Master Plan EIR (City of Roseville 1996). Thus, the impacts assessment for the DCWWTP in the 1996 Master Plan EIR is based on greater flow than is currently projected, including UGA flows such as those resulting from build-out of the PVSP. Several factors indicate that the analysis used to evaluate impacts in the Technical Memorandum (TM) is conservative (Quad Knopf 2007):

- The total estimated future flow of 19.3 MGD from the DCWWTP is 5.6 MGD less than the 24.9 MGD future flow projected and evaluated in the 1996 Master Plan EIR.
- The analysis assumes all of the dry weather flow will be discharged. However, dry season discharge to Dry Creek will be less than average dry weather flow generated, because a portion of the flow will be returned to the UGAs as recycled water for irrigation instead of being discharged to Dry Creek.
- The West Roseville Specific Plan EIR (Quad Knopf 2006) includes mitigation, which conditions issuance of building permits on obtaining all the necessary permits to treat, discharge and reuse flows from the Project. The SPWA, as the responsible CEQA agency, has indicated its intent to request a similar mitigation measure for the UGAs that are the subject of the TM.

Potential water quality impacts associated with increased discharge of treated wastewater into Dry Creek are based on the cumulative effects of future flow of all UGAs projected and evaluated in the 1996 Master Plan EIR. The actual incremental effect of wastewater flows from the Project would be substantially less than the cumulative effects of wastewater flows from all UGAs as presented below. To avoid or minimize impacts associated with increased wastewater flows into Dry Creek from future UGAs, various measures will be implemented at the DCWWTP to maintain water quality parameters at existing levels.

Proposed Conservation Measures

Avoidance, Minimization, and Conservation/Protection Measures and BMPs to be Implemented as Part of the Project

The Action Area includes a 250-foot buffer zone that envelops both the Project area and the Off-Site Area for Infrastructure Elements (see Figure 3 of the Biological Assessment). The establishment of a 250-foot buffer is intended to address potential indirect impacts of the project on adjacent habitats (e.g., wetlands, streams, and riparian habitat) that may support federally listed species. The following proposed avoidance, minimization, and conservation / protection measures will be implemented as part of the PVSP to ensure that Dry Creek and associated aquatic habitat is not adversely affected by construction and operation of the Project.

To protect Dry Creek and adjacent habitat, planned setbacks along Dry Creek average over 240 ft. The setback will preserve the riparian corridor along Dry Creek, thereby minimizing adverse effects of the Project on EFH and Central Valley steelhead.

The Placer Vineyards Specific Plan Avoidance and Open Space Plan was designed to avoid and minimize impacts to key on-site aquatic resources and was based on plan and field investigations of existing wetlands and wetland/swale corridor configurations and proposed adjacent land uses. The Avoidance and Open Space Plan incorporates 709 acres of open space preserves within the Project land use plan with a goal of establishing interconnected preserves. The open space preserves include significant wetland/swale corridors. These corridors, which are central to the open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, and avoid natural occurring wetlands over those created artificially through agricultural manipulation.

In addition to on-site preservation and avoidance within 709 acres of open space within the PVSP, off-site mitigation will require the preservation of more open space including preserved and restored/created waters of the U.S. (comprised of vernal pool complex habitat and other

wetlands/waters). Avoidance and open space along the Dry Creek corridor will protect the channel and associated riparian resources.

The following measures have been designed to avoid or minimize potential impacts associated with the development and operation of the Project.

Project Construction

- Prior to initiation of construction activities, the Project developer/project proponent will submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards. The plan will address storm drainage during construction and proposed BMPs to reduce erosion and water quality degradation. All on-site drainage facilities will be constructed to Placer County specifications. BMPs will be implemented throughout the construction process.
- During construction, BMPs will be provided to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs will generally consist of a combination of the following measures: minimizing soil disturbance, inlet protection, stabilized construction access, covering of exposed areas with mulch, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding, etc. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per NPDES permit requirements and County ordinance standards.
- Concurrent with construction of site improvements, stormwater BMPs will be constructed and maintained in accordance with the SWPPP as approved by the Central Valley Regional Water Quality Control Board (CVRWQCB). During construction of the project, specific BMPs will be implemented to control erosion, runoff, and sedimentation and include: soil stabilizers, fiber rolls, inlet filters, and gravel bags to prevent pollutants from being carried off-site in stormwater generated on the project site. The erosion control plan will ensure that proper control of siltation, sedimentation, and other

pollutants will be implemented per the NPDES permit requirements and County ordinance standards. Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into Secret Ravine Creek. Furthermore, the Stormwater Pollution Prevention Plan (SWPPP) will specify the pollutants that are likely to be used during construction and that could be present in stormwater drainage and non-stormwater discharges; and to ensure the BMPs are effective, a sampling and monitoring program will be included in the stormwater pollution prevention plan (SWPPP) that meets the requirements of the State Water Resources Control Board (SWRCB) Order 99-08-DWQ. Installation of these BMPs will reduce the potential for runoff, erosion, and sedimentation impacts to Dry Creek and Central Valley steelhead.

- Other BMPs will involve prompt re-vegetation of disturbed areas.

To help protect and maintain Dry Creek and associated riparian habitat, educational signs will be posted in prominent locations along riparian areas to inform property owners and the public about Central Valley steelhead and Dry Creek as designated Critical Habitat. Post and cable fencing will be installed along the northern edge of the preserve along Dry Creek to prevent access to the creek. Posted signs will identify waterways, elevation, latitude and longitude, presence of special-status species and Critical Habitat, and other pertinent information.

In addition to the general conservation measures discussed above, specific measures will be instituted as part of the build-out and operation of the Project including:

- On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat will minimize the effects of the Project on EFH and Central Valley steelhead by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

- The use of water-conserving landscaping and other residential conservation measures will be encouraged.

Implementation of the following avoidance and conservation/protection measures would reduce impacts from construction and grading activities associated with implementation of the proposed Project to levels that are not likely to adversely affect EFH or Central Valley steelhead within the Action Area.

- All construction within approximately 150 ft of Dry Creek will be restricted to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Project Area is expected to be minimal. If construction occurs during this time period, steelhead are not likely to be adversely affected, directly or indirectly. Furthermore, potential impacts to the movement of anadromous fishes through the Project Area should be minimal during this time.
- Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the state. In addition, the Project will institute BMPs as identified in the Project's stormwater management plan. The erosion control plan will indicate that proper control of siltation, sedimentation and other pollutants will be implemented per the NPDES permit requirements and County ordinance standards.

Installation of the water quality basin and implementation of the appropriate BMPs would reduce potential stormwater runoff impacts to water quality in Dry Creek and to Central Valley steelhead associated with implementation and operation of the proposed Project to levels that are not likely to adversely affect Central Valley steelhead or Critical Habitat within the Action Area.

To maximize effectiveness, the selected BMPs will be based on finalized site-specific hydrologic conditions, with consideration for the type and location of development. Mechanisms to maintain the BMPs will be identified in the conditions of approval and on the improvement

plans. Typical BMPs and Best Available Technologies (BATs) that could be used in the proposed Project include, but are not limited to, the following:

- Application of a street sweeping program to remove potential contaminants from street and roadway surfaces before they reach drainages.
- Minimize sources of concentrated flow by maximizing use of natural drainages to decelerate flows, collect pollutants and suspended sediment.
- Placement of velocity dissipaters, rip-rap, and/or other appropriate measures to slow runoff, promote deposition of waterborne particles, and reduce the erosive potential of storm flow.
- Soil protection and slope stabilization practices will be promptly applied to all disturbed areas.
- Creation of a water quality basin to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake.
- Use of fossil filters consisting of small filters that are placed like troughs around the inside top drain inlets or at ditch outlets.
- Use of rock-lined ditches, which are surface ditches lined with rock, with or without filter material, with the rock lining material designed to allow water to filter into the ground.

NPDES Stormwater Phase II requires installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. Under the provisions of NPDES II, the Project will be required to design and install such BMPs as are determined to be appropriate.

It is likely that the project will be required to comply with the NPDES Phase II regulations through coverage under the State's General Permit. The Phase II General Permit contains four basin requirements: discharge prohibition, effluent limitations, stormwater management program requirements, and reporting requirements. The General Permit prohibits discharges of waste that are otherwise prohibited under State and regional water quality control plans. In addition, the General Permit prohibits discharges that cause or threaten to cause a nuisance, discharges that contain a reportable quantity of specified hazardous substances, and any other

discharge except as allowed under the NPDES permit. The General Permit requires permittees to reduce pollutants in stormwater by developing and implement a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants through the storm drain to the Maximum Extent Practicable (MEP) to protect water quality. The MEP standard is a technology-based standard and is acceptable in lieu of numeric effluent limitations. The MEP is an evolving, flexible, and advancing concept, which considers technical and economic feasibility. The SWMP describes how pollutants in stormwater will be controlled by means of BMPs that address six (6) minimum control measures (MCM) specified in the General Permit. These six MCMs are as follows:

- Public education and outreach;
- Public participation;
- Illicit discharge detection and elimination;
- Construction site stormwater runoff control;
- Post-Construction stormwater management; and
- Pollution preventing/good housekeeping for municipal operations.

Each BMP has specified measurable goals and a timetable for implementation to help measure program effectiveness.

The SWMP will comply with various Design Standards as required by the Regional Water Quality Control Board (RWQCB) for the following issues:

1. Conservation of natural areas.
    - Development will be concentrated or clustered on portions of the site and the remaining land will be left in a natural undisturbed condition.
    - Clearing and grading of native vegetation will be limited at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
    - Trees and other vegetation will be maximized at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.

- The use of natural vegetation will be promoted by using parking lot islands and other landscaped areas.
- Riparian areas along Secret Ravine Creek will be preserved.

2. Minimization of stormwater pollutants of concern
    - The development will be designed to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the stormwater conveyance system as approved by the building official.
    - To meet this requirement, minimization of the "pollutants of concern", will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in the runoff to the maximum extent practicable.

3. Protection of slopes and channels
    - Runoff will be conveyed safely from the tops of slopes and disturbed slopes will be stabilized.
    - Natural drainage systems will be utilized to the maximum extent practicable.
    - Slopes will be vegetated with native or drought tolerant vegetation, as appropriate.
    - Energy dissipaters, such as rip-rap, will be installed at the outlets of new storm drains, culverts, conduits, or channels according to applicable specifications to minimize erosion.

4. Provide storm drain system stenciling and signage
    - Storm drain stencils will be placed directly adjacent to storm drain inlets. The stencil will contain a brief statement prohibiting the dumping of improper materials into the storm drain conveyance system.

5. Proper design of outdoor material storage areas
    - Materials with the potential to contaminate stormwater will be placed in an enclosure that prevents contact with runoff or spillage to the stormwater conveyance system; or protected by secondary containment structures such as berms or curbs.
    - The storage area will be paved and impervious to contain leaks and spills.
    - The storage area will have a roof or awning to minimize collection of storm water within the secondary containment area.

6. Proper design of trash storage areas
    - Trash container areas will have drainage from adjoining roofs and pavement diverted around the area(s).
    - Trash container areas will be screened or walled to prevent off-site transport of trash.

7. Provide proof of ongoing BMP maintenance
    - If the project is required to include Structural or Treatment Controls BMPs in the project plans, a verification of maintenance will be provided through such means as may be appropriate; including but not limited to, legal agreements, covenants, CEQA mitigation requirements and/or conditional use permits.

Installation of Utilities

"Jack and bore" construction techniques will be used wherever proposed utility lines cross Dry Creek, unless otherwise specified by California Department of Fish and Game (CDFG).

Protective fencing and straw wattles will be placed between the bore pits and Dry Creek at least 25 ft from the channel margin to contain any runoff from the construction site. When boring beneath Dry Creek, a minimum clearance of 5.0 ft will be maintained below the deepest part of the stream channel (see Figure 4 of the Biological Assessment).

Removal and Replacement of the Watt Avenue Bridge at Dry Creek

Avoidance and minimization measures and BMPs will be implemented during construction to reduce impacts to the stream and aquatic life. Central Valley steelhead will be protected from potential construction-related activities within approximately 150 ft of Dry Creek by restricting construction activities to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Action Area is expected to be minimal or absent. Additional measures to protect steelhead resources include use of BMPs to minimize and localize siltation and other water quality impacts and to provide for riparian restoration activities. These BMPs may include the use of cofferdams / water barriers and other structures during dewatering and construction activities. Water quality monitoring will also be performed to ensure that state and federal water quality standards are met.

If cofferdams / water barriers are required during bridge construction, a dewatering and fish salvage plan will be developed and approved by the NMFS prior to the initiation of construction activities. A qualified fish biologist will be present on-site during any dewatering activities at construction sites to minimize impacts to EFH and Central Valley steelhead in Dry Creek within or downstream of the Project Area (i.e., prevent stranding of special-status species). Individual fish collected during dewatering will be identified and released in an uninterrupted waterway adjacent to the area of disturbance.

Protection, avoidance, and conservation measures will be implemented to minimize impacts to the Dry Creek riparian corridor during demolition of the existing bridge and construction of the new bridges. These measures would include, but not limited to, the following:

- The design of the new bridge will minimize impacts to the Dry Creek riparian corridor. The conceptual bridge layout provides for a span of sufficient length over the active channel to avoid the placement of piers and bridge foundations in the creek (see Figure 5 of the Biological Assessment).
- Protective fencing shall be placed between the construction zone and the active channel area to prevent the movement of equipment and material from the construction zone into the creek. Silt fence, straw wattles, or an equivalent silt barrier shall be constructed

adjacent to the protective fencing to prevent sediment from entering the creek (see Figure 6).

- Access routes shall be designed so that construction equipment, material, and workers enter the construction zone from the bank sides.
- Netting or an equivalent barrier shall be placed beneath the existing bridge during demolition to prevent debris from falling into the active creek channel. A temporary barrier shall be placed beneath the proposed bridges during construction to prevent construction material from falling into the active creek channel.
- Construction material shall be stockpiled behind the protective fencing, away from the channel area, to prevent material from entering the creek zone.
- Dust palliatives shall be applied to disturbed earth surfaces to minimize dust.
- Disturbed surfaces shall be re-vegetated at the conclusion of construction to minimize erosion and sedimentation.
- Construction activities during the winter months when stream flows are typically higher, shall be avoided.
- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented during bridge construction activities.

At the conclusion of construction all disturbed areas will be re-contoured, stabilized, and re-vegetated to minimize potential sedimentation problems.

Stormwater Drainage System

On-site drainage facilities, consisting of drainage inlets and pipes (see Figure 8), would be designed to meet Placer County drainage requirements including water quality treatment of runoff. The treatment will consist of the following actions:

- Directing some of the flow to sheet discharge onto grassy areas or open space.
- The installation of "Fossil Filter" or equivalent petroleum absorbing inserts in the Project drop inlets.
- The placement of water quality interceptor devices.
- The placement of water quality sediment basins within channels.

- Use of rock-lined ditches below pipe outlets.

Of the approximate 3,746 acres of participating properties and off-site infrastructure alignments, only 600 +/- acres (Quad Knopf 2006) in the southeastern portion of the project site (Dry Creek shed) naturally drains to Dry Creek (see Figure 7). However, only about 462 +/- acres are planned for residential and commercial development with the remaining 138 +/- acres designated for open space along Dry Creek, a park, and religious/public services.

Within the Dry Creek shed (Figure 7), collected drainage would either flow through culvert outfall features (fitted with oil/grit separators or other BMPs) or into on-site water quality basins prior to entering Dry Creek (see Figure 9).

Stormwater runoff from the Dry Creek shed would be pre-treated through roadway catch-basin filters and continuous deflection system (CDS) units and then either discharged to Dry Creek or conveyed to water quality basins and discharged into grassy swales prior to entering Dry Creek. The use of grassy swales and other designed features are intended to further reduce pollutant concentrations to comply with existing water quality criteria and to minimize the potential for impacting Dry Creek. The catch-basin filters and CDS units would function as the primary treatment BMPs. Design standards for structural or treatment control BMPs will incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, to mitigate stormwater runoff.

The water quality basins will be designed to provide water quality treatment to further reduce potential pollutants in stormwater through infiltration, settling, and biological uptake in accordance with the Guidance Document for Volume and Flow-Based Sizing of Permanent Post-construction BMPs for Stormwater Quality Protection by the Placer Regional Stormwater Coordination Group (PRSCG) (May 2005). These facilities would provide the preferred "treatment train" system. Associated BMPs may consist of several effective methods including the installation of petroleum absorbing insert assemblies. With the installation of water quality basins and associated BMPs, runoff from the Dry Creek shed portion of the Project Area is not likely to result in adverse effects to migrating Central Valley steelhead or to Critical Habitat.

The incorporation of water quality basins would ensure that the estimated pollutant concentrations (for evaluated pollutants) would comply with existing water quality criteria. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region (RWQCB) identifies narrative criteria for oil and grease.

Prior to issuance of a grading permit for the site, these BMPs will be reviewed for adequacy to ensure that they will effectively remove pollutants from stormwater runoff. At that time, if technologies as effective as, or more effective than, catch-basin filters and CDS units are available, they can be considered.

Implementation of the proposed Project would ensure that on-site riparian areas along Dry Creek would be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat would minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

Project Operation

- Water-conserving landscaping and other conservation measures will be encouraged.
- The Placer County General Plan encourages the use of natural stormwater drainage systems to preserve and enhance natural features and supports efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state. The General Plan also states that the County will ensure that new storm drainage systems are designed in conformance with the Placer County Stormwater Management Manual and the County Land Development Manual, and provides that the County will strive to improve quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures, including artificial wetlands, detention ponds, grassy swales, infiltration/ sedimentation basins, riparian setbacks, oil/grease separators, and other BMPs.

- Federal and State policies require that stormwater BMPs be included as a part of Project development. The goal of BMPs is to reduce sediment and pollutants in stormwater runoff at their origin prior to the runoff discharging into drainage systems. Whereas BMPs traditionally have focused on the post-development process, the goal of Placer County is to integrate BMPs throughout the project development. This approach provides two benefits. First, stormwater management improvements are disbursed throughout the Project area and provide treatment to runoff before it enters the drainage collection systems. This helps maintain a higher quality of runoff discharge without needing large regional treatment basins. Second, by integrating the stormwater management elements throughout the Project area, each individual parcel can provide the stormwater management elements that best respond to the particular constraints of the individual site. This will promote the removal of the various constituents on each parcel prior to discharging into the drainage system. A comprehensive stormwater management plan will minimize potential impacts of the Project to Central Valley steelhead and to Critical Habitat within the Action Area.
- National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II requires installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. Under the provisions of NPDES II, the Project will be required to design and install such BMPs as are determined to be appropriate. These BMPs will reduce or eliminate the potential for water quality impacts to Dry Creek and to Central Valley steelhead and Critical Habitat.
- Storm drain inlet cleaning will occur semi-annually (at a minimum) and parking lots shall include the installation of oil/sand/grit separators or as otherwise approved by the Placer County Department of Public Works. The Project will include a method for financing the long-term maintenance of the proposed facilities and BMPs. The Project will conform to the Master Project Drainage Study and the California Stormwater Quality Association Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment (or other similar source approved by the Department of Public Works). BMPs will reflect improvements in techniques and opportunities made

available over time and shall also reflect site-specific limitations. The County will make the final determination as to the appropriate BMPS for each project.

Conclusions for Essential Fish Habitat (EFH)

EFH is defined in the Magnuson-Stevens Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical, and biological properties used by fish which may include aquatic areas historically used by fish where appropriate; and substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities.

Dry Creek (especially within the Action Area) functions primarily as a migration corridor for anadromous salmonids, with limited EFH present (especially for salmonids) within the Project Area and areas immediately upstream and downstream of the project (based on the results of habitat typing) and throughout most of the Action Area (based on field reconnaissance). Site-specific habitat data for Dry Creek within the Project area and for areas both upstream and downstream of the Project Area are available in the *Environmental Baseline* section of the Biological Assessment.

Available literature indicates that steelhead do not typically spawn or rear in Dry Creek, especially areas downstream of the City of Roseville; however, Dry Creek provides a migration corridor for Central Valley steelhead to access suitable spawning and rearing habitat in Miners and Secret Ravine creeks located in the upper watershed. With the exception of limited marginal spawning habitat in the upper reaches of Dry Creek in the vicinity of the City of Roseville, spawning and rearing habitat for steelhead is not present within the Project or Action Areas due primarily to the scarcity of riffles, runs, and pool tail-outs with gravel and cobble substrates suitable for spawning; and to water temperatures which are often above the lethal limits during the summer. The limited cobble and gravel substrates that occur in Dry Creek are degraded by an abundance of sand, resulting in embeddedness values of 25-50% or greater. Pool habitats are also dominated by sand, resulting in lack of depth and reduced instream cover. In general, instream cover for fish is poor to moderate (average of 15% within the Project reach) within the Project Area and throughout most of the lower reaches of Dry Creek

and is restricted mostly to overhanging vegetation and a few isolated locations with undercut banks and/or large woody debris. In general, there is a paucity of rocky substrates, undercut banks, large woody debris, root wads, attached aquatic vegetation, turbulence or bubbles, or other cover items. As a result, holding areas for fish are limited due to the predominance of open sand areas, limited instream structures, and lack of deep pools and attached aquatic vegetation.

A reconnaissance survey conducted along Dry Creek within the Action Area (where access was available) indicated that stream habitats, substrate types and condition, riparian and instream cover, and other habitat characteristics were similar to that observed within the Project Area.

Available food sources for steelhead and other fish species also appears to be limited within the Project and Action Areas due to the lack of boulder, cobble, and gravel substrates, abundance of fine sediments. In addition, BMI communities in Dry Creek are generally characterized by relatively poor production, a high percentage of tolerant organisms, and low to moderate diversity (consisting primarily of terrestrial insects) due primarily to the dominance of fine sediments.

As a result, Dry Creek within the Project and Action Areas functions primarily as a immigration / emigration corridor for adult and juvenile steelhead (and Chinook salmon) during the late fall / winter and spring periods, although juveniles may use edgewater habitat for feeding when migrating to the Pacific Ocean.

Given the relatively limited amount of EFH present within the Project and Action Areas and the proposed avoidance, conservation, and minimization measures, and BMPs that will be included as part of construction and operation of the project; loss of EFH is not anticipated as a result of implementation of the Project. Based on this assessment, construction and operation of the project is not likely to adversely affect EFH within the Action Area.

APPROPRIATE REFERENCES

Bailey Environmental. 2003. Streams of Western Placer County: Aquatic habitat and biological resources literature review. Prepared for Sierra Business Council.

CDFG (California Department of Fish and Game). 1996. Steelhead restoration and management plan for California. February 1996. 234 pages.

CDFG (California Department of Fish and Game). 2007. Existing Program Summary: Central Valley Salmon and Steelhead Monitoring Programs.

Good, T.P., R.S. Waples, and P. Adams (editors). 2005. Updated status of federally listed ESUs of West Coast salmon and steelhead. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-66, 598 p.

Moore, T. L. 2001. Steelhead Survey Report for Antelope, Deer, Beegum and Mill Creeks, 2001. (Available from Sacramento River Salmon and Steelhead Assessment Program, California Department of Fish and Game, 1416 Ninth St., Sacramento, CA 95814.)

Moyle, P.B. 2002. Inland Fishes of California: Revised and Expanded. University of California Press. 502 pp.

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Figure 2. Placer Vineyards Specific Plan – Approved Development Plan
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Figure 4. Representative Schematic for Jack and Bore Utility Crossings on Dry Creek
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Figure 8. Placer Vineyards Drainage Schematic
Figure 9. Placer Vineyards Storm Water Quality Basins
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Figure 11. Project Area
Figure 12. Action Area
Figure 13. Central Valley Steelhead Evolutionarily Significant Unit (ESU)
Figure 14. Existing Vegetation Types and Biological Features within the Specific Plan Area

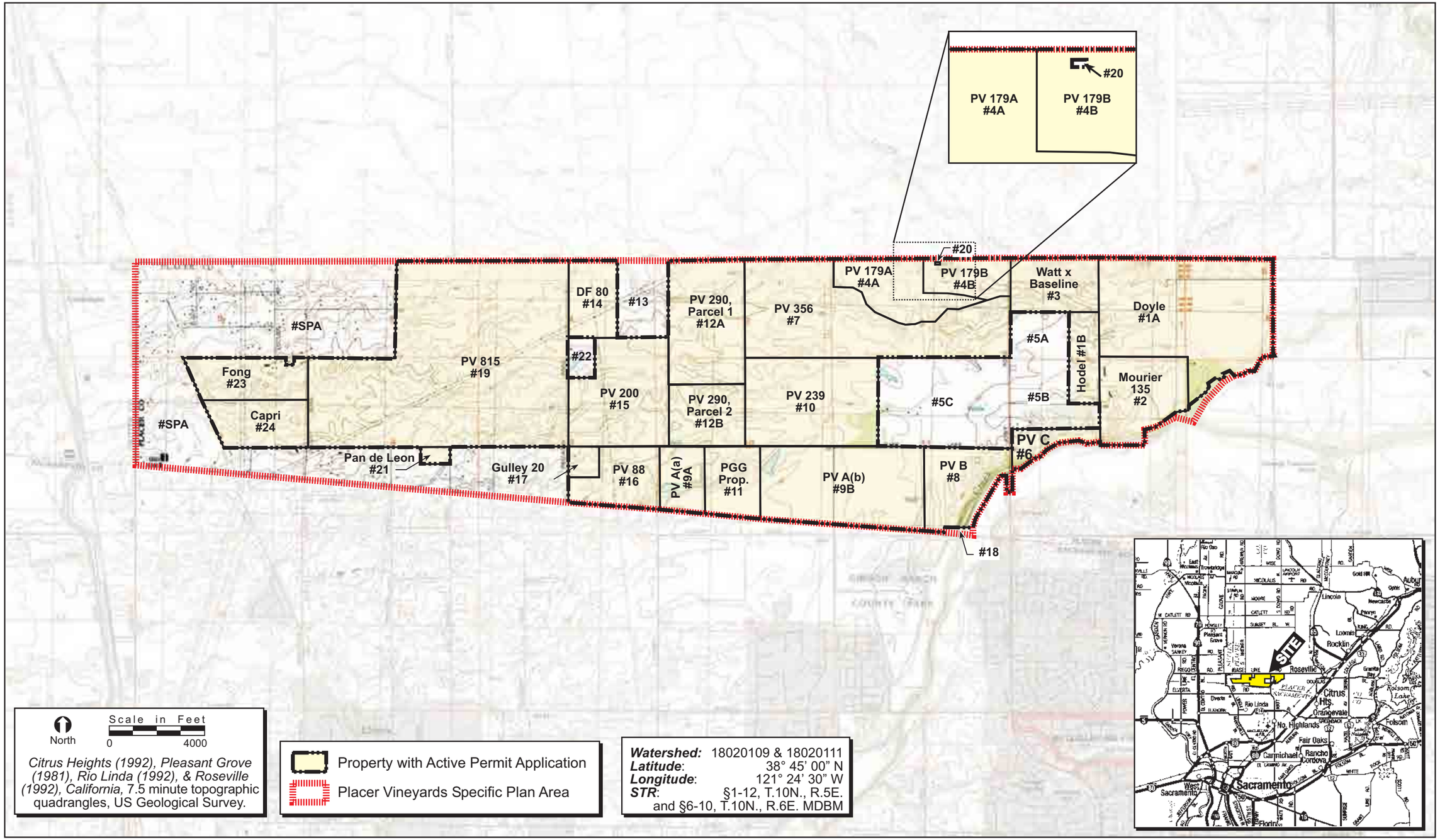

Figure 1. Placer Vineyards Specific Plan Area and Properties with Active Permit Applications

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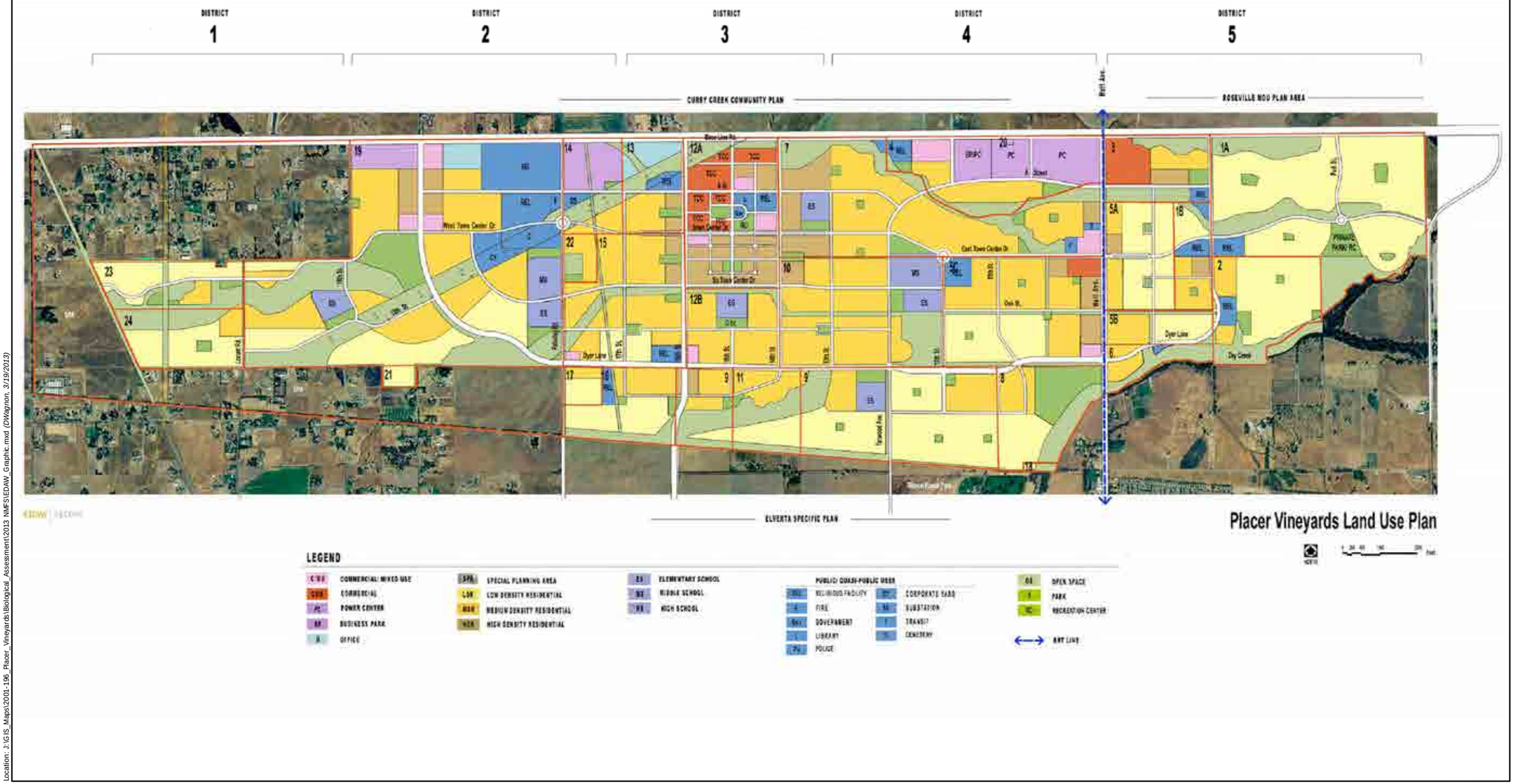
2001-196 Placer Vineyards



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Map Date: 3/19/2013

Figure 2. Placer Vineyards Specific Plan - Approved Development Plan

2001-196.1 Placer Vineyards

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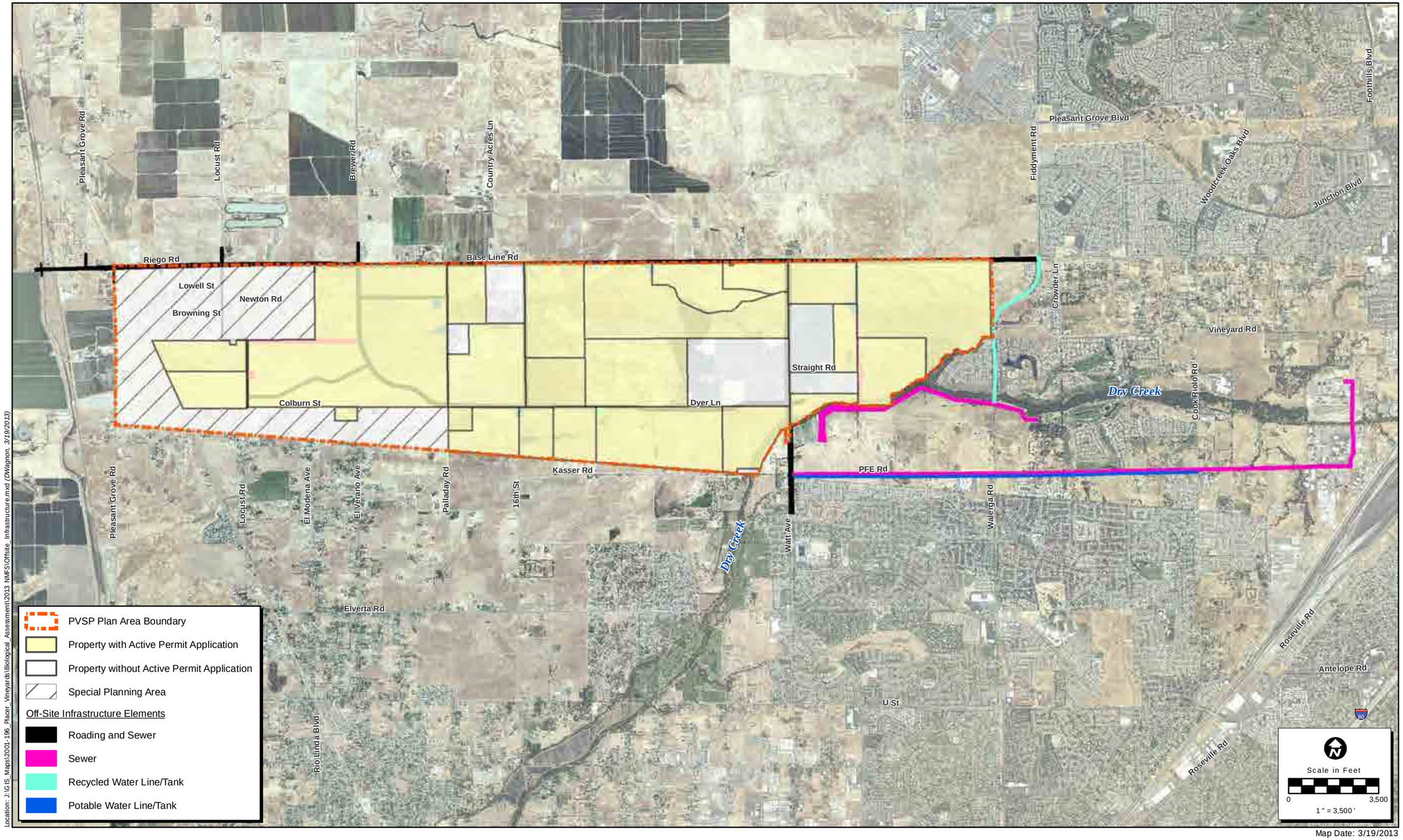

Map Date: 3/19/2013

Figure 3. Off-Site Area for Infrastructure Elements

2001-196.1 Placer Vineyards

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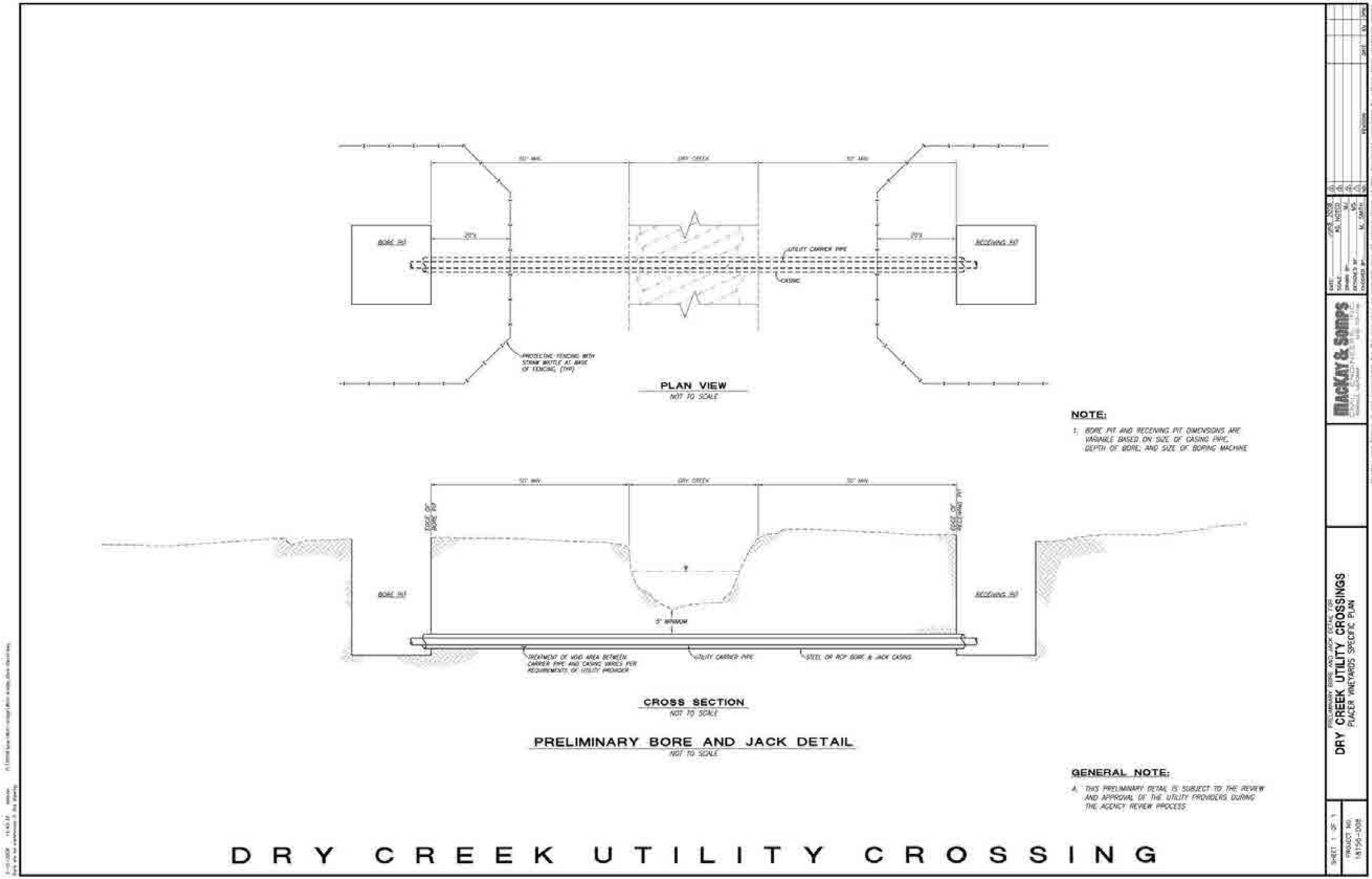

FIGURE 4. Representative Schematic for Jack and Bore Utility Crossings on Dry Creek

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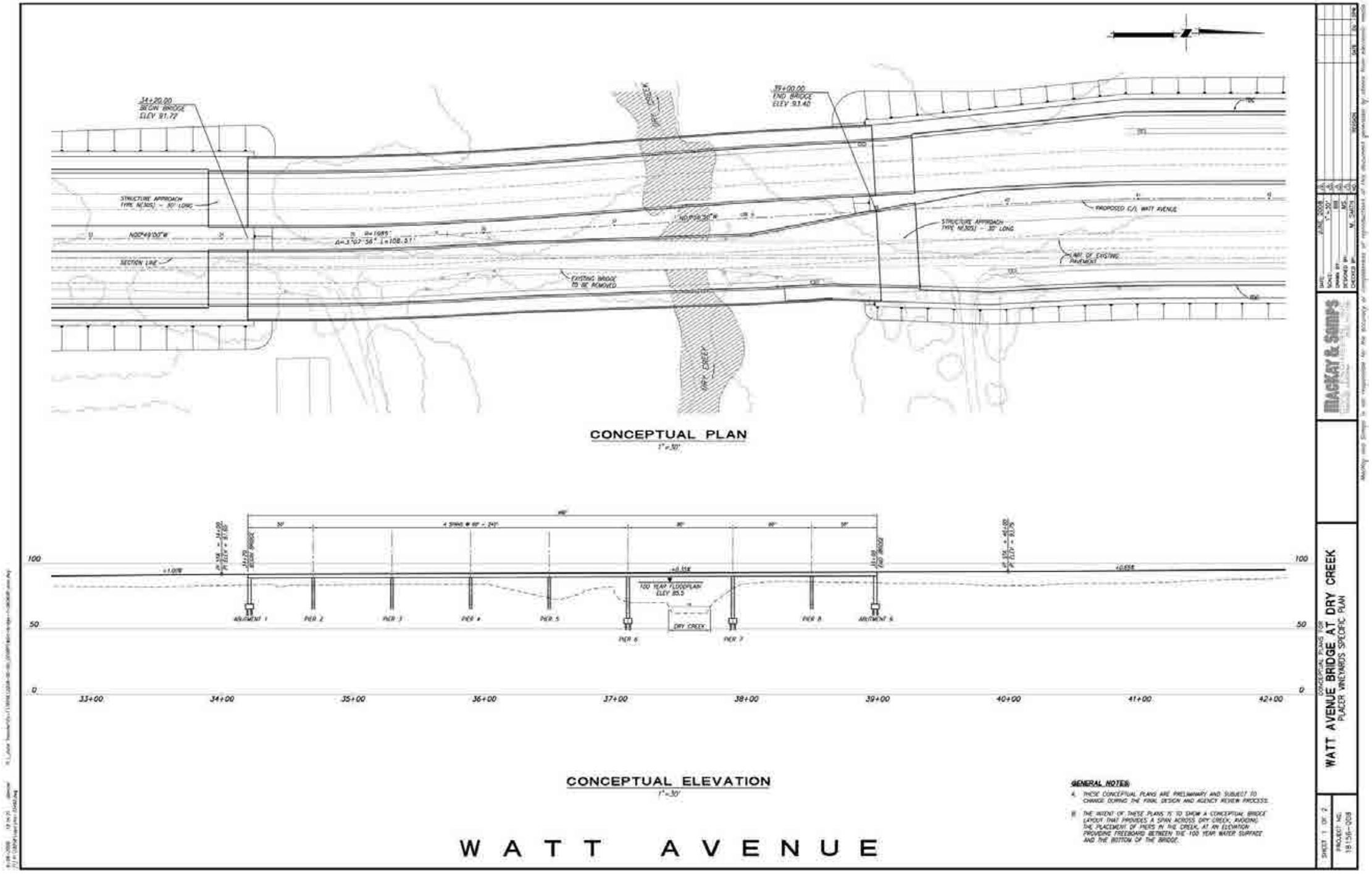

FIGURE 5. Conceptual Plan for the Proposed Watt Avenue Bridge Replacement at Dry Creek

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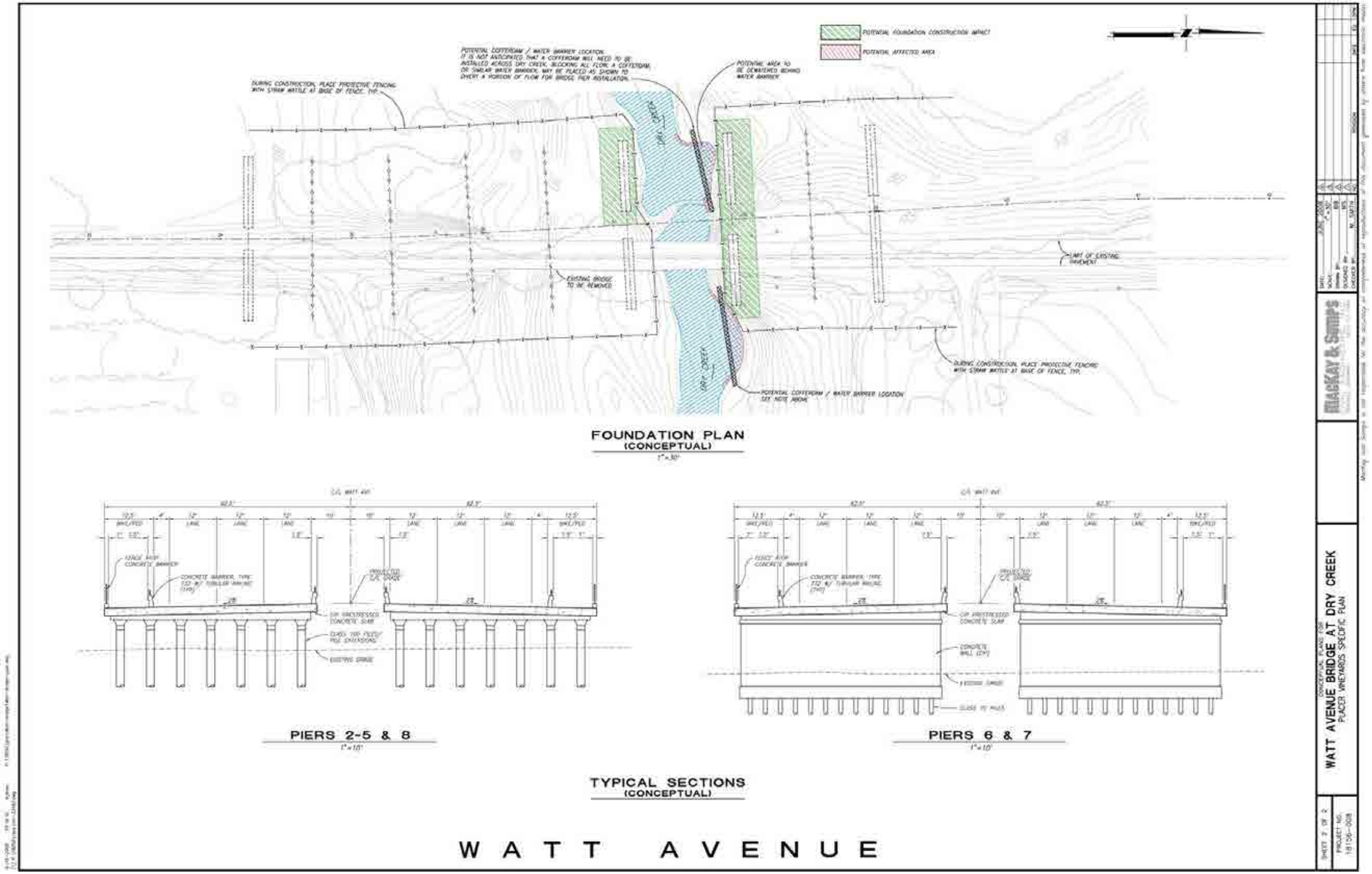

FIGURE 6. Proposed Foundation Plan for the Watt Avenue Bridge Replacement at Dry Creek

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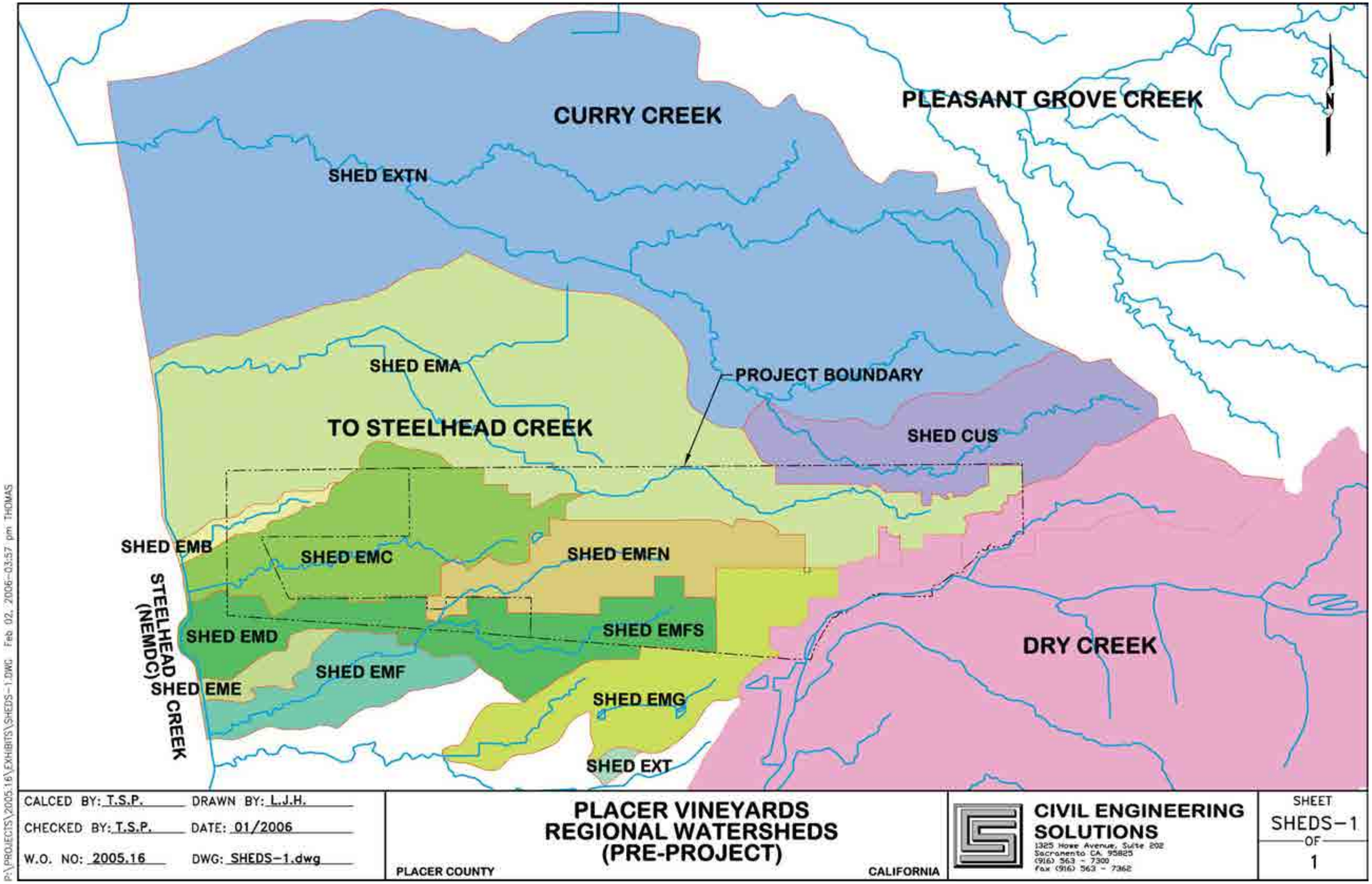

FIGURE 7. Placer Vineyards Regional Watersheds (Pre-Project)

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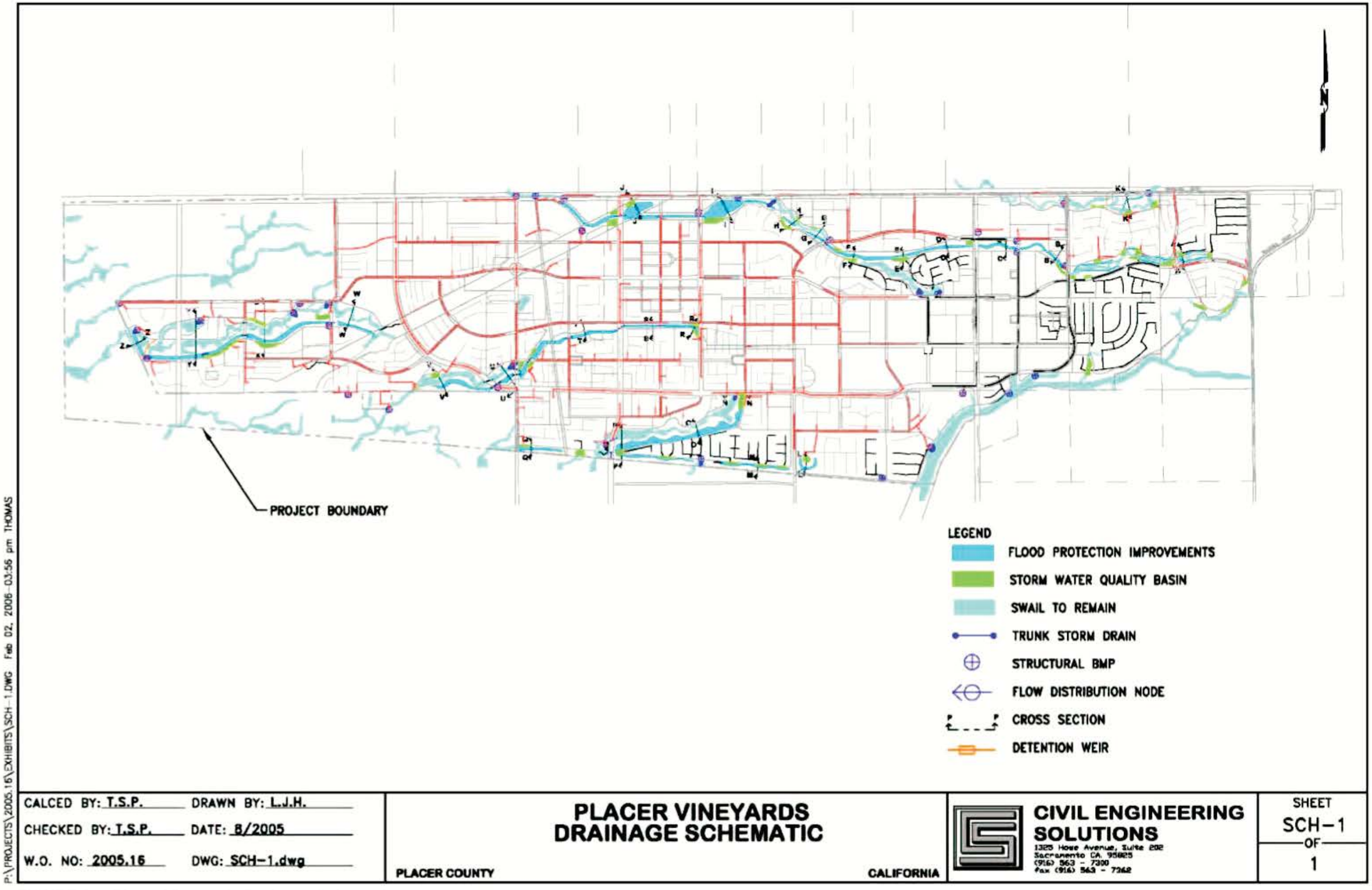

FIGURE 8. Placer Vineyards Drainage Schematic

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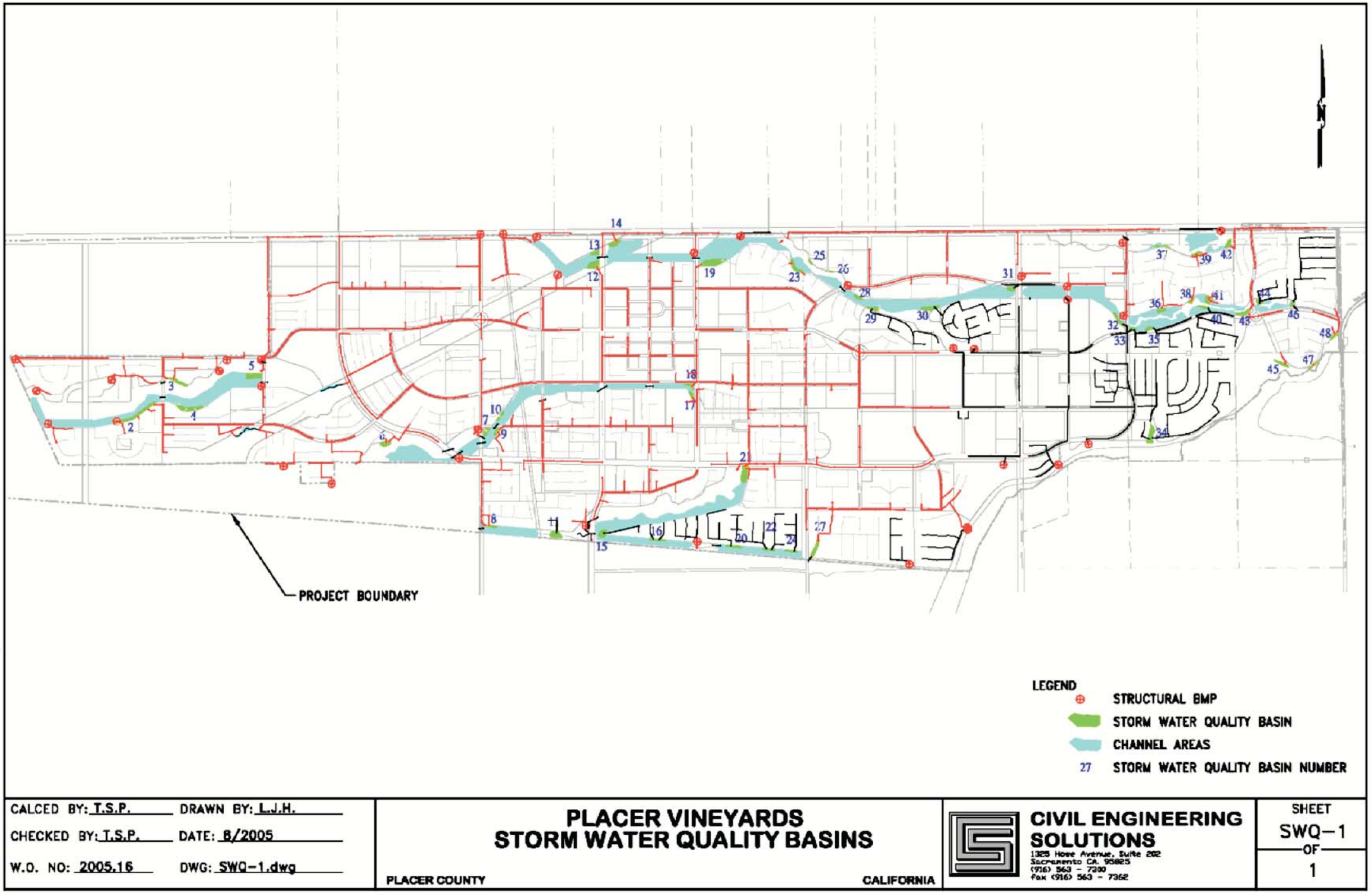

FIGURE 9. Placer Vineyards Storm Water Quality Basins

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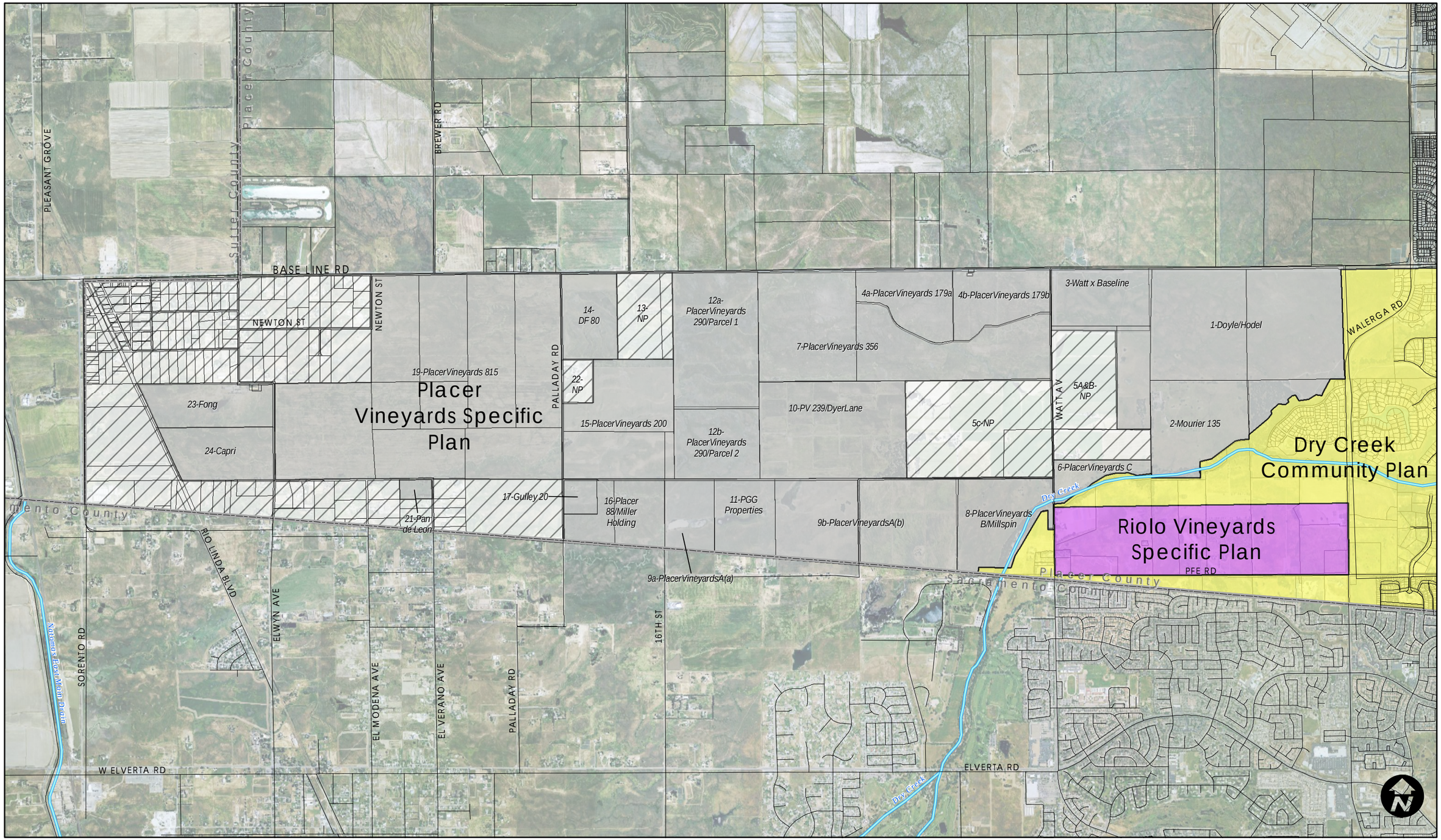

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FIGURE 10. Adjacent Existing and/or Proposed Developments and Plan Areas

2001-196 Placer Vineyards

0 0.25 0.5 1 Miles

Legend

N.A.P.O.T.S.

Participating Properties

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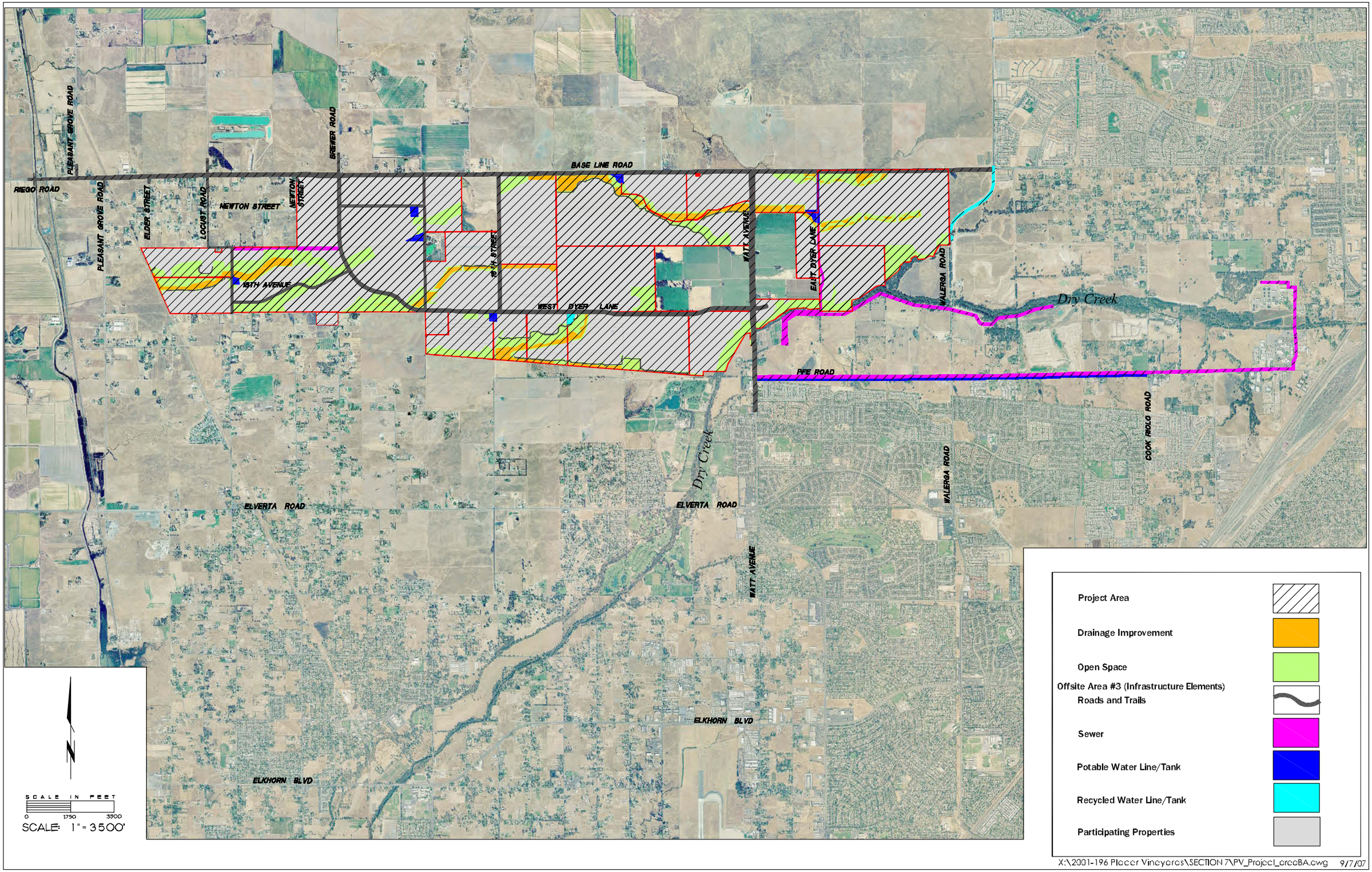

FIGURE 11. Project Area

2001-196 PLACER VINEYARDS

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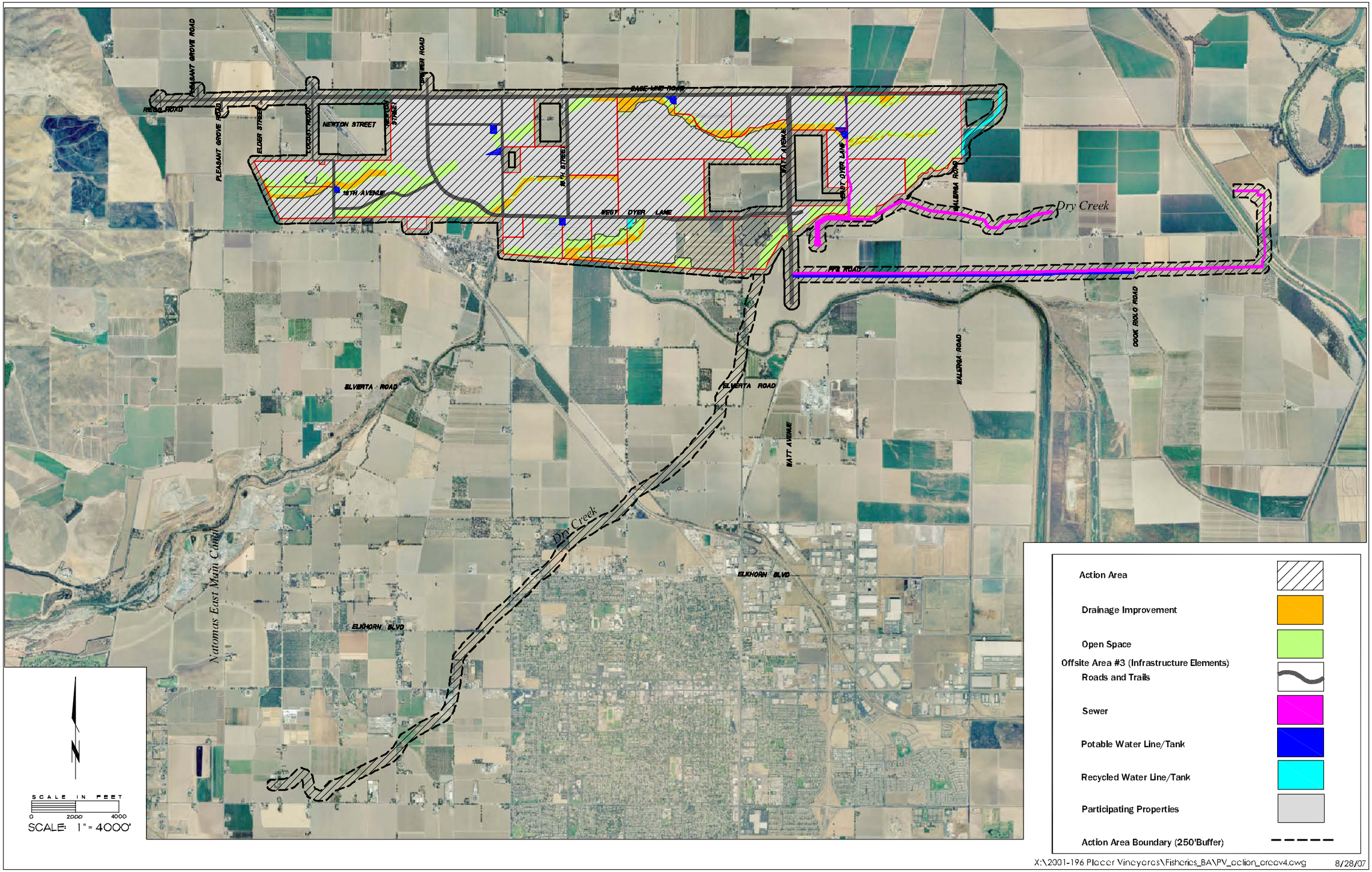

Figure 12. Action Area

2001-196 PLACER VINEYARDS

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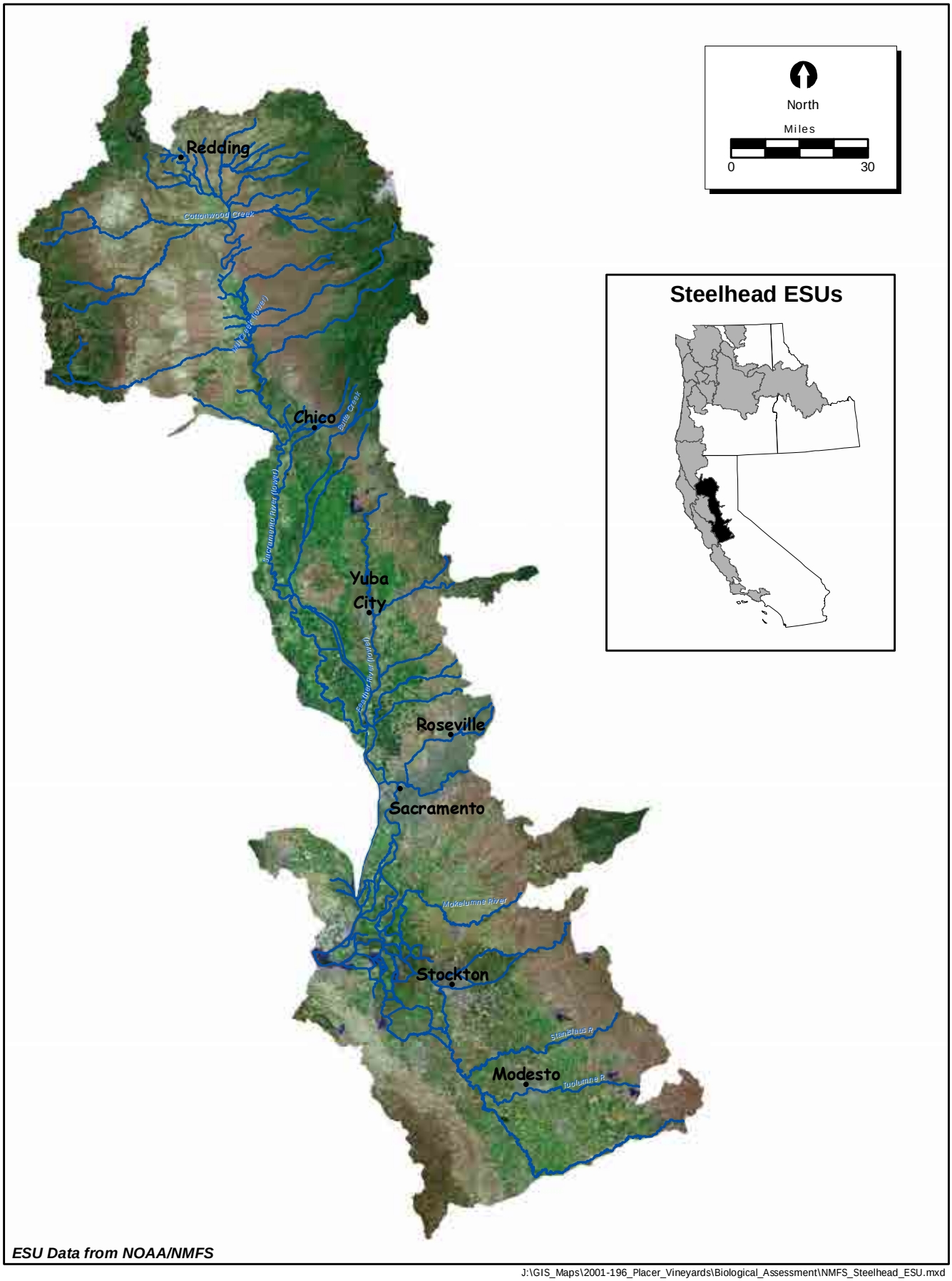

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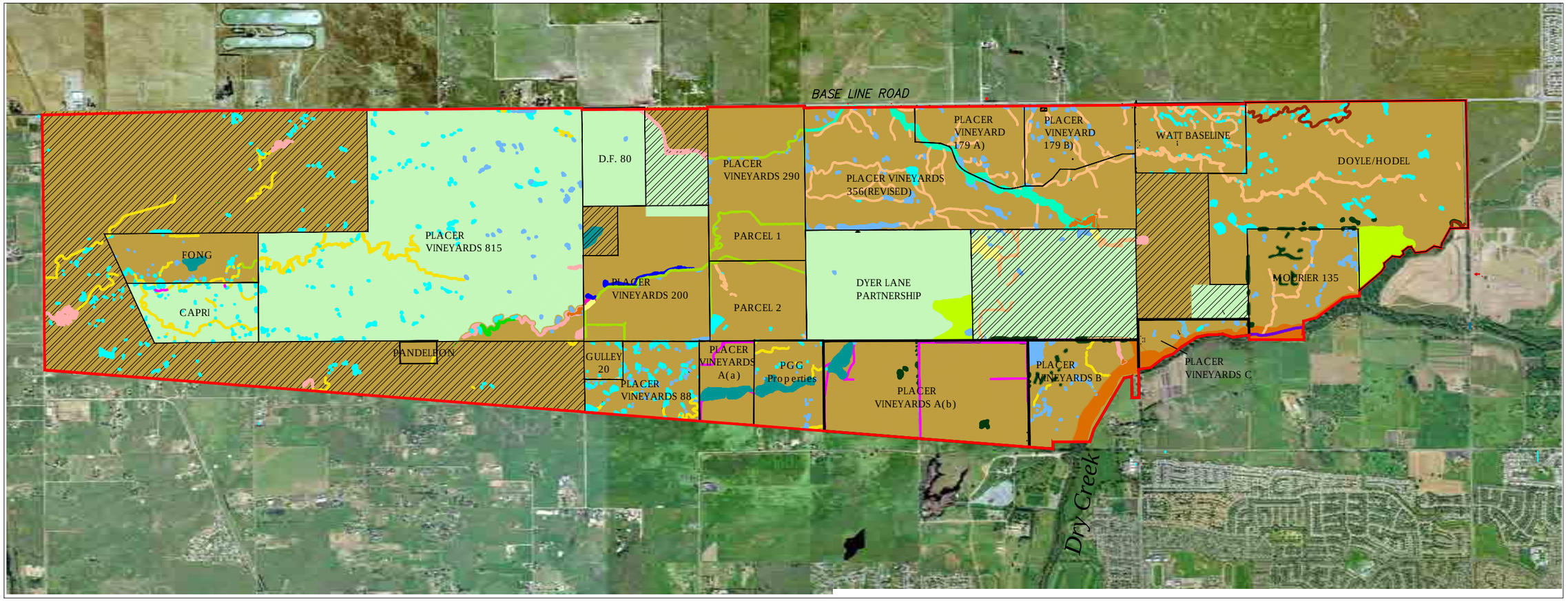
Figure 13. Central Valley Steelhead Evolutionarily Significant Unit (ESU)



SEASONAL WATERS OF THE U.S.
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Drainage Swale

OTHER WATERS
- Ditch/Canal
- Creek
- Riverine Seasonal Wetland
- Riverine Seasonal Marsh
- Riverine Perennial Marsh
- Seasonal Marsh
- Pond
- Ephemeral Drainage
- Intermittent Drainage
- Stock Pond
- Channel

- Oak Woodland
- Oak Savannah
- Agricultural
- Grassland
- Riparian
- Riparian Non-Native

- PLAN AREA
- PROPERTY BOUNDARY
- NON-PARTICIPATING PROPERTIES

N

SCALE IN FEET
0 1250 2500
SCALE: 1"=2500'

X:\2001-196 Placer Vineyards\SECTION 7\PV-veg_v3.dwg 08/13/07

FIGURE 14. Existing Vegetation Types and Biological Features within the Specific Plan Area

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LIST OF ATTACHMENTS

Attachment A – U.S. Fish and Wildlife Service Official Species List for the "Citrus Heights, CA," "Rio Linda, CA," "Pleasant Grove, CA," and "Roseville, CA," 7.5-Minute Quadrangles

Attachment B – National Marine Fisheries Service Official Species List for the Project Site and Action Area

Attachment C – Dry Creek Fish Habitat Assessment – Photographs

Attachment D – Dry Creek Fish Habitat Assessment – Results

ATTACHMENT A

U.S. Fish and Wildlife Service Official Species List for the “Citrus Heights, CA,” “Rio Linda, CA,” “Pleasant Grove, CA,” and “Roseville, CA,” 7.5-Minute Quadrangles

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

May 22, 2007

Document Number: 070522050647

Craig Seltenrich, MS
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Subject: Species List for Placer Vineyards Specific Plan Area

Dear: Mr. Seltenrich

We are sending this official species list in response to your May 22, 2007 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be August 20, 2007.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 070522051538

Database Last Updated: March 5, 2007

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardi

vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana aurora draytonii

California red-legged frog (T)

Reptiles

Thamnophis gigas

giant garter snake (T)

Birds

Haliaeetus leucocephalus

bald eagle (T)

Candidate Species

Fish

Oncorhynchus tshawytscha

Central Valley fall/late fall-run chinook salmon (C) (NMFS)

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

CITRUS HEIGHTS (512A)

RIO LINDA (512B)
PLEASANT GROVE (528C)
ROSEVILLE (528D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

ATTACHMENT B

National Marine Fisheries Service Official Species List for the Project Site and Action Area

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

JUN 18 2007

Craig Seltenrich
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, California 95677

Dear Mr. Seltenrich:

Thank you for your letter of May 24, 2007, requesting that NOAA's National Marine Fisheries Service provide a list of threatened, endangered, or special status species that may be affected by the proposed Placer Vineyards Specific Plan area in Placer County, California.

The following Federally listed and proposed species Evolutionarily Significant Units or Distinct Population Segments (DPS)) and designated critical habitat occur in the proposed project area:

Central Valley steelhead DPS
(*Oncorhynchus mykiss*) threatened (January 5, 2006, 71 FR 834)

Central Valley steelhead designated critical habitat
(September 2, 2005, 70 FR 52488)

The Pacific Fisheries Management Council has identified Essential Fish Habitat (EFH) for the Pacific salmon fishery in Amendment 14 to the Pacific Coast Salmon Fishery Management Plan. This EFH designation includes habitat found in Dry Creek.

Please contact John Baker at (916) 930-3616, or via e-mail at john.baker@noaa.gov if you have any questions about this project or need additional information.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: Copy to ARN: 151422SWR2004SA20076
NMFS-PRD, Long Beach, CA

ATTACHMENT C

Dry Creek Fish Habitat Assessment – Photographs

J:\GIS_Maps\2001-196_Placer_Vineyards\Biological_Assessment\NMFS_Habitat_Assessment.mxd

Attachment C. Fish Habitat Assessment Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Typical run habitat looking upstream at Watt Ave. Bridge

Wood debris augmented pool looking downstream

Dry Creek Fish Habitat Assessment Photos - November 2006

Lateral scour pool looking downstream

Run/woody debris enhanced pool looking downstream

Dry Creek Fish Habitat Assessment Photos – November 2006

Typical run habitat looking downstream

Typical main channel pool looking upstream

Dry Creek Fish Habitat Assessment Photos – November 2006

Woody debris enhanced main channel pool looking upstream

Complex habitat (corner pool and lateral scour root wad) looking downstream

Dry Creek Fish Habitat Assessment Photos – November 2006

ATTACHMENT D

Dry Creek Fish Habitat Assessment – Results

Summary of Dry Creek habitat types, distance and percent of habitat, Placer Vineyards, 2006				
Habitat	**Code**	**N**	**Total Distance**	**Percent**
Backwater pool-log	BPL	1	5.0	0.2
Backwater pool-rootwad	BPR	1	10.0	0.3
Corner Pool	CRP	7	230.0	7.6
Dammed Pool - log	DPL	3	54.0	1.8
Glide	GLD	4	74.0	2.4
Low Gradient Riffle	LGR	1	20.0	0.7
Lateral Scour Pool - log	LSL	2	37.0	1.2
Lateral Scour Pool - rootwad	LSR	10	387.0	12.7
Main Channel Pool	MCP	17	428.0	14.1
Plunge Pool	PLP	1	12.0	0.4
Run	Run	35	1732.0	56.9
Secondary Channel Pool	SCP	5	54.0	1.8
		87	**3043.0**	**100.0**

Physical Parameters of Stream Habitat Units within Dry Creek, Placer Vineyards

Habitat Unit					Depth (Meters)		Substrate (%)								Cover (%)				
No.	Type	Characteristics	Length (m)	Avg Width (m)	Max	Avg	Silt	Sand	Gravel	Cobble	Boulder	Bedrock	Clay	Canopy	Instream	Object Cover	Undercut Banks	Turbulence	Overhanging Veg.
31	Run		42.0	8.0	0.6	0.3	30	35	10				25	40	2	1	1	1	1
30	LSR		23.0	10.0	1.2	0.5	28	70	2					75	3	2	1	1	3
29	Run		34.0	8.0	1	0.4	15	70	5				10	20	2	1		1	1
28	MCP	Clay Formed/downed ash tree	21.0	8.0	0.9	0.5	5	45					50	5	2	2		1	2
27	Run		39.0	11.5	0.7	0.4	30	50	5				15	10	1	1		1	1
26	MCP	Tree Formed	12.0	11.5	0.8	0.3	20	60	10				10	30	4	4		3	3
24a	GLD		24.0	1.5	0.4	0.75	30	30					40	70	1	1			1
25	Run		51.0	6.5	0.7	0.4	20	40	10				30	10	1	1		1	2
24	LSL	Tree From bank	25.0	8.0	0.9	0.7	20	40	30				10	20	3	3		2	2
23	MCP	Clay Formed	23.0	12.0	0.9	0.5	10	50	10				30	25	2	1		2	
22	MCP		10.0	10.0	0.8	0.5	5	30	45				20	5	1			1	
21a	GLD	Side Channel	15.0	5.0	0.4	0.25	25	30	23	2			20	0	1	1			1
21	Run	Split by Clay Bar	21.0	6.0	0.7	0.35	5	35	35	5			20	0	1	1		1	
20	CRP		35.0	13.0	0.9	0.4	15	40	5				40	10	3	2	1	2	1
19a	BPL		5.0	5.0	0.5	0.3	80	20						5	1	1			1
19	Run		20.0	8.0	0.7	0.4	30	35	20				15	0	1	1	1	1	1
18	LSR		21.0	8.0	0.9	0.5	30	50	10				10	0	3	3	2	2	1
17	MCP	Bedrock/Clay Formed	8.0	8.0	0.8	0.4	5	50	28	2			15	5	1	1		1	1
16	MCP	w Tree Branches	13.0	16.0	0.5	0.2	5	35	40				20	30	2	1		2	1
15	Run		16.0	7.0	0.7	0.4	5	35	25				35	25	2	1		2	1
14a	BPR		10.0	4.5	0.7	0.5	30	15	20				35	35	3	3	3		1
14	PLP		12.0	18.0	1.5	0.6	5	55	40					10	4	4	1	3	1
13	DPL	4 Trees from Banks	15.0	20.0	1.3	1	40	55	5					15	5	5	2	2	1
12	Run		56.0	8.0	0.9	0.5	20	30	25				25	30	2	2	1	1	1
11	LSR		22.0	8.0	0.9	0.6	15	55	30					50	2	2	1	2	1
10	Run	minimal side chanel AVG 2.0 m shallow (0.05), max 0.	47.0	7.5	0.6	0.3	30	35	35					15	2	1		2	1
9	MCP	4 trees	17.0	12.5	1.4	0.8	35	60	5					20	4	4	1	1	1
8	Run	Gravel bar in middle	23.0	13.0	0.4	0.3	25	65	10					35	2	1	1	1	1
7	LSR	Tree in Stream	33.0	12.0	0.9	0.4	38	60	2					40	3	3		1	2
6	MCP	Log Formed	6.0	15.0	1.2	0.5	45	50	5					20	3	3		2	
5	LSR		44.0	10.0	0.8	0.5	35	65						65	3	2	2	1	1
4	Run	Split by sand bar	35.0	7.5	0.6	0.4	25	70	5					85	1	1	1	1	
3	LSR		30.0	12.0	2	1	40	60						40	4	3	2	1	1
2	Run		56.0	10.0	0.6	0.25	30	65	5					20	1	1	1	1	
1	MCP	Riprap weir	28.0	16.0	1	0.7	20	70			10			10	2	1	1	2	
32	Run	Watt Bridge	35.0	12.0	0.7	0.25	10	75	5		10			70	1	1		1	
33	LSR		20.0	12.0	1	0.4	18	80	2					5	2	2	1	1	
34	Run		40.0	12.0	0.65	0.3	2	78	20					5	1	1		1	1
35	LGR		20.0	10.0	0.35	0.2		40	50	5			5	0	1	1		1	
35a	SCP		12.0	5.0	0.8	0.4	30	70						80	1	1			
36	Run		20.0	10.0	0.7	0.3	10	60	24	1			5	65	1	1	1	1	1
37	MCP	Log Enhanced	80.0	10.0	1.2	0.6	30	60	5		5			15	2	2		2	
38	DPL	Backwater Pools on Both Edges of Tree Dam	24.0	12.0	0.9	0.4	5	70	19	1			5	10	2	2	1	1	1
39	GLD		18.0	12.0	0.4	0.25	15	74	10				1	5	1	1		1	1
40	Run		50.0	12.0	0.7	0.5	15	75	10					20	1	1	1	1	1
41	Run	Split Channel	21.0	6.0	0.8	0.4	15	65	20					5	1	1		1	1
41a	Run		21.0	7.0	0.3	0.2	15	65	20					5	1	1		1	1
42	LSR/MCP	Log Enhanced	55.0	12.0	1.1	0.5	10	75	15					60	2	1	1	1	1
43	MCP	Log Enhanced	18.0	11.0	1.4	0.6	35	65						10	3	2	1	1	1
43a	SCP		10.0	5.0	1.15	0.4	70	30						0	2	1			
44	Run		25.0	12.0	0.6	0.4	10	85	5					20	1	1		1	1
45	LSR	Series of Pools on Meanders	66.0	10.0	1	0.7	20	70	10					60	3	2	2	1	1
46	Run		17.0	9.0	0.5	0.3	15	80	5					15	2	1		1	1
47	CRP	w downed valley oak	15.0	9.0	0.9	0.6	19	80	1					5	3	3		1	
48	CRP		30.0	8.0	1	0.7	19	80	1					80	3	2	2	1	1
49	Run	Big Meander	86.0	9.0	0.9	0.4	5	80	15					5	2	1	1	1	1

Physical Parameters of Stream Habitat Units within Dry Creek, Placer Vineyards

Habitat Unit					Depth (Meters)		Substrate (%)								Cover (%)				
No.	Type	Characteristics	Length (m)	Avg Width (m)	Max	Avg	Silt	Sand	Gravel	Cobble	Boulder	Bedrock	Clay	Canopy	Instream	Object Cover	Undercut Banks	Turbulence	Overhanging Veg.
50	CRP		31.0	11.0	0.8	0.6	5	85	5				5	20	2	1	1	1	1
51	Run		27.0	10.0	0.7	0.4	10	80	10					40	2	1	1	1	2
52	CRP-LSR		10.0	15.0	0.8	0.4	25	70	5					95	1	1		1	1
53	Run	Man made wier in middle	87.0	14.0	0.7	0.3	15	55	25		5			10	2	2	1	1	1
53a	SCP		16.0	4.0	0.8	0.5	50	50						90	3	3	1		3
54	CRP	Split Channel Oak in Creek	31.0	8.0	1.2	0.5	15	75	10					10	4	3	1	2	1
55	Run	Woody debris throughout	125.0	11.0	0.75	0.3	10	60	25				5	35	2	1	1	1	2
56	GLD		17.0	9.5	0.4	0.3	2	85	10				3	40	1				1
56a	SCP		10.0	6.0	0.8	0.5	90						10	60	1	1			
57	Run	has depressions from veg/stumps	57.0	9.0	1.1	0.5	8	70	20				2	20	2	1	1	1	1
58	LSL		12.0	9.0	0.9	0.6	8	80	10				2	50	3	3	1	2	
59	Run		64.0	8.0	1	0.4	7	75	15				3	35	2	1	1	1	1
60	MCP	Log enhanced	10.0	12.0	0.8	0.3	3	80	15				2	20	2	2		1	1
61	Run		60.0	10.0	0.6	0.3	5	65	20				10	35	2	1		1	1
62	MCP	extended due to veg root systems	24.0	10.0	0.7	0.4	1	75	14				10	70	3	3	1	1	2
63	Run		83.0	7.5	0.6	0.4	1	65	25				9	75	3	2	1	1	3
64	MCP	log enhanced also LSR	51.0	12.0	1.1	0.5	2	75	15				8	80	4	3	1	2	3
65	Run	woody debris in spots	223.0	10.0	0.8	0.4	2	58	30				10	50	2	2	1	1	2
66	LSR	gravel bar enhanced	36.0	10.0	0.9	0.5	5	65	25				5	50	3	3	1	1	2
67	Run		37.0	12.0	0.6	0.4	2	53	40				5	65	2	1	1	1	2
68	CRP	woody debris	22.0	8.0	1	0.5	2	68	20				10	55	2	1		1	1
69	CRP		21.0	13.0	1.3	0.6		75	15				10	50	3	3	2	1	3
70	MCP	log/rootwood enhance	24.0	10.0	1.4	0.8	1	64	25				10	60	3	2	1	2	1
71	MCP/CRP	meander pools	60.0	9.0	1	0.5	2	57	25	1			15	70	3	2	1	1	2
71a	SCP		6.0	6.0	0.5	0.3	80	10					10	90	2	2	1		
72	Run		50.0	10.0	0.9	0.4	1	64	25				10	50	3	1	1	1	2
73	MCP	logs enhanced	23.0	9.0	1.4	0.6	5	65	30					50	3	3	1	2	1
74	Run	w cutoff side channel / gravel bar	35.0	8.0	0.8	0.3	2	63	30				5	55	2	1	1	2	1
75	DPL	trees/timbers enhanced - bass habitat	15.0	15.0	1.1	0.6	5	73	20				2	75	4	3	2	2	1
76	Run	lots of woody debris	20.0	12.0	0.6	0.4	2	63	30				5	50	3	3	2	2	2
77	CRP/LSR	meanders w island split channel	35.0	6.0	1	0.6	2	63	30				5	55	4	3	3	2	2
77a	Run		10.0	6.0	0.6	0.2	5	70	20				5	50	2	1	1		2
78	Run	woody debris in spots	99.0	18.0	0.6	0.3	5	65	25				5	65	2	1	1	1	1

Section 404(b)(1) Alternatives Analysis for
Placer Vineyards Specific Plan

Section 404(b)(1) Alternatives Analysis

For

PLACER VINEYARDS

Specific Plan

Placer County, California

Prepared For:

Placer Vineyards Specific Plan
Property Owners Group

Prepared By:

COX CASTLE NICHOLSON

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

MACKAY & SOMPS
CIVIL ENGINEERS, INC.

REMY, THOMAS, MOOSE and MANLEY, LLP
ATTORNEYS AT LAW

August 2008

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APPENDICES

Appendix A

Acronyms and Defined Terms

Acronym/Defined Term	Definition
Applicants	Those developers of the Placer Vineyards Development and Infrastructure pursuant to the Placer Vineyards Specific Plan who have individual Clean Water Act Section 404 permit applications (PN #199900737) are collectively referred to as, the "Applicants."
Corps of USACE	U.S. Army Corps of Engineers
CWA	Clean Water Act
Direct Impact	Direct "Impact" or "effect" means the filling of a wetland or other waters of the U.S.
DOT	California Department of Transportation
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
Indirect Impact	Indirect impact or effect refers to wetlands or other waters of the U.S. that will not be filled but will still be adversely affected due to adjacent development.
Infrastructure Elements	The backbone infrastructure which consists of most of the essential public service-based items that are underground or on the surface. The Infrastructure Elements includes improvements for existing roadways and intersections, proposed routes for new major roadways, pedestrian/ bicycle trails, water transmission lines and storage tanks (both potable and recycled), storm water management and conveyance systems, and sewer trunk lines, force mains and lift stations included in and necessary to serve the Placer Vineyards Specific Plan, and are in addition to tract improvements included within individual Participating Properties' Section 404 Permit applications. The "Infrastructure Elements" are also referred to as the "Infrastructure."
Infrastructure Scenario #3	Identified in the Clean Water Act, Infrastructure Section 404 Permit Application as the most likely scenario to be implemented for the on-site and infrastructure elements improvements in terms of location and alignment with

Acronym/Defined Term	Definition
	respect to the Proposed Alternative.
MOA	Memorandum of Agreement between the EPA and the Corps Concerning the Determination of Mitigation Under the Clean Water Act Section 401(b)(1) Guidelines (1990)
MTP	Metropolitan Transportation Plan
NAPOTS	This term refers to the area that is "not a part of the Specific Plan area" and includes the Non-participating Properties.
Non-participating Properties	The remaining 1,484-acre area of the Placer Vineyards Specific Plan, inclusive of the "Special Planning Area," for which no Section 404 Permit applications have been filed by the property owners. This area is also referred to as, the "NAPOTS," and is shown in "white" on the Proposed Project Land Use Plan.
NPDES	National Pollutant Discharge Elimination System
Open Space - Active Use	This category of open space consists of Placer County–designated open space lands that would include detention basins, bike trails, utility service roads, drainage out falls, potentially underground storm drainage, water and sewer pipes, passive recreation areas, parking lots, pedestrian trails, drainage inlets, and other active recreational uses and County utilities and services. To the extent that this category of open space results in impacts to aquatic resources, the Alternatives Analysis identifies the acreage of impacted wetlands. In other words, this acreage will be reported as "impacted acreage" NOT as "preserved" acreage.
Open Space - Preserve	This category of open space includes areas in which the Placer Vineyards Specific Plan proposes avoidance of aquatic resources, preservation of existing habitat, and habitat mitigation. No development nor active uses would occur in an area designated Open Space – Preserve. This area could be protected in perpetuity under a conservation easement. The Alternatives Analysis identifies the acreage as "preserved" acreage.

Acronym/Defined Term	Definition
Open Space - Preserve with Enhancement/Restoration	This category of open space includes areas in which the Placer Vineyards Specific Plan proposes to realign, enhance, and restore existing wetlands and other Waters of the U.S. in order to provide for additional aquatic habitat preservation opportunities within the Specific Plan. This category also includes engineered drainage channels, drainage pipe inlets and outfalls, and drainage maintenance/maintenance access areas, and realignment and restoration of drainage channels. This area could be protected in perpetuity under a conservation easement. To the extent that this category of open space results in impacts to aquatic resources, the Alternatives Analysis identifies the acreage of impacted wetlands. In other words, this acreage will be reported as both "impacted acreage" (temporal in nature) AND as "preserved" acreage.
Participating Properties	The 3,744-acre area within the Placer Vineyards Specific Plan for which Section 404 permit applications have been filed by the property owners comprising the Placer Vineyards Property Owners Group.
Placer County Conservation Plan (PCCP)	The Placer County Habitat Conservation Plan/Natural Community Conservation Plan which is intended to address the impacts associated primarily with unincorporated growth in west Placer to the year 2050.
Placer Vineyards Development	A residential and mixed-use community with associated infrastructure proposed on an approximately 3,744-acre site in Western Placer County for which the Placer Vineyards Property Owners Group filed Section 404 Permit applications.
Placer Vineyards Property Owners Group	A group of 20 property owners brought together for purposes of planning and development of common infrastructure for the Placer Vineyards Development.
Placer Vineyards Specific Plan Area	The entire 5,230-acre area in unincorporated western Placer County bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line and Pleasant Grove Road, and on the east by Dry Creek and Walerga Roads, that is the subject of the Placer Vineyards Specific Plan. This area is also referred to as the "Plan

Acronym/Defined Term	Definition
	Area."
Placer Vineyards Specific Plan	The specific plan developed by the Placer Vineyards Property Owners Group for development of a 5,230-acre area in unincorporated western Placer County. Also referred to as the "Specific Plan."
Project Area or Project Site	The 3,744-acre area for which Section 404 permit applications have been filed.
Proposed Project or Project	The approximately 3,744-acre site in Western Placer County for which the Placer Vineyards Property Owners Group filed Section 404 Permit applications for the development of a portion of the Placer Vineyards Specific Plan ("Placer Vineyards Development") and on-site and off-site infrastructure elements ("Infrastructure Elements").
PUD	Planned Unit Development
RCP	reinforced concrete pipe
SACOG	Sacramento Area Council of Governments
SMUD	Sacramento Municipal Utility District
Special Plan Area ("SPA")	The approximately 970-acre portion of the Non-Participating Properties area that remained unplanned as part of the Placer Vineyards Specific Plan. Individual subdivision approvals and Section 404 Permit applications have not been filed for the SPA.
USGS	U.S. Geological Survey

Executive Summary

In May 2006, the Placer Vineyards Owners' Group submitted Clean Water Action Section 404 Permit applications for the backbone infrastructure and participating properties within the Placer Vineyards Specific Plan. In July 2007, Placer County approved the Placer Vineyards Specific Plan. Concurrent with the local Specific Plan approval process, the permitting team engaged in discussions with the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (EPA) to discuss the scope of the analysis for the proposed Section 404 permit applications for the project and the alternatives that would be evaluated in the Section 404(b)(1) Alternatives Analysis and the Environmental Impact Statement (EIS).

The Alternatives Analysis evaluates the development of the Placer Vineyards Development Project ("Placer Vineyards" or "Project") and its compliance with the U.S. Environmental Protection Agency's ("EPA") *Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material* (40 CFR part 230). The proposed federal action for the Project is the issuance of a Department of the Army Permit under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers ("Corps") to discharge fill material into approximately 97.4 acres of jurisdictional wetlands and waters of the United States in connection with the development of the Project, including the applications submitted by individual property owners.

With respect to the off-site alternatives evaluated in the Alternatives Analysis, none of the sites either were of a sufficient size to accommodate Placer Vineyards, or were available in Western Placer County or Southeastern Placer County. Consequently, the Alternatives Analysis evaluates on-site alternatives only for the Placer Vineyards Plan Area.

The Alternatives Analysis evaluated the Proposed Project and seven on-site alternatives. The Proposed Project is the only alternative that meets the project purpose, is available and practicable. Development of the large scale mixed use community results in approximately 97 acres of direct impacts to wetlands. Due to the Proposed Project's configuration and ability to accommodate the project, as well as its ability to meet the cost, logistics, and technological criteria, and its avoidance and minimization of impacts to aquatic resources, development of the Proposed Project on the Project Site is the least environmentally damaging practicable alternative.

Conclusions Regarding Off-Site Alternatives

Table 1 summarizes the findings regarding the screening of two off-site alternatives within the Placer County area. None of the sites that were identified that were of sufficient size to accommodate Placer Vineyards were available in Western Placer County or Southeastern Placer County.

Conclusions Regarding On-Site Alternatives Analysis

Table 2 summarizes the findings regarding the screening of 8 on-site alternatives considered in this analysis.

Table 1

Summary of Off-Site Alternatives Screening

Alt. No.	Alternative	Project Purpose	Availability	Technology	Logistics	Cost	Aquatic Resources Impacts (acres)	Other Environmental Impacts
	Proposed Project	○	○	○	○	○	97.43	○
1	Other Locations in Western Placer County	□	●					
2	Southeast Placer County Locations	□	●					

Table 2

Summary of On-Site Alternatives Screening

Alt. No.	Alternative	Project Purpose	Availability	Technology	Logistics	Cost	Aquatic Resources Impacts (acres)	Other Environmental Impacts
	Proposed Project	○	○	○	○	○	97.43	○
A	Preservation of listed invertebrate habitat with a 250-foot buffer	□	○	●	●	●	43.35	○
B	Further minimization of impacts to aquatic resources in the west and northeast areas	□	○	●	●	●	67.50	○
C	85% avoidance of vernal pools resources	□	○	●	●	●	44.22	○
D	Avoidance of wetlands with a 50-foot buffer, 3,015 acres developed	□	○	●	●	●	0	○
E	No development of the Plan Area	●	○	●	●	●	0	○
F	Further avoidance of impacts to aquatic resources in the west and northeast areas	□	○	●	●	●	66.12	○
G	Avoidance of aquatic resources in the south and northeast areas	□	○	●	●	●	80.00	○

● = fails criterion.
○ = passes criterion.
□ = partially passes criterion

1.0 INTRODUCTION

1.1 Purpose of this Alternatives Analysis

This Alternatives Analysis evaluates the development of mixed use residential community, and its compliance with the U.S. Environmental Protection Agency's (EPA's) Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 C.F.R. Pt. 320). The proposed federal action for the Placer Vineyards Specific Plan Project ("Project") is the issuance of individual Section 404 Permits by the U.S. Army Corps of Engineers (Corps) to discharge fill material into approximately 97.43 acres of wetlands and waters of the United States (U.S.) in connection with development of a mixed use residential community within southwest Placer County.

1.2 Project Overview

The Placer Vineyards Specific Plan project is a residential mixed-use community (the "Placer Vineyards Development") with associated infrastructure (the "Infrastructure") proposed on an approximately 3,744-acre site in western Placer County. The Placer Vineyards Plan Area includes approximately 5,230 acres. Of this area, 3,744[1] acres are planned for urban development at this time and are the subject of the proposed Section 404 Permit applications. For purposes of this analysis, the "Placer Vineyards Development" consists of the 3,744 acres of urban development for which Section 404 Permit applications have been filed. The remaining 1,484 acres are reserved as a Special Plan Area or are non-participating properties.

When complete, development of the Placer Vineyards Specific Plan will consist of residential, office and commercial uses, public facilities and services, religious facilities, elementary, middle, and high school facilities, parks (neighborhood, community and mini parks, as well as a recreational center), roadway infrastructure; and open space. A fundamental element of the Project is to provide residential uses in proximity to schools, jobs, shopping and necessary infrastructure. Specific land uses and development allocations are provided below in Section 2.2.1 for the Placer Vineyards Development.

The Placer Vineyards Property Owners Group which includes the developers of the Placer Vineyards Development and Infrastructure pursuant to the Placer Vineyards Specific Plan are collectively referred to as, the "Applicants." The Applicants originally applied for 24 Department of the Army Permits under the authority of Section 404 of the Clean Water Act to discharge dredged or fill material into approximately 102.7 acres of waters of the United States. These original applications proposed the fill of approximately 95.9 acres of wetlands/waters occurring on approximately 3,996 acres of participating properties, and approximately 6.8 acres of wetlands/waters off-site, in order to construct infrastructure, housing, commercial and institutional facilities in accordance with the approved Placer Vineyards Specific Plan. The 3,996 acres[2] of participating properties were calculated according to the engineered drawings for

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1 Gross acreages and land use allocations are based upon the land use acreages and development allocations reflected in the Placer Vineyards Specific Plan adopted on June 16, 2007. Due to the fact that the Specific Plan acreages are based on conceptual planning and design, there is an approximately 9-acre discrepancy between the acreages reflected in the Specific Plan and the actual acreages calculated as part of the engineering plans for the Plan Area. All wetland impact acreages are based on the engineered drawings.

2 The 3,996 acres reflects a 9-acre discrepancy when compared to the Specific Plan acreage. This means that the original 23 applications included 9 more acres than the Specific Plan acreage allocated to the participating properties.

the participating properties for which Section 404 permit applications were submitted in 2006. Since that time, one of those applications ("Riolo Ranch 237," property 5C) has been withdrawn. This application requested authorization to fill 7.52 acres of waters of the U.S. (exclusive of infrastructure impacts) on that 241.9-acre parcel. Adjusting for withdrawal of this application, there are now 23 applications requesting authorization to fill a total of 97.43 acres of waters of the U.S. Of these 97.43 acres of proposed impacts, approximately 87.1 acres would occur on 22 participating properties (totaling 3,744 acres). The remaining 6.8 acres of proposed impact would occur outside of the boundaries of the participating properties and would be associated with the Infrastructure.

1.3 Project Location

The Placer Vineyards Plan Area encompasses approximately 5,230 acres located in the southwest portion of unincorporated Placer County, approximately 15 miles north of Sacramento. The Plan Area is bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line and Pleasant Grove Road, and on the East by Dry Creek and Walerga Road. (See Fig. 1.) East to west, the Plan Area spans approximately 6 miles. North to south, at its widest point, it spans approximately 2 miles. While the Placer Vineyards Plan Area includes approximately 5,230 acres, only 3,744 acres are planned for urban development at this time and are the subject of the proposed Section 404 Permit applications. The area consists of property subject to applications filed by 22 individual applicants. (See Fig. 1.2.)

The Placer Vineyards Specific Plan Infrastructure would traverse 243 acres within the Plan Area and outside the Plan Area that are not otherwise covered by one of the 22 applications. Some of this acreage is already encumbered by easements, roads, and developed areas. The off-site portion of the Infrastructure includes infrastructure located outside of the Plan Area. (See Fig. 1.3 and 1.4.)

Wallace Rd
Walt Ave
Dyer Ln
Plan Area
Kaiser Rd
16th St
Country Acres Ln
Pelleday Rd
Elverta Rd
Locust Rd
Pleasant Grove Rd
Pleasant Grove Rd
Quad Knopf
PLACER VINEYARDS SPECIFIC PLAN
PLAN AREA LOCATION - AERIAL VIEW

Figure 1.1

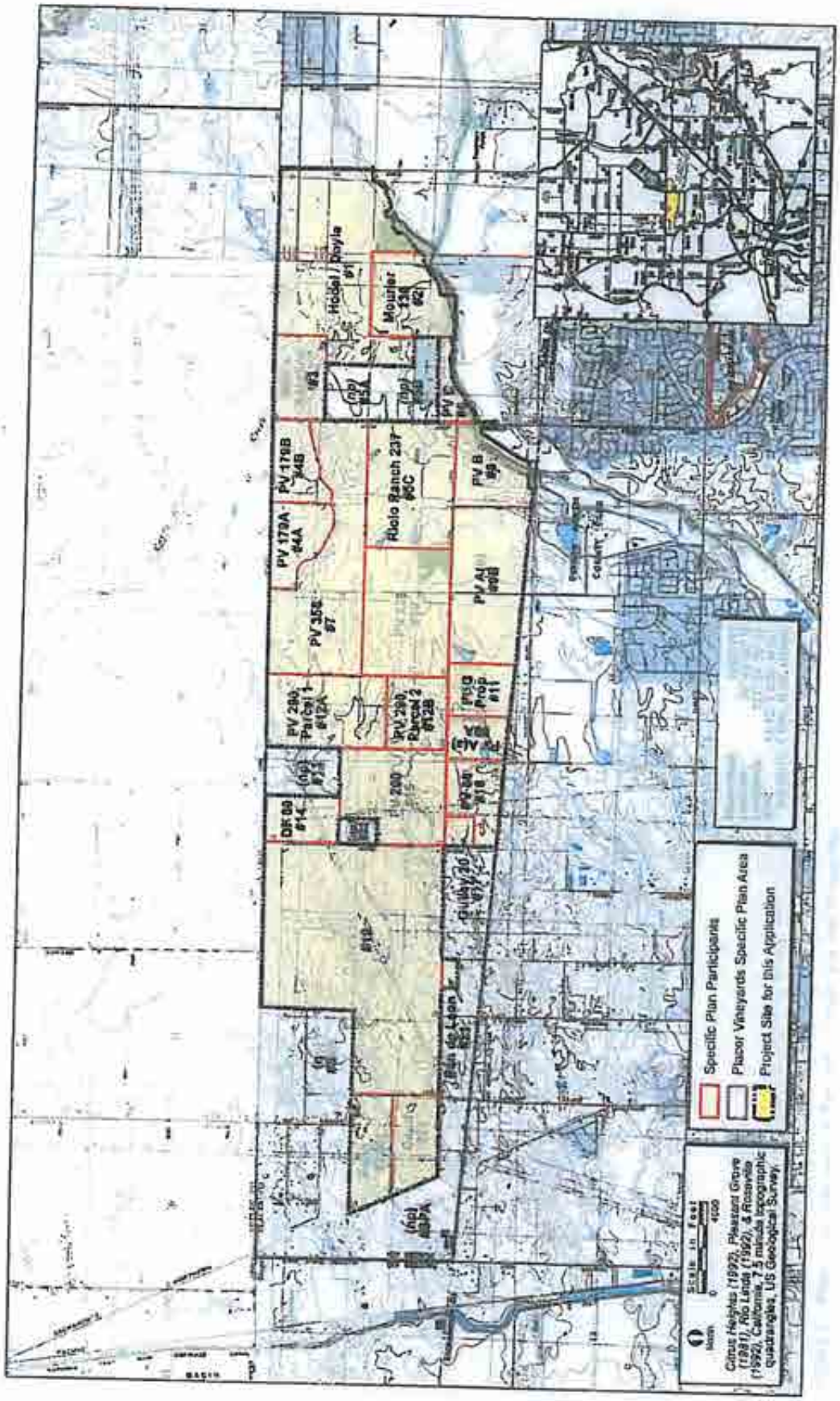
Specific Plan Participants
Placer Vineyards Specific Plan Area
Project Site for this Application
Scale in Feet
0
4000
Citrus Heights (1992), Pleasant Grove (1981), Rio Linda (1992), & Roseville (1992), California, 7.5 minute topographic quadrangles, US Geological Survey.
Hodel / Doyle
Mourier
Rolo Ranch 237
PV 179B
PV 179A
PV 352
PV 290 Parcel 1
PV 290 Parcel 2
PV 8
PV A
Prop #11
DF 60
Plan de Leon

Figure 1.2

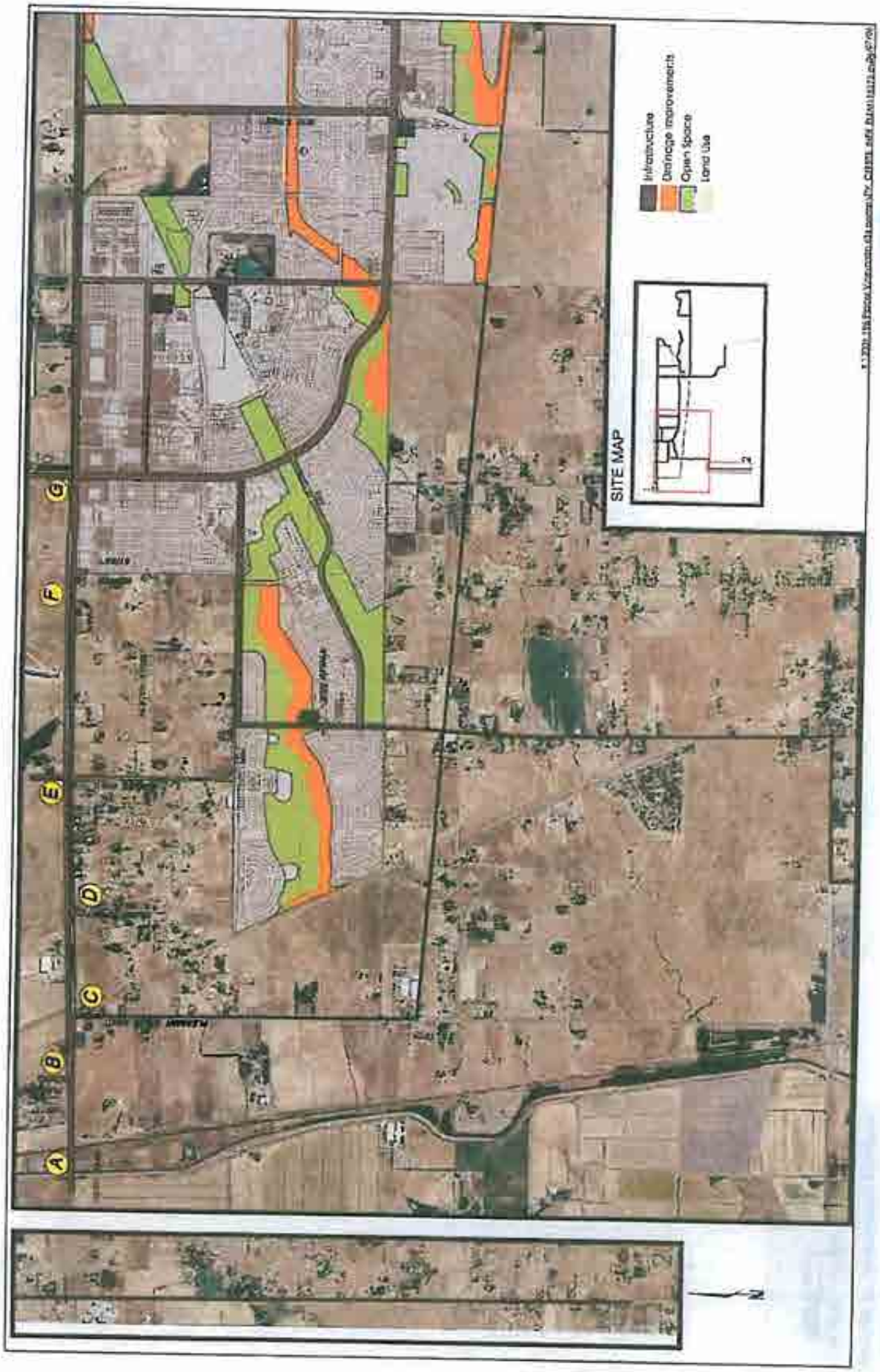
A
B
C
D
E
F
G
Infrastructure
Drainage improvements
Open Space
Land Use
SITE MAP

Figure 1.3

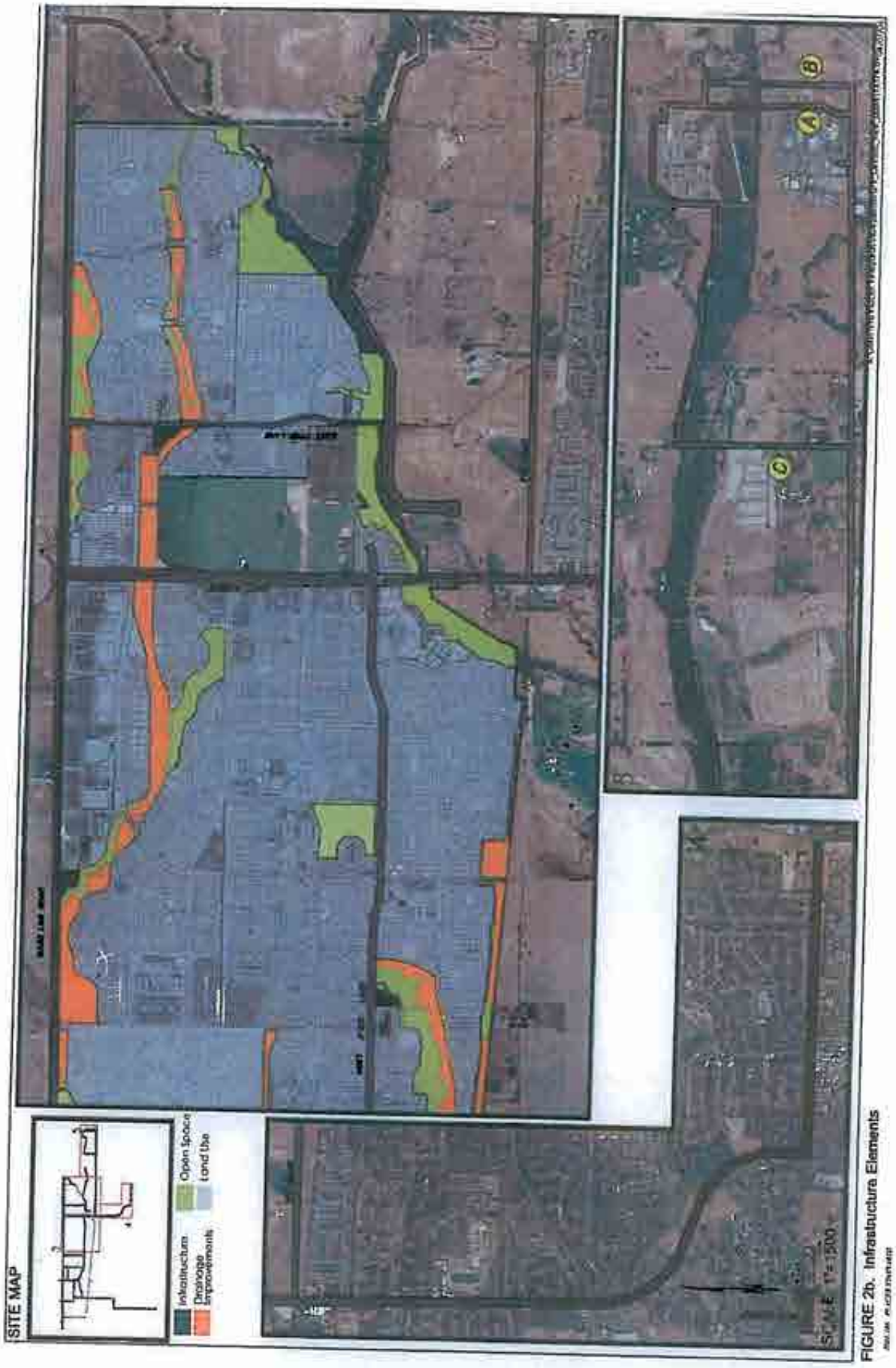
SITE MAP
Infrastructure
Drainage Improvements
Open Space
Land Use
SCALE 1"=1500'
FIGURE 2b. Infrastructure Elements

Figure 1.4

2.0 Project Background

2.1 Project Purpose and Need

The August 1994 Placer County General Plan directed the preparation of a Specific Plan to allow development of the Dry Creek/West Placer Community Plan area with the intent that the entire 5,230-acre Placer Vineyards Plan Area would be comprehensively planned. The Placer County Board of Supervisors approved the Placer Vineyards Specific Plan on July 16, 2007. The Specific Plan sets forth regulations and programs which will implement the goals and policies of the General Plan.

The Placer Vineyards Specific Plan is proposed to meet the County's planning objectives for the remaining unplanned area in Western Placer County. One component of the Specific Plan is the Placer Vineyards Development and related infrastructure ("Project"). The Project is a mixed-use development consisting of a variety of residential, employment, commercial, open space, recreational and public/quasi-public land uses, and all of the types of land uses and services that are necessary to support a functioning and viable community. The Project Area includes approximately 3,744 acres located in the southwest portion of unincorporated Placer County in the Plan Area.

The Project is intended to assist in meeting the region's future needs for residential opportunities through comprehensive planning. It is designed to implement the following "smart growth" principles advocated by the Sacramento Area Council of Governments (SACOG) and Specific Plan design principles.

- Promote a mixed-use, compact development pattern linked to regional transportation systems.
- Create a livable, pedestrian-friendly environment with a distinct community identity and sense of place. Create safe and accessible links between neighborhoods, centers, and districts within the Plan Area and the surrounding community.
- Provide a diversity of housing choices in terms of types, styles, densities and costs.
- Provide a range of transportation choices including streets, paths, and trails, with links to local and regional transportation systems.
- Protect and enhance the highest quality natural features and resources on the site by incorporating native oaks, wetlands, creeks and drainage systems into a community-wide open space system. Provide transitional buffers sensitive to the character of adjacent land uses.
- Promote a balance of uses—housing, employment, schools, parks, recreation, and places to shop—that support a balance of jobs to housing in the region.

- Ensure that adequate public facilities are provided concurrent with development.

Placer County identified the Placer Vineyards Specific Plan Area for urban development because of a number of important regional planning factors, including, but not limited to: (1) the cities and areas surrounding the Plan Area are experiencing rapid growth of jobs, creating the need for additional housing in southwest Placer County; (2) the area is contiguous to existing urban development to the south and new development to the north; (3) the region is planning improvements to the transportation network that could accommodate the level of growth associated with the Specific Plan; (4) the Plan Area is better suited for concentrated new growth than other locations, as it would create less sprawl; and (5) a portion of the Plan Area, the Special Planning Area (SPA) would remain as existing large lot rural type development.

Need for a Residential Mixed Use Community in Western Placer County

Following Placer County's adoption of the West Placer Community Plan in 1990, the County identified in its General Plan the need for a self-sufficient mixed-use community, including residential, retail, commercial, and business/professional uses, as well as public facilities (e.g., parks, schools and open space) in Western Placer County. The August, 1994 *Placer County General Plan* identified this area as appropriate for urbanization following adoption and implementation of a comprehensive Specific Plan. Concurrently with adoption of the *Placer County General Plan* in 1994, the Placer County Board of Supervisors adopted Resolution No. 94-238 which amended the *Dry Creek/West Placer Community Plan* to include the West Placer Plan Area. The West Placer Plan Area is identical to the Placer Vineyards Plan Area. This area was one of only two areas designated in the 1994 *Placer County General Plan* for large-scale development to accommodate anticipated growth at increased densities to be considered through the specific plan process in the unincorporated area of Placer County. The other area, originally identified as the Boulder Ridge area, is the approved *Bickford Ranch Specific Plan* area. Placer Vineyards is the only other remaining area in unincorporated Placer County that is planned for large-scale development

2.2 Project Description

The Project consists of the Placer Vineyards Development and the Infrastructure. The Project is a mixed-use development consisting of a variety of residential, employment, commercial, open space, recreational and public/quasi-public land uses, and the types of land uses and services that are necessary to support a functioning and viable community. (See Table 3.) The Project Area includes approximately 3,744 acres located in the southwest portion of unincorporated Placer County and another 243 acres of property through which the Infrastructure Elements would traverse. As stated above, much of the 243 acres is already encumbered by easements, roads, and developed area.

Table 3

Placer Vineyards Land Use Summary

		Acres	Units
Residential			
	Low Density Residential (2 to 6 units/acre)		2,961
	Medium Density Residential (4 to 8 units/acre)		5,508
	High Density Residential (7 to 21 units/acre)		2,537
	Subtotal	2,005.5	11,006
Commercial and Mixed Use			
	Commercial/Mixed Use	277.7	579
	Subtotal	277.7	579
Park and Open Space			
	Open Space	675.5	
	Parks	199.0	
	Arterials and Collector Roads	295.2	
	Subtotal	1,169.2	
Public/Quasi-Public			
	Public Uses	50.5	
	Schools	167.0	
	Religious Facilities	74.0	
	Subtotal	291.5	
	TOTAL	**3,744.4**	**11,585**

The coordinated and comprehensive application package consists of twenty-two individual permit applications for the Placer Vineyards Development and a single application for the Infrastructure Elements that would be constructed within the Project Area in accordance with the Placer Vineyards Specific Plan. Since the 1,484 acre SPA and non-participating properties are not part of this permit package, the term "Project Area" used herein refers to only the 3,744 acres planned for urban development that are the subject of the permit package of applications (i.e., the "Placer Vineyards Development").

2.2.1 Placer Vineyards Development

When complete, development of the 3,744 acres will consist of approximately 2,005 acres of residential uses; approximately 280 acres of office/business park/commercial uses; about 50 acres of public facilities and services uses; approximately 74 acres of religious facilities; approximately 167 acres of elementary, middle, and high school uses; approximately 200 acres of park (neighborhood, community and "mini" parks, as well as a recreational center); approximately 296 acres of major roadways; and approximately 675 acres of open space. (See Fig. 2.1.) Consistent with the Placer County General Plan, the *Placer Vineyards Specific Plan*

allocates 11,585 of the 14,132 allowable dwelling units to the 3,744 acres proposed for urban development (i.e., those properties for which Section 404 permit applications are filed), and 2,547 units on other properties designated for urban development under the local specific plan approval process, but which for which no Section 404 permit application is being made. Of the 2,547 units, 411 dwelling units were allocated to the 979-acre SPA (which is not included in the Applications), including 150 existing dwelling units.

The Placer Vineyards Development will result in a build-out population of approximately 32,800 persons over a 20- to 30-year period (based on the anticipated occupancy of approximately two persons per residence as assumed in the Specific Plan). The density of the Placer Vineyards Development is 5.7 units per acre, which is equivalent to 4,100 persons per square mile.

2.2.2 Infrastructure

The following roadways, drainage, sewer and water infrastructure included within the Infrastructure Elements component of the Project are necessary to serve development under the Placer Vineyards Specific Plan. The Infrastructure Elements include both on-site and off-site components. The Infrastructure includes road improvements (e.g., widening of lanes and the addition of intersection controls), the addition of utility lines and routes for sewer trunk and water lines, and recycled water storage facilities and transmission lines. Where possible, utility lines would be placed within the existing roadways or other disturbed areas, in order to minimize environmental impacts. Due to current uncertainties regarding the precise path/alignment for each of the Infrastructure Elements, six different scenarios were included in the Clean Water Act, Section 404 Permit Application. Scenario #3 was identified in the Clean Water Act, Infrastructure Section 404 Permit Application as the most likely scenario to be implemented for the on-site and Infrastructure Elements in terms of location and alignment with respect to the Proposed Project. For purposes of this analysis, the analysis of Infrastructure Elements alignments is based on the infrastructure alignments included in "Infrastructure Scenario #3" in the Infrastructure Section 404 Permit Application as shown in Figures 1.2 and 1.3.

The Specific Plan also incorporates parks, trails and open space features as shown in Figure 2.1. The trails and other ancillary public facilities within open space areas are preliminary and conceptual, and their locations have not been confirmed at this time.

Access/Circulation

The Specific Plan consists of backbone circulation and access infrastructure within the Plan Area and the Infrastructure Elements necessary to accommodate Project traffic. Additionally, in-tract improvements are proposed as part of each individual development project within the Specific Plan and have been incorporated into each of the individual 23 Section 404 Permit applications as further described in the comprehensive Clean Water Act, Section 404 Permit Application.

For off-site improvements included in the Infrastructure application, the Specific Plan proposes to widen Baseline Road between Walerga/Fiddyment Road on the east and the Sutter County line on the west. Watt Avenue would be widened to 6 lanes from Baseline Road on the north to approximately one thousand feet south of the Sacramento County line. Five intersections also would be improved along Baseline/Riego Road. Rights-of-way for road widenings are typically

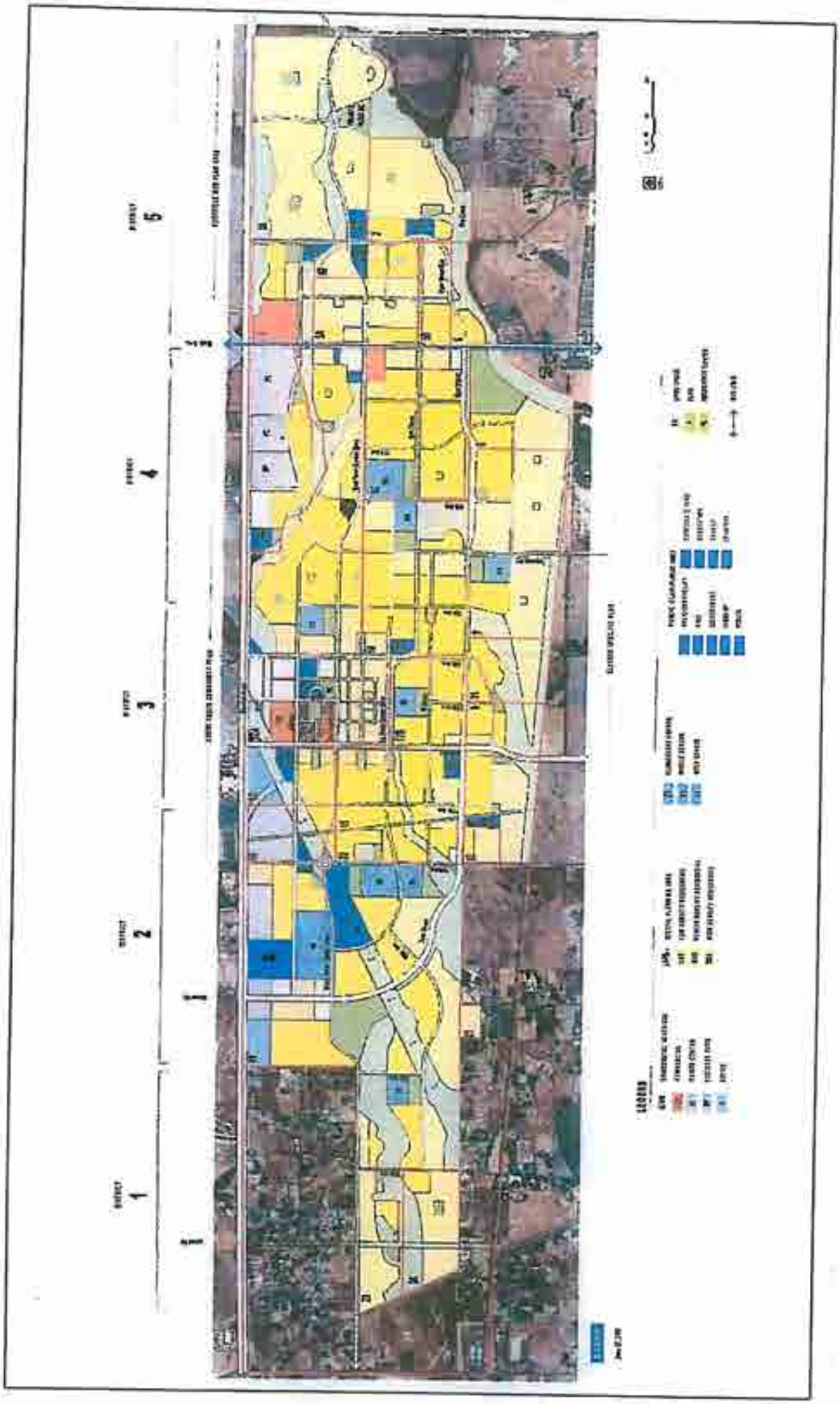

Figure 2.1

acquired equally on both sides of the existing roadway; however, in the case of Baseline Road, widening along the project's frontage will initially occur primarily on the south side in order to minimize off-site encroachments. Land to the north of Baseline Road is not within the Plan Area and contains some existing structures, including residences that would be avoided under the proposed roadway alignment. The five intersection improvements along Baseline/Riego Road will not affect any existing residences or structures. Properties along the west and east sides of Watt Avenue, both within and south of the Plan Area, include existing structures and residences.

Drainage

Except where specific roadway improvements are required, named creeks within and/or bordering the Project Area (i.e., Dry Creek and Curry Creek) would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Plan Area. These discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms. Other drainage ways in the Project Area with significant resource values, however, would be avoided. These include:

a. the main east-west drainage in shed EMA (see Figure 2.2) as it crosses property #1 (Doyle/Hodel);

b. the southern tributary to that same drainage (shed EMA) that is located on property #7 (Placer Vineyards 356);

c. the series of linked ponds in shed EMFS that occur on properties #9a, #9b, and #11 (Placer Vineyards A(a), Placer Vineyards A(b), and PGG, respectively);

d. the portion of the main drainage in shed EMFN that crosses properties #19 and #21 (Placer Vineyards 815 and Placer Vineyards 88); and

e. the majority of the main drainage in shed EMC that crosses property #19, #23, and #24 (Placer Vineyards 815, Fong, and Capri, respectively).

Separate parallel engineered drainage facilities would be constructed in order to avoid these drainages, but still provide for needed storm water conveyance/storage capacity. In other sheds (or in other reaches of these drainages) where there are lesser resource values, the existing drainages would be modified to both increase storm water conveyance and storage capacity and to restore or enhance their biological function. These include:

a. the main east-west drainage in shed EMA that flows across property #3 (Watt x Baseline), then between properties # 4a (Placer Vineyards 179a), #4b (Placer Vineyards 479b), and #7 (Placer Vineyards 356), then across property #12a (Placer Vineyards 290, Parcel 1); and

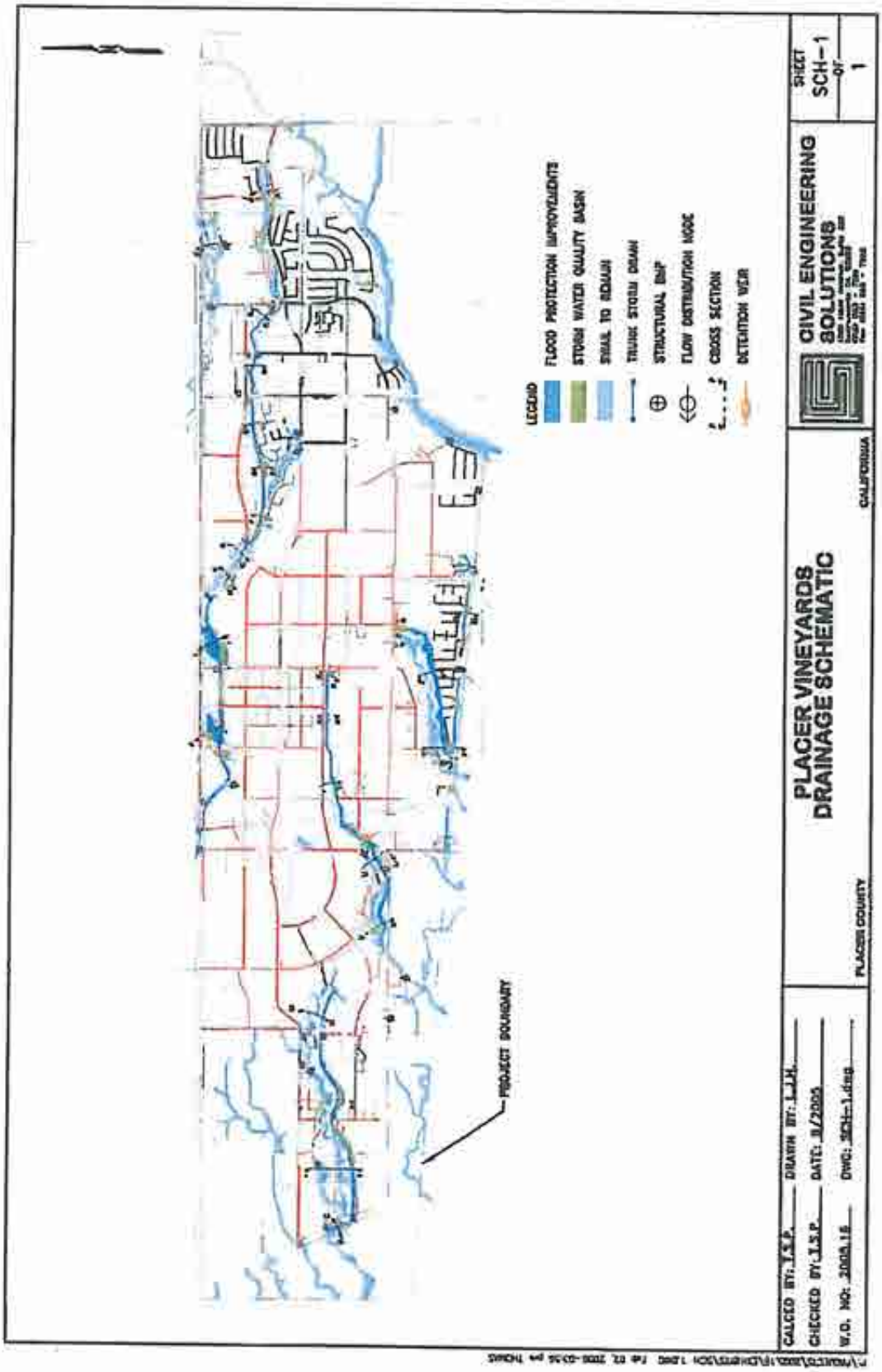
PROJECT BOUNDARY
LEGEND
FLOOD PROTECTION IMPROVEMENTS
STORM WATER QUALITY BASIN
SMALL TO REMAIN
TRUNK STORM DRAIN
STRUCTURAL BMP
FLOW DISTRIBUTION NODE
CROSS SECTION
DETENTION WEIR
CALCED BY: T.S.P.
DRAWN BY: L.J.H.
CHECKED BY: T.S.P.
DATE: 8/2005
W.O. NO: 2003.18
DWG: SCH-1.dwg
PLACER COUNTY
PLACER VINEYARDS
DRAINAGE SCHEMATIC
CALIFORNIA
CIVIL ENGINEERING
SOLUTIONS
SHEET
SCH-1
OF
1

Figure 2.2

b. the main east-west drainage in shed EMFN that flows across property #12b (Placer Vineyards 290, Parcel 2) and property #15 (Placer Vineyards 200).

The Specific Plan includes a system for the management of storm water runoff, and establishes guidelines for management of urban runoff and the control of erosion and sedimentation through the design of drainage systems and land use regulations. Potential water quality impacts would be minimized by preserving all, except three, drainageway reaches in existing locations and establishing detention basins to contain and filter storm water runoff.

Consistent with the Specific Plan, the on-site Project drainage would be designed to provide water quality treatment of runoff from paved and other developed areas prior to release into the swales and streams. This treatment would consist of the following: directing some of the flow to sheet discharge onto grassy areas or open space; the installations of Fossil Filter or equivalent petroleum absorbing insert assemblies in the project drop inlets; the placement of water quality interceptor devices; the placement of water quality sediment basins within detention facilities and channels; and use of rock-lined ditches below pipe outlets.

The Project Area is within three major drainage sheds which are comprised of eight sub-sheds: Curry Creek, Dry Creek, and the Upper Natomas East Main Drainage Canal (NEMDC), now known as Steelhead Creek. According to the Specific Plan and the Master Project Drainage Study (*cite*), the drainage system is designed to accommodate peak flow rates resulting from additional impervious surfaces and proposed drainage modifications. Project development would require additional attenuation at several locations, including within the existing floodplain and flood control channels upstream of proposed culvert facilities. Project on-site drainage facilities would consist of drainage inlets and pipes would be designed to meet Placer County drainage requirements as further described in the *National Oceanographic and Atmospheric Administration, National Marine Fisheries Service Endangered Species Act Consultation Biological Assessment for Placer Vineyards Specific Plan Project* dated July 7, 2008. Detention basins and water quality treatment basins would be provided to optimize water quality. Pending final design, opportunities are identified within constructed and/or enhanced drainageways, for which wetlands would increase biological function. Where appropriate, riparian plantings may augment these habitats, particularly as required by the County's mitigation measures for the Specific Plan EIR. The Drainage Study includes provisions to maintain the hydrology of sensitive areas by preserving the mean annual and peak flow rates.

Water and Sewer

The Project Area is within the service area of the Placer County Water Agency (PCWA). PCWA has determined that it has sufficient water rights to meet the projected demand of projects likely to develop in western Placer County through 2030, including the Proposed Project. The Project Area would receive water service from various sources on an initial and long-term basis. New infrastructure to use these water supplies would be necessary. The Sacramento River is the source of the long-term water supply with a new multi-party pump station, treatment plant, and transmission pipeline.

A secondary water supply could be made available if the Sacramento River project has not initiated water delivery when the initial supply has been fully utilized. It consists of use of approximately 6,000 acre feet per year of the 29,000 acre feet of PCWA Middle Fork American River water. The supply would be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Project Area via existing pipelines.

The Specific Plan proposes to provide recycled water to the Project Area for use in parks, schools, publicly landscaped areas, and the landscaping associated with commercial, business, and professional uses. This would be supplied from the Dry Creek Wastewater Treatment Plant, and eventually from the Pleasant Grove Wastewater Treatment Plant.

The Specific Plan contemplates two options for providing long-term sewer service to the entire Plan Area, including the Project Area. The options involve using a planned connection to the Sacramento Regional Wastewater Treatment Plant (SRWWTP) or the Dry Creek Wastewater Treatment Plant (DCWWTP). Under either option, the easternmost 890 acres of the Plan Area would be serviced by the DCWWTP. The required conveyance facilities have been partially constructed with the first phase of the Dry Creek/Western Placer Community Facilities District (CDF) project. A pump station and force main near Walerga Road and north of PFE Road have been designed to accept water from the Plan Area. This would be accomplished by using a utility corridor to connect to the DCWWTP that extends from the eastern portion of the Plan Area to an existing sewer force main east of Walerga Road. This alignment would overland from its point of origin to Dry Creek, where bore and jack technology would be used to implement the required crossing (thus avoiding impacts), then west and south (paralleling Dry Creek) to a proposed lift station. From that lift station, a new forced main would convey wastewater to a point where it would intersect an existing forced main approximately 1400 feet east of Walerga Road.

The forced sewer line will be located on the east side of the existing City Corporation Yard. A sewer force main will parallel Dry Creek. Although the precise alignment has not been determined, there will be at least a 100 foot minimum separation between the approximate centerline of Dry Creek and the force main. The force main will carry "untreated" sewer effluent. The wastewater is not treated until it reaches the Dry Creek Wastewater Treatment Plant (at the end of the existing force main that PVSP will be connecting to approximately 1,400 feet east of Walerga Road). After the gravity sewer exits the Plan Area and crosses Dry Creek (via bore and jack), the gravity sewer pipe turns and heads west (paralleling Dry Creek with same minimum offset as described above) and then turns south flowing to a proposed lift station. The proposed sewer force main originates at the lift station, then travels parallel to, but in the opposite direction of the gravity sewer, past the point where the bore and jack crossing will be, continuing easterly toward Walerga Road (parallel to Dry Creek) and the connection to the existing force main.

2.3 Site Description

The Plan Area is comprised of leveled to gently rolling terrain that slopes primarily southwest, except for a smaller area in the east which drains toward Dry Creek. The Plan Area is situated at an elevational range of approximately 40 to 100 feet above mean sea level. Existing land uses

within the 3,744-acre Project Area include active agriculture (pasturelands and farmlands), rural residences, transmission line corridors, and developed and undeveloped roadways.

A majority of the properties within the Plan Area are undeveloped parcels characterized by flat to slightly undulating terrain that supports a predominance of grassland habitat. For the most part, these areas have historically been utilized for livestock grazing. Some areas have been used for crop cultivation in the past. There are approximately 150 residences within the Plan Area. A mini-storage facility is located on the east side of Pleasant Grove Road, at the southwest corner of the Plan Area. An abandoned portion of the Union Pacific Railroad traverses the westernmost portion of the Plan Area. Many of these existing residences would remain within the SPA or NAPOTS.

2.4 Wetlands

2.4.1 Existing Wetlands

Wetland delineations were conducted for each of the Participating Properties as shown in the Composite Wetland Delineation in the Comprehensive Section 404 Permit Applications. Aquatic features within the Infrastructure Elements area were visually assessed through aerial photograph interpretation. Based on the final delineations conducted for the Participating Properties, approximately 160 acres of waters of the U.S. occur within the Project Area:

Vernal Pool:	33.04 acres
Seasonal Wetland:	36.84 acres
Seasonal Wetland Swale:	12.72 acres
Seasonal Marsh:	0.21 acres
Pond:	18.45 acres
Ephemeral Drainage:	4.12 acres
Intermittent Drainage:	17.80 acres
Drainage Swale:	2.09 acres
Channel:	1.46 acres
Creek:	6.01 acres
Riverine Seasonal Wetlands:	25.28 acres
Riverine Seasonal Marsh:	0.64 acres
Riverine Perennial Marsh:	0.58 acres
Drainage Canal	0.44 acres
Total:	**159.67 acres**

Section 7.3 contains a description of the existing quality and nature of the aquatic resources occupying the Placer Vineyards Development Area.

2.4.2 Wetlands Impacts and Mitigation

Of the 160 acres of waters of the United States mapped within the Project Area, development will result in direct impacts to approximately 97.43 acres of waters of the U.S. The Proposed Project would indirectly impact another 18.62 acres of wetlands. The remaining 43.63 acres of wetlands will be preserved within the Project Area. Approximately 11 acres of potential aquatic invertebrate habitat (i.e., seasonal wetlands, seasonal wetland swales, drainage swales, and vernal pools) occurs within the open space areas, and may be indirectly impacted by the Proposed Project. Additional indirect impacts to wetlands could result in areas within 250 feet of the Project Area boundary.

The on-site (in-tract) infrastructure would directly impact 33.3 acres of waters of the U.S. which are included in the 97.43 acres of on-site impacts reported above for the Placer Vineyards Development. The Infrastructure Elements also includes backbone infrastructure that is not otherwise part of the Placer Vineyards Development, and this additional infrastructure would directly impact an estimated another 6.8 acres of waters of the U.S. Although various options and alignments were considered for the Infrastructure Elements, for purposes of the Infrastructure Section 404 Permit application, impacts to aquatic resources are based on Infrastructure Scenario #3 because the infrastructure alignments in Scenario #3 are considered the most likely to occur. Additional indirect impacts to wetlands are anticipated for areas within 250 feet of the Off-Site Area for Infrastructure Scenario #3.

Permanent Impacts

Development of the Participating Properties included within the Placer Vineyards Development and the estimated Infrastructure Elements area would result in 116.05 acres of impacts to waters of the U.S., including 97.43 acres of direct impacts and 18.62 acres of indirect impacts. This estimate is partially based on aerial photograph interpretation since access to the off-site areas has not been secured. This estimate does not include estimates for adjacent properties within 250 feet of the Placer Vineyards Development and Infrastructure Elements area.

Approximately 53.8 acres would be impacted by development of lotting plans for the Placer Vineyards Development. Of the total wetland impact acreage, another 41.4 acres would be impacted due to Infrastructure Elements construction, including 33.3 acres on-site and 6.8 acres off-site. The Infrastructure Elements component includes improvements to existing roadways and intersections, proposed routes for new major roadways, portions of pedestrian/bicycle trails, water transmission lines and storage tanks (both potable and recycled), storm water management and conveyance systems, and sewer trunk lines, force mains, and lift stations. Where feasible, utility lines would be installed within existing roadways or other disturbed areas in order to minimize environmental impacts.

Conceptual Conservation Strategy

The avoidance and mitigation strategy for the Placer Vineyards Specific Plan ("the Conceptual Conservation Strategy") includes two primary components: on-site avoidance and preservation and on-site creation and/or restoration within open space corridors where feasible; and

acquisition of off-site lands for creation, enhancement, and preservation. These two key components are referred to as the: Avoidance and On-Site Open Space Plan; and 2) a Conceptual Compensatory Mitigation Program. Proposed on-site avoidance and conservation prioritized maintaining the connectivity and integrity of drainage corridors from east to west through the Plan Area. Restoration and creation will compensate for the anticipated loss of wetland area and replacement of impacted wetland functions. The goal of this strategy is to achieve a mixed mosaic of habitats within the mitigation areas that will provide and, in some areas, enhance ecosystem stability and result in the long-term conservation of important biological resources.

Avoidance and the On-site Open Space Plan

Participating Properties within the Plan Area cover approximately 3,744 acres and contain approximately 160 acres of wetland and other "waters." Of this, about 85 acres are vernal pool and associated seasonal wetland habitat. About 75 acres includes other waters through the Plan Area. The Avoidance and Open Space Plan has been designed to avoid and minimize impacts to key on-site aquatic resources based on plan and field level investigation of existing wetlands and wetland/swale corridor configurations and planned adjacent land uses. The Avoidance and Open Space Plan incorporates over 675 acres of open space within the Plan Area, and is based upon the goal of establishing interconnected open space. The open space includes significant wetland/ swale corridors identified within the Plan Area. These corridors which are central to the preserve design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially and/or degraded through agricultural manipulation or other human modification, and promote avoidance efficiency by maximizing wetlands avoided per total open space area.

Compensatory Mitigation

Approximately 160 acres of waters of the United States have been delineated within the project boundaries. The Placer Vineyards Development and Infrastructure Elements will result in direct impacts to approximately 97 acres of waters of the United States, and indirect impacts to approximately 19 acres of waters of the U.S. Within the Participating Properties, approximately 62 acres of waters of the United States will be avoided and/or preserved. Wetland compensation will assure "no net loss" of wetland functions or values.

The Conceptual Compensatory Mitigation Program component of the Conceptual Conservation Strategy includes four key elements: 1) the Open Space/Agricultural Land Mitigation; 2) the Applicant Initiated Mitigation Proposal; 3) Specific Compensatory Mitigation Standards; and 4) Open Space Mitigation and Management Plans. The Conceptual Compensatory Mitigation Program incorporates a variety of compensatory wetland mitigation measures, including the acquisition and preservation of vernal pool-dominated grasslands, enhancement of existing wetlands, restoration of previously existing wetlands, and the establishment of new wetlands. From a broad perspective, the preservation and enhancement measures are intended primarily to assure that there will be no net loss of wetland functions. The restoration and creation components are primarily intended to compensate for the loss of wetland area, and to result in the replacement of a portion of the impacted wetland functions. The Conceptual Compensatory Mitigation Program will be implemented through a compensatory wetland mitigation plan.

The Conceptual Compensatory Mitigation Program will be based on an ecosystem approach (including watershed conditions and needs, current trends in habitat loss or conversion, cumulative loss, current development trends, and regional planning) involving a variety of aquatic habitats and their surrounding upland environments. In selecting and securing mitigation areas, the emphasis will be on securing large parcels encompassing intact watersheds. Securing larger parcels allows for a more comprehensive ecosystem approach and minimizes indirect impacts and disturbance from activities on adjacent lands. In many instances, these mitigation measures will serve a dual function in mitigating impacts to rare, threatened, or endangered species. Adequately sized buffers will be established for off-site mitigation areas to ensure the long term viability of mitigation areas.

The Placer Vineyards Specific Plan Comprehensive Section 404 Permit Application and Public Notice (PN #199900737), as well as the Avoidance/Minimization Strategy dated June 16, 2008 and prepared for use in the Placer Vineyards EIS, contain further description of the proposed Conceptual Conservation Strategy.

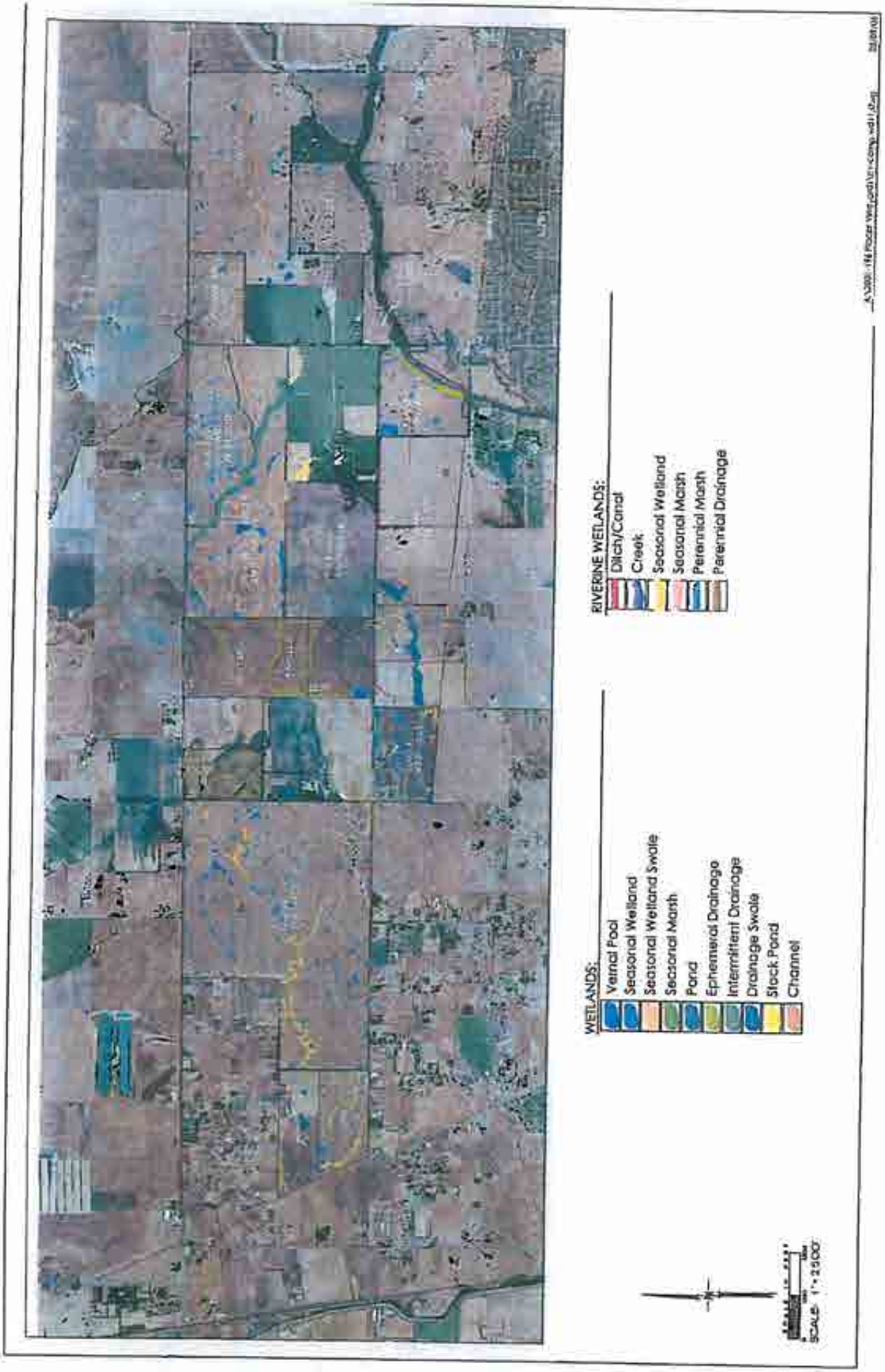
WETLANDS:
Vernal Pool
Seasonal Wetland
Seasonal Wetland Swale
Seasonal Marsh
Pond
Ephemeral Drainage
Intermittent Drainage
Drainage Swale
Stock Pond
Channel
RIVERINE WETLANDS:
Ditch/Canal
Creek
Seasonal Wetland
Seasonal Marsh
Perennial Marsh
Perennial Drainage
SCALE: 1" = 2500'

Figure 2.3

3.0 Regulatory Requirements

3.1 General Clean Water Act Requirements

The goal of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To meet this objective, Section 301 of the CWA prohibits the discharge of any pollutant into navigable waters unless authorized under either Section 402 or 404 of the CWA. 33 U.S.C. § 1341. Section 402 establishes the National Pollutant Discharge Elimination System (NPDES). 33 U.S.C. § 1342. Section 404 authorizes the issuance of permits for the discharge of dredged or fill material into the waters of the United States. 33 U.S.C. § 1344.

3.2 Overview of the Section 404 Process

The Corps administers the Section 404 program on behalf of the Secretary of the Army. The EPA has the authority to determine the scope of Section 404 jurisdiction, to issue guidelines on the discharge of dredged or fill material (Section 404(b)(1), 33 U.S.C. § 1344(b)(1) – the "Section 404(b)(1) Guidelines"), and to prohibit a discharge if EPA determines under Section 404(c) of the CWA, 33 U.S.C. § 1344(c) that the discharge will result in unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. The EPA can exercise its Section 404(c) authority to veto the Corps' issuance of a Section 404 Permit.

The Corps' Section 404 permit review involves "the consideration of the full public interest by balancing the favorable impacts against the detrimental impacts." The Corps evaluates the probable impacts of the proposed activity and its intended use on the public interest. 33 C.F.R. § 320.1(a). In its review, the Corps carefully weighs the benefits reasonably likely to accrue against foreseeable detriments. 33 C.F.R. § 320.4(a). The Corps' public interest analysis reflects a variety of factors including land use, economics, property ownership, and general needs and the welfare of people, and it assesses the relative extent of the public and private need for a Proposed Project. 33 C.F.R. § 320.4(a).

The Corps' regulations also address the relationship between the Corps and state and local land use planning agencies. The regulations expressly state that "the primary responsibility for determining zoning and local land use matters rest with state and local and tribal authorities." 33 C.F.R. § 320.4(j)(2). The regulations direct that upon compliance with the Corps' rules and other applicable federal law, in the absence of "overriding national factors of the public interest" that may be revealed during a permit application, a permit "will be generally issued following receipt of a favorable state determination." 33 C.F.R. § 320.4(j)(4).

3.3 Section 404(b)(1) Requirements

The Corps is required to determine whether a project complies with the Section 404(b)(1) Guidelines. 40 C.F.R. Pt. 230; 33 C.F.R. § 320.4(a)(1). The *Memorandum of Agreement between the EPA and the Corps Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines* (1990) (MOA) provides that the Section 404(b)(1) Guidelines first must avoid impacts, then minimize impacts, and finally provide practicable

compensatory mitigation for unavoidable impacts. The MOA encourages on-site, in-kind mitigation and an overall no net loss of functions and values. Regulatory Guidance Letter 02-2 clarifies and provides further support for the Corps' no-net loss policy and reinforces the Corps' commitment to protecting waters of the United States, including wetlands. Additionally, the Section 404(b)(1) Guidelines prohibit the discharge of dredged or fill materials to waters of the United States if that is not the least environmentally damaging practicable alternative as further described below.

The Section 404(b)(1) Guidelines also contain substantive requirements in addition to the "practicable alternative" standard. These include prohibiting discharges that cause or contribute to violation of water quality standards, violate any toxic effluent limit under Section 307 of the CWA, or jeopardize the continued existence of any endangered species or destroy or modify its critical habitat. 40 C.F.R. § 230.10(b). If a federally-listed threatened or endangered species may be affected by a project, then the Corps is required to consult with the U.S. Fish and Wildlife Service, pursuant to 33 C.F.R. § 320.3. The Section 404(b)(1) Guidelines also prohibit any discharge that causes or contributes to significant degradation of the waters of the United States. An evaluation of the Project's compliance with these substantive requirements will be provided as part of the 404 Permit process.

4.0 Project Purpose Screening Analysis

The Section 404(b)(1) Guidelines prohibit the discharge of dredged or fill materials to waters of the United States if there is a "practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other, significant adverse environmental consequences." 40 C.F.R. § 230.10(a).

Practicable alternatives include activities that do not involve a discharge of fill into waters of the United States or involve a discharge at other locations in waters of the United Sates. An alternative is "practicable" if it is "available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes." 40 C.F.R. § 230.10(a)(2).

If the proposed activity would involve a discharge into a special aquatic site such as a wetland, the Section 404(b)(1) Guidelines distinguish between those projects that are water dependent and those projects that are not. A water dependent project is one that requires access to water to achieve its basic purpose. A non-water dependent project is one that does not require access to water for its basic purpose.

The Section 404(b)(1) Guidelines establish two presumptions for non-water dependent projects that propose a discharge into a special aquatic site. The first presumption is that a practicable alternative is available that does not involve discharging into a special aquatic site. The second presumption is that all practicable alternatives to a proposed discharge, which do not involve a discharge into a special aquatic site, are presumed to have less adverse impact to aquatic resources. The applicant has the burden of clearly demonstrating that these presumptions do not apply in a particular case. 40 C.F.R. § 230.10(a)(3).

4.1 Project Purpose Statement

The basic project purpose is *to develop residential and commercial uses*. This basic purpose is not water dependent.

The statement of overall project purpose is the applicant's statement of objectives used to evaluate practicable alternatives to the project. In this case, the Applicants' overall project purpose is:

> *"To construct a large-scale regional mixed use residential project in western Placer County."*

4.2 Project Purpose Screening

The overall purpose of the Project is to accommodate projected population growth through a comprehensive approach towards land use development consisting of residential, employment-generating, commercial, recreational and public/quasi-public land uses, and required infrastructure, as well as open space, in a coordinated and interrelated development envelope in order to support a population of approximately 30,000 people. Each aspect of development is integral to the viability of all other developmental elements as further discussed below.

Large Scale

A **large-scale** community is intended to assist in meeting the region's future needs for the provision of residential and non-residential development opportunities to accommodate long-term projected population growth in Western Placer County between the City of Lincoln and the County's border with Sacramento County as further discussed below in the logistics criteria discussion in Section 6.1.2. The Project is proposed to accommodate the Placer County General Plan's goals of meeting the region's long term growth needs.

Mixed-Use Residential Community

A **mixed-use community** is based on the need for a development comprised of a variety of residential, employment-generating, commercial-serving and public/quasi-public uses. Mixed-use community is this context would also mean comprehensive planned developments constructed on a single tract of land or on multiple contiguous parcels owned and/or controlled by a single landowner or a group of landowners primarily developed with a mix of land uses.

A mixed use community is comprised of residential development and related infrastructure, a broad range of commercial uses, ancillary uses such as local-serving retail, open space and recreational uses, and other public services and amenities. The land uses must be functionally integrated in such a manner that the combination of residential, employment-generating, commercial-service, and public/quasi-public uses efficiently and effectively serve the residents. The project purpose contemplates a mixed use community which is integrated through a series of concentrated urban centers and a mix of residential neighborhood developments, uniquely situated around public amenities, employment, housing, shopping, recreational uses and multiple transportation options in a manner that achieves an appropriate mix of residential land uses with supporting non-residential development to create a community in Western Placer County.

In order to be a viable, mixed-use community within the Placer County region, a development must provide a balance of jobs, housing units and other amenities which would be attractive to major employment-generating uses from a metropolitan location within the Bay Area. In this regard, a mixed use community also must provide a wide variety of employment opportunities for residents of Placer County and surrounding areas, including construction-related jobs, retail, office, and other job-generating uses. These jobs range from relatively low-paid entry level jobs to relatively high paid professional jobs.

A **residential** project with a range of housing types for multiple income segments reflects the Applicants' and Placer County's objectives in developing a well-integrated and harmonious pattern of residential-oriented activities affording a variety of housing opportunities. Such a community would include a range of housing choices, types, styles and densities to accommodate all income levels.

A large-scale mixed use community also includes schools, parks, public facilities, and urban centers as focal points for its neighborhoods and communities, with emphasis on pedestrian access and activity at these facilities. A mixed use community further incorporates regional transportation systems to link the Project Area and Plan Area to the surrounding urban areas

through a regional bus rapid transit system and transfer station and a system of on- and off-street trails, linked to the regional trail system.

Western Placer County Region

The market area for this project is the western Placer County region. This region was selected because of a number of important regional planning factors. For example, the Placer County General Plan designated western Placer County for urban development. Consistent with the General Plan, SACOG also designated this area for urban development. A new town within the western Placer County region focuses development in an area that would minimize urban sprawl and preserve prime farmland located elsewhere. Moreover, the areas/cities surrounding Placer Vineyards have experienced and will continue to experience rapid employment growth (South Sutter, Placerville, etc.), thereby generating the need for housing in the western Placer County area because this area services the housing needs of the region. The area also is contiguous to existing urban development to the south (City of Sacramento) and new development to the North (southwest Roseville). Additionally, the region is planning improvements to the transportation network in order to accommodate the projected level of population growth and associated development. The Plan Area is better suited for concentrated new growth than other locations because local and regional plans contemplate urban development in this area, and it would result in less sprawl and associated environmental impacts and loss of prime farmland.

5.0 Framework for Analysis

Specific plans and master planned development projects offer the ability to utilize the upfront and large scale planning efforts to streamline Alternatives Analysis required under the CWA Section 404 "Guidelines." The proposed framework for the Alternatives Analysis reflects efforts accomplished through the local planning process to avoid and preserve interconnected and intact habitat areas for the Plan Area. In this regard, the Alternatives Analysis framework is designed to address alternatives, their practicability and relative impacts for the Specific Plan as a whole and for the projects comprising the Specific Plan. The objective of assessing alternatives in this manner is to provide for a hierarchical analysis moving from issues germane to the Specific Plan as a whole to issues that affect development of key components of the Specific Plan.

The analysis addresses the Placer Vineyards Development and the Infrastructure Elements necessary to serve that development. The Infrastructure Elements include all infrastructure such that is needed for development of the Plan Area (i.e., including the Placer Vineyards Development) as opposed to that infrastructure that is needed only for the development of individual parcels within the Plan Area(i.e., tract improvements). Examples of Infrastructure Elements include those roads and arterials facilitating transportation throughout the Plan Area, drainage/flood control improvements needed to develop the Plan Area, and utilities serving more than one parcel. Other Project components include land uses that are needed as part of a large-scale mixed use community at the Specific Plan level that are not inherently limited to development of specific parcels such as: parks and open space, schools, and other public amenities.

This analysis contains an evaluation of off-site alternatives for the Placer Vineyards Development and Infrastructure Elements that are proposed as part of a large-scale residential mixed use community. Although individual Section 404 Permit applications were filed by the developers of the Participating Properties, because these properties are proposed to be developed as part of an integrated Specific Plan, this Alternatives Analysis evaluates alternative sites that can accommodate the development of the Specific Plan, as a whole, including the associated infrastructure. In other words, this analysis does not evaluate alternative sites for each individual permit application.

For the evaluation of each on-site alternative, the analysis considers alternatives in terms of the alternatives to the Placer Vineyards Development and Infrastructure Elements, as a whole, followed by an assessment of each respective alternative's effects on the applications filed by the Participating Properties for each specific parcel within the Project Area.

6.0 Off-Site Alternatives

This Alternatives Analysis evaluates off-site alternatives to the Placer Vineyards Development based on the land use plan reflected in the Placer Vineyards Specific Plan. Off-site alternatives that would be capable of achieving the Applicants' project purpose described in Section 4 were further evaluated based on their availability, practicability, effects on aquatic resources and other environmental effects. Sites were screened in particular with respect to the minimum requirements necessary to achieve the Applicants' project purpose and in accordance with applicable off-site criteria.

The initial screening of the Proposed Project and two alternative sites evaluated in this Alternatives Analysis concluded that none of the alternative sites would achieve the overall project purpose. All of the off-site alternative sites are summarized in Tables 1 and 5 and shown on Figure 6.1 and further evaluated below.

6.1 Screening for Off-Site Alternatives

The criteria described below were used in the screening of the off-site alternative locations that were determined to be consistent with the project purpose.

6.1.1 Initial Screening

The Applicants' project purpose statement was used to determine whether or not a site satisfied the basic geographic criteria for alternative project locations. This analysis considers alternative sites located within the western Placer County region. Because Sutter County borders the Placer Vineyards site on the west, this analysis also considered alternative locations in southeastern Sutter County in order to identify any alternatives that were capable of accommodating the Placer Vineyards Development within the region.

6.1.2 Practicability Screening Criteria

Off-site alternatives that survived the review based on their ability to meet the project purpose were further evaluated to determine whether they met the additional criteria listed below. An alternative site was rejected as impracticable if it failed to meet one of the practicability screening criteria. Sites that were found to be unavailable were rejected from further review.

<u>Availability</u>

The assessment of geographic considerations for a large scale mixed use community is based on the concept of "market entry." Under one approach based on the *Bersani v. U.S. Environmental Protection Agency*[3] decision, the Corps evaluates alternatives available at the time the applicant entered the market. In this case, "market entry" would be the time the future developers of Placer Vineyards began assembling parcels for development.

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3 850 F.2d 36 (2d Cir. 1988), cert. denied, 489 U.S. 1089 (1989).

In August 1994, the Placer County General Plan directed the preparation of a specific plan to allow development of the Dry Creek/West Placer Community Plan area with the intent that the entire 5,230-acre Placer Vineyards Plan Area would be comprehensively planned. Pursuant to the adopted General Plan requirements, the future developers of Placer Vineyards began a land assemblage effort at that time in response to the County's Community Plan. Thus, based on the market entry approach, the developers, now known as the Placer Vineyards Property Owners Group, entered the market in 1994, consistent with the County's General Plan.

Under another approach, "market entry" is defined as occurring at the time an applicant files a Section 404 permit application. Under this definition of "market entry," the Corps would consider alternative sites available in May 2006.

An area not presently owned by an applicant may be considered as an alternative discharge location if it could be reasonably "obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity" (40 C.F.R. § 230.10[a][2]). Sites that meet the project purpose but were not owned by the Property Owners at the time of site selection also would be included in this analysis. Similarly, sites that meet the project purpose and currently are not owned by any one of the applicants (or by multiple applicants) will be evaluated to determine whether they could be reasonably obtained, utilized, expanded or managed to fulfill the project's basic purpose.

Because the time frame for property assemblage necessary to develop the Placer Vineyards Specific Plan spanned more than a decade and it was only when the applicants filed their applications with the Corps in May 2006 that the Owners' Group was able to identify the full set of applications and associated property affected by the applications, for purposes of this analysis, market entry is determined as of May 2006.

In accordance with these principles, the Alternatives Analysis evaluated the availability of alternative sites as follows:

- If the alternative site was not available for acquisition and development, the alternative was rejected from further review.

- If the alternative site is proposed for development, currently being developed, or has already been developed, the site was rejected from further review.

- If the alternative site has been set aside for open space conservation (including habitat preservation and/or agricultural preservation) or identified as part of a potential reserve system under the PCCP effort or for mitigation preserves, the site was rejected from further review.

Logistics Criteria

The Alternatives Analysis evaluated off-site alternatives based on the following logistics criteria:

- **Size.** If the site(s) is not of sufficient size to allow for development of a large-scale mixed use development, then the site was rejected from further review. A site of

sufficient size was defined by site configuration with respect to project elements and their relation to one another within the context of a large-scale mixed use community.

The size criterion is based on the minimum acreage and supporting land uses that can accommodate a minimum population of 30,000 people based on the County's population projections for Western Placer County and at an average household size of 2 persons per household (see Specific Plan, Table 3-4). Placer County includes some of the fastest growing communities in the Sacramento Region (Roseville, Rocklin, and Lincoln), with evidence of significant population growth from 1980 to 2000 and even faster growth anticipated through 2040. (Placer Parkway Draft Tier 1 EIS/EIR, pp. 1-12,13). From 2020 to 2040, population growth in the West Placer County regional analysis district (RAD) is anticipated to increase by approximately 3,344 percent.

Specifically, in 1990, Western Placer County had a population of 932 residents, and in 2000, the population increased to 1,014 persons, representing an 8.8% increase in population. Expected population growth in 2020 is projected to be 34,919 persons and in 2040, 145,466 persons. This represents a 3,344 percent increase in population from 2000 to 2020 and a 317% increase from 2020 to 2040. Employment projections similarly are anticipated to increase by 10,663 percent from 2000 to 2020 as compared to a 132 percent increase from 1990 to 2000. Employment projections are anticipated to increase by 802 percent from 2020 to 2040.

The Placer County General Plan anticipated the development of a maximum of 14,132 dwelling units in the West Placer Specific Plan Area (i.e., Placer Vineyards) in order to accommodate the anticipated population increases in the County. For purposes of this analysis, a site must accommodate more than 10,000 dwelling units, over 2 million square feet of commercial/retail uses, including a town center, over 1 million square feet of commercial and employment uses, and schools to accommodate more than 8,000 students at a reasonable density. The site also must include public/quasi-public facilities and services to accommodate the resident population. In order to provide adequate public/quasi-public facilities, the new town includes a bus transit system, a transit center, religious sites, a high school, two middle schools and six elementary schools, as well as shared parking facilities within the Placer Vineyards Department area. Together, these land uses represent the minimum project size that has the potential to be an economically mixed use community to accommodate 30,000 people in unincorporated western Placer County, consistent with the 1994 Placer County General Plan.

- **Assemblage.** If it is not feasible to acquire multiple parcels to enable development of a large-scale mixed use plan area, the site was rejected from further review.

- **Land Use Approval Status.** If the alternative site was located in areas that were not designated and/or zoned by local government jurisdictions for a balance of residential/ employment center development, or could not be designated in the near future for such uses, the site was rejected from further consideration.

- **Growth Limitations.** The sites either must be within a city's planning boundary, or an area of Placer or Sutter County where development could be permitted and

utilities extended. Any property that is subject to an initiative was rejected from further consideration.

Technological Criteria

The Alternatives Analysis evaluated off-site alternatives in terms of the following technological criteria:

- **100-Year Flood Protection.** If the alternative site is located within a 100-year floodplain, or if it is located in the 100-year floodplain and an adequate and feasible engineering solution is not available to bring the property outside the 100-year floodplain, the site was rejected from further review.

- **Transportation Infrastructure Availability.** If the site is not located in an area with access to adequate local and regional transportation/roadway, or if transportation infrastructure cannot be feasibly extended to the site, the alternative was rejected from further consideration.

- **Water Supply**. If the site is not located in an area with reasonable access to an available, sufficient and reliable water supply, the site was rejected from further review.

- **Wastewater Treatment.** If the site does not have reasonable access to available, sufficient and reliable wastewater treatment and disposal facilities, the site was rejected from further consideration.

6.1.3 Aquatic Resources Impacts

Under the Section 404(b)(1) Guidelines, the alternatives analysis must demonstrate that there are no practicable alternatives to the proposed discharge which would have less adverse impact on the aquatic ecosystem, provided that the alternative does not have other significant adverse environmental impacts. The 404(b)(1) Guidelines define the *aquatic ecosystem* as waters of the U.S., including wetlands, "that serve as habitat for interrelated and interacting communities and populations of plants and animals." (40 C.F.R. § 230.3(c)). Accordingly, the analysis of alternatives to the proposed discharge considers an alternative's effects on the aquatic ecosystem in terms of a landscape-based approach which reflects the interrelated and interacting vegetation and wildlife habitat.

For identification of practicable alternative sites, the alternatives analysis evaluated whether these alternatives would be potentially less-damaging to the aquatic ecosystem to develop as compared to the Placer Vineyards Specific Plan.

6.1.4 Environmental Impacts

Practicable off-site alternatives that would result in less adverse impacts on a special aquatic site or would not involve discharges of dredged or fill material in other waters of the United States were evaluated to determine whether they would result in other significant adverse environmental consequences.

- **Biological Resource Impacts.** Alternatives that would result in a significant adverse impact on rare, threatened or endangered species were rejected from further consideration. Alternatives were rejected if they would result in development on lands designated or acquired for habitat preservation.

- **Flooding and Seismic Risks.** Alternative sites were rejected that would result in the exposure of habitable structures to unacceptable risks of flooding or seismic hazards.[4]

- **Land Use Incompatibility Effects.** Alternative sites that would result in the establishment of a mixed use residential community in proximity to incompatible land uses (e.g., an airport) were rejected.

6.2 Screening Analysis of Off-Site Alternatives

The Applicants evaluated the Project Site and two categories of off-site alternatives, which are described and evaluated below and shown in Figure 6.1 and identified in the summary table (Tables 1 and 5).

6.2.1 Description of Proposed Site

The Project Site is described in Chapter 2 above and shown in Figure 2.1. The Proposed Project consists of the Placer Vineyards Development, a residential mixed-use community, and the Infrastructure Elements which provide the backbone infrastructure to serve the development.

Project Purpose

The Proposed Project would meet the Project Purpose for the reasons described for the Proposed Project Site in Section 7.3.1. In summary, the Placer Vineyards Specific Plan, generally, and the Project specifically, are designed to provide a unique opportunity for Placer County to achieve a variety of important goals that will benefit both the County and the region. Specifically, the Project is planned to accommodate the Placer County General Plan's goals of meeting the long term growth needs of the County. The Specific Plan establishes a series of concentrated urban centers and a mix of residential neighborhood developments, uniquely situated around public amenities, employment, housing, shopping, recreational uses and multiple transportation options. The Proposed Project is intended to implement the Specific Plan land use plan in a manner that achieves an appropriate mix of residential land uses with supporting non-residential development to create a mixed-use community in Western Placer County. The Project also incorporates regional transportation systems to link the Project Area and Plan Area to the surrounding urban areas through a regional bus rapid transit system and transfer station and a system of on- and off-street trails, linked to the regional trail system.

As a large-scale mixed use community, the Proposed Project also provides schools, parks, public facilities, and urban centers as focal points for its neighborhoods and communities, with

[4] Flood and seismic hazards fail on practicability grounds and not "other environmental" grounds if such effects are unmitigatable. If flood and seismic hazards are mitigatable, but the mitigation has substantial environmental impacts, the alternative can be dropped on environmental grounds.

emphasis on pedestrian access and activity at these facilities. Homes within the Specific Plan area are encouraged to front onto pedestrian sidewalks, and retail areas are encouraged to extend into the pedestrian realm to create vital environments. A town center, two village centers and several neighborhood centers provide a mix of uses designed to complement the needs of and activities within the community.

Availability

This alternative is available as further discussed in Section 7.3.1.

Practicability

Development of the Project is practicable both for the Specific Plan as a whole and for individual parcels for which a Section 404 Permit application was submitted. The Project accommodates a large-scale residential mixed use community and is practicable based on cost, logistics, and technological considerations for the reasons set forth in Section 7.5.1.

Aquatic Resources Impacts

The Project would result in combined effects to approximately 97.43 acres of wetlands or other waters of the United States. Sections 2.4 and 7.3 of this Alternatives Analysis describe the aquatic resources on the Proposed Site and Figure 6.1 depicts the location of these resources. Section 7.5.1 describes the Project's effects on these resources.

Other Environmental Impacts

With respect to the other environmental criteria, the Project would comply with the criteria related to land use compatibility, biological resources and seismic safety/flooding considerations, as further explained in Section 7.5.1. For these reasons, development of the Project at the Project Site would be practicable and would not result in any other significant environmental impacts.

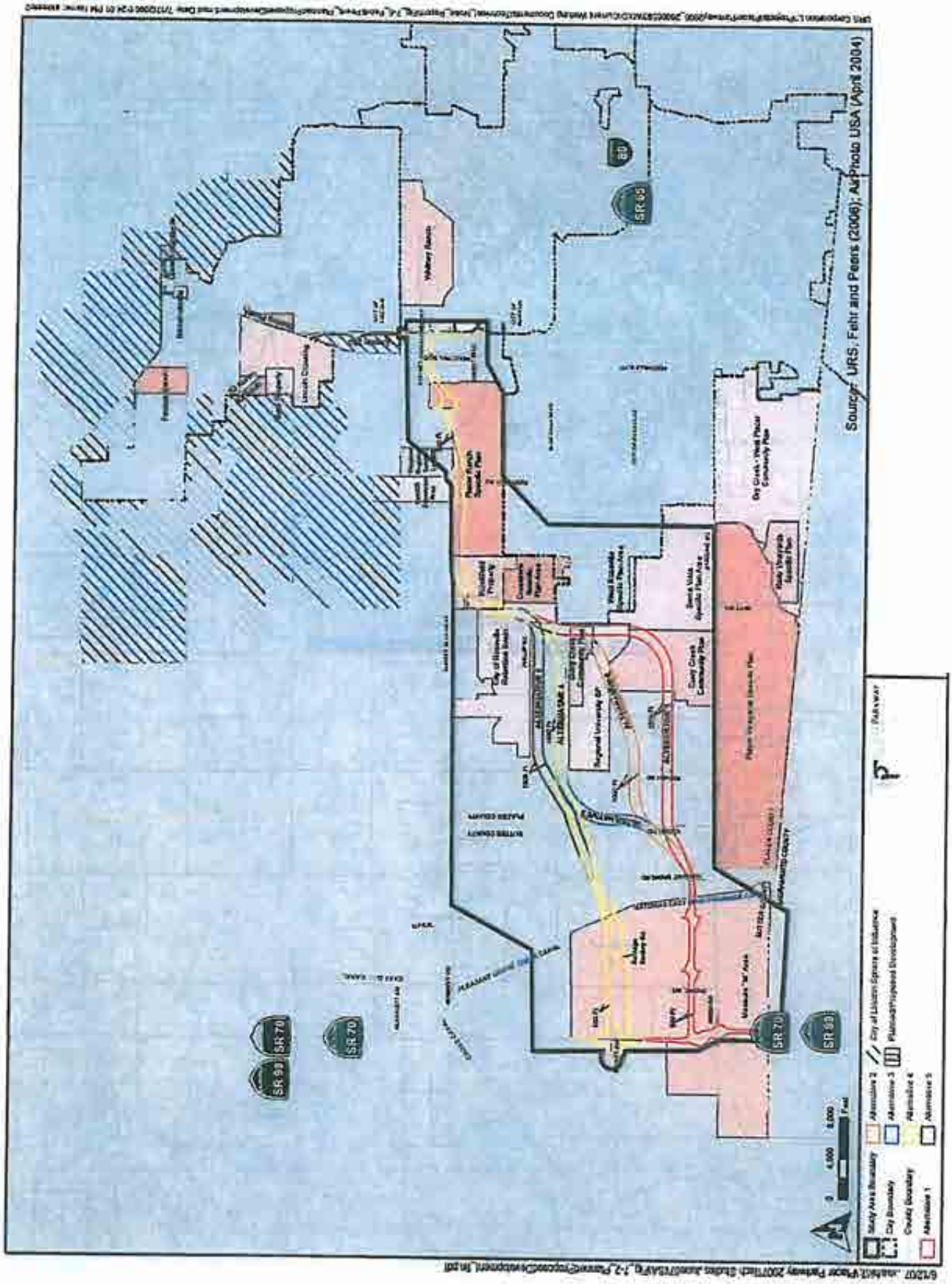
Source: URS, Fehr and Peers (2006); AirPhoto USA (April 2004)
SR 99
SR 70
SR 65
Valley Ranch
Lincoln Crossing
Sunset Ranch Specific Plan
Residential Property
Commercial Properties
City of Riverside Sphere Study
Regional University SP
Dairy Creek Community Plan
Sierra Vista Specific Plan Area
Riverside Specific Plan Area
Dry Creek - West Placer Community Plan
Placer Vineyards Specific Plan
Placer County Specific Plan
Sutter County
Placer County
Yuba County
Study Area Boundary
City Boundary
County Boundary
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
City of Lincoln Sphere of Influence
Publicly/Proposed Development
Parkway
0
4,000
8,000
Feet

Figure 6.1

6.2.2 Off-Site Alternative 1 – Other Western Placer County Alternatives

This alternatives includes all currently undeveloped sites within western Placer County that are of sufficient size to allow for development of a large scale mixed use residential and commercial community and at a reasonable density to accommodate 30,000 people. A reasonable density includes a range of densities accommodating low (under 4 units per acre), medium (4-8 units per acre) or high density (7-21 units to the acre) (see e.g., *Technical Evaluation of the Placer Vineyards Specific Plan Reduced Density Alternative* dated September 6, 2006).

Sites that are either (1) identified for resource conservation areas as part of mitigation reserve sites or sites that are anticipated to be preserved along the northern and western portions of the proposed Placer County Conservation Plan (PCCP) area, or (2) already planned for development by Placer County were rejected on the basis that the sites are not available. Although sufficient area exists for the development of a large-scale mixed use community, sites that are expected to be targeted for potential resource conservation under the PCCP as depicted in preliminary preserve maps for the past three years, generally would not be available for development of a mixed use community because this area has been identified by Placer County to be included in the PCCP for preservation purposes. Thus, undeveloped sites to the north and west of Placer Vineyards that have not otherwise been proposed for development fail to meet the criteria for availability set forth in Section 6.1.2, above, and development of a large scale mixed use community on these sites would not be considered practicable.

Further, all other sites of sufficient size for a large scale mixed use development that Placer County identified for development are currently undergoing or completed multi-year planning processes. Consequently, these alternative sites also fail to meet the criteria for availability set forth in Section 6.1.2 above, because the sites are not available for acquisition and development, and are either proposed for development, currently being developed, or have already been developed, as further described below.

West Placer. Concurrently with adoption of the *Placer County General Plan* in 1994, the Placer County Board of Supervisors adopted Resolution No. 94-238 which amended the *Dry Creek/ West Placer Community Plan* to include the West Placer Plan Area. This amendment, included as Exhibit 1 of the resolution, includes standards for development in the Plan Area and changes to Community Plan Land Use Diagram. Exhibit 1 states that the Placer Vineyards Plan Area was identified in the *Dry Creek/West Placer Community Plan* as an area to be examined as part of the Countywide General Plan Update and that update resulted in this designation for the area. The West Placer Plan Area later became the Placer Vineyards Plan Area. It was one of only two areas designated in the 1994 *Placer County General Plan* for large-scale development at increased densities to be considered through the specific plan process in the unincorporated area of Placer County. This site is available and is further discussed below, as the Proposed Project.

Bickford Ranch. The other area, originally identified as the Boulder Ridge area, is the approved *Bickford Ranch Plan Area* located in Placer County near the southern boundary of the City of Lincoln. The Bickford Ranch project is a large scale, mixed-use planned development including 1,880 residential units, including an age-restricted component, 18-hole golf course with driving range and two clubhouses, 9.7 acres of retail/office uses, two public park sites, a fire station,

police substation, and an elementary school site. The Bickford Ranch Project obtained all of the entitlements necessary to commence development, successfully sustained litigation challenges, and is currently under construction. Thus, this site is not available.

Other areas of sufficient acreage to accommodate a large-scale mixed use residential community in the western Placer County region similarly have been planned for urban development over the years. These areas are located in Western Placer County, and in some cases, are proposed for annexation to the City of Roseville. These areas include:

Placer Ranch. The proposed Placer Ranch Plan Area encompasses 2,213 acres immediately north of the City of Roseville. The Placer Ranch project site is located in unincorporated Placer County, and the portion of the site east of Fiddyment Road is within the City of Roseville's Sphere of Influence. However, the project applicant recently requested that the entire project site be considered for annexation into the City of Roseville. The Placer Ranch site extends approximately one mile north from the north boundary of the City of Roseville and is approximately three and one-quarter miles wide. The eastern boundary of the site is located approximately one mile west of the State Route 65/Sunset Boulevard interchange, and the western boundary abuts agricultural land. The existing Western Regional Sanitary Landfill is adjacent to the site along a portion of its northern boundary.

Currently, the Placer Ranch project site is undeveloped and characterized by areas of flat and gently rolling terrain crossed by drainages associated with Pleasant Grove Creek. The site contains non-native grasslands in the east and agricultural fields in the west. The agricultural fields, currently under Williamson Act contracts, but not in active agricultural production, have historically supported hay, wheat and rice production.

The Placer Ranch project site is included in the Sunset Industrial Area, which is an 8,000-acre community plan area established by Placer County in 1997. This area was planned to support future manufacturing, business, and high-tech industry jobs. Since the mid-1990s, Placer Ranch has been engaged in the planning and entitlement process first with Placer County and more recently with the City of Roseville.

This off-site alternative is not available because a specific development project has been proposed for this area since the time of market entry for the Project. Currently, the landowner is undergoing a specific plan process for Placer Ranch and is proposing to annex the property into the City of Roseville.

Sierra Vista. The 2,175-acre Sierra Vista Plan Area is located along the western edge of the City of Roseville in unincorporated Placer County, west of Fiddyment Road, north of Baseline Road, and south of the West Roseville Plan Area. Approximately 1,692-acres of SVSP is within the City's Sphere of Influence and approximately 480-acres is outside the existing sphere.

In June of 2005, the City of Roseville initiated the annexation and specific plan process for this site pursuant to a request from the Sierra Vista Landowner Group. The Landowners submitted a formal application on March 29, 2007 to process the Sierra Vista Specific Plan, annexation request, General Plan Amendment, and Development Agreement for the area. This off-site

alternative is not available because a specific development project was proposed for this area at the time of market entry for the Project.

Moreover, this area currently is proposed for development by a group of landowners and developers proposing the Sierra Vista Specific Plan. The proposed Sierra Vista Specific Plan project would provide for a mix of land uses within the Plan area to create a community with approximately 9,995 residential units; 281 acres of commercial, commercial mixed use, and business professional uses; along with supporting public/quasi-public, open space and urban reserve uses, and parks.

West Roseville. The approved West Roseville Plan Area encompasses approximately 3,150 acres located within the City of Roseville, and is generally located west of Fiddyment Drive and north of Baseline Road. The West Roseville project site is located approximately eight and a half miles west of Interstate 80 and approximately six and a half miles west of the Blue Oaks Boulevard Interchange on State Route 65.

The West Roseville Specific Plan was adopted by the City of Roseville in 2004, and the Specific Plan site is currently under construction. The Specific Plan area is planned primarily as a residential community with an overall mix and intensity of uses similar to that found in adjacent portions of the City. The Specific Plan project incorporates a mixed-use village center, forming the centerpiece of the community, and also provides for recreation, open space, employment and educational opportunities available to residents both within and outside the Plan Area. The site will be developed with a total of approximately 8,430 dwelling units on approximately 1,754 acres; 685 acres set aside in open space; 270 acres for dedication to parks; 148 acres of public/quasi-public uses; 49 acres of community commercial; 20 acres of business professional uses; 109 acres of light and general industrial uses; and 128 acres of right-of-way. Thus, this off-site alternative is not available.

Regional University. The Regional University Plan Area consists of approximately 1,157 acres of undeveloped land in western Placer County, immediately adjacent to the west of the West Roseville Plan Area. The Regional University project site located to the west of the West Roseville Specific Plan and south of Pleasant Grove Creek. The eastern boundary of the site is located adjacent to and immediately west of a proposed future Watt Avenue extension, with the western boundary adjacent to Brewer Road. The northwest corner of the site falls approximately 2.7 miles north of Base Line Road.

The eastern portion (roughly two thirds) of the Regional University project site is currently in active agriculture. The western third of the site was historically used for cattle grazing and rice farming, and is currently composed primarily of non-native annual grassland.

The Regional University project site is currently designated as Agriculture by the Placer County General Plan and is zoned F-B-X (Farm-Combining – 80-acre minimum site size). The site is also located within the Future Study Area, identified by the Placer County General Plan as an appropriate location for consideration of potential future urban or suburban growth.

This off-site alternative is not available because a specific development project was proposed for this area at the time of market entry for the Project. Moreover, a group of landowners and

developers initiated the environmental review and entitlement process with Placer County for the development of the Regional University Specific Plan, which is expected to come before the Board of Supervisors in 2008. The proposed Regional University Specific Plan project would include two primary components: a University campus and an adjoining Community. In addition to the institutional facilities on campus, the campus would include approximately 1,155 residential units for students and faculty, as well as retirement housing, and a portion of the campus is planned for a potential private high school that could accommodate 1,200 students and accompanying staff and faculty. The proposed Community would be mixed-use, with a variety of residential, commercial, employment, open space, parks, and public uses, including a kindergarten through sixth grade (K–6) school and a kindergarten through eighth grade (K–8) school. The Community would include 3,232 residential units of varying densities.

Development of Off-Site Alternative 1, other sites in western Placer County, would not be available, nor practicable for the reasons set forth above. For this reason, Off-Site Alternative 1 is rejected from further review.

6.2.3 Off-Site Alternative 2 – Southeast Sutter County Alternatives

All currently undeveloped sites within southeast Sutter County that are of sufficient size to allow for development of a large scale mixed use residential and commercial community at a reasonable density are either: (1) located within the South Sutter County Industrial/ Commercial Reserve, or (2) are not authorized by the USFWS and CDFG for incidental take under the Natomas Basin Habitat Conservation Plan (NBHCP) and associated permits.

The land located within the South Sutter County Industrial/Commercial Reserve encompasses two specific plan areas – the approved *South Sutter County Specific Plan* and the proposed Sutter Pointe Specific Plan. As discussed below, the South Sutter County Industrial/Commercial Reserve area fails to meet the criteria for availability set forth in Section 6.1.2 because the *South Sutter County Specific Plan* has been approved and the area is being developed, and the proposed Sutter Pointe Plan Area is not available because development of this area is subject to an initiative (Measure M). Lands located west of the SSCI/C Reserve area are included in the NBHCP reserve lands, and are managed by the Natomas Basin Conservancy for the benefit of protected species. The land set aside for resource conservation under the NBHCP also fails to meet the criteria for availability set forth in Section 6.1.2 above. Thus, development of a large scale mixed use community in these areas would not be considered practicable.

South Sutter County. In 1996, the Sutter County Board of Supervisors identified a 10,500-acre South Sutter County Industrial/Commercial (SSCI/C) Reserve in the *Sutter County General Plan*. The SSCI/C Reserve is in Sutter County adjacent to the Sacramento County boundary. In 2004, Sutter County began development of the 3,500-acre approved *South Sutter County Specific Plan* area within the SSCI/C Reserve. The *South Sutter County Specific Plan* area is located just north of the Sutter County/Sacramento County line and along the State Route 70/99 corridor. The South Sutter County area currently is being developed and thus, is not available.

Sutter Pointe. In 2004, Sutter County voters also passed Measure M, an advisory measure providing guidance on the type of development preferred for the remaining 7,500-acre portion of the SSCI/C Reserve area. The Measure M area is generally bound by Natomas Road on the east,

the Sacramento-Sutter County line on the south, and, at its westernmost point, Power Line Road; the northern boundary is approximately four miles north of the Sacramento-Sutter County line.

In July, 2006, the Measure M proponents submitted an application to Sutter County for the proposed Sutter Pointe Specific Plan, crafted specifically to respond to the opportunities and limitations established by Measure M. The Sutter Pointe proposal is being evaluated by the County. A draft EIR is expected to be released for public review in the Fall of 2008, and a decision by the Board of Supervisors is expected in the first half of 2009. Upon adoption, implementation of the Sutter Pointe Specific Plan and associated entitlements will satisfy the provisions of Measure M and guide future development in the SSCI/C Reserve area. Because the Sutter Pointe project site is subject to an initiative, and because the site is currently undergoing its own planning process for a residential community, the site is not available.

Other Land in Southeast Sutter County. The land between the eastern boundary of the Measure M planning area and the western boundary of Placer County is not of a sufficient size for a large scale mixed use development. Even if the area was of sufficient size to accommodate the Placer Vineyards Specific Plan, assemblage of land from multiple property owners would be required. Further, this land appears to currently be developed with agricultural and rural ranchette uses, and is thus not available for development. Additionally, this area is within the Natomas Basin Habitat Conservation Plan and is designated for open space and habitat conservation area. This land is not authorized for development. Finally, it appears that several of the alternative routes being considered for the future construction of Placer Parkway would traverse this area. No other sites in southeastern Sutter County are of sufficient size to accommodate the Placer Vineyards Specific Plan. Consequently, these alternative sites also fail to meet the criteria for availability set forth in Section 6.1.2, as described further below.

Because the alternative off-site locations identified above that were of sufficient size to accommodate a large-scale mixed use residential community are currently undergoing their own planning processes, are under construction, or the sites are unavailable, these sites were not further evaluated in this analysis in terms of their effects on aquatic resources. Accordingly, the Placer Vineyards Development Area is the only site that is available and can meet the project purpose.

Table 5
Summary of Off-Site Alternatives

Alternative	Summary of Evaluation	Rejected?
Proposed Project	• Achieves project purpose • Available • Practicable based on cost, logistics and technological considerations. • Results in total of approximately 97.43 acres of fill; avoidance or preservation to be realized under this alternative would be 62.25 acres, but 18.62 acres of those acres would be indirectly affected. • Other environmental impacts are primarily related to traffic, noise, and air quality.	**No**
Off-Site Alternative 1 – Other Western Placer County Alternatives	• Achieves project purpose • Not available • Not practicable because these sites are already being developed	**Yes**
Off-Site Alternative 2 – Southeast Sutter County Alternatives	• Achieves project purpose • Not available • Not practicable because these sites either are already being developed (Sutter Pointe) or are located within the Natomas Basin Habitat Conservation Plan (NBHCP) area and are not authorized for development	**Yes**

7.0 On-Site Alternatives

Off-site alternatives that survived the project purpose and off-site screening process were evaluated initially to determine their ability to avoid and minimize impacts to aquatic resources, as noted earlier in this document. As explained in Section 6.0, none of the off-site alternatives were found to be the least environmentally damaging practicable alternative site.

The Section 404(b)(1) analysis evaluated on-site avoidance and minimization alternatives for the Proposed Project, and each on-site alternative was evaluated to determine whether it would result in less adverse impacts on the aquatic ecosystem when compared to the discharge associated with the Project Site. In addition, alternatives resulting in other adverse environmental consequences were eliminated from further consideration.

7.1 Screening for On-Site Alternatives

Based on the results of the off-site alternatives analysis in Section 6.0, the Project Site was determined to be the only site that achieved the project purpose. Consequently, the Project Site is subject to further screening for potential on-site alternatives.

7.1.1 Initial Screening

The Applicants further evaluated the Project Site to determine whether it could be modified to further avoid and minimize effects on aquatic resources using a three-step process. The *first step*, practicability, involved analyzing alternative project designs in terms of avoidance and minimization of effects on the aquatic ecosystem, and the ability of each alternative to meet the overall project purpose and applicable practicability screening criteria. The *second step* involved identification of aquatic resources present on the Project Site, and their contribution to the aquatic ecosystem. These alternative designs were then evaluated in the *third step* in terms of their potential to result in other significant environmental effects.

7.2 Step 1 -- Practicability Screening Criteria

Each alternative is evaluated in terms of the practicability criteria including, cost, logistics and other technological considerations.

- If an element of the Project (e.g., "Town Center" element, infrastructure component, etc.) under any given alternative does not comply with the avoidance and minimization criteria, then this analysis evaluated whether or not it would be practicable to eliminate that Project element in order to comply with the avoidance and minimization criteria.

- Where it was determined that the development plan for any individual parcel would not fully comply with the avoidance and minimization criteria, this Alternatives Analysis evaluated whether or not compliance is practicable first, for the plan as a whole, and second, for the individual parcel as a separate CWA Section 404 permit application, taking into account logistics, technological factors, and costs using the "practicability screening criteria."

On-site alternatives that complied with the project purpose were evaluated to determine whether they would be practicable based on cost, logistics, and technological considerations. The following practicability criteria were applied to evaluate potential on-site alternatives in terms of logistical constraints, technological factors, and cost criteria in the development of the on-site alternatives. An alternative that failed to meet one or more of the criteria was rejected from further review on the basis that the alternative was not practicable.

7.2.1 Logistics Criteria

The following logistics criteria were applied to evaluate on-site alternative footprints to the entire Plan Area and then to individual development parcels within the Plan Area, to determine whether avoidance and minimization would be practicable. An alternative that is considered practicable in terms of logistics must be able to meet the following criteria:

- ***Functionally-Integrated Master Planned Community.*** The alternative must be able to be developed in a functionally integrated manner as a mixed use master planned community. This means that:

    - Proposed land uses meet basic planning principles for developing residential uses that are supported by and accessible to neighborhood retail, commercial, and public/quasi-public land uses.

    - The alternative results in an elementary school located in reasonable proximity to the residential subdivisions for which the school is intended to serve, rather than locating an elementary school so that access could not be provided to connect the residential development to the school (i.e. not functionally-integrated).

- ***Self-Sustaining.*** The alternative can be developed in a self-sustaining manner. In 1994, the Placer County General Plan identified two areas for master-planned development in unincorporated Placer County to accommodate projected population growth for the upcoming decades. One of these areas is Placer Vineyards. The County has required that future development in this area must be "self-sustaining." This means that:

    - Residential development would be in proximity to new employment-generating uses, supported by a town center and other neighborhood-serving and general commercial uses, provide institutions for all levels of education and all public services (e.g., fire, police, cemeteries, etc.)

    - All necessary infrastructure and services would be provided at no cost to the local jurisdiction.

    - The alternative must include the infrastructure necessary to support new development without compromising the levels of service for utilities and infrastructure elsewhere in the County.

- ***Size***. An alternative must be sized to accommodate the supporting land uses that can accommodate a minimum population of 30,000 people based on the County's population projections for Western Placer County as further discussed in Section 6.1.2, above. To accommodate this population, the mixed use community would need to be sized to provide over 10,000 dwelling units, over three million square feet of employment-generating, commercial/retail uses and other non-residential development at a reasonable range of densities consisting of a mix of low (under 4 du/acre), medium (4-8 du/ac) and high density (7-21 du/ac) for residential uses. For non-residential development, development would need to generate 7,000 to 9,000 jobs with a goal towards addressing the regional job-housing balance at approximately 1.3 jobs per housing unit to meet the Statewide number of jobs per housing unit (See EPS Technical Memorandum dated September 6, 2006). A large-scale mixed use community also includes sufficient public facilities and schools to serve the population with basic services and utilities.

- ***Major Infrastructure.*** Development of the on-site alternative does not require the provision of major on-site or off-site Infrastructure Elements improvements that cannot be constructed as part of the proposed mixed use community such as:

  - A highway interchange or substantial regional transportation infrastructure that was not otherwise contemplated in the Placer County General Plan or SACOG Blueprint.

  - A new wastewater treatment plant.

  - Major surface water treatment systems.

- ***Land Use Policies.*** The on-site alternative does not require amendments to the Placer County General Plan, Placer Vineyards Specific Plan and related approvals resulting in a conflict with General Plan planning principles (in place since 1994) guiding the location of urban development in the County and resulting in a substantial delay in the ability for the County to accommodate projected population growth through planned development.

7.2.2 Technological Criteria

The following technological criteria were applied to evaluate on-site alternative footprints:

- The alternative site is located outside a 100-year floodplain, or if the site or a portion of the site is located in the 100-year floodplain, an adequate and feasible engineering solution is available to bring the property outside the 100-year floodplain.

7.2.3 Cost Criteria

This analysis considers general effects on costs for each alternative for comparative purposes. Costs are based on the effects of each alternative on infrastructure, and development costs.

Alternatives satisfy the cost criteria if costs associated with developing the site were reasonable based on the following:

- Development costs associated with developing the on-site alternative are reasonable development costs typically associated with comparable master planned communities. Development costs include land assemblage costs, developer fees, cost per unit or developable acre, and cost of building construction.

- Infrastructure costs associated with developing the on-site alternative are reasonable based on infrastructure costs typically associated with comparable master planned communities. Costs may include the cost of building roads, water, sewer, drainage, and mass grading.

- An alternative development footprint must be able to support both major infrastructure and in-tract service requirements.

7.3 Step 2 -- Aquatic Resources Screening Criteria

The framework for assessing on-site avoidance and minimization measures was developed based on the principals an recommendation set forth in "A Proposed Methodology for a "Regional LEDPA" Determination: Permitting under CWA Section 404 in Western Placer County" (Vendlinski April 6, 2006)[5] as further discussed in the ECORP Consulting, Inc. report entitled, "Placer Vineyards Aquatic Resources Qualitative Assessment and Avoidance and Minimization Strategy" dated July 3, 2008 ("Qualitative Assessment"). In the April 6, 2006 paper, Vendlinski proposes a methodology for establishing a regional "least environmentally damaging practicable alternative" (LEDPA) for the Placer County Conservation Plan (PCCP).

This methodology is based on the assumption that "... a regional conservation strategy is environmentally superior to the practice of project-level mitigation." A key premise of the proposed methodology is that "Establishing a regional LEDPA with a system of large, connected conservation reserve areas under the PCCP allows the regulated community to comply as a whole with avoidance requirements of the Federal Guidelines promulgated under CWA §404(b)(1)." A second key assumption is that "...avoidance within the development envelope is limited to stream corridor set backs, wetlands adjacent to streams, and Low Impact Development Strategies (LIDS) incorporated into project design. These avoidance strategies are focused on mitigating negative impacts to water quality and surface water runoff that occur with watershed development."

The overlying implication is that implementation of a scientifically-based conservation strategy with avoidance, followed by minimization measures through LIDS and the stream setbacks may provide the mechanism to assure compliance with the avoidance and minimization requirements of Section 404(b)(1) Guidelines for the entire Placer Vineyards Development Area. The standard wetland permitting process requires applicants to: (1) prepare an "alternatives analysis" for each project examining off-site locations and alternative on-site configurations; (2) prove

5 This document was drafted by Tim Vendlinski (EPA's Wetlands Regulatory Office) and was substantially revised and improved by his colleagues and by the five-agency workgroup.

their preferred alternative is the LEDPA by examining the potential direct, secondary, and cumulative impacts of several alternatives; and (3) avoid on-site aquatic resources and minimize environmental damage to the maximum extent practicable. The intent of this Alternatives Analysis is to establish criteria that apply to all of the proposed permit applications within the Placer Vineyards Development area so as to evaluate the project as a whole and the individual applications within the Placer Vineyards Development for conformance with the overall avoidance and minimization criteria.

While it is recognized that the Vendlinski paper and the strategy set forth therein, were developed for the PCCP, the general principles apply equally as well to large scale specific plans with some modifications as further discussed in the Qualitative Assessment. Using this approach would incorporate a broad watershed based planning approach to establish impact and avoidance measures designed to assure that impacts to aquatic resources will be avoided or minimized to the maximum extent in terms of aquatic resource functions and value.

This Alternatives Analysis adapted the basic strategy set forth by Vendlinski for the Placer Vineyards Specific Plan in accordance with the following rationale for determining the significance of aquatic resources present within the Plan Area in terms of the overall aquatic ecosystem. This rationale reflects the quality and functions of aquatic resources existing within the Plan Area in terms of:

- The degraded nature of the existing aquatic resources;
- The difficulty of preserving the function of the aquatic resource;
- The ability to preserve the primary function of the resource in the watershed;
- The fewest permanent impacts to aquatic resources;
- The fewest temporary impacts to aquatic resources; and
- The fewest secondary permanent impacts to aquatic resources.

The Qualitative Assessment accompanying this Alternatives Analysis contains further support for the above-mentioned rationale, as summarized below.

7.3.1 Degraded Nature of Existing Aquatic Resources

Many of the wetlands within the plan area have been negatively impacted and modified by historical agricultural use. For example, Placer Vineyards 815 (#19) and the Capri property (#23) have been dry-farmed for the past several years. Repeated discing on these properties has softened the definition of seasonal wetland and vernal pool borders, perhaps altered natural drainage courses, and resulted in the replacement of native wetland plant communities with agricultural monocultures. For example, Placer Vineyards 179a (#4A), Placer Vineyards 179B (#4B), Placer Vineyards 356 (#7), Hodel/Doyle (#1), and Watt Baseline (#3) were subjected to the same historical treatment, but have been left fallow during the last few years. Placer

Vineyards 200 (#15), Placer Vineyards 290 Parcel 1 (#12A) and Placer Vineyards 290 Parcel 2 (#12B) have, during recent years, been managed as irrigated pasture for livestock grazing.

Table 4

Summary of Wetlands and Waters of the U.S. Within the Participating Properties

Wetland/Waters Type	Area (ac)	Percent of Total
Channel	1.46	1%
Creek	6.01	3.8%
Drainage Canal	0.44	0.3%
Drainage Swale	2.09	1.3%
Ephemeral Drainage	4.12	2.6%
Intermittent Drainage	17.80	11.1%
Pond	18.45	11.6%
Riverine Perennial Marsh	0.58	0.4%
Riverine Seasonal Marsh	0.64	0.4%
Riverine Seasonal Wetland	25.28	15.8%
Seasonal Marsh	0.21	0.1%
Seasonal Wetlands	36.84	23.1%
Seasonal Wetland Swale	12.72	8%
Vernal Pool	33.04	20.7%
Total	**159.67**	**100%**

Many of the linear wetlands on these properties have been channelized or bermed to manage irrigation flows and the former seasonal plant communities have transitioned toward more perennial function. Placer Vineyards 239 (#10), and D.F. 80 (#14) historically have been more extensively manipulated (e.g., graded/bermed) to manage for irrigated agriculture (e.g., rice and/or row crops), but have been dry-farmed during more recent years. All of these historical agricultural practices have, to varying degrees, altered "natural" wetland function on these

properties, resulting in altered topography and drainage patterns, "unnatural" water regimes, and, in some cases, diminished wildlife habitat value.

7.3.2 Preservation of Aquatic Resource Functions

Taking into consideration both the difficulty of, and ability to preserve the function of the aquatic resource as indicated in the second and third points of the above rationale, the following is a list of the avoidance and minimization screening criteria that were used to determine the significance of potential effects on aquatic resources based on the quality and functions of aquatic resources existing within the Plan Area. Pages 15 through 22 of the accompanying Qualitative Assessment further document the rationale for the selection of these principles.

7.3.3 Avoidance Principles

Based on general conservation principles, and in the context of watershed function, wetlands/ waters provide hydrologic (e.g., surface runoff storage and movement), water quality (e.g., sediment removal), and habitat functions (e.g., aquatic habitat for reptiles and amphibians, foraging habitat for waterfowl). With respect to hydrologic functions, interconnected aquatic systems collect and transport precipitation and runoff downstream. Depending upon size and topography, they also provide some storage capacity for runoff. With respect to water quality, depending upon flow rates and topography, they may provide for settling, filtration, and/or removal of nutrients/contaminants via biological uptake. The following summarizes the key Avoidance Principles that were applied in this Alternatives Analysis to determine the significance of potential effects on aquatic resources resulting from each alternative. The goal of the principles is to result in a project with the fewest permanent impacts to aquatic resources as indicated in the fourth point in the rationale indicated above.

1. *Preserve contignous core drainage course/wetland corridors in each drainage basin.*

- Preserve primary drainage courses at the site. Six such flow lines are present within the Project Site. Two of these are named creeks (i.e., Dry Creek and Curry Creek). Four others are historically ephemeral and/or intermittent drainageways, all of which have been subjected to varying degrees of anthropogenic modification (i.e., used for irrigation water conveyance, channel relocation/straightening, berming/excavation to construct stock ponds, and/or direct exposure to tilling/plowing).

- Each primary corridor should have an average setback (buffer) of 100 feet extending laterally from the edge of preserved waters of the U.S. Although this principle also serves as a minimization measure, an adequate setback also is necessary to assure that development does not encroach into the preserved wetland corridors.

- Minimize proposed actions that would interrupt or truncate primary drainage course/wetland corridors and minimize modifications of these

corridors except for those modifications that are designed to maintain or improve wetland or watershed function over existing conditions.

- Reaches of these primary corridors that have been channelized into excavated ditches, will not be subject to the Avoidance Principles because their wetland and watershed maintenance functions have been severely compromised.

- Artificial impoundments created through excavation or berming and whose hydrology is dominated by irrigation water or irrigation return flows will not be subject to these preservation measures. Their remaining watershed function (i.e. conveyance of runoff) will be maintained through measures designed to assure conveyance of flows to downstream waters.

2. *Preserve non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.) where they can be included within corridors contiguous with other preserves established to meet the first avoidance/minimization criterion or where they are large enough and/or concentrated enough to assure long-term maintenance of wetland function and value.*

- Preserved non-contiguous wetlands should have an average setback (buffer) of 100 feet extending laterally from the edge of preserved wetlands. Although this principle also serves as a minimization measure, an adequate setback also is necessary to assure that development does not encroach into the preserved non-contiguous wetland features.

- Preserved wetlands should contribute to preservation of watersheds.

- Adequate buffers and avoiding isolation of wetlands by development should be incorporated into the on-site alternative to influence the ecological viability of preserving wetland and watershed functions of various wetlands.

- Other factors considered in the avoidance and minimization of impacts to non-contiguous, non-linear wetlands present within the Project Area include: (1) the quality of the wetlands (e.g.. degree of disturbance); (2) internal fragmentation; (3) type of land/land uses between the aquatic resource and similar aquatic resources within the Plan Area; and (4) degree of incompatibility with adjacent land uses.

7.3.4 Minimization Principles

The following measures and principles were utilized to minimize project impacts to those "waters" avoided within the Plan Area's proposed open space areas. These measures will also help determine and develop required compensation for unavoidable impacts to the "waters" with specific project boundaries, and could be implemented on a project-by-project basis as part of planned build out of the Placer Vineyards Development. The goal of these criteria is to result in

the fewest temporary and secondary impacts to aquatic resources as described in the fifth and sixth points of the rationale described above.

- To the extent practicable maintain the overall hydrologic integrity of the open space to ensure that there will not be a net loss of functions and values as a result of adjacent development. This includes minimizing changes to the distribution, frequency and duration of flows, including restricting summer nuisance flows, and treating discharges to the open space areas by implementing appropriately engineered site drainage systems with water quality treatment devices and/or Low Impact Development Strategies, such as grassy swales associated with outfalls.

- To the extent practicable and feasible, use elevated roads, arched culvert crossings and other practices for transportation corridors that must traverse open space areas to minimize direct and indirect impacts to aquatic resources in the open space areas.

- Use conservation design elements to minimize the effect of adjacent development on the open space areas by constructing, to the extent practicable, single-loaded roads where housing directly abuts open space, designing roadside landscaping to drain (surface and subsurface) toward urban features and not towards the open space, and orienting houses so that the front living area faces the open space. Fences should be low and not restrict visibility into the open space. Within the development area, impervious surfaces would be minimized to the extent practicable and storm water/water runoff plans would be designed to use Best Management Practices (BMPs) such as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat storm water and water runoff from the development areas.

- To the extent practicable, locate compatible land uses next to open space. The preferred land uses adjacent to the open space are parks, hiking trails and athletic fields.

- Mow-only firebreaks may be located at the outer edges of open space areas. Mowing within the open space should be conducted consistent with achieving the goals of a management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the open space.

- Ensure that wetlands preserved within open space areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Those areas preserved would be fenced and signed.

- Prior to initiation of construction activities, the Project developer/project proponent will submit to the Placer County Department of Public Works, for review and approval, an erosion control plan consistent with the County's Grading, Erosion and Sediment Control Ordinance. The plan will address storm drainage during

construction and proposed BMPs to reduce erosion and water quality degradation. BMPs will be implemented throughout the construction process.

- During construction, BMPs will be provided to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs will generally consist of a combination of the following measures: minimizing soil disturbance, inlet protection, stabilized construction access, covering of exposed areas with mulch, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding, etc.

- Concurrent with construction of site improvements, storm water BMPs will be constructed and maintained in accordance with the SWPPP as approved by the Central Valley Regional Water Quality Control Board (CVRWQCB). During construction of the project, specific BMPs will be implemented to control erosion, runoff, and sedimentation and include: soil stabilizers, fiber rolls, inlet filters, and gravel bags to prevent pollutants from being carried off-site in storm water generated on the project site.

- Other BMPs will involve prompt re-vegetation of disturbed areas.

- On-site riparian areas along Dry Creek will be protected from damage or disturbance by construction with "no net loss" of riparian habitat. "No net loss" of riparian habitat will minimize the effects of the Project on Central Valley steelhead and Critical Habitat by maintaining channel integrity and existing stream shading characteristics. Mitigation measures will be implemented to replace all riparian trees removed to accommodate development. New trees and shrubs will be planted within existing riparian areas or improved drainage corridors.

- The use of water-conserving landscaping and other residential conservation measures will be encouraged.

- All construction within approximately 150 feet of Dry Creek will be restricted to the dry months of the year when stream flows are low, water temperatures are warm, and movement of steelhead within the Project Area is expected to be minimal or absent.

- Debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material will not be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the state. In addition, the Project will institute BMPs as identified in the Project's storm water management plan.

- Application of a street sweeping program to remove potential contaminants from street and roadway surfaces before they reach drainages.

- Minimize sources of concentrated flow by maximizing use of natural drainages to decelerate flows, collect pollutants and suspended sediment.

- Placement of velocity dissipaters, rip-rap, and/or other appropriate measures to slow runoff, promote deposition of waterborne particles, and reduce the erosive potential of storm flow.

- Soil protection and slope stabilization practices will be promptly applied to all disturbed areas.

- Creation of water quality basins to assist in reducing pollutant concentrations through infiltration, settling, and biological uptake.

- Use of fossil filters consisting of small filters that are placed like troughs around the inside top drain inlets or at ditch outlets.

- Use of rock-lined ditches, which are surface ditches lined with rock, with or without filter material, with the rock lining material designed to allow water to filter into the ground.

The overall intent of these avoidance and minimization criteria is to provide a framework of hierarchical avoidance goals that, if met for each the selected alternative, would preserve watershed and wetland functions to the maximum extent. The intended implication is that additional preservation would not result in less adverse impacts to the aquatic ecosystem. It is not meant to specifically imply practicability.

7.4 Step 3 -- Environmental Criteria

Practicable on-site alternatives were evaluated to determine whether they would result in other significant adverse environmental consequences. These adverse effects are described as follows.

7.4.1 Biological Resource Effects

- The alternative results in development in areas with superior/higher quality biological resources.

7.4.2 Land Use Incompatibility Effects

The Specific Plan provides for a mixed-use environment, which could lead to land use incompatibilities within the Plan Area and with respect to existing surrounding land uses. For instance:

- The alternative results in certain public and quasi-public land uses such as fire stations and the County corporation yard in proximity to sensitive receptors (e.g., schools or residences), and thus raises land use incompatibility issues.

- The alternative results in land use incompatibility issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

7.4.3 Proximity to Electric Transmission and Distribution Lines

The Plan Area is crossed by electric transmission and distribution lines. In consultation with the California State Department of Health Services (DHS) and electric power companies, the California Department of Education (CDE) has established the following standards for locating public schools near high-voltage power transmission lines:

- A minimum of 100 feet from the boundary of a 50-133kV line easement
- A minimum of 150 feet from the boundary of a 220-230kV line easement
- A minimum of 350 feet from the boundary of a 500-550kV line easement

Currently, there are no standards for locating residential uses near high-voltage power transmission line easements. Alternatives were rejected that would result in the placement of residences and school facilities at distances from the transmission and distribution facilities that did not meet CDE/DHS and other applicable standards.

7.4.4 Flooding and Seismic Safety

The alternative results in the exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards such as the construction of residences or schools within a special flood hazard area for which flood control improvements have not been identified or approved.

7.4.5 Traffic and Air Quality Effects

The alternative is unable to accommodate the projected population growth of 30,000 people anticipated in Placer County thereby resulting in the potential for the region to suffer from increased traffic impacts and associated air quality impacts due to the increase in suburban sprawl and associated commute traffic.

7.4.6 Noise Effects

The alternative results in unacceptable noise impacts based on adopted County noise standards or associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

7.5 Screening Analysis of On-Site Alternatives

The following describes the on-site alternatives evaluated in this analysis, followed by the results of the screening process. In addition to the Proposed Project, the following on-site alternatives will be evaluated in the Section 404(b)(1) Alternatives Analysis.

- **Alternative A:** Alternative A involves preservation of listed aquatic invertebrate (fairy and/or tadpole shrimp) habitat with a 250-foot buffer. (See Figures 7.2-A through 7.2-D.)

- **Alternative B:** Alternative B evaluates an on-site alternative with further minimization of impacts to aquatic resources located predominantly in the western and northeastern portions of the Plan Area. (See Figures 7.3-A through 7.3-D.)

- **Alternative C**: Alternative C consists of 85% avoidance of vernal pool resources. (See Figures 7.4-A through 7.4-D.)

- **Alternative D**: Alternative D consists of avoidance of wetlands with a 50-foot buffer resulting in development of 2,943 acres of the entire 3,744-acre Plan Area. (See Figures 7.5-A through 7.5-D.)

- **Alternative E**: This alternative involves no development of the entire Placer Vineyards Development area (3,744 acres).

- **Alternative F - EPA/Corps Alternative "A:"** Alternative F evaluates an on-site alternative with further avoidance of impacts to aquatic resources located predominantly in the western and northeastern portions of the Plan Area. (See Figures 7.6-A through 7.6-D.)

- **Alternative G – EPA/Corps Alternative "B:"** Alternative G consists of avoidance of aquatic resources to aquatic resources located predominantly in the southern and northeastern portions of the Plan Area. (See Figures 7.7-A through 7.7-D.)

7.5.1 Description and Analysis of Proposed Project

Chapter 2 of this report contains a description of the Project. The Proposed Project consists of the Placer Vineyards Development and the Infrastructure Elements which provide the backbone infrastructure to serve the proposed mixed use development.

The Proposed Project is comprised of 23 applications (including the Infrastructure Elements) with parcels ranging from approximately 11- to 815- acres in size. Of the approximately 160 acres of existing wetlands within the Project Area, 97.43 acres will be impacted by the proposed land use development, and associated on-site infrastructure, and 62.25 acres will be avoided or preserved in open space. (See Fig. 7.1-A.) The Proposed Project also includes off-site infrastructure with improvements to existing roadways and intersections, proposed routes for new major roadways, portions of pedestrian/bicycle trails, water transmission lines (both potable and recycled), and sewer trunk lines, force mains, and lift stations. Where feasible, utility lines will be located within existing roadways or other disturbed areas, to minimize environmental impacts. Based on preliminary infrastructure alignments, off-site infrastructure improvements would result in direct impacts to 6.8 acres of waters/wetlands. These off-site impacts are not considered in this Alternatives Analysis, as off-site infrastructure impacts were not identifiable for other alternatives considered.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
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- Placer Vineyards Specific Plan Boundary

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Note: The map illustrates a total preserved area of 675 acres including approximately 30 acres of Open Space Active Use lands whose boundaries will be further refined during the planning process. Preserved acreage (green) includes areas that will be indirectly impacted within the preserve boundary and areas that will be directly impacted as part of channel restoration but preserved in perpetuity, as well as Active Open Space areas that consist of County-designated open space lands.

PROPOSED PROJECT

Figure 7.1-A

With respect to impacts within the Project Area, this alternative develops approximately 3,069 acres of the 3,744-acre site. The Proposed Project consists of 11,585 units, including 2,961 low density residential units, 5,508 medium density residential units, 2,537 high density residential units, and 579 commercial mixed-use units. It also would result in the fill of 97.43 acres of wetlands and the avoidance or preservation of 62.25 acres of wetlands. Approximately 18.62 acres of those would be indirectly impacted. Impacts resulting from on-site infrastructure elements are included within these totals. The total preserved area under the Proposed Project is 675.0 acres.

Project Purpose

The Proposed Project would meet the Project Purpose for the reasons described for the Proposed Project Site in Chapter 6.2.1. This alternative would provide for the development of a large-scale residential community with employment-generating land uses, commercial development, recreational and public/quasi-public land uses, and required infrastructure, as well as open space. Placer Vineyards is designed as a self-sufficient community with a mix of higher density residential neighborhoods, a central mixed-use town center, mixed-use village centers, a commercial and employment corridor, parks, recreation facilities, schools, religious facilities and a network of open space and protected riparian corridors. The Project would assist in meeting the region's future needs for residential and commercial opportunities to accommodate the growing population of Placer County by comprehensively planning Western Placer County between the City of Lincoln and the County's border with Sacramento County.

The Specific Plan encourages a range of housing choices, types, styles and densities to accommodate all income levels. Development standards are flexible to accommodate a wide array of housing types. The goal is to encourage new and creative development forms, especially in high density residential areas and mixed-use centers.

Placer Vineyards is designed to be a transit-friendly community with easy access from residential neighborhoods to a range of transportation facilities, including a community transit center linked to the regional bus rapid transit system; a grid of streets; and a continuous network of shaded sidewalks and bikeway trails that loop through neighborhood centers, schools, and parks, and provide access to other modes of transit.

Both during the construction period and after full build-out, Placer Vineyards will provide a wide variety of employment opportunities for residents of Placer County and surrounding areas. Such jobs will include construction-related jobs, as well as jobs in the portions of the Specific Plan area devoted to various retail, office, and other job-generating uses. These jobs will range from relatively low-paid entry level jobs to relatively high paid professional jobs.

The Specific Plan area will ultimately contain a new high school, two middle schools, and six elementary schools. These facilities will provide education to residents in the Project Area.

This alternative would provide for the development of a large-scale residential mixed use community with employment-generating land uses, commercial development, recreational and public/quasi-public land uses, and required infrastructure, as well as open space. Placer

Vineyards is designed with a mix of higher density residential neighborhoods, a central mixed-use town center, mixed-use village centers, a commercial and employment corridor, parks, recreation facilities, schools, religious facilities and a network of open space and protected riparian corridors. The Project would assist in meeting the region's future needs for residential and commercial opportunities to accommodate the growing population of Placer County by comprehensively planning Western Placer County between the City of Lincoln and the County's border with Sacramento County.

Availability

This alternative is available as further discussed in Chapter 6.

Practicability

Development of the Proposed Project is practicable both for the Specific Plan as a whole and for individual parcels for which a Section 404 Permit application was submitted. The Proposed Project accommodates a large-scale residential mixed use community and is practicable based on cost, logistics, and technological considerations for the following reasons.

Development costs associated with developing the Proposed Project are reasonable in terms of development costs typically associated with developing a large-scale mixed use residential project. The Applicants and the landowners of the Non-Participating Properties assembled the property necessary to develop a large-scale mixed use community to accommodate future growth in the region in accordance with the Placer County General Plan. Infrastructure costs associated with developing the Project also are reasonable in comparison to the infrastructure costs typically associated with the development of a self-sustaining mixed-use community. The Applicants would be responsible for funding the Infrastructure Elements in terms of frontage improvements, in-tract improvements and secondary road improvements at a cost of roughly $854 million at buildout (See EPS Technical Memorandum dated September 6, 2006). In many instances, the Applicants will advance fund more than their "proportionate share" of infrastructure costs in order to facilitate the Infrastructure Elements (See EPS Technical Memorandum dated September 6, 2006).

In terms of logistics, the Proposed Project can be developed in a functionally integrated manner as a master-planned community as the proposed land uses would meet basic planning principles for developing residential uses that are supported by neighborhood retail, commercial, and public/quasi-public land uses, and associated infrastructure. The Proposed Project is consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and complies with General Plan planning principles in place for this region since 1994 because the Placer Vineyards Development is sized to accommodate a population of 30,000 people at a reasonable range of densities.

In terms of technological considerations, the Project meets the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system (e.g., water treatment and distribution systems, sewer treatment and collection systems, electrical distribution systems, fire suppressions facilities, general government facilities) to serve the needs of future residents and allow existing residents to tie into upgraded facilities. The Placer

Vineyards master-planned community provides all public services and utilities necessary to support Placer Vineyards without compromising the County's ability to provide utilities and public services to existing residents as reflected by the County's approval of the Specific Plan.

Infrastructure improvements are included in the Project to maintain adequate levels of service. The Infrastructure Elements include both on-site and off-site components. The Infrastructure Elements improvements include road improvements (e.g., widening of lanes and the addition of intersection controls), the addition of utility lines and routes for sewer trunk and water lines, and recycled water storage facilities and transmission lines. Where possible, utility lines would be placed within the existing roadways or other disturbed areas, in order to minimize environmental impacts. Due to current uncertainties regarding the precise path/alignment for each of the Infrastructure Elements, six different scenarios were included in the Clean Water Act, Section 404 Permit Application to assure that the potential alignments can be accommodated as part of the Proposed Project. Scenario #3 was identified in the Clean Water Act, Infrastructure Section 404 Permit Application as the most likely scenario to be implemented for the on-site and Infrastructure Elements in terms of location and alignment with respect to the Proposed Project. To the extent infrastructure improvements are required outside of the Project Area, the improvements are consistent with Placer County General Plan infrastructure policies applicable to Western Placer County. Therefore, the Project is practicable in terms of logistics criteria.

For these reasons, the Project meets the practicability criteria.

Aquatic Resources Impacts

In terms of acreage of impacts to aquatic resources, approximately 159 acres of waters of the U.S. have been delineated within the Participating Properties comprising the Placer Vineyards Development area. In addition to relatively smaller impacts to other types of wetlands/waters, the Proposed Project results in impacts to approximately 35.40 acres of seasonal wetlands, 14.16 acres of riverine seasonal wetland, 26.84 acres of vernal pools, and 9.55 acres of seasonal wetland swale. The Proposed Project results in the avoidance of approximately 62.25 acres of wetlands, including 14.12 acres of intermittent drainage, 17.81 acres of pond, 11.12 acres of riverine seasonal wetlands, and 6.20 acres of vernal pools. Of the 159 acres mapped within the Plan Area, the Placer Vineyards Development would potentially result in 97.43 acres of direct impacts to waters of the U.S. and 18.62 acres of indirect impacts to potential aquatic invertebrate habitat (i.e., seasonal wetlands, seasonal wetland swales, drainage swales, and vernal pools). Thus, approximately 116.05 acres of waters of the U.S. would be considered to be directly and/or indirectly impacted by the Proposed Project. (See Fig. 7.1-B.) This does not include estimates for impacts within 250 feet of the Placer Vineyards Development and Off-Site Infrastructure Elements.

In terms of acreage of impacts to delineated wetlands, the 116.05 acres of total Project impacts (direct and indirect) include specific impacts shown in Appendix A and Figure 7.1-B resulting from the Applicants' individual development proposals on the Participating Properties.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

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LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
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- Placer Vineyards Specific Plan Boundary

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PROPOSED PROJECT

Figure 7.1-B

In summary, development of the Participating Properties would result in the following aquatic resources impacts. Regarding terminology, "avoided or preserved" is intended to convey that *no direct impacts* would occur to the reported acreage under the Proposed Project or any of the alternatives. However, *indirect impacts* may affect a portion of wetlands in this category. "Indirectly impacted" indicates the acreage of those "avoided or preserved" wetlands that would experience indirect impacts due to the Proposed Project or the alternatives.

- **Fong:** Development on the 92.6-acre Fong parcel will result in fill of approximately 2.23 acres of waters/wetlands and avoidance or preservation of 3.91 acres. Indirect impacts would occur to 1.35 acres of wetlands/waters. The wetland types on the Fong parcel are ephemeral drainage, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **Capri:** Development on the 93.9-acre Capri parcel will avoid or preserve about 1.84 acres of wetlands/waters, and directly impact about 3.16 acres and indirectly impact 1.07 acres of wetlands. The wetland types located on the parcel include drainage canals, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PV 815:** Development on the 815.1-acre PV 815 parcel would fill 21.88 acres of wetlands and avoid or preserve 11.79 acres of wetlands. The Project would indirectly impact 3.91 acres of wetlands. The wetland types located on the parcel include drainage canals, riverine seasonal wetlands, seasonal marshes, seasonal wetlands, and vernal pools.

- **Pan de Leon:** Development on the 10.7-acre Pan de Leon parcel would result in direct impacts to 0.33 acres of wetlands including, creeks, riverine seasonal wetlands, seasonal marshes, seasonal wetlands, and vernal pools. No wetlands/ waters would be preserved or avoided.

- **DF 80:** Development on the 80-acre DF 80 parcel would fill 0.58 acres of wetlands, and, although avoided would indirectly impact 0.02 acres of wetlands. The wetland types located on the parcel include creeks, drainage canals, and seasonal wetlands.

- **PV 200:** Development on the 200-acre PV 200 parcel near the center of the Project Area, would directly impact about 3.86 acres and, although avoided, would indirectly impact 0.39 acres of wetlands. The wetland types on this parcel consist primarily of drainage swale, ephemeral drainage, ponds, and seasonal wetlands.

- **Gulley 20:** Development on the Gulley 20 parcel would directly impact all 0.44 acres of delineated wetlands on the 19.5-acre parcel. The wetland types on this parcel include a seasonal wetland swale and vernal pools.

- **PV 88:** Development on the 93.8-acre PV 88 parcel would avoid or preserve 0.95 acres of delineated wetlands, 0.84 of these would be indirectly impacted. The

project would result in direct fill of 5.39 acres. The wetland types on this parcel include riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PV 290:** Development on the 200-acre PV 290, Parcel 1 would directly impact about 2.57 acres of ephemeral drainage and seasonal wetlands. Development of PV 290, Parcel 2 consisting of another 100 acres, would directly impact 2.97 acres of wetlands. The wetland types on this parcel include ephemeral drainage, seasonal wetlands, seasonal wetland swales, and vernal pools.

- **PVA(a):** Development on the 60.5-acre PV A(a) parcel would directly impact 9.47 acres of wetlands/waters. It would avoid or preserve 5.22 acres, 0.99 acres of which would be indirectly impacted. The wetland types on this parcel include drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PGG:** Development on the 79-acre PGG property would directly impact 0.93 acres of wetlands and avoid or preserve 5.83 acres of wetlands. The Project indirectly impacts 0.56 acres of wetlands. The wetland types include drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PV 356:** Development of the PV 356 property would result in 15.80 acres of direct impact to wetlands and 12.51 acres of avoided or preserved wetlands. It would also result in 2.24 acres of indirect impacts to avoided wetlands/waters. The wetland types on this 356-acre parcel include intermittent drainage, seasonal wetlands, seasonal wetland swale, and vernal pools.

- **PV 179A:** Development on the PV 179A property would result in fill of 2.99 acres. About 1.85 acres would be preserved or avoided, but indirect impacts to 0.71 acres would occur on the 88-acre parcel. The wetland types on this parcel include intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 179B:** Development on the 92-acre PV 179B parcel would result in direct impacts to 2.80 acres of delineated wetlands. It would also avoid, but indirectly impact, 0.03 acres of intermittent drainage and seasonal wetland swale. The wetland types on this parcel include intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 239:** Development of the 241.5-acre PV 239 parcel would result in the fill of 1.24 acres. The wetland types on this parcel include seasonal wetlands and seasonal wetland swale.

- **PV A(b):** Development of the 265.6-acre PV A(b) parcel would directly impact 0.18 acres, and indirectly impact 0.74 acres of wetlands. About 5.42 acres of wetlands would be preserved or avoided. The wetland types on this parcel include drainage canals, ponds, and riverine seasonal wetlands.

- **Watt x Baseline:** Development on the 100.4-acre Watt x Baseline parcel would directly impact about 4.28 acres of wetlands and indirectly impact 0.55 acres of avoided wetlands. The wetland types on this parcel include seasonal wetland swale and vernal pools.

- **Mourier:** Development of the 173.6-acre Mourier parcel would avoid or preserve about 0.70 acres of wetlands, and fill about 2.82 acres of wetlands. 0.26 acres of avoided wetlands would be indirectly impacted. The wetland types on this parcel include creeks, seasonal wetlands, and seasonal wetland swale.

- **Hodel/Doyle:** Hodel/Doyle is a 462.3-acre parcel. Development on this property would directly impact 7.42 acres of wetlands, while 4.85 acres would be avoided or preserved. Development of this parcel would also indirectly impact 4.21 acres of avoided wetlands. The wetland types on this parcel include vernal pools, seasonal wetlands, and seasonal wetland swale.

- **PV C:** Development on the PV C property, a 39.2-acre parcel, would impact 0.32 acres of wetlands and avoid or preserve 0.85 acres, of which about 0.42 acres would be indirectly impacted. The wetland types on this parcel include riverine seasonal marsh, seasonal wetlands, and vernal pools.

- **PV B:** Development of the 123 acre PV B parcel will result in fill of 5.77 acres of wetlands, and avoidance or preservation of 5.52 acres of wetlands. It will also result in indirect impacts to 0.32 acres of avoided wetlands. The wetland types on this parcel include creeks, drainage canals, riverine perennial marsh, riverine seasonal wetlands, and seasonal wetlands.

Infrastructure Elements

Except where specific roadway improvements are required, named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Plan Area. These discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances

The Master Project Drainage Study states that outlet structures are to be designed in order to demonstrate that the "project will not adversely impact mean annual and peak type events." Thus, increases in flow rates for these events would not be allowed within the unaltered swales. "Additionally, where seasonal wetlands are identified, nuisance waters from non storm discharges would be diverted to the flood control facilities to avoid effects on the seasonal nature of the existing features." In order to achieve these goals special outlet structures will be constructed with flow restriction/diversion features to regulate/control the outlet flow discharge locations and volumes.

The forced sewer line will be located on the east side of the existing City Corporation Yard. A sewer force main will parallel Dry Creek. Although the precise alignment has not been determined, a 100-foot minimum separation between the approximate centerline of Dry Creek and the force main would be provided. The force main will carry "untreated" sewer effluent. The wastewater would then be treated when it reaches the Dry Creek Wastewater Treatment Plant (at the end of the existing force main that PVSP will be connecting to approximately 1,400 feet east of Walerga Road).

After the gravity sewer leaves the Plan Area and crosses Dry Creek (via bore and jack), the gravity sewer pipe would turn and travel west (paralleling Dry Creek with same minimum offset described above), and then travel south to a proposed lift station. The proposed sewer force main would originate at the lift station, then travel parallel to, but in the opposite direction of the gravity sewer, past the point where the bore and jack crossing would be installed, continuing east toward Walerga Road (parallel to Dry Creek) and a connection to the existing force main.

The pipe materials and joints, installation methods, and testing procedures will meet the requirements and specifications of the serving wastewater utility agency (Placer County). Pipe segments and joints will be required to be water tight and leak proof and will be tested after installation before the sewer system will be accepted for actual use.

Segments of other drainageways with significant resource values in the Project Area would be largely avoided. These include:

a. the main east-west drainage in shed EMA (see Figure X) as it crosses property #1 (Doyle/Hodel);

b. the southern tributary to that same drainage (shed EMA) that is located on property #7 (Placer Vineyards 356);

c. the series of linked ponds in shed EMFS that occur on properties #9a, #9b, and #11 (Placer Vineyards A(a), Placer Vineyards A(b), and PGG, respectively);

d. the portion of the main drainage in shed EMFN that crosses properties #19 and #21 (Placer Vineyards 815 and Placer Vineyards 88);

e. the majority of the main drainage in shed EMC that crosses property #19, #23, and #24 (Placer Vineyards 815, Fong, and Capri, respectively).

In order to avoid these drainages, but still provide for needed storm water conveyance/storage capacity, and in order to preserve and protect the existing hydrology of the avoided drainage way, separate parallel engineered drainage facilities would be constructed. Each primary corridor would have an average setback (buffer) of 100 feet extending laterally from the edge of preserved waters of the U.S.

In other sheds (or in other reaches of these drainages) where there are lesser resource values, the existing drainages would be modified to both increase storm water conveyance and storage capacity and to restore or enhance their biological function. These include:

- the main east-west drainage in shed EMA that flows across property #3 (Watt x Baseline), then between properties # 4a (Placer Vineyards 179a), #4b (Placer Vineyards 479b), and #7 (Placer Vineyards 356), then across property #12a (Placer Vineyards 290, Parcel 1); and

- the main east-west drainage in shed EMFN that flows across property #12b (Placer Vineyards 290, Parcel 2) and property #15 (Placer Vineyards 200).

Other Infrastructure impacts to major drainage ways include the truncation of the upper end of the main drainage in shed EMC on property #19 (Placer Vineyards 815) by the proposed major east-west roadway (i.e., 18th Avenue) linking the proposed Dyer Lane extension with existing Locust Road.

The Proposed Project is designed to minimize modifications of these corridors except for those modifications that are described above, and those that are designed to maintain or improve wetland or watershed function over existing conditions. Although reaches of these primary corridors that have been channelized into excavated ditches are for the most part, impacted by the Proposed Project, the loss of these channelized features or ditches is not considered to significantly impact the aquatic ecosystem because their wetland and watershed maintenance functions have been severely compromised. The proposed Placer Vineyards Development and Infrastructure impact aquatic resources that are artificially impounded through excavation or berming and whose hydrology is dominated by irrigation water or irrigation return flows would not be subject to these preservation measures. The Infrastructure Elements maintain their remaining watershed function (i.e. conveyance of runoff) through measures designed to assure conveyance of flows to downstream waters.

Avoidance, Minimization and Enhancement

Although the Project would result in direct impacts to 97.43 acres of aquatic resources, the Project would comply with many of the avoidance and minimization criteria described above in terms of effects on aquatic resource functions and contribution to the overall aquatic ecosystem. Specifically, the Placer Vineyards Development and Infrastructure Elements would preserve contiguous core drainage course/wetland corridors in each drainage basin based on the principles described above, as follows.

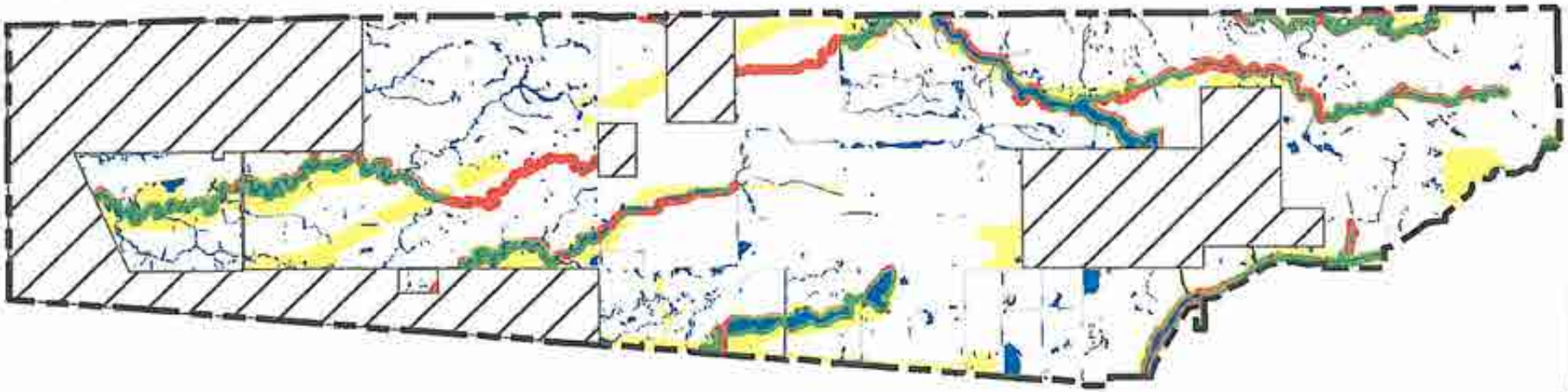
Avoidance

The Placer Vineyards Specific Plan Avoidance and Open Space Plan (see Figure 2.1) was designed to avoid and minimize impacts to key on-site aquatic resources based on plan-wide, aerial photo and field-level investigations of existing wetlands and wetland/swale corridor configurations, and consideration of planned adjacent land uses. The Avoidance and Open Space Plan incorporates approximately 675 acres of open space within the Placer Vineyards Development land use plan. The open space includes significant wetland/swale corridors identified within the Project Area. (See Fig. 7.1-C).

	Area (Ac.)
Total Impacted Wetlands*	97.43
Total Indirectly Impacted Wetlands	18.62
Total Preserved Wetlands	43.63
Total Preserved Area**	675.0

*Note: Impacts include approximately one acre of Waters of the US within the Open Space - Active Use areas based on the assumption that at the site's average wetland density of 4.3%, the 30 acre OS-AU area would yield 1.3 acres of wetlands and that these areas will be impacted by the construction/installation of trails/pedestrian trails, landscaping, and other structures related to recreational uses.

**Note: Preserved acreage includes areas that will be indirectly impacted within the preserve boundary, and areas that will be directly impacted as part of channel restoration but preserved in perpetuity as well as Active Use Open Space areas that consists of County-designated open space lands that may include wetland impacts. The 675 acre area includes approximately 30 acres of Open Space Active Use lands whose boundaries will be further refined during the planning process.



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

FIGURE 7.1-C

Proposed Project - July 2007 Approved Placer Vineyards Specific Plan excluding SPA and non-participants

2001-196 Placer Vineyards

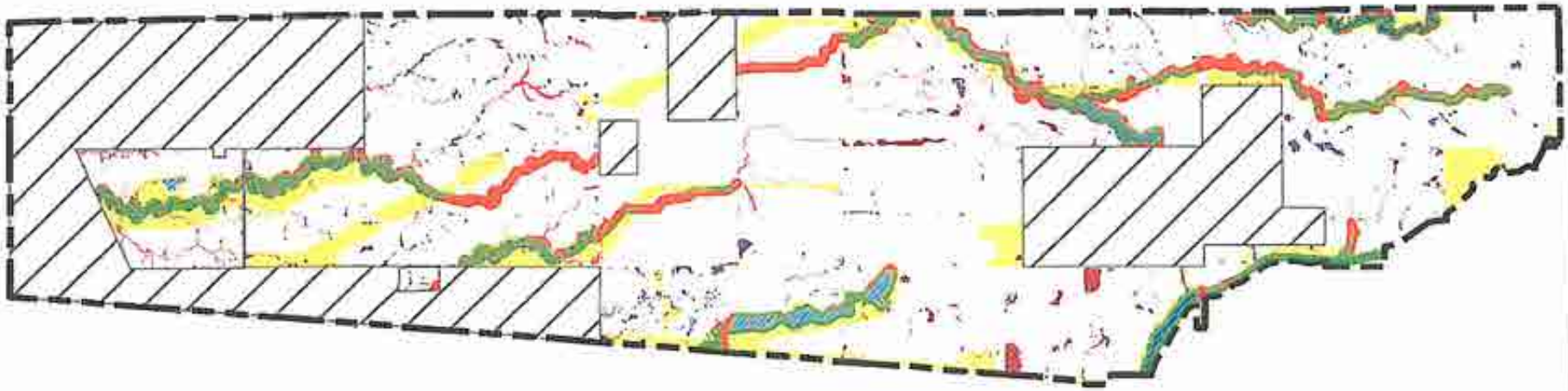
ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

	Impact	Indirect	Preserve	Total
Channel	0.08	0.74	0.65	1.46
Creek	0.57	0.28	5.16	6.01
Drainage Canal	0.33	0.04	0.07	0.44
Drainage Swale	1.99	0.09	0.00	2.09
Ephemeral Drainage	3.82	0.24	0.06	4.12
Intermittent Drainage	3.68	2.72	11.41	17.80
Pond	0.63	1.86	15.96	18.45
Riverine Perennial Marsh	0.00	0.09	0.49	0.58
Riverine Seasonal Marsh	0.17	0.04	0.43	0.64
Riverine Seasonal Wetland	14.16	1.79	9.33	25.28
Seasonal Marsh	0.21	0.00	0.00	0.21
Seasonal Wetland	35.40	1.41	0.04	36.84
Seasonal Wetland Swale	9.55	3.17	0.00	12.72
Vernal Pool	26.84	6.15	0.04	33.04
Total	97.43	18.62	43.63	159.67

	Area (Ac.)
Total Impacted Wetlands*	97.43
Total Indirectly Impacted Wetlands	18.62
Total Preserved Wetlands	43.63
Total Preserved Area**	675.0

*Note: Impacts include approximately one acre of Waters of the US within the Open Space - Active Use areas based on the assumption that at the site's average wetland density of 4.3%, the 30 acre 85-AU area would yield 1.3 acres of wetlands and that these areas will be impacted by the construction/installation of bike/pedestrian trails, landscaping, and other structures related to recreational uses.

**Note: Preserved acreage includes areas that will be indirectly impacted within the preserve boundary, and areas that will be directly impacted as part of riparian restoration but preserved in perpetuity, as well as Active Use Open Space areas that consists of County-designated open space lands that may include wetland impacts. The 675 acre area includes approximately 30 acres of Open Space Active Use lands whose boundaries will be further refined during the planning process.



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area[2]

Avoidance and Minimization Criteria Not Preserve Area[3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

FIGURE 7.1-D

Z:\GIS_Maps\2001-196_Placer_Vineyards\Alternative_Analysis\GIS_Onsite\v8(2007-08-14)_DRAFT_WOV_DRY_CREEK_Yardstick\Alternatives_by_Type\Letter-Proposed_Project.mxd

Revision Date: 2008-06-25

Proposed Project - July 2007 Approved Placer Vineyards Specific Plan excluding SPA and non-participants

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

The Avoidance and Open Space Plan is based on the goal of establishing interconnected open space that is appropriately managed, and which will tie into existing local and regional planning efforts, such as the future PCCP. In addition, the on-site Avoidance and Open Space Plan will provide for meaningful conservation of sensitive habitats for species integrity and long-term survival by providing for habitat preservation and/or enhancement and for wildlife movement within those corridors defined by the primary drainage courses.

Based on the guidance provided by the PCCP, the PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. (See e.g., Valley Grassland/Vernal Pool Goal/Objective 1.1.1 and 1.2.1 of the PCCP). Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the east and west ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. Further, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent urban uses (both existing and proposed).

The field assessments identified five corridor reaches (in addition to the Dry Creek corridor) which had perceptively higher functional values than other Plan Area wetland/swale corridors. Additionally, these corridors which are central to the open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially through agricultural manipulation, and promote avoidance efficiency by maximizing wetlands avoided per total open space area. Per the Vendlinski Paper, preservation and buffering of these main contiguous aquatic features would provide the most benefit in terms of water quality, habitat protection, and ongoing wetland function.

Five of the six primary preservation corridors in the Plan Area would be comprised of Relatively Permanent Waterways (RPWs), [as defined in the 5 June 2007 memorandum Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (EPA and Corps 2007)], and tributaries/abutting wetlands within a 100-foot setback area. RPWs flow year-round, or have continuous flow for at least three months a year. For the purposes of this analysis, those primary drainages that have augmented flows resulting from irrigation conveyance have also been considered RPWs. Aside from the two named creeks, three of the four primary drainage courses convey such irrigation flows over at least part of their length.

- they are generally assumed to make a smaller relative contribution to hydrologic and water quality functions in downstream aquatic systems.
- the habitat values of surrounding assumed upland buffers do not necessarily include connectivity with upstream/downstream habitats, and

- the resultant assumed upland preserve areas are proportionally more susceptible to edge-effects.

Altered tributaries, including direct tributaries to primary drainages, were excluded from consideration for preservation because it is generally assumed that their remaining contribution to watershed function is limited primarily to storage and/or conveyance because:

- their comprehensive contribution to water quality function has been diminished by alteration,

- their habitat value has been diminished by alteration.

Isolated wetlands occurring within 100-feet of primary drainages were also proposed for preservation, consistent with both the regional and project-specific goals/criteria stated above. Where "significant" isolated wetlands (e.g., significant size or "clustering" of isolated wetlands) occur, proposed preservation boundaries were enlarged to include them. This is important because cumulative watershed health can be affected by impacts to wetlands (especially those adjacent to perennial waters) in terms of pollutant removal, flood storage, erosion control, groundwater recharge, and wildlife habitat (CWP 2006).

As compared to the avoidance and minimization principles, the following losses would occur. The primary drainage course that crosses the Placer Vineyards 815 property would be largely avoided over approximately two-thirds of its length. Upstream of that point it would be directly impacted. This truncation would result in the loss of approximately 4787 linear feet (29%) of this drainage course. In terms of delineated acreage, approximately 1.62 acres (18%) would be lost. To the southeast, although it would be impacted downstream on the Pan de Leon property, the primary drainage course that crosses the Placer Vineyards 815 and Placer Vineyards 200 properties would be largely avoided on the Placer Vineyards 815 property. In this reach, approximately 180 linear feet (2%) and 0.1 acres (2%) of the drainage course would be lost. To the southeast, the primary drainage course that crosses the PVA(b), PGG, PVA(b) and PV88 properties would be largely avoided. Only approximately 351 linear feet (6%) and 0.05 acres (0.5%) of this drainage would be lost to specific roadway improvements. To the north, the primary drainage course that crosses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (Parcel 1), and D.F. 80 properties would be largely avoided on the Hodel/Doyle property. Approximately 4827 linear feet (23%) and 2.87 acres (11%) of the drainage would be avoided in this reach. Downstream, on the PV 356 property, approximately 2089 linear feet (10%) and 4.54 delineated acres (18%) of the primary drainage would be avoided, along with the significant tributary that originates in the southeast portion of the PV356 property. This tributary is approximately 2171 feet in length and contains approximately 9.47 acres of wetlands. Thus, avoiding it effectively adds 10% in length and 38% in wetland area to the primary drainage (defined by the HUC flow line). Approximately 984 linear feet (14%) of the on-site portion of Curry Creek would be lost to specific roadway improvements. At Dry Creek, a widened Watt Avenue bridge is anticipated to be constructed such that only bridge footings would be placed within the Creek. A sewer line crossing will be constructed under the creek using "bore and jack" technology. Impacts due to this construction were conservatively overestimated at 0.36 acres and 300 linear feet. These values represent only 4% of the linear feet and 6% of the acreage of the on-site portion of Dry Creek.

Minimization

The wetland/swale corridor reaches and associated wetland habitat will be avoided and protected as part of the Plan. They will be adequately protected to assure continued function. Adjacent to the avoided channels, an engineered side channel will be constructed to maintain existing hydrology in the natural channels. Where feasible, these side channels will be constructed with a naturalized meander and other features to mimic natural channels.

Given flow controls and water quality treatment techniques to be implemented, an average 100-foot setback (buffer) from vernal pools and seasonal wetlands was determined to be sufficient to provide protection from water quality stressors such as sediment deposition, pollutant accumulation in wetland sediments, and nutrient enrichment from adjacent residential development. This setback was determined based on several criteria (wetland functional value - level of disturbance, sensitivity to disturbance; intensity of adjacent land use; buffer characteristics - vegetation density and structural complexity, soil condition; and specific buffer functions required). Buffers less than 5 to 10 meters (m) provide little protection of aquatic resources under most conditions. Buffer widths of 15 to 30 m are recommended under most circumstances, with the lower end of this range providing basic physical and chemical buffering, and the upper end being the minimum needed for maintenance of biological components of wetlands and streams (Castelle *et al.* 1994). In addition, although sediment and nutrient removal may occur within the first 15 to 30 feet of the buffer (depending on site conditions), buffers of 30 to 100 feet or more will remove pollutants more consistently (Environmental Law Institute 2008).

Each primary corridor would have an average setback (buffer) of 100 feet, extending laterally from the edge of preserved waters of the U.S. The buffer would also reduce any "edge effects". An edge effect is the effect of the union of contrasting environments on an ecosystem. This term is commonly used in conjunction with the boundary between natural habitats and disturbed or developed land. Edge effects are especially pronounced in small habitat fragments. Therefore, the use of 100-foot setback off of the conservation areas would reduce any edge effects between the channels, riparian areas and associated wetlands, and the planned development.

The project has minimized actions that would interrupt or truncate primary drainage courses or wetland corridors, as well as minimizing modifications of the corridors, except for those modifications what are designed to maintain or improve wetland or watershed function over existing conditions. By minimizing impacts to primary drainage courses/wetland corridors, significant effects that could minimize the positive benefits derived from the establishment of the 100-foot buffer, would be avoided. However, "channelized" portions of the primary corridor would not be improved by the addition of a substantial buffer due to their existing degraded nature. These degraded reaches have been artificially impounded through excavation or berming, and have hydrology that is dominated by irrigation water or irrigation return flows. Therefore, their wetland and watershed maintenance functions are already compromised. The preserve corridor, as a whole, would be better served by the maintenance of these reaches to assure conveyance of flows to downstream waters.

The primary drainage course that crosses the Placer Vineyards 815 property would be largely avoided over approximately two-thirds of its length. Upstream of that point it would be directly

impacted. This truncation would result in the loss of approximately 23 acres (30%) of the upland open space that would be associated with this primary drainage under the avoidance and minimization principles. To the southeast, although it would be impacted downstream on the Pan de Leon property, the primary drainage course that crosses the Placer Vineyards 815 and Placer Vineyards 200 properties would be largely avoided on the Placer Vineyards 815 property. In this reach, approximately 2.1 acres of the associated upland open space would be lost. To the southeast, the primary drainage course that crosses the PVA(b), PGG, PVA(b) and PV88 properties would be largely avoided. Only approximately 4.4 acres (15%) of the open space that would be associated with this drainage would be lost to specific roadway improvements. To the north, the primary drainage course that crosses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (Parcel 1), and D.F. 80 properties would be largely avoided on the Hodel/Doyle property. Under the avoidance and minimization principles, avoidance in this reach would generate approximately 25.21 acres of open space (upland and wetland). As proposed, the project would realize approximately 24.93 (99%). Downstream, a segment of the primary drainage would be avoided, along with the significant tributary that originates in the southeast portion of the PV356 property. This avoidance captures approximately 35 acres (131%) of the upland open space that would be associated with this drainage under the avoidance and minimization principles. Approximately 7 acres (22%) of upland open space associated with the on-site portion of Curry Creek would be lost to specific roadway improvements. At Dry Creek, a widened Watt Avenue bridge is anticipated to be constructed such that only bridge footings would be placed within the Creek. A sewer line crossing will be constructed under the creek using "bore and jack" technology. Impacts due to this construction have been conservatively overestimated at 0.36 acres. These values represent only 4% of the linear feet and 6% of the acreage of the on-site portion of Dry Creek.

Minimization measures also would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas. Separate parallel engineered drainage facilities would be constructed in order to avoid these drainages, but still provide for needed storm water conveyance/storage capacity. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. In other sheds (or in other reaches of these drainages) where there are lesser resource values, the existing drainages would be modified to both increase storm water conveyance and storage capacity and to restore or enhance their biological function.

Enhancement

The Avoidance and Open Space Plan identifies approximately 180 acres of open space that is associated with one of the primary drainage courses and presents opportunities for creation and/or enhancement of existing wetlands/waterways. These enhancements can be incorporated into the engineered site storm water conveyance/detention system in such a way as to mimic natural functions and, in many cases, provide for improved habitat and water quality functions compared to the existing degraded waterways. Naturalized meander could be established and the corridors could be designed in such a way as to minimize or eliminate maintenance. Where maintenance is not required, these enhanced corridors could also be protected, consistent with the minimization strategies discussed above, in order to maintain functional values.

Despite direct impacts to 97.43 acres of aquatic resources, the Proposed Project would preserve non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.) where they can be included within corridors contiguous with other preserves established to meet the avoidance and minimization criteria described in item 1, above, or where they are large enough and/or concentrated enough to assure long-term maintenance of wetland function and value. Approximately 675 acres of on-site open space consisting of approximately 475 acres of drainage corridors and associated preserved non-contiguous wetlands would have an average setback (buffer) of 100 feet extending laterally from the edge of preserved wetlands. The westernmost primary drainage course, which crosses the PV815, Capri, and Fong properties would not be enhanced, but a separate adjacent channel would be constructed for storm water management. This separate "side channel" offers opportunities for enhancement. To the southeast, the primary drainage course that crosses the PV200 and PV815 properties would be similarly avoided on the PV815 property (i.e., a similar side channel would be constructed). Upstream of Palladay Road (on the PV200 and PV290 (Parcels 1 and 2 properties) the existing drainage would be relocated and reconstructed. To the southeast, the primary drainage course which crosses the PVA(b), PGG, PVA(a), and PV88 properties would be avoided with side channel construction. The primary drainage that crosses Hodel/Doyle, Watt x Baseline, PV356, PV179(A and B), PV290 (Parcel 1) and D.F. 80, would in places (see discussion under Avoidance, above), be avoided with side-channel construction. However, the remainder would be reengineered and in some places relocated. Finally, storm water management/wetland enhancement would be undertaken along that portion of Curry Creek which crosses the Hodel/Doyle property (although the creek itself would be avoided).

With respect to the preservation of isolated and/or non-contiguous wetlands, the proposed land use plan is designed to preserve watersheds, maintain the minimum viable preserve size, the need to provide adequate buffers and avoiding isolation of wetlands by development all influence the ecological viability of preserving wetland and watershed functions of various wetlands. Other factors considered in the avoidance and minimization of impacts to non-contiguous, non-linear wetlands present within the Plan Area include: (1) the quality of the wetlands (e.g., degree of disturbance); (2) internal fragmentation; (3) type of land/land uses between the aquatic resource and similar aquatic resources within the Plan Area; and (4) degree of incompatibility with adjacent land uses.

With respect to quality, as discussed under Section 6.1.2, above, many of the wetlands within the Plan Area have been degraded by years of agricultural land use. Where alteration of natural topography has not otherwise been extensive, the recovery of wetland function in these systems is possible. However, the rate and degree of such recovery is speculative. With respect to fragmentation, major roadway improvements are required to facilitate traffic flow within and through the Project Area, thus it is considered unlikely that an effective contiguous and unfragmented preserve size (e.g., 200 acres) could be achieved within the Project Area.

The Project Land Use Plan and Infrastructure Elements incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Compatible land uses, such as parks, hiking trails, athletic fields, and other forms of open space are located next to preserves.

The proposed Specific Plan incorporates the preservation of on-site preserves. Buffers have been incorporated into the Specific Plan and lot lines will be located outside of proposed on-site preserve areas. Preserves could be protected in perpetuity through conservation easements that are adequate funded for maintenance and managed.

Other Environmental Impacts

With respect to the other environmental criteria, the Proposed Project would comply with the criteria related to land use compatibility, power line easement corridors, biological resources, noise and seismic safety/flooding considerations.

Land Use/Noise Incompatibility

The Proposed Project provides for a mixed-use community. Consequently, non-residential land uses are proposed adjacent to residential land uses. Potential land use incompatibilities have been addressed within the Project Area through design guidelines and development standards identified in the Specific Plan process. Accordingly, certain public and quasi-public land uses such as fire stations and the County corporation yard would not be sited in proximity to sensitive receptors (i.e., residences) in the proposed land use plan. Additionally, the Specific Plan would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

In terms of proximity to the power line corridors, the three power line easement corridors are primarily designated as open space under the proposed Specific Plan, which restricts intensive forms of development immediately adjacent to or under the power lines. Other related types of development proposed under the power lines include a cemetery, religious site, and County corporation yard. The power line easements contain three 115kV transmission lines and seven 230kV transmission lines. In addition, a new 230/21kV distribution substation is proposed for an approximately six-acre site located at the intersection of Palladay Road and A Street, contiguous to and west of the existing PG&E electric transmission line. The substation, however, is substantially surrounded by non-residential land uses.

According to the Specific Plan Land Use Plan, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area, generally, nor within the Placer Vineyards Development Area. The Specific Plan provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55).

Biological Resources

Of the 97.43 total wetland acres anticipated to be directly impacted by the Proposed Project, 73.79 acres (i.e., wet areas) may be described as potential aquatic invertebrate habitat and 23.64 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, and seasonal wetland swales typically considered

potential habitat for federally listed vernal pool branchiopods. Three wetland-inhabiting federally listed invertebrates have the potential to be affected by the proposed project. These include three vernal pool branchiopod species: vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and the Conservancy fairy shrimp (*B. conservation*). Both vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*) have been identified from scattered locations within the Plan Area. Conservancy fairy shrimp (*B. conservatio*) has not been found.

The Applicants' proposed on-site avoidance and conservation strategy proposes to maintain the connectivity and integrity of drainage corridors from east to west through the Plan Area. Preservation, restoration and creation would compensate for the anticipated loss of habitat supporting special status species. The Applicants' proposed conservation strategy would achieve a mixed mosaic of habitats within the Plan Area that would preserve ecosystem stability and result in the long-term conservation of important biological resources as further discussed in the Placer Vineyards Biological Assessment.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All Placer Vineyards Development residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards.

Traffic

The Proposed Project will result in an increased volume in traffic. Specifically, it is expected that the Proposed Project will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County. The Proposed Project will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions with the addition of the Proposed Project, the Proposed Project is expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County. It would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. The Proposed Project would also increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line.

The County required that the Applicants incorporate mitigation measures into their proposed development projects to lessen these impacts. These measures include preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These mitigation measures, however, could adversely affect the environment and traffic in other jurisdictions.

Noise

The Proposed Project will likely result in an increase in noise levels due to the Proposed Project's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. Both the on- and off-site noise levels will increase during construction. Furthermore, on- and off-site noise levels will likely increase as result of Proposed Project-generated traffic. In addition, the Proposed Project will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

The County required that the Applicants incorporate mitigation measures into the design of their individual projects to lessen significant noise impacts. These mitigation measures include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for the Proposed Project, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions. Specifically, the Proposed Project will likely result in an increase in ROG, NOx, CO, and PM10. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, the Proposed Project will increase both mobile and stationary source emissions. It will also add additional vehicles on the local roadway system, and the sewer lift station operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, the Proposed Project may result in cumulative air quality impacts, and Proposed Project -generated traffic would contribute to cumulative localized impact.

In order to mitigate any adverse air quality impacts, the Applicants will adopt mitigation measures to lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

For these reasons, the environmental impacts described above will be fully addressed and will not be considered significant.

Conclusion

The Proposed Project meets the Applicants' project purpose and is available. Moreover, this alternative satisfies the logistical, technological, and cost criteria for practicability. Although this alternative results in aquatic resources impacts, the project avoids and minimizes impacts to aquatic resources in a manner largely consistent with the screening criteria as demonstrated above. In summary, the Proposed Project avoids and enhances most on-site major drainages with adequate buffers and preservation of contiguous vernal pool and other wetland resources.

Finally, with the inclusion of mitigation measures, this alternative does not result in other significant environmental impacts when compared to the other development alternatives.

7.5.2 Description and Analysis of On-Site Alternatives

This Alternatives Analysis evaluates 7 on-site alternatives for comparison to the Proposed Project as shown in the attached summary table.

7.5.3 On-Site Alternative A – Vernal Pool Habitat Preservation Alternative

On-Site Alternative A consists of the development of a portion of the Placer Vineyards Development, a residential mixed-use community, and the Infrastructure Elements which provide the backbone infrastructure to serve the development. (See Fig. 7.2-A.) To the extent that such infrastructure would occur in the Project Area, the types of impacts to aquatic resources have been generally identified. Where off-site infrastructure would be required to support this alternative, alignments and quantification of impacts to aquatic resources would be refined following selection of the land plan. This alternative is designed so that listed aquatic invertebrate (fairy and/or tadpole shrimp) habitat is preserved with a 250-foot buffer. The map includes areas for which there are negative survey results. However, the Alternative A map in no way is a reflective of the ultimate extent of listed aquatic invertebrate habitat. These final determinations on that issue will be reached only after consultation under Section 7 of Endangered Species Act. For the purposes of this analysis, isolated depressional features (i.e., vernal pools and seasonal wetlands) were considered to represent such habitat, while drainage swales and seasonal wetlands swales were not. These buffers, like the wetlands, are scattered throughout the site, creating pockets and islands of development.

This alternative develops less than approximately 1,740 acres of the 3,744-acre Project site and preserves about 2,005 acres. In fact, it is probable that less than 1,000 acres would actually be developable given the fragmented area available for proposed land uses. Based on the 1,740 figure, Alternative A consists of 5,608 units (compared to 11,585 units under the Proposed Project), including 1,246 low density residential units, 2,599 medium density residential units, 1,452 high density residential units, and 311 commercial mixed-use units. This alternative would result in the fill of 43.35 acres of wetlands and 15.04 acres of avoided, but indirectly impacted wetlands. Alternative A would preserve 101.28 acres. Thus, in terms of acreage, Alternative A results in avoidance of a total of 116.32 acres of aquatic resources habitat.

Project Purpose

On-Site Alternative A does not fully meet the Applicants' Project Purpose. This on-site alternative design would provide for only about half of the residential units in the Proposed Project and eliminates development of about half of the overall Project developable acreage. Consequently, with the loss of 5,709 residential units and 268 commercial units as compared to the Proposed Project, Alternative A would lose approximately 2,005 acres of development. This lost development potential includes approximately 153 acres of commercial space, 80 acres for schools, 98 acres for parks, 151 acres in major roads, 349 acres in open space, and 55 acres for religious facilities as compared to the Proposed Project.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING AND PLANNING-LAND SURVEYING
ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE A

Figure 7.2-A

Under Alternative A, the following uses will be eliminated: the only high school proposed as part of the project and the only two middle schools proposed. This alternative eliminates 5 of the 6 elementary schools, the only cemetery and corporation yard proposed, and one of the 2 fire stations. Additionally, the two proposed community parks, residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts would be eliminated. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative A. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the unit count for Alternative A, three elementary schools, one middle school, and one high school would be needed. Sites for two elementary schools, one middle school, and one high school would need to be accommodated within the remaining developable area. It is also likely that the cemetery, corporation yard, fire station and community park land uses would need to be relocated within the developable area of the alternative, because the County requires that Placer Vineyards provide all of the necessary public/quasi-public facilities necessary to meet adequate levels of service without imposing a burden on existing residents.

The alternative will need to provide a mixed use development, with the same range of uses that the Project provides, even if the Project is developed at a proportionately smaller scale as a result of lands that are set aside for preserve purposes. Placer County will require that a mix of residential uses be developed within the areas permitted for development under the respective alternatives in accordance with the 1994 General Plan.

Because wetlands are scattered throughout the Project Area, Alternative A development would be discontiguous within the Project Area. Although a mix of land uses could be developed, the land uses would not be connected or functionally integrated such that Alternative A would not result in a community. In fact, specific development proposals on the following Participating Property owners' parcels would be almost entirely precluded from construction: Fong, Capri, PV 815, Pan de Leon, Gulley 20, PV 88, PFF Property, Watt X Baseline, Mourier 135, PV C, and PV B. Substantial portions of the proposed development projects on the following parcels would also be precluded: PV 200, PV A(a), PV 290, PV 356, PV 179A, PV 179B, Hodel/Doyle, PV 239, and PV 290. This alternative eliminates two elementary schools, one middle school, one high school, a corporate yard, cemetery, religious facilities, a business park, power center, and commercial districts.

Given the scattered development proposed under this alternative and elimination of many key residential, commercial, public services and infrastructure uses of the property, Alternative A does not meet the project purpose of creating a large-scale mixed use community. It also would not provide for the growing population of Placer County because it would accommodate only half as much housing as the Proposed Project. On-Site Alternative A would therefore not fully meet the Project Purpose.

Availability

This alternative is available.

Practicability

With respect to costs, Alternative A is not practicable because it foregoes 52% of the residential units and commercial square footage as compared to the Proposed Project. As the number of residential units decreases, the related infrastructure costs would be prohibitively high to support the remaining 48% of the residential uses. While the reduction in the amount of Placer Vineyards Development may result in a proportionate reduction in the capacity of the Infrastructure Elements, infrastructure, utilities and services would nonetheless be required in order to assure that the provision of services and utilities would not impact the County's levels of service. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive. Further, it is unlikely that any one landowner/developer or fewer Participating Property owners would be able to proceed with development independently, as the property owner would be required to construct all of the core backbone infrastructure to serve the other scattered development projects. Additionally, the remaining developers would be required to finance the required public facilities. Thus, it is unlikely that Alternative A development could fund the Infrastructure Elements at a cost that is even less than the roughly $854 million project infrastructure costs at buildout (See EPS Technical Memorandum dated September 6, 2006).

For some specific development projects on the Participating Properties, the developers would forego any development. For example, the developers of the Capri, Pan de Leon, PV 88, and Watt x Baseline parcels would be almost completely precluded from developing their parcels under Alternative A. Consequently, the costs for these specific development proposals would be unreasonably high as compared to other specific development proposals because they would incur the costs for services and infrastructure for development that these landowners would not realize. Alternatively, these landowners may not be required to contribute to the funding of such infrastructure and services because they would not be able to proceed with their development projects, thereby resulting in the allocation of infrastructure and services costs over a smaller number of development projects within the Placer Vineyards Development Area.

Fong, PV 815, DF 80, PV 200, Gulley 20, PV 290, Parcel 1, PV 290, Parcel 2, PV A(a), PGG Property, PV 356, PV 179A, PV 179B, PV 239, PV A(b), PV B, PV C, Hodel/Doyle, and Mourier also would be substantially precluded from developing because the developable areas on each of these parcels would be substantially reduced and fragmented. Consequently, the loss of development on these parcels would result in disconnected and fragmented pockets of development. Effectively, due to the location of the preserves and their configuration, no development could occur in the western and eastern quadrants of the Project Area, resulting in some residential and commercial development concentrated in pockets in the center of the Project Area. Because of the disconnected nature of the development and the loss of public/ quasi-public facilities, Alternative A would not result in a self-sufficient, functioning mixed-use development because commercial uses would not be located in proximity to residential development; there would be limited public/quasi-public services, and even if one applicant in Placer Vineyards might be able to develop, it would be an isolated from other existing

development. The costs for developing these parcels would also be unreasonably high for the same reasons discussed above.

In terms of logistics, Alternative A would not be developed in a functionally-integrated manner as a master-planned mixed use community because the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. From a size perspective, less than 1,000 acres would actually be developable given the fragmented area available for proposed land uses.

In terms of technological considerations, this Alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to maintain the requisite levels of service.

For these reasons, On-Site Alternative A is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

In terms of acreage of impacts to aquatic resources, in addition to relatively smaller amounts of impacts to other types of wetlands/waters, On-Site Alternative A results in impacts to approximately 11.58 acres of pond, 4.92 acres of creek, 10.43 acres of intermittent drainage, 7.49 acres of riverine seasonal wetlands, and 4.41 acres of seasonal wetland swale. The total acreage for impacted wetlands is about 43.35 acres. This alternative results in the avoidance of approximately 116.32 acres of wetlands, including 33.04 acres of vernal pools, 36.84 acres of seasonal wetlands, 17.79 acres of riverine seasonal wetland, 8.31 acres of seasonal wetland swale, and 0.78 acres of drainage swale. Although On-Site Alternative A would not result in the direct fill of any listed aquatic invertebrate habitat, it would result in indirect impacts to approximately 15.04 acres of wetlands, including approximately 7.37 acres of potential listed aquatic invertebrate habitat. (See Fig. 7.2-B.)

In terms of acreage of impacts to delineated wetlands, the 43.35 acres of impacts under Alternative A include the specific impacts shown in Table 2 associated with the Applicants' individual development proposals on the Participating Properties. In summary, development of the Participating Properties would result in the impacts described further below.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

Figure 7.2-B

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ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE A

- **Fong:** Alternative A results in the preservation of approximately 80% of the Fong parcel and the elimination of most of the low density residential and medium residential uses. The remaining development on this 92.6-acre parcel will be discontinuous, creating isolated islands and peninsulas. Alternative A will directly impact approximately 1.18 acres of wetlands and indirectly impact 0.40 acres of wetlands. The waters of the U.S. impacted on the Fong parcel include ponds and riverine seasonal wetlands. All other seasonal wetlands and vernal pools would be avoided or preserved for a total of 4.96 acres of wetlands.

- **Capri:** Alternative A results in the preservation of 90% of the Capri parcel and the elimination of low and medium-density residential uses. Three small islands of fragmented development could occur under this alternative because it is designed to preserve listed invertebrate (shrimp) habitat with a 250-foot buffer. Under this alternative, Capri will avoid or preserve about 4.42 acres of wetlands, directly impact about 0.58 acres and indirectly impact 0.37 acres. The impacted wetlands include riverine seasonal wetlands, and preserved wetlands include seasonal wetlands and vernal pools.

- **PV 815:** Under Alternative A, PV 815 (the largest parcel) results in the preservation of scattered wetlands on about 65% of its 815.1 acres. Alternative A results in the loss of office space, low, medium, and high density residential, power center, business park, cemetery, corporate yard, elementary school, middle school, and high school. The permitted development for this parcel under Alternative A results in severely piecemealed and fragmented development with no functional connectivity among land uses. This alternative would directly fill about 6.76 acres of riverine seasonal wetlands, indirectly impact 1.73 acres of riverine seasonal wetlands, and avoid or preserve 26.92 acres of riverine seasonal wetlands, seasonal marsh, seasonal wetlands, and vernal pools. PV 815 will lose office space, low, medium, and high density residential development.

- **Pan de Leon:** Alternative A results in the preservation of 95% of the 10.7-acre Pan de Leon parcel to avoid 0.33 acres of wetlands. This alternative will indirectly impact 0.01 acres of creek. Low density residential development would not occur. Preserved wetlands on this parcel include creeks, riverine seasonal wetlands, seasonal marshes, seasonal wetlands, and vernal pools.

- **DF 80:** Under Alternative A, most of DF 80, an 80-acre parcel, could be developed with a business park/power center and medium density residential uses. Approximately 15% of the proposed development would be eliminated under Alternative A, thereby, resulting in 0.20 acres of fill of wetlands and 0.02 acres of indirect impacts. A total of 0.40 acres of wetlands would be avoided or preserved. Preserved wetlands include drainage canals and seasonal wetlands, and impacted wetlands are canals.

- **PV 200:** Alternative A results in the loss of approximately 20% of the proposed development on the 200-acre PV 200 parcel. Alternative A would forego a

religious facility and low, medium, and high density residential uses. Alternative A results in the fill of about 2.22 acres of drainage swale, ephemeral drainage, and pond on PV 200, and indirect impacts to 1.02 acres. This alternative avoids or preserves about 2.03 acres of ephemeral drainage, pond, and seasonal wetland.

- **Gulley 20:** Alternative A results in preservation of approximately 80% of the 19.5-acre Gulley 20 parcel with a commensurate elimination in low and medium density residential uses. Under this alternative, development will not impact any wetlands and will preserve about 0.44 acres of seasonal wetland swale and vernal pools.

- **PV 88:** PV 88 would completely forfeit any development under Alternative A. The loss is 93.8 acres of religious facilities, and low and medium residential uses. Consequently, under Alternative A, 6.34 acres of wetlands will be avoided or preserved and none will be impacted. These wetlands include riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PV 290, Parcel 1:** Under Alternative A, approximately 35% of PV 290, Parcel 1, a 200-acre parcel would be preserved resulting in the loss of commercial/ mixed use, library, police/government, town center, and high density residential land uses. The preservation area reflected in Alternative A essentially cuts the parcel in half, with no connectivity between the upper and lower portions of the property. This parcel will avoid or preserve about 1.57 acres of wetlands under this alternative and impact about 1.0 acres of wetlands. It will indirectly impact 0.09 acres of wetlands. The wetland types on this parcel include ephemeral drainage and seasonal wetlands, and ephemeral drainage will be impacted.

- **PV 290, Parcel 2:** This alternative results in the preservation of 25% of the 100 acre parcel. Medium density residential and commercial/mixed use would be eliminated. The preserved areas for this parcel would primarily be concentrated along the edges of the parcel. About 0.55 acres of wetlands will be directly filled on this parcel and 2.42 acres of wetlands will be avoided or preserved. Alternative A will result in indirect impacts to 0.46 acres of wetlands. The wetland types present on this parcel include ephemeral drainage, seasonal wetlands, seasonal wetland swales, and vernal pools.

- **PVA(a):** PV A(a) loses about 10% of its 60.5 acres to preservation under Alternative A. This results in a loss of low and medium density residential use. This parcel will avoid or preserve 11.70 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools under this alternative and impact about 2.98 acres of pond, riverine seasonal wetlands and drainage canal. It will indirectly impact 0.68 acres.

- **PGG:** Approximately 70% of this 79-acre property would be preserved under Alternative A. Low and medium density residential would be eliminated under this alternative. Alternative A results in small, fractured, isolated islands of development, with a larger pocket of development towards the bottom of the

parcel. Realistically, only the larger portion of the parcel could be developed under this alternative. Development under this alternative will fill 2.45 acres of drainage canal, pond, and riverine seasonal wetlands and avoids or preserves 4.31 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. Indirect impacts are estimated at 0.96 acres.

- **PV 356:** Approximately one-half of the 356.9 acres would be preserved under Alternative A. This area includes religious facilities, commercial/mixed use, and low, medium, and high residential uses. With the preserved areas included in Alternative A, PV 356 will resemble a "swiss cheese" approach to preservation since the preserved areas would be scattered throughout the parcel. Specifically, this alternative will result in 10.71 acres of fill of waters of the U.S. and 17.60 acres of avoided or preserved wetlands. It also results in 2.73 acres of indirect impacts to wetlands. Wetlands include intermittent drainage, seasonal wetlands, seasonal wetland swale, and vernal pools, however, the alternative would not impact vernal pool habitat.

- **PV 179A:** Approximately 40% of the parcel's 88 acres would be preserved under Alternative A. Commercial/mixed use, business park and power center, and medium density residential would not be developed. For this parcel, Alternative A will result in 1.21 acres of direct impact, 0.48 acres of indirect impact, and avoidance or preservation of 3.62 acres of wetlands. These wetlands include intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 179B:** Approximately 80% of the PV 179B 92-acre parcel could not be developed under Alternative A. This alternative primarily results in the loss of a power center and medium density residential, with isolated and fragmented pockets of development and preservation area. Under Alternative A, 0.19 acres of seasonal wetland swale will be impacted on this parcel, while 2.64 acres of wetlands will be avoided or preserved. It will also indirectly impact 0.44 acres of wetlands. The preserved wetlands include intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 239:** Alternative A results in additional avoidance on about 30% of PV 239, a 241.5-acre parcel. Religious facilities and low, medium, and high density residential uses would not be developed. Alternative A will result in isolated and fragmented areas of preservation. Under Alternative A, 0.03 acres of wetlands will be directly impacted, while 1.21 acres of wetlands will be avoided or preserved. It will also indirectly impact 0.10 acres of wetlands. The impacted wetlands include seasonal wetland swale, while seasonal wetlands will be preserved.

- **PV A(b):** Alternative A results in the development of approximately one-half of the approximately 265.6 acre parcel. Low and medium density residential uses would not be developed, and under this alternative, PV A(b) will impact 4.89 acres of wetlands and avoid/preserve about 0.72 acres of wetlands. It will

indirectly impact 0.27 acres of wetlands. Drainage canals and ponds will be preserved, while riverine seasonal wetlands will be impacted.

- **Watt x Baseline:** This 100.4-acre parcel will lose about 95% of its area to preservation under Alternative A. The lost uses consist of commercial, religious, and medium and high density residential uses. Under Alternative A, Watt x Baseline can be developed with only very small, isolated islands of development. Alternative A will directly impact about 0.46 acres of seasonal wetland swale, indirectly impact 2.23 acres, and avoid or preserve about 4.38 acres of seasonal wetland swale and vernal pools.

- **Mourier:** Alternative A preserves approximately 50% of the 137.6 acres comprising this parcel. Religious and low and medium density residential uses would not be developed, and any remaining land uses would consist of isolated pockets of development. Alternative A avoids or preserves about 2.62 acres of wetlands and directly impacts 0.90 acres of wetlands. It will indirectly impact 0.36 acres of wetlands. Impacted wetlands include creeks and seasonal wetland swale, while seasonal wetlands will be preserved.

- **Hodel/Doyle:** Hoyle/Doyle landowners will be unable to develop about 40% of its 462.3 acres. Preservation under Alternative A will result in a loss of low density residential, religious facilities, and a private park/recreation center. The configuration will result in islands of preservation scattered throughout the parcel with discontinuous development. Under Alternative A, 1.84 acres of wetlands will be impacted on this parcel, while 10.44 acres of wetlands will be avoided or preserved. It will also indirectly impact 1.99 acres of wetlands. This parcel is characterized by wetlands include vernal pools, seasonal wetlands, and seasonal wetland swale.

- **PV C:** Approximately 80% of this 39.2-acre parcel will be preserved under Alternative A. The preservation will result in the loss of low and high density residential use. This preservation will also result in three very small fragmented islands and one larger expanse of development. Under this alternative, 0.32 acres of riverine seasonal marsh will be filled and 0.85 acres of riverine seasonal marsh and vernal pool habitat will be avoided or preserved. It will also indirectly impact about 0.16 acres of riverine seasonal marsh.

- **PV B:** Approximately 50% of the 123.4-acre area would be preserved under Alternative A resulting in the loss of low and medium density residential use. This configuration will also result in pockets of development and islands of preservation. Specifically, under Alternative A, 4.89 acres of direct fill of creek, riverine perennial marsh, and riverine seasonal wetlands would occur. Approximately 6.40 acres of seasonal wetlands and creek would be avoided or preserved. Indirect impacts to 0.55 acres of creeks would occur.

Infrastructure Elements

The Infrastructure Elements would be impacted by Alternative A. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Elements. Each major arterial roadway – Base Line Road, Watt Avenue, West Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by Alternative A. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected.

Additionally, the shape of the proposed preserve areas will prevent construction of multiple short segments of road. The cost associated within the sheer number of bridges and bores required by Alternative A precludes the ability to bridge the segments for road construction and boring and jacking utility improvements. Base Line Road is an existing two-lane road that would be widened to become a primary east-west arterial road serving the Plan Area as well as the balance of western Placer County. Likewise, Watt Avenue is an existing two-lane road proposed to be widened to become a primary north-south arterial serving the Placer Vineyards project as well as the balance of western Placer County. Further, the inability to widen and improve Base Line Road and Watt Avenue will impose significant barriers to any development in the Plan Area.

It may be possible to realign West Dyer Lane, East Dyer Lane, and 16th Street to avoid wetlands as these streets are internal arterials. However, the realigned internal arterials would still need to connect to Base Line Road and Watt Avenue. If these primary arterials cannot be constructed, the ability to realign the internal arterials would be negligible.

The construction of the following Infrastructure Elements will be completely prevented under this alternative: the sanitary sewer lift station to serve the portion of the Plan Area west of Watt Avenue, the five proposed potable water well and storage tank sites, the two proposed recycled water storage tank sites, proposed drainage channel corridors, substation site, and one of the two proposed fire station sites.

With respect to impacts resulting from Infrastructure Elements, except where specific roadway improvements might be required, it is assumed that named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Plan Area under Alternative A. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances.

Avoidance, Minimization and Enhancement

Alternative A was designed to avoid and minimize impacts to potential listed aquatic invertebrate habitat, based on plan-wide, aerial photo and field-level investigations of existing wetlands and wetland/swale corridor configurations. Approximately 2,005 acres of on-site open space, containing approximately 101 acres of wetlands, would be preserved under this alternative.

Although Alternative A would result in direct impacts to 43.35 acres of aquatic resources, in terms of effects on aquatic resources and contribution to the overall aquatic ecosystem, this alternative would only comply with some of the avoidance and minimization criteria described above. Although Alternative A would preserve large open expanses of contiguous listed aquatic invertebrate habitat, this alternative would result in substantial impacts to creeks and drainages throughout the Project Area. Thus, this alternative would not facilitate preservation of interconnected open space and drainage corridors, in conflict with the avoidance and minimization criteria described above.

Avoidance

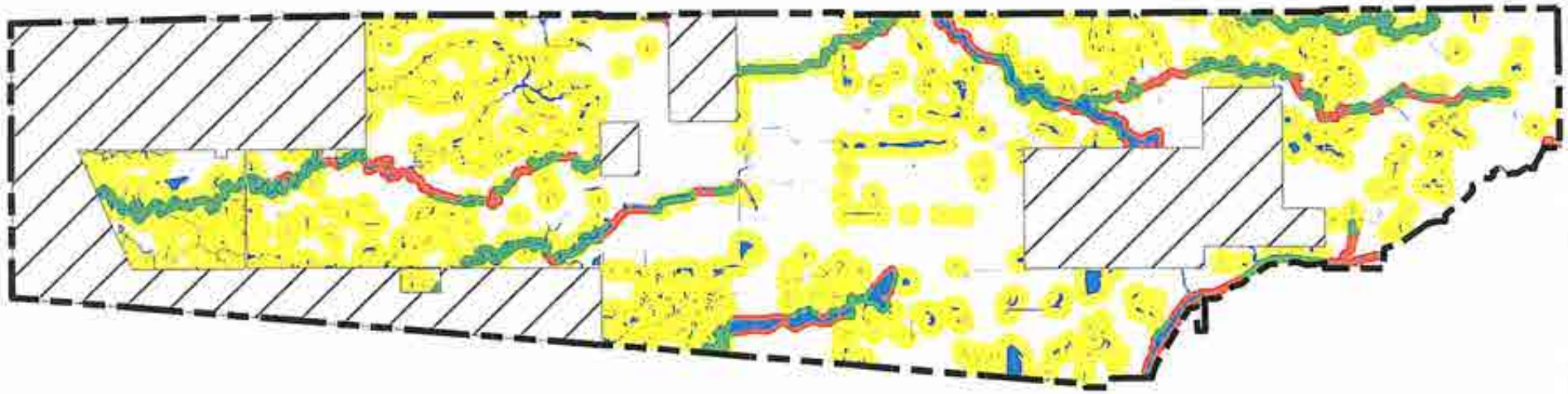
Alternative A would result in avoidance of 101.28 acres of wetlands within approximately 2,005 acres of open space scattered throughout the Project Area. With respect to the preservation of isolated and/or non-contiguous wetlands, the Alternative A land use plan is designed to provide adequate buffers around potential listed aquatic invertebrate habitat, wherever it may be distributed.

The PCCP calls for large (i.e., greater than 2,000 acre) contiguous preserves located adjacent to existing preserve areas, and located in areas where long-term management practices, such as grazing and controlled burning, are consistent with adjacent uses. Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the east and west ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. Further, there are no adjacent existing preserve areas with which to join. Finally, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent urban uses (both existing and proposed). Although all isolated wetlands would be preserved under this alternative, the preservation footprint would be generally limited to a 250-foot area surrounding each wetland. Consequently, while isolated wetland features would be preserved under this alternative, Alternative A does not provide large contiguous blocks of habitat in a manner consistent with both the regional and project-specific goals/criteria stated above. This alternative would result not only in the apparent elimination of any viable, integrated land use development strategy, but would isolate wetlands due fragmented development.

The field assessments and map analysis based upon HUC flow lines identified five corridor reaches (in addition to the Dry Creek corridor) which had perceptively higher functional values than other Plan Area wetland/swale corridors. Additionally, these corridors which are central to the open space design of the Proposed Project, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially through agricultural manipulation, and promote avoidance efficiency by maximizing wetlands avoided per total open space area. Per the Vendlinski Paper, preservation and buffering of these main contiguous aquatic features would provide the most benefit in terms of water quality, habitat protection, and ongoing wetland function. However, many segments of these primary corridors, including large segments of Dry Creek, would be impacted under Alternative A, as discussed below. (See Fig. 7.2-C.)

	Area (Ac.)
Total Impacted Wetlands	43.35
Total Indirectly Impacted Wetlands	15.04
Total Preserved Wetlands	101.28
Total Preserved Area	2004.5

*The Alternative A map includes areas for which there are negative survey results and the map in no way is a reflection of the ultimate extent of listed aquatic invertebrate habitat. The final determination on that issue will be reached only after consultation under Section 7 of the Endangered Species Act



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

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Revision Date: 2004-09-03

Alternative A - Preservation of listed invertebrate habitat with a 250-foot buffer

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.2-C

	Impact	Indirect	Preserve	Total
Channel	0.14	0.03	1.29	1.46
Creek	4.92	0.56	0.53	6.01
Drainage Canal	0.11	0.03	0.30	0.44
Drainage Swale	1.31	0.78	0.00	2.09
Ephemeral Drainage	2.07	0.24	1.81	4.12
Intermittent Drainage	10.43	1.35	6.03	17.80
Pond	11.58	2.36	4.50	18.45
Riverine Perennial Marsh	0.58	0.00	0.00	0.58
Riverine Seasonal Marsh	0.32	0.16	0.15	0.64
Riverine Seasonal Wetland	7.49	2.15	15.64	25.28
Seasonal Marsh	0.00	0.00	0.21	0.21
Seasonal Wetland	0.00	0.00	36.84	36.84
Seasonal Wetland Swale	4.41	7.37	0.94	12.72
Vernal Pool	0.00	0.00	33.04	33.04
Total	43.35	15.04	101.28	159.67

	Area (Ac.)
Total Impacted Wetlands	43.35
Total Indirectly Impacted Wetlands	15.04
Total Preserved Wetlands	101.28
Total Preserved Area	2004.5

*The Alternative A map includes areas for which there are negative survey results and the map in no way is a reflection of the ultimate extent of listed aquatic invertebrate habitat. The final determination on that issue will be reached only after consultation under Section 7 of the Endangered Species Act.

Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

FIGURE 7.2-D

Alternative A - Preservation of listed invertebrate habitat with a 250-foot buffer

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

The westernmost drainage, which (upstream to downstream) traverses the PV 815, Capri, and Fong properties, would be subject to direct impacts, at approximately one-third of its length from the downstream point where it exits the Project Area, and would be directly impacted over a substantial portion of its length upstream of that point. As compared to the avoidance principles described above, approximately 4,950 linear feet (30%) of this primary drainage would be lost. As compared to the buffers defined by the avoidance principles described above, approximately 25 acres (28%) of the open space associated with this drainage would be lost.

Moving eastward, the next primary drainage course, which traverses the PV 200 and PV 815 (southeast corner) properties, would be subject to direct impacts at approximately one-third of its length from the point where it exits the project area. Upstream of that point, it would be subject to direct impacts over a substantial portion of its length. As compared to the avoidance principles, approximately 1,866 linear feet (22%) of this drainage would be lost, and about 10 acres (23%) of the associated open space would be lost.

To the southeast, the next primary drainage course, which crosses the PV A(b), PGG, PV A(a), and PV 88 (southeast corner) properties, would be subject to direct impacts at approximately one-eighth of its length from the downstream point where it first exits the Project Area. Upstream of that point, it would be subject to direct impacts over the majority of its length. As compared to the avoidance principles, approximately 2,700 linear feet (44%) of this drainage would be lost, along with approximately 22 acres (49%) of the associated open space.

To the north, the primary drainage course which traverses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (parcel 1) and D.F. 80 properties, would be subject to direct impact very near where the drainage exits the Project Area (on the D.F. 80 property). Upstream of that point, and disregarding the intervening Non-Participating Property, it would be subject to direct impacts over a substantial portion of its length. As compared to the avoidance principles, approximately 6,750 linear feet (32%) of this drainage and 51 acres (38%) of the associated open space would be lost. A significant tributary to this primary drainage course near the southeastern corner of the PV 356 property would also be subject to direct impact. This tributary supports a relatively significant stand of existing riparian habitat.

Curry Creek, located on the Hodel/Doyle and Watt x Baseline properties, would be largely (however coincidentally) protected under this alternative. As compared to the avoidance principles, none of the creek, and only approximately one-half acre (1%) of the associated open space would be lost.

Dry Creek and its direct tributary that borders the Project Area upstream of the Mourier 135 property, would be subject to considerable impacts over the entire length that it is contained within or borders the project site (on the southeast). As compared to the avoidance principles, approximately 4900 linear feet (69% of the on-site length) of these waterways could be impacted, and approximately 34 acres (76%) of the associated open space would be lost.

Despite direct impacts to 43.35 acres of aquatic resources, Alternative A would coincidentally preserve portions of the primary drainage courses and some associated non-contiguous, non-linear wetlands (e.g. vernal pools, depressional seasonal wetlands, etc.). Generally, preservation

of these features would not be included within corridors contiguous with other preserves, and thus, would not meet the avoidance and minimization criteria described in item 1, above. Where the primary drainage courses would be subject to minimal direct impacts (e.g., placed within culverted crossings for short distances), resulting impacts to downstream (i.e., off-site) hydrologic and water quality function may be minimal. However, where large segments of these drainages might be piped, unless mitigated by appropriate design elements, significant degradation of downstream functions could occur. In either case, significant disruption of continuous wildlife movement corridors is considered likely.

Minimization

With the exception of Curry Creek, under Alternative A, segments of all of the primary drainage course would be impacted, along with some associated wetland habitats. Although setbacks of 250-feet would surround potential listed aquatic invertebrate habitat, buffers would not be provided along drainage corridors. Thus, unlike the Proposed Project, the entirety of each primary drainage course would not have an average setback (buffer) of 100 feet, extending laterally from the edge of preserved waters of the U.S., but would be directly impacted where not coincidentally protected by the listed aquatic invertebrate habitat buffers.

As discussed above, Alternative A would interrupt or truncate primary drainage courses and their associated open space corridors. Remaining segments of primary drainage courses (i.e., those coincidentally contained within the buffers surrounding potential listed aquatic invertebrate habitat) would be protected only to the extent that the listed aquatic invertebrate habitat buffers would protect them. As reported above, As compared to the buffers defined by the avoidance principles used to plan the proposed project, approximately 25 acres (28%) of the open space associated with the westernmost drainage (which crosses the PV815, Capri, and Fong properties) would be lost. Approximately 10 acres (23%) of the open space associated with the primary drainage course which crosses the PV200 and PV815 properties would be lost. Approximately 22 acres (49%) of the open space associated with the primary drainage course which crosses the PV(b), PGG, PV(a), and PV88 properties would be lost. Approximately 51 acres (38%) of the open space associated with the primary drainage course which crosses the Hodel/Doyle, PV356, PV179(A and B), PV290 (Parcel 1) and D.F. 80 properties would be lost. While this alternative preserves almost all of the open space associated with Curry Creek (99% coincidentally), significant losses (approximately 34 acres, or 76%) of open space associated with Dry Creek could occur.

Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative A, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. Alternative A would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas, in order to direct drainage toward urban features and away from the preserve boundaries. Alternative A would incorporate the preservation of on-site preserves in perpetuity.

Enhancement

Alternative A does not include significant opportunities for enhancement of existing wetlands/waterways because the alternative is focused on preservation of listed aquatic invertebrate habitat, and, with the exception of Curry Creek, all of the major drainages would be impacted. Some enhancement could be undertaken along Curry Creek, however, the potential for indirect impacts to potential listed aquatic invertebrate habitat would limit this possibility.

Other Environmental Impacts

Land Use/Noise Incompatibility

Although On-Site Alternative A involves a mixed-use environment, land use incompatibilities would occur because the development would be fragmented and disconnected with land uses sited wherever they could occur on a particular parcel outside of vernal pool habitat rather than based on siting land uses that are complementary in nature. However, Alternative A would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Similar to the Proposed Project, under Alternative A, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Project Area. Alternative A provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55.)

Biological Resources

Of the 43.35 total wetland acres anticipated to be directly impacted by Alternative A, 5.72 acres (i.e., wet acres) of seasonal wetland swales and drainage swales may be described as potential aquatic invertebrate habitat and 37.63 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, drainage swales, and seasonal wetland swales typically considered potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Placer Vineyards Development area, and one vernal pool tadpole shrimp cyst was reported from one wetland within the Development area.

The Applicants' proposed on-site avoidance and conservation strategy proposes to maintain (and/or enhance) the integrity of primary east-west drainage courses throughout the Project Area. Alternative A, focused upon the preservation of potential listed aquatic invertebrate habitat, would compromise the provision of connectivity and integrity of drainage corridors from east to west through the Plan Area, and thus, would also disrupt the continuity of their associated wildlife movement corridors. Although preservation, restoration and creation would compensate for the anticipated loss of habitat supporting special status species, development would occur within drainage corridors and in proximity to vernal pool habitat that are preserved on site

resulting in approximately 58 acres of direct (i.e., 43 acres) and indirect (i.e., 15 acres) impacts to aquatic resources.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards under Alternative A.

Traffic

As with the Proposed Project, Alternative A will result in an increased volume in traffic. This increase will only be about 48% of the Proposed Project, since Alterative A proposes a proportionately lower number of units. Alternative A traffic will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative A will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative A would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County by approximately 48% fewer trips than the Proposed Project. Alternative A would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. Alternative A is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts.

Noise

As with the Proposed Project, Alternative A will likely result in an increase in noise levels due to the Alternative A's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 52% as compared to the Proposed Project due to the decreased number of dwelling units and the fewer public/quasi-public facilities that could be developed under this alternative. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative A-generated traffic. In

addition, the Alternative A will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will incorporate mitigation measures into the Project recommended through the EIR process to mitigate impacts caused by Alternative A. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative A, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative A will likely result in an increase in ROG, NOx, CO, and PM10, but likely at about 48% of the Proposed Project emissions. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, Alternative A will increase both mobile and stationary source emissions by 48% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station emissions operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative A may result in cumulative air quality impacts, and Alternative A-generated traffic would contribute to cumulative localized impact as is the case with the Proposed Project. Because development potential would be reduced within Placer Vineyards, locating development in other areas of the County would need to compensate for additional housing and non-residential uses that would then relocate to other regions in the County. This would result in additional traffic and associated potential air pollutant emissions in other areas in Placer County, rather than in a net reduction in air pollutant emissions. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses.

In order to mitigate any adverse construction air quality impacts, the Applicants will adopt construction-related mitigation measures. These mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use. Additional mitigation measures that would be implemented to lessen operational air quality impacts include requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative A does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. This alternative causes 43.35 acres of direct aquatic resources impacts, thereby resulting in fewer impacts to aquatic resources from an acreage perspective. However, Alternative A is only partially consistent with the aquatic resource impact screening criteria,

because the focus of this alternative is on avoiding and minimizing direct impacts to potential aquatic invertebrate habitat habitat, while it results in greater impacts to drainage corridors and wildlife movement corridors, and greater exposure to potential indirect impacts compromising the functions and values avoided wetlands that do not represent potential habitat for listed aquatic invertebrates. Finally, this alternative results in less significant environmental impacts when compared to the other development alternatives.

7.5.4 On-Site Alternative B – Minimization Alternative

On-Site Alternative B consists of the Placer Vineyards Development and the Infrastructure Elements which provide the backbone infrastructure to serve the development. (See Fig. 7.3-A.) To the extent that such infrastructure would occur on the Project Area, the types of impacts that could be anticipated to aquatic resources have been generally identified. Where off-site infrastructure would be required to support this alternative, alignments and quantification of impacts to aquatic resources would be refined following selection of the land plan. It contemplates further (beyond that of the Proposed Project) avoidance and minimization of impacts to aquatic resources, primarily potential listed aquatic invertebrate habitat located predominantly in the western and northeastern portions of the Plan Area. Although the preserve areas are more concentrated than under Alternative A, this alternative results in fragmented pockets of development.

This alternative would result in the development of less than approximately 1,703 acres of the 3,744-acre site and the preservation of about 2,041 acres. In fact, somewhat less than 1,000 acres would actually be developable given the fragmented area available for proposed land uses. Based on the 1,736-acre estimate, Alternative B consists of 5,651 units (compared to 11,585 units under the Proposed Project), including 1,547 low density residential units, 2,470 medium density residential units, 1,452 high density residential units, and 182 commercial mixed-use units. In addition, Alternative B would result in the fill of about 67.50 acres of wetlands and indirect impacts to 20.62 acres of wetlands. Alternative B avoids or preserves about 92.17 acres of wetlands and other waters of the U.S.

<u>Project Purpose</u>

On-Site Alternative B does not fully meet the Applicants' Project Purpose. This on-site alternative design provides for only about half of the residential units of the Proposed Project and eliminates development on about 54% of the acreage. Consequently, this alternative results in the loss of 5,931 residential units, and the preservation of approximately 2,041 acres of open space. Approximately 186 acres of commercial space, 119 acres for schools, 106 acres for parks, 133 acres in major roads, 352 acres in open space, and 49 acres for religious facilities would not be developed as compared to the Proposed Project.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
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- Wetlands
- Placer Vineyards Specific Plan Boundary

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0' 1200' 2400' 4800' 1 mile

ALTERNATIVE B

Figure 7.3-A

Under Alternative B, the following uses will be eliminated: the one proposed high school, the two proposed middle schools, and four of the six proposed elementary schools. Additionally, the one proposed cemetery, corporation yard, two fire stations, and one of the two proposed community parks would be lost. Alternative B also results in the elimination of one transit center, residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative B. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the remaining unit count for Alternative B, three elementary schools, one middle school, and one high school would be needed. Sites for one elementary school, one middle school, and one high school will need to be restored in the remaining developable area. It is also likely that the cemetery, corporation yard, fire station, transit center, and community park land uses will need to be restored within the developable area of the Alternative..

Alternative B will need to provide a mixed use development, with the same range of uses that the project provides, at the same reasonable densities, even if the project is developed at a proportionately smaller scale. Placer County will require that a mix of residential uses be developed within the areas permitted for development under the respective alternatives in accordance with the 1994 General Plan.

Although these preserves would primarily be consolidated in the western and northeastern portions of the site, the design results in three disconnected "islands" of potential developable area as shown in Figure 7.3-A. Two small areas in the westernmost corner of the site and a southwestern portion of the site would also be fragmented. Furthermore, development of the following specific development applications would be entirely, or almost entirely, precluded: PV 815, Capri, PV 290 Parcel 2, PV 356, PV 179A, PV 179B, Watt x Baseline, and Hodel/ Doyle. Alternative B substantially eliminates the proposed development on the Fong, PGG Property, and PV 88. In addition to the acreage described above, Alternative B eliminates three elementary schools, one middle school, one high school, religious facilities, a business park, power center, fire station, transit, cemeteries, and commercial areas.

Given the scattered development proposed under this alternative and elimination of the significant residential, commercial, and infrastructure within the Placer Vineyards Development Area, this alternative does not meet the project purpose of creating a large-scale mixed use residential community, because a mixed use integrated community could not be developed. It also would not provide for the growing population of Placer County because it provides half as much housing as the Proposed Project. On-Site Alternative B would therefore not fully meet the Project Purpose.

Availability

This alternative is available.

Practicability

With respect to costs, Alternative B is not practicable because it foregoes 50% of the residential units and commercial square footage as compared to the Proposed Project. As the number of residential units decreases, the related infrastructure costs would be prohibitively high to support the remaining 50% of the residential uses. While the reduction in the amount of Placer Vineyards Development may result in a proportionate reduction in the capacity of the Infrastructure Elements, infrastructure, utilities and services would nonetheless be required in order to assure that the provision of services and utilities would not impact the County's levels of service. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive.

Furthermore, for some specific development projects within the Participating Properties, the landowners/developers would forego any development. For example, the developers of the Capri, PV 815, PV 88, PV 280, Parcel 2, PV 356, PV 179A, PV 179B, Watt x Baseline, and Hodel/Doyle would be almost completely precluded from developing their parcels under Alternative B. Consequently, the costs for these specific development proposals would be unreasonably high as compared to other specific development proposals because they would incur the costs for services and infrastructure for development that these landowners would not realize. Alternatively, these landowners would not contribute to the funding of such infrastructure and services because they would not be able to proceed with their development projects, thereby resulting in the allocation of infrastructure and services costs over a smaller number of development projects within the Placer Vineyards Development Area.

Fong, Gulley 20, and PGG Property would be partially precluded from developing their parcels because the developable areas on each of these parcels would be substantially reduced and fragmented. Effectively, due to the location of the preserves and their configuration, no development could occur in the western and northeastern quadrants of the Project Area, resulting in some residential and commercial development concentrated in pockets in the center and along the eastern border of the Project Area. Because of the loss of public/quasi-public facilities, Alternative B would not result in a self-sufficient, functioning mixed-use development because commercial uses would not be located in proximity to residential development; there would be limited public services, and even if one applicant in Placer Vineyards might be able to develop, it would be an isolated from other existing development. The costs for developing these parcels would also be unreasonably high for the same reasons discussed above.

Further, it is unlikely that any one landowner/developer or fewer Participating Property owners would be able to proceed with development independently, as the property owner would be required to construct all of the core backbone infrastructure to serve the other scattered development projects under Alternative B. Additionally, the remaining developers would be required to finance the required public facilities. Thus, it is unlikely that Alternative B development could fund the Infrastructure Elements at a cost that is even 50% of the roughly

$854 million project infrastructure costs at buildout (See EPS Technical Memorandum dated September 6, 2006).

In terms of logistics, Alternative B would not be developed in a functionally-integrated manner as a master-planned community since the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. The fragmented fashion in which development occurs under this design is also impractical. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. From a size perspective, less than 1,000 acres would actually be developable given the fragmented area available for proposed land uses.

In terms of technological considerations, this Alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to maintain the requisite levels of service. Thus, the Infrastructure Elements would be impacted by Alternative B. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Elements. Each major arterial roadway – Base Line Road, Watt Avenue, West Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by Alternative B. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected.

The shape of the proposed preserve areas will prevent construction of multiple long segments of road. The inability to widen and improve Base Line Road and Watt Avenue will impose significant barriers to any development in the Plan Area under Alternative B. West Dyer Lane, East Dyer Lane, and 16th Street are internal arterials that may be able to be realigned to avoid preserve areas and serve development in the Placer Vineyards Specific Plan Area. However, the realigned internal arterials would still need to connect to Base Line Road and Watt Avenue.

Alternative B precludes construction of the following Infrastructure Elements: the sanitary sewer lift station to serve the portion of Plan Area west of Watt Avenue, four potable water wells and storage tank sites (out of 5 total proposed), proposed drainage channel corridors, the two proposed fire station sites, and the one proposed transit center site. Without the provision of backbone infrastructure, development of Alternative B would be reduced to individual projects and residential subdivisions that may result in a burden on existing infrastructure. Thus, Alternative B would not meet the technological considerations.

For these reasons, On-Site Alternative B is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

In addition to relatively smaller amounts of impacts to other types of wetlands/waters, On-Site Alternative B results in the loss of approximately 16.46 acres of pond, 6.01 acres of creek, and

25.14 acres of seasonal wetlands, 5.37 acres of vernal pools, 5.71 acres of riverine seasonal wetlands, and 4.01 acres of ephemeral drainages. Alternative B results in direct impacts to 67.50 acres of wetlands. This alternative results in the avoidance or preservation of approximately 92.17 acres of wetlands, including 27.68 acres of vernal pools, 11.70 acres of seasonal wetlands, 11.74 acres of seasonal wetland swale, 19.57 acres of riverine seasonal wetland, and 17.71 acres of intermittent drainage. Although On-Site Alternative B would result in a reduction in the fill of vernal pool habitat (as compared to the Proposed Project), it would result in indirect impacts to approximately 20.62 acres of wetlands, 18.85 of which represent potential habitat for listed aquatic invertebrates. (See Fig. 7.3-B.). Thus, Alternative B results in two acres of greater indirect impacts to aquatic resources than the Proposed Project.

In terms of acreage of impacts to delineated wetlands, the 67.50 acres of direct impacts under Alternative B include the specific impacts shown in Appendix A associated with the Applicants' individual development proposals on the Participating Properties. In summary, development of the Participating Properties would result in the impacts described further below.

- **Fong:** Under Alternative B, about 50% of this parcel would be preserved and the applicant would lose the majority of its low density residential and medium residential uses. Development of this 92.6-acre parcel will be discontinuous, creating isolated islands and peninsulas. Alternative B will result in direct impacts to 0.83 acres of wetlands, including 0.02 acres of pond, 0.13 acres of riverine seasonal wetland and 0.68 acres of seasonal wetland on this parcel. Alternative B avoids or preserves about 5.31 acres of wetlands, but indirectly impacts 1.93 acres of wetlands.

- **Capri:** Capri will lose the ability to develop its entire parcel. Alternative B would result in the loss of low and medium density residential uses on this 93.9-acre parcel. Under this alternative, development will not involve the fill of any of its 5 acres of wetlands, but would indirectly impact 0.89 acres of riverine seasonal wetlands and vernal pools.

- **PV 815:** Approximately 95% of PV 815 would be preserved, resulting in the elimination of development of office space, low, medium, and high density residential, power center, business park, cemetery, corporate yard, elementary school, middle school, and high school. The permitted development for this parcel under Alternative B results in one small island of development in the southwestern corner of the property. Specifically, Alternative B would result in the fill of 6.07 acres of riverine seasonal wetlands, seasonal wetlands and vernal pools, while 27.61 acres of vernal pools, riverine seasonal wetlands and seasonal wetlands would be avoided or preserved. It will indirectly impact 4.46 acres of wetlands types.

- **Pan de Leon**. This 10.7-acre parcel will be able to develop its parcel as planned under the Proposed Project. It will impact 0.28 acres of wetlands and indirectly impact 0.04 acres of wetlands. Wetlands that would be impacted on this parcel include creeks, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

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Figure 7.3-B

ALTERNATIVE B

- **Gulley 20:** This alternative would result in impacts to about 30% of the entire 19.5 acre parcel and would result in the loss of low and medium density residential uses and a religious facility. This parcel will impact 0.10 acres of vernal pools and indirectly impact about 0.34 acres of seasonal wetland swale and vernal pools.

- **PV 88:** Under Alternative B approximately 80% of the 93.8 acres would be preserved resulting in the loss of religious facilities and low and medium residential uses. Although this alternative avoids or preserves 4.44 acres of wetlands riverine seasonal wetlands, seasonal wetlands, and vernal pools, approximately 1.90 acres of predominantly vernal pool (with minimal amounts of riverine seasonal and seasonal wetlands) habitat will be impacted. It will indirectly impact 2.71 acres of wetlands.

- **PV 290(a)**: Alternative B results in the entire development of PV 290(a), a 200-acre area. This development includes commercial/mixed use, library, police/ government, town center, and high density residential. Alternative B results in 2.57 acres of fill of ephemeral drainage and seasonal wetlands. No wetlands will be preserved.

- **PV 290(b):** PV 290(b) loses about 90% of its 100 acres to preservation. Medium density residential, an elementary school, and commercial/mixed use development would be precluded under Alternative B. Under Alternative B, 0.84 acres of wetlands will be avoided or preserved on this parcel and 2.13 acres of ephemeral drainage, seasonal wetlands, seasonal wetland swale, and vernal pools will be impacted. It will result in the indirect impact of 0.58 acres of wetlands.

- **PV A(a):** Under Alternative B, the entire 60.5 acres would be developed as contemplated by the Proposed Project. This development includes low, medium, and high density residential use. Alternative B results in the fill of 14.68 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PGG Property:** Alternative B results in the loss of 40% of the development potential on this 79-acre property. This loss consists primarily of medium density residential uses. The preservation contemplated by this alternative is concentrated in the northern portion of the parcel, so there is an isolated block of development towards the bottom of the parcel. This alternative fills 6.13 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. Approximately 0.63 acres of riverine seasonal wetlands will be preserved. Indirect impacts to 0.42 acres of wetlands would occur, however.

- **PV 356**: Under Alternative B, 95% of this 356.9 acre parcel would be preserved. Consequently, religious facilities, commercial/mixed use, an elementary school, and low, medium, and high residential uses would not be developed. Alternative B results in the avoidance or preservation of 23.66 acres of wetlands and direct

impacts to 4.65 acres of wetlands, primarily seasonal wetlands. It indirectly impacts 2.02 acres of wetlands. The wetlands include intermittent drainage, seasonal wetlands, seasonal wetland swale, and vernal pools.

- **PV 179A:** Under Alternative B, no development would occur on the 88 acre parcel, and the project would forego commercial/mixed use, religious facilities, business park and power center, and medium density residential uses. Alternative B avoids or preserves 4.83 acres of wetlands intermittent drainage, seasonal wetlands, and seasonal wetland swale while indirectly impacting 0.31 acres of wetlands.

- **PV 179B**: Under Alternative B, no development would occur on the 92-acre parcel and the project would forego a power center and medium density residential. This alternative results in isolated pockets of development and preservation. Alternative B does not directly impact any wetland acreage, and instead, avoids or preserves 2.84 acres of intermittent drainage, seasonal wetlands, and seasonal wetland swale. It will indirectly impact 0.95 acres of wetlands.

- **PV 239:** Under Alternative B, the entire 241.5-acre parcel would be developed as contemplated by the Proposed Project. Under Alternative B, 1.24 acres of seasonal wetlands and seasonal wetland swale would be impacted on this parcel. No wetlands would be preserved.

- **PV A(b):** Under Alternative B, the entire 265.6-acre parcel would be developed as contemplated by the Proposed Project. An elementary school and low and medium density residential uses would be developed. Under this alternative, development on PVA(b) would impact 5.61 acres of drainage canals, ponds, and riverine seasonal wetlands. No wetlands would be preserved.

- **Watt x Baseline:** Alternative B results in the loss of any development potential on this site. No commercial, religious, and medium and high density residential uses would occur as contemplated by the Proposed Project. Under this scenario, Watt x Baseline will avoid or preserve 4.83 acres of seasonal wetland swale and vernal pools. 1.62 acres of wetlands would be indirectly impacted.

- **Mourier**: This alternative results in the development of the entire 137.6 acre parcel with religious and low and medium density residential uses. It will impact 3.52 acres of wetlands of creeks, seasonal wetlands, and seasonal wetland swale. No wetlands would be preserved.

- **Hodel/Doyle:** Under Alternative B, approximately 85% of the 462.3 acres would be preserved resulting in a loss of low density residential, religious facilities, and a private park/recreation center. The configuration will result in a narrow strip of development surrounded by preserve, as well as pockets of development. Under Alternative B, 0.53 acres of wetlands would be impacted on this parcel. While 11.75 acres of wetlands will be avoided or preserved, approximately 4.29 acres of wetlands would be indirectly impacted.

- **PV C**: Alternative B allows for the development of 39.2-acre parcel with primarily low and high density residential use. Development on this parcel under Alternative B will impact 1.17 acres of riverine seasonal marsh, seasonal wetlands, and vernal pools. No wetlands would be preserved.

- **PV B:** Alternative B allows for the buildout of this 123.4-acre parcel with predominantly low and medium density residential uses. Development on this parcel under Alternative B would impact 11.29 acres of creeks, drainage canals, riverine perennial marsh, riverine seasonal wetlands, and seasonal wetlands. No wetlands would be preserved.

Infrastructure Elements

The Infrastructure Elements would be impacted by Alternative B as described above under the practicability discussion. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Element. With respect to impacts resulting from Infrastructure Elements, except where specific roadway improvements might be required, it is assumed that named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Plan Area under Alternative B. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances.

Avoidance, Minimization and Enhancement

Alternative B was designed to minimize impacts to listed aquatic invertebrate habitat located in the northeastern and western portions of the project area, based on plan-wide, aerial photo and field-level investigations of existing wetlands and wetland/ swale corridor configurations. Approximately 2,041 acres of on-site open space containing approximately 92 acres of wetlands would be avoided or preserved under this alternative.

Although Alternative B would result in direct impacts to approximately 67.50 acres of aquatic resources, in terms of effects on aquatic resource functions and contribution to the overall aquatic ecosystems, this alternative would comply with some of the avoidance and minimization criteria described above. Although Alternative B would preserve some relatively large areas of contiguous potential listed aquatic invertebrate habitat, this alternative would result in substantial impacts to creeks and primary drainages, and other scattered listed aquatic invertebrate habitat in the central and southern portions of the Project Area. Moreover, this alternative would result in direct impacts to the Dry Creek corridor, and impacts to wetlands, contiguous to it and the other primary drainage courses within the Project Area. Thus, this alternative would not facilitate preservation of interconnected open space and drainage corridors, and would conflict with the avoidance and minimization criteria described above.

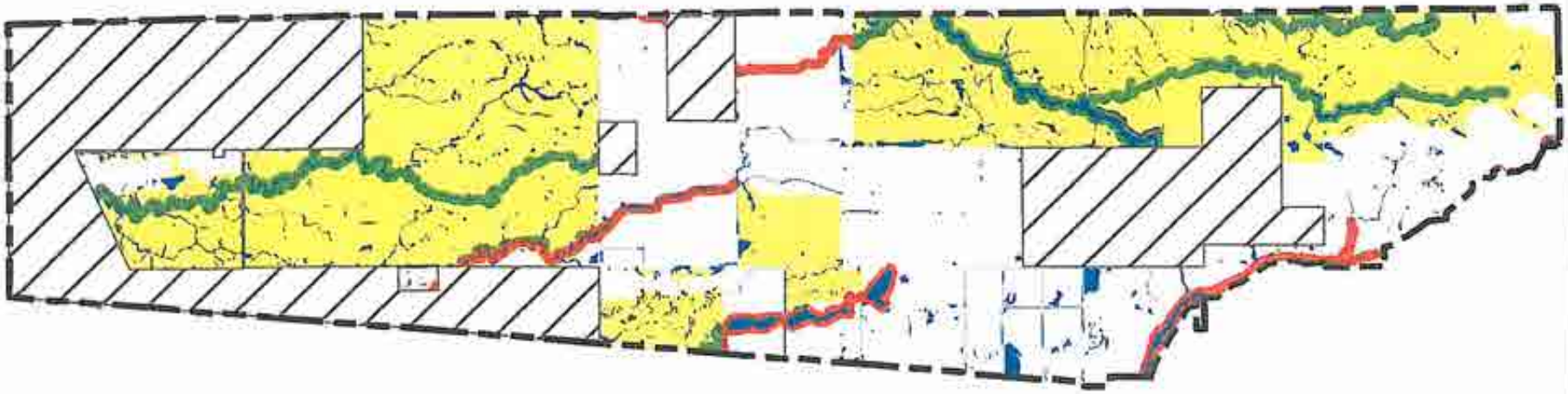
Avoidance

Alternative B would avoid or preserve 92.17 acres of wetlands within an approximately 2,041 acre open space area. With respect to the preservation of isolated and/or non-contiguous wetlands, the Alternative B land use plan is designed to preserve watersheds, maintain the minimum viable preserve size, address the need to provide adequate buffers (of remaining avoided and preserved wetlands) and avoid isolation of wetlands by development. All influence the ecological viability of preserving wetland and watershed functions of various wetlands.

The PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the east and west ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. Further, recommended long term management practices (i.e., grazing and controlled burning) while marginally more feasible than with Alternative A, are considered incompatible with the proposed adjacent urban uses (both existing and proposed).

The field assessments and map analysis based on HUC flow lines, identified five corridor reaches (in addition to the Dry Creek corridor) which had perceptively higher functional values than other Plan Area wetland/swale corridors. Additionally, these corridors which are central to the Proposed Project's open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially through agricultural manipulation, and promote avoidance efficiency by maximizing wetlands avoided per total open space area. Per the Vendlinski Paper, preservation and buffering of these main contiguous aquatic features would provide the most benefit in terms of water quality, habitat protection, and ongoing wetland function. However, Alternative B conflicts with these principles as it would eliminate planned avoidance and/or protection of portions of major drainage corridors located in the central and eastern portions of the Project Area, including the Dry Creek corridor, as shown on Figure 7.3-C.

	Area (Ac.)
Total Impacted Wetlands	67.50
Total Indirectly Impacted Wetlands	20.62
Total Preserved Wetlands	71.56
Total Preserved Area	2040.9



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

Alternative B - On-site alternative with further minimization of impacts to aquatic resources located in the W and NE portions of the Plan Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.3-C

	Impact	Indirect	Preserve	Total
Channel	0.14	0.00	1.32	1.46
Creek	6.01	0.00	0.00	6.01
Drainage Canal	0.29	0.08	0.07	0.44
Drainage Swale	2.09	0.00	0.00	2.09
Ephemeral Drainage	4.01	0.04	0.07	4.12
Intermittent Drainage	0.09	0.45	17.26	17.80
Pond	16.46	0.09	1.89	18.45
Riverine Perennial Marsh	0.58	0.00	0.00	0.58
Riverine Seasonal Marsh	0.64	0.00	0.00	0.64
Riverine Seasonal Wetland	5.71	1.10	18.47	25.28
Seasonal Marsh	0.00	0.00	0.21	0.21
Seasonal Wetland	25.14	3.51	8.19	36.84
Seasonal Wetland Swale	0.98	2.56	9.18	12.72
Vernal Pool	5.37	12.78	14.90	33.04
Total	67.50	20.62	71.56	159.67

	Area (Ac.)
Total Impacted Wetlands	67.50
Total Indirectly Impacted Wetlands	20.62
Total Preserved Wetlands	71.56
Total Preserved Area	2040.9

Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

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North

NOT TO SCALE

0 3,000

F:\GIS_Maps\2001-196_Placer_Vineyards\Alternative_Analysis\EIS_Draft\(8.2008-09-14)_DRAFT_WOV_DRY_CREEK_Yardstick\Alternatives_by_Type\Letter-Alternative_B.mxd

Revision Date: 2008-09-24

Alternative B - On-site alternative with further minimization of impacts to aquatic resources located in the W and NE portions of the Plan Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.3-D

While the westernmost drainage, which traverses the PV 815, Capri, and Fong properties, would be completely avoided, the next primary drainage course to the east, which traverses the PV 200 and PV 815 (southeast corner) properties, would be subject to direct impacts over its entire length within the project site. To the southeast, the next primary drainage course, which crosses the PV A(b), PGG, PV A(a), and PV 88 (southeast corner) properties, would be avoided between the point where it exits the Project Area to a point approximately 1/8 of its length upstream. Upstream of that point, it would be completely subject to direct impacts over the remainder of its length. As compared to the avoidance principles reflected in the screening criteria, approximately 4,700 linear feet (76%) of this drainage would be lost, along with approximately 40 acres (88%) of associated open space. To the north, the primary drainage course which traverses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (parcel 1) and D.F. 80 properties, would be subject to direct impacts where it exits the project area (on the D.F. 80 property), and (disregarding the intervening non-participating property) upstream to a point just east of the western boundary of the PV 356 property. From that point, working upstream, and disregarding that segment which occurs off-site to the north across Baseline Road, it would be avoided all the way to its upstream terminus on the Hodel/Doyle property. As compared to the avoidance principles, approximately 3,540 linear feet (17%) of this primary drainage would be lost, along with approximately 17 acres (13%) of associated open space. Under this alternative, no impacts to Curry Creek would occur. While the riparian habitat occurring in the southeast corner of the PV356 property would remain intact under this alternative, both Dry Creek (approximately 7,120 linear feet within the project site boundary) and its associated riparian corridor would be subject to direct impacts. As compared to the avoidance principles, approximately 46 acres (100%) of open space associated with Dry Creek could be lost.

Despite direct impacts to 67.50 acres of aquatic resources, Alternative B would preserve isolated non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.) where they are included within the defined preserves. For the most part, this alternative includes many concentrations of non-contiguous, non-linear wetlands associated with the primary drainage courses. In that respect, to the extent that primary drainage courses would be avoided/ preserved, it is coincidentally consistent with the avoidance and minimization principles described above. Where large segments of these drainages might be piped, unless mitigated by appropriate design elements, significant degradation of downstream functions could occur. In either case, significant disruption of continuous wildlife movement corridors is considered likely.

Minimization

Primary drainage courses and associated wetland habitats in the western and northeastern portions of the Project Area would be avoided under Alternative B, and the majority of these would be adequately buffered within the defined preserve areas. However, development under Alternative B would interrupt or truncate several primary drainage courses and their associated open space corridors. The entirety of the drainage course, which crosses the PV200 and PV815 properties would be directly impacted. This would result in the loss of approximately 39 acres (90%) of associated open space. In addition, the majority of the primary drainage course which crosses the PVA(b), PGG, PVA(a), and PV88 properties would be subject to direct impacts. As compared to the avoidance and minimization principles, approximately 40 acres (88%) of the open space associated with this drainage course would be lost. The primary drainage course

which crosses the Hodel/Doyle, PV356, PV179 (A and B), PV290 (Parcel 1) and D.F. 80 properties would be subject to direct impacts from a point just east of its crossing with the western boundary of the PV356 property (disregarding the intervening, non-participating property) all the way downstream to the point where it exits the Project Area (on the D.F. 80 property). As compared to the avoidance and minimization principles, approximately 17 acres (13%) of the open space associated with this drainage would be lost. Finally, the Dry Creek corridor would not be avoided (or buffered). As compared to the avoidance and minimization principles, this would represent a loss of approximately 46 acres of open space. Where avoided and preserved, the major drainage courses would be adequately buffered. Nonetheless, substantial portions of these four primary drainage courses would not be.

Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative B, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. Alternative B would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Alternative B would incorporate the preservation of on-site preserves in perpetuity. Buffers would be incorporated into the land plan within the on-site preserve areas.

Enhancement

Alternative B does not include significant opportunities for enhancement of existing wetlands/ waterways because the alternative is focused on preservation of listed aquatic invertebrate habitat in the western and northeastern portions of the Project Area, and, with the exceptions of the westernmost drainage and Curry Creek, all of the major drainages would be impacted. Although a major portion of the primary drainage course that crosses Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (Parcel 1), and D.F. 80 would remain intact, because the northeastern portion of the Project Area would not be developed under this alternative, it is not anticipated that additional water would be readily available for enhancement. Upstream of that point where this drainage is joined by the tributary originating in the southwest portion of the PV 356 property (supplied by irrigation flows), this drainage is seasonal in nature, and changing its character would be undesirable. In the western portion of the Project Area, only the westernmost drainage course would not be impacted. This drainage is seasonal in nature, and changes in its character would be considered as a significant impact. Finally, enhancement of any of these remaining drainages would be limited by the potential for indirect impacts to potential listed aquatic invertebrate habitat.

Other Environmental Impacts

Land Use/Noise Incompatibility

Although On-Site Alternative B provides for a mixed-use project, land use incompatibilities would occur because the development would be fragmented and disconnected with land uses sited wherever they *could* occur on a particular parcel outside of vernal pool habitat rather than

based on siting land uses that are complementary in nature. However, Alternative B would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Similar to the Proposed Project, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area. The Specific Plan provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55.) Nonetheless, the power line corridor traverses diagonally through the western preserve area. The power line corridor is comprised of two easements containing multiple tower lines and the tower lines will need to be maintained thereby resulting in the potential for additional indirect effects to wetlands.

Biological Resources

Of the 67.50 total wetland acres anticipated to be directly impacted by the Project, 33.58 acres (i.e., wet areas) may be described as potential aquatic invertebrate habitat and 33.92 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, drainage swales, and seasonal wetland swales typically considered potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Placer Vineyards Project Area, and one vernal pool tadpole shrimp cyst was reported from one wetland within the development area.

The Applicants' proposed on-site avoidance and conservation strategy proposes to maintain the connectivity and integrity of drainage corridors from east to west through the Project Area. Preservation, restoration and creation would compensate for the anticipated loss of habitat supporting special status species. The Applicants' proposed conservation strategy would achieve a mixed mosaic of habitats within the Plan Area that would preserve ecosystem stability and result in the long-term conservation of important biological resources as further discussed in the Placer Vineyards Biological Assessment. Alternative B would preserve the westernmost drainage, Curry Creek, and the majority of the primary drainage course that originates on the Hodel/Doyle property, but would allow significant direct impacts to other primary drainage courses, including Dry Creek. To the extent that these drainages would be eliminated, so would the continuity of their associated wildlife movement corridors.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards under Alternative B.

Traffic

As with the Proposed Project, Alternative B will generate increased traffic volumes. This increase will only be about 49% of the Proposed Project trips, since Alterative B proposes a proportionately lower number of units. Alternative B will still increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative B will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative B would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County by approximately 49% fewer trips than the Proposed Project. Alternative B would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. Alternative B is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These mitigation measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts

Noise

As with the Proposed Project, Alternative B will likely result in an increase in noise levels due to the Alternative B's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 50% as compared to the Proposed Project due to the decreased number of dwelling units. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative B-generated traffic. In addition, the Alternative B will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will adopt mitigation measures as part of the CEQA process to mitigate impacts caused by Alternative B. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative B, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative B will likely result in an increase in ROG, NOx, CO, and PM10, but likely at about 49% of the Proposed Project. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, Alternative B will increase both mobile and stationary source emissions by 49% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station emissions operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative B may result in cumulative air quality impacts, and Alternative B-generated traffic would contribute to cumulative localized impact like the Proposed Project. Because development potential would be reduced within Placer Vineyards under Alternative B, locating development in other areas of the County would compensate for the need for additional housing and non-residential uses and thus, would relocate the potential emissions to other regions of the County. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses or urban areas.

In order to mitigate any adverse air quality impacts, the Applicants will adopt mitigation measures to lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative B does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. Although this alternative results in aquatic resources impacts, Alternative B results in fewer impacts to aquatic resources from an acreage perspective when compared to the Proposed Project. However, Alternative B is only partially consistent with the avoidance and minimization criteria, because the focus of this alternative is on minimizing direct impacts to vernal pool habitat. This alternative results in greater impacts to drainage corridors which may, in turn, have increased effects on downstream (off-site) aquatic systems. Finally, this alternative results in less significant environmental impacts when compared to the other development alternatives.

7.5.5 On-Site Alternative C – 85% Avoidance Alternative

On-Site Alternative C consists of the Placer Vineyards Development and the Infrastructure Elements which provide the backbone infrastructure to serve the development. To the extent that such infrastructure would occur in the Project Area, the types of impacts that could affect aquatic

resources have been generally identified. Where off-site infrastructure would be required to support this alternative, alignments and quantification of impacts to aquatic resources would be refined following selection of the land plan. Alternative C consists of 85% avoidance of "vernal pool" resources within the Placer Vineyards Specific Plan development. Functionally, these "vernal pool" resources have been defined to include vernal pools, seasonal wetlands, drainage swales, and seasonal wetland swales, as these wetland types are typically considered by the U.S. Fish and Wildlife Service to constitute aquatic ecosystems suitable for occupation by "vernal pool" species. It results in one contiguous parcel of development in a contiguous, consolidated block in the middle of the Project Area. (See Fig. 7.4-A.)

This alternative develops less than 1,173 acres of the 3,744-acre site and preserves about 2,572 acres. In actuality, less than 1,000 acres would be physically developable given the fragmented area available for proposed land uses. Based on the 1,173-acre approximation, Alternative C consists of 4,346 units (compared to 11,585 units under the Proposed Project), including 821 low density residential units, 2,343 medium density residential units, 1,034 high density residential units, and 148 commercial mixed-use units. It would result in the fill of approximately 44.22 acres of wetlands and avoidance or preservation of 115.45 acres. It also results in indirect impacts to 19.03 acres.

Project Purpose

On-Site Alternative C does not fully meet the Applicants' Project Purpose. This on-site alternative would provide for only about 38% of the residential units in the Proposed Project, and it would eliminate development of about 69% of the Placer Vineyards Development. Consequently, in addition to the loss of residential units, Alternative C would lose approximately 2,572 acres of development, including approximately 201 acres of commercial space, 140 acres for schools, 155 acres for parks, 192 acres in major roads, 495 acres in open space, and 60 acres for religious facilities as compared to the Proposed Project.

In terms of school facilities, Alternative C results in the loss of the one proposed high school, two middle schools, and four of the 6 elementary schools. Alternative C also results in the loss of one cemetery, one corporation yard, the two proposed fire stations, two community parks, and one transit center. Additionally, this alternative eliminates various residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative C. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the remaining unit count for Alternative C, it is likely there will be a need for two elementary schools, one middle school, and one high school. Sites for one middle school and one high school will need to be restored in the remaining developable area. It is likely that the cemetery, corporation yard, fire station, transit center, and community park land uses will need to be restored within the developable area of Alternative C.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

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ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE C

Figure 7.4-A

Alternative C will need to provide a mixed use development, with the same range of uses that the project provides, even if the project is developed at a proportionately smaller scale under Alternative C. Placer County will require that a mix of residential uses be developed within the areas permitted for development in accordance with the General Plan.

Although Alternative C results in the preservation of large blocks of land along the eastern and western portions of the Project Area, and development would be clustered in the center, Alternative C would not satisfy the project purpose, because this alternative would not result in a large-scale mixed use residential community. Development would be precluded on the following parcels: Fong, Capri, PV 815, Pan de Leon, PV 356, PV 179A, PV 179B, Watt x Baseline, Hodel/Doyle, Mourier 135, PV C, and PV B. Development would be partially precluded on DF 80, PV 200, PV 290 Parcel 1, PV 239, and PV A(b).

This site design effectively eliminates five elementary schools, two middle schools, one high school, religious facilities, a business park, power center, commercial use, library, transit, fire, police, corporate yard, and cemeteries. Under this alternative, although some residential development would remain, insufficient developable area would be available for employment-generating uses, public services and facilities, schools, and commercial uses. Given the elimination of many key residential, commercial, and infrastructure uses of the property, this alternative does not meet the project purpose of creating a mixed-use community. It also would not provide for the growing population of Placer County because it provides half as much housing as the Proposed Project.

Availability

This alternative is available.

Practicability

Based on the distribution of vernal pools on the Project Site, most project objectives could not be achieved under a plan that retains 85% of the vernal pools. As discussed above, development would be discontiguous and leap frog in nature. Its feasibility from a financial and market perspective would be very low. Further, scattered development within an area that would be predominantly vernal pool preserve would pose a number of access problems and potential land use conflicts that would lead to vernal pool encroachments and degradation over time as further discussed below. In addition, it is highly unlikely that such a configuration could be found consistent with the Placer County General Plan, since it has shown all of the Specific Plan Area as developable since 1994. Because most project objectives could not be achieved where 85% of vernal pools are protected and for the additional reasons set forth above, On-Site Alternative C would not fully meet the project purpose since it lacks real world feasibility.

With respect to costs, Alternative C is not practicable because it foregoes 62% of the residential units as compared to the Proposed Project. As the number of residential units decrease, the related infrastructure costs would be prohibitively high to support the remaining 38% of the residential units. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive.

Furthermore, for some specific development projects within the Participating Properties, the landowners/developers would forego any development. For example, the developers of the Fong, Capri, PV 815, Pan de Leon, PV 356, PV 179A, PV 179B, Watt x Baseline, Hodel/Doyle, Mourier, PV B, and PV C parcels would be completely precluded from any development. Consequently, the costs for these specific development proposals would be unreasonably high as compared to other specific development proposals because they would incur the costs for services and infrastructure for development that these landowners would not realize. Alternatively, these landowners would not contribute to the funding of such infrastructure and services because they would not be able to proceed with their development projects, thereby resulting in the allocation of infrastructure and services costs over a smaller number of development projects within the Placer Vineyards Development Area.

DF 80, PV 200, PV 290, Parcel 1, PV 239, and PV A(b) would be partially precluded from developing their parcels because the developable areas on each of these parcels would be substantially reduced and fragmented. The costs for developing these parcels would also be unreasonably high for the same reasons discussed above.

While the reduction in the amount of Placer Vineyards Development may result in a proportionate reduction in the capacity of the Infrastructure Elements, infrastructure, utilities and services would nonetheless be required in order to assure that the provision of services and utilities would not impact the County's levels of service. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive. Further, it is unlikely that any one landowner/developer or fewer Participating Property owners would be able to proceed with development independently, as the property owner would be required to construct all of the core backbone infrastructure to serve the other scattered development projects under Alternative C. Additionally, the remaining developers would be required to finance the required public facilities. Thus, it is unlikely that Alternative C development could fund the Infrastructure Elements at a cost because some of the roughly $854 million project infrastructure costs in backbone infrastructure would still be required at buildout (See EPS Technical Memorandum dated September 6, 2006) even with development of less than 69% of the Proposed Project.

In terms of logistics, Alternative C would not be developed in a functionally-integrated manner as a master-planned community since the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. The fragmented fashion in which development occurs under this design is also impractical. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. From a size perspective, a reasonable density could not be achieved because substantially less land would be available for development to provide a sufficient number of residential units and employment generating uses to accommodate the projected 30,000 person population.

In terms of technological considerations, this alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to

maintain the requisite levels of service. The proposed preserve areas under Alternative C would prevent the construction of all, or a portion, of the Infrastructure Element. Each major arterial roadway – Base Line Road, Watt Avenue, West Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by each alternative. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected. Additionally, the shape of the proposed preserve areas will prevent construction of multiple long segments of road. The inability to widen and improve Base Line Road and Watt Avenue will impose significant barriers to any development in the Plan Area. West Dyer Lane, East Dyer Lane, and 16th Street are internal arterials that may be able to be realigned to avoid preserve areas and serve development in the Placer Vineyards Specific Plan Area.

The construction of the following Infrastructure Elements will be completely prevented under this alternative: the sanitary sewer lift station to serve portion of Plan Area west of Watt Avenue, four of the five proposed potable water well and storage tank sites, one of the two recycled water storage tanks, proposed drainage channel corridors, substation site, the two proposed fire station sites, and one transit center site.

For these reasons, On-Site Alternative C is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

In terms of acreage of impacts to aquatic resources, approximately 159 acres of waters of the U.S. have been delineated within the Participating Properties comprising the Placer Vineyards Project Area. Of the 159 acres mapped within the Project Area, Alternative C would potentially result in 44.22 acres of direct impacts to waters of the U.S, including 15.99 acres of pond, 12.81 acres of seasonal wetlands, 7.94 acres of vernal pools, and 3.29 acres of ephemeral drainage. The remaining 115.45 acres of wetlands and waters occur within the open space would be avoided or preserved under Alternative C. (See Fig. 7.4-B.) The avoided or preserved wetlands include 17.80 acres of intermittent drainage, 23.92 acres of riverine seasonal wetlands, 24.03 acres of seasonal wetlands, and 25.10 acres of vernal pools. Approximately 19.03 of the 115.45 acres would be indirectly impacted. Approximately 16.97 acres of this 19.03 acres could be considered potential habitat for federally-listed aquatic invertebrates.

In terms of acreage of impacts to delineated wetlands, the 44.2 acres of direct impacts under Alternative C include the specific impacts shown in Appendix A associated with the Applicants' individual development proposals on the Participating Properties. In summary, development of the Participating Properties would result in the impacts described further below.

- **Fong:** Under Alternative C, no development of low density residential and medium residential uses would occur on this approximately 93-acre parcel. Even with the avoidance or preservation of 5.74 acres of ephemeral drainage, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools, Alternative C directly impacts 0.39 acres of seasonal wetlands and indirectly impacts 1.09 acres of wetlands.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

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LEGEND:

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ROSEVILLE, CALIFORNIA

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ALTERNATIVE C

Figure 7.4-B

- **Capri**: No development would occur on the entire parcel under Alternative C, thereby resulting in the elimination of mostly low and medium residential uses. No direct fill of wetlands would occur and this alternative avoids or preserves 5.00 acres of drainage canals, riverine seasonal wetlands, seasonal wetlands, and vernal pools. 0.59 acres of wetlands would be indirectly impacted.

- **PV 815**: Alternative C would not allow development of the 815.1 acres with proposed office space, low, medium, and high density residential, power center, business park, cemetery, corporate yard, elementary school, middle school, and high school. Alternative C nonetheless directly impacts 0.28 acres of riverine seasonal wetlands and indirectly impacts 4.48 acres of wetlands. This alternative would avoid or preserve 33.40 acres of drainage canals, riverine seasonal wetlands, seasonal marsh, seasonal wetlands, and vernal pools.

- **Pan de Leon**: No development of low density residential uses would occur on this 10.7-acre parcel under Alternative C. Nonetheless, Alternative C impacts 0.04 acres of wetlands and avoids or preserves 0.29 acres of wetlands. It will indirectly impact 0.24 acres of wetlands. The parcel is characterized by creeks, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **DF 80**: Under Alternative C, most of the proposed development could occur, including a business park/power center and low density residential. About 15% of the proposed development would be precluded under Alternative C. Development of this site would impact about 0.49 acres of creeks and seasonal wetlands and avoid or preserve 0.11 acres of drainage canal. It would indirectly impact 0.01 acres of wetlands.

- **PV 200**: Under Alternative C, PV 200 loses about 10% of its proposed development of commercial mixed use as well as medium density residential uses. Development under this alternative will fill about 3.42 acres of drainage swale, ephemeral drainage, ponds, and seasonal wetlands and result in the avoidance or preservation of about 0.83 acres of pond and ephemeral drainage. It would indirectly impact 0.30 acres of wetlands.

- **Gulley 20**: All 19.5 acres would be developed under Alternative C with low and medium density residential uses. Alternative C would impact 0.44 acres of seasonal wetland swale and vernal pools. No wetlands would be preserved on this parcel.

- **PV 88**: Development with 93.8 acres of religious facilities, and low and medium residential uses would occur under this alternative. This alternative results in the fill of 6.34 acres of riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands will be preserved on this parcel.

- **PV 290(a)**: This 200-acre parcel would lose about 30% of its proposed development potential. Under Alternative C, commercial/mixed use, library,

police/government, and high density residential uses would not be developed. The preservation area proposed by Alternative C essentially cuts the parcel in half, with no connectivity between the upper and lower portions. Alternative C directly impacts 1.89 acres of ephemeral drainage and seasonal wetlands and avoids or preserves 0.68 acres of wetlands. It would indirectly impact 0.03 acres of ephemeral drainage.

- **PV 290(b)**: All 100 acres would be developed under Alternative C. This development consists mostly of an elementary school, medium density residential, and commercial/mixed use. The preserved areas for this parcel under Alternative C are concentrated primarily along the edges of the parcel. As a result of development, Alternative C would impact 2.97 acres of ephemeral drainage, seasonal wetlands, seasonal wetland swale, and vernal pools. No wetlands would be preserved on this parcel.

- **PV A(a)**: The 60.5 acre parcel would be developed with low, medium, and high density residential use. Consequently, development on this parcel will fill 14.48 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. 0.20 acres of seasonal wetlands would be avoided, but indirectly impacted. No wetlands would be preserved on this parcel.

- **PGG Property**: This 79-acre property would be developed under Alternative C with low and medium density residential. It will impact about 6.76 acres of wetlands of canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands will be preserved on this parcel.

- **PV 356**: PV 356 will be completely precluded from development and the proposed elementary school, transit, fire, religious facilities, commercial/mixed use, and low, medium, and high residential uses would not occur as contemplated by the Proposed Project. As a result, Alternative C avoids or preserves 28.31 acres of intermittent drainage, seasonal wetlands, seasonal wetland swales, and vernal pools. 1.64 acres of these wetlands would be indirectly impacted.

- **PV 179A**: PV 179A will be completed precluded from development of commercial/mixed use, business park and power center, and medium density residential uses. This alternative results in avoidance or preservation of 4.83 acres of intermittent drainage, seasonal wetlands, and seasonal wetland swales. Approximately 0.31 acres would be indirectly impacted.

- **PV 179B**: PV 179B would experience 0.53 acres of direct impact and 2.31 acres of avoidance or preservation. Approximately 0.58 acres would be indirectly impacted.

- **PV 239**: Alternative C eliminates 20% of the developable area on this parcel and the elimination of an elementary school, religious facilities, and low, medium, and high density residential uses. Alternative C will result in pockets of preservation on this parcel. Under Alternative C, 0.57 acres of wetlands would be directly

impacted on this parcel, while 0.67 acres of wetlands would be avoided or preserved. It would indirectly impact 0.58 acres of wetlands.

- **PV A(b)**: Alternative C results in the loss of development of low and medium density residential uses on approximately 15% of the 265.6-acres. PV A(b) would directly impact 5.61 acres of drainage canals, ponds, and riverine seasonal wetlands. No wetlands would be preserved on this parcel.

- **Watt x Baseline**: This parcel will be completely preserved under Alternative C. The lost uses consist of commercial, religious, and medium and high density residential uses. Alternative C results in the direct fill of approximately 0.01 acres of wetlands and avoidance or preservation of 4.82 acres of seasonal wetland swale and vernal pools. 1.61 acres of wetlands would be indirectly impacted.

- **Mourier**: Alternative C eliminates development on this 137.6 acre parcel. The lost uses include religious and low and medium density residential uses. Consequently, Alternative C does not involve fill of wetlands and would avoid or preserve 3.52 acres of creeks, seasonal wetlands, and seasonal wetland swale. It would result in indirect impacts to 0.20 acres of wetlands.

- **Hodel/Doyle**. No development of low density residential, religious facilities, and a private park/recreation center would occur on this 462.3-acre parcel. Under Alternative C, 2.19 acres of wetlands would be indirectly impacted on this parcel, while 12.27 acres of vernal pools, seasonal wetlands, and seasonal wetland swale would be avoided or preserved.

- **PV C**: This 39.2-acre parcel will not be developed under Alternative C. The preservation will result in the loss of low and high density residential use. No wetlands will be directly impacted on this parcel under Alternative C. Approximately 1.17 acres of riverine seasonal marsh, seasonal wetlands, and vernal pools will be avoided or preserved, with indirect impacts to 0.63 acres of wetlands.

- **PV B**: Alternative C results in the preservation of most of the 123.4-acre area and elimination of low and medium density residential uses contemplated by the Proposed Project. Consequently, it would not impact any wetlands and instead will avoid or preserve 11.29 acres of creeks, drainage canals, riverine perennial marshes, riverine seasonal wetlands, and seasonal wetlands. It would indirectly impact 4.34 acres of wetlands.

Infrastructure Elements

Alternative C precludes construction of most of the Infrastructure Elements. On-site infrastructure would be limited to the center of the Project Area. Regarding impacts resulting from Infrastructure Elements, except where specific roadway improvements might be required, named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Plan Area

under Alternative C. In those instances where specific roadway improvements are required in order to connect development areas within Placer Vineyards, impacts to the preserves and drainage corridors would occur as further discussed below. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/ maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances.

Avoidance, Minimization and Enhancement

Alternative C was designed to avoid impacts to 85% of vernal pool resources and, coincidentally also protects several key drainage corridors. Approximately 2,572 acres of on-site open space containing approximately 115.45 acres of wetlands would be avoided or preserved under this alternative. Although Alternative C would result in direct impacts to 44.22 acres of aquatic resources, this alternative would comply with some of the avoidance and minimization criteria described above in terms of aquatic resource functions and contribution to the aquatic ecosystem. With respect to the preservation of isolated and/or non-contiguous wetlands, Alternative C is designed to preserve much of the watersheds in the western and eastern portions of the Project Area. Accordingly, Alternative C concentrates all development in the center of the Project Area. This alternative results in the preservation of the Dry Creek corridor and minimizes impacts to associated and contiguous wetlands along several of the primary drainage courses. No development would occur in proximity to the preserved drainage corridors and non-contiguous wetlands. One entire drainage in the southern portion of the Project Area, and substantial portions of two other drainages in the center of the Project Area would be impacted under this alternative, thereby potentially affecting both on-site and off-site watersheds. Thus, although this alternative generally would facilitate preservation of some interconnected open space and drainage corridors in accordance with the avoidance and minimization criteria above, it would result in impacts to substantial portions of three drainage corridors, as discussed below.

Avoidance

Alternative C results in the preservation/avoidance of 2,572 acres of open space including 115.45 acres of wetlands and waters of the U.S. With respect to the preservation of isolated and/or non-contiguous wetlands, the Alternative C land use plan is designed to preserve watersheds, maintain the minimum viable preserve size, provide adequate buffers and avoid isolation of wetlands by development. All influence the ecological viability of preserving wetland and watershed functions of various wetlands. Other factors considered in the avoidance and minimization of impacts to non-contiguous, non-linear wetlands present within the Plan Area include: (1) the quality of the wetlands (e.g., degree of disturbance); (2) internal fragmentation; (3) type of land/land uses between the aquatic resource and similar aquatic resources within the Plan Area; and (4) degree of incompatibility with adjacent land uses.

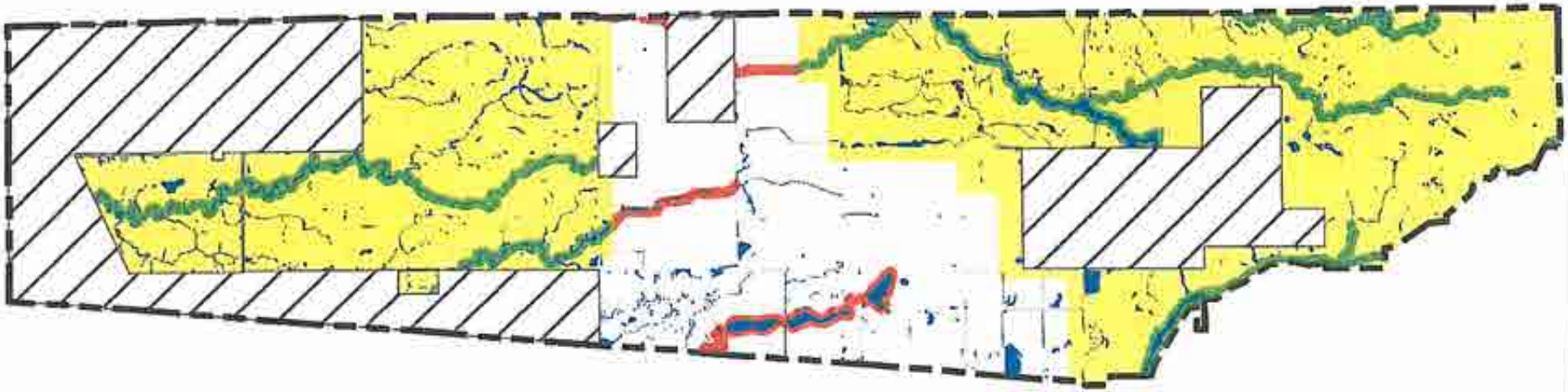
The PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with

the regional conservation goals and objectives in the PCCP is not possible. (See Fig. 7.4-C.) The distribution of these types of resources within the Plan Area (i.e., clustered at the east and west ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. Further, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent urban uses (both existing and proposed).

The field assessments and map analysis based on HUC flow lines identified five corridor reaches (in addition to the Dry Creek corridor) which had perceptively higher functional values than other Plan Area wetland/swale corridors. Additionally, these corridors which are central to the Proposed Project's open space design, promote connectivity of waters and watersheds, avoid isolating wetlands and drainages, avoid natural occurring wetlands over those created artificially through agricultural manipulation, and promote avoidance efficiency by maximizing wetlands avoided per total open space area. Per the Vendlinski Paper, preservation and buffering of these main contiguous aquatic features would provide the most benefit in terms of water quality, habitat protection, and ongoing wetland function. However, Alternative C conflicts with the aquatic resource screening principles, as it would eliminate portions of major drainage corridors located in the central portion of the Project Area. While almost all of these segments have been subject to agricultural manipulation, under Alternative C, they would be eliminated (as opposed to potentially enhanced, as under the Proposed Project alternative).

Specifically, Alternative C would avoid both named creeks and significant portions of several other primary drainage courses within the Project Area. Under this alternative, both Curry Creek and Dry Creek would be completely avoided. The westernmost primary drainage course, which traverses the PV 815, Capri, and Fong properties, would also be completely avoided. To the east, the primary drainage course that traverses the PV200 and PV 815 properties would be avoided for a little more than one-half of its length (between the point where it last exits the project site and a point just a little upstream of existing Palladay Road). Upstream from that point, it would be subject to direct impacts. As compared to the avoidance principles, this would result in the loss of approximately 3,170 linear feet (38%) of this primary drainage and approximately 15 acres (35%) of associated open space. To the southeast, the entirety of the next primary drainage course, which crosses the PVA(b), PGG, PVA(a), and PV 88 properties (southeast corner) would be subject to direct impacts. As compared to the avoidance principles, this would result in the loss of approximately 6,175 linear feet of this primary drainage, along with approximately 46 acres of associated open space. To the north, near Baseline Road, the major drainage course which traverses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (parcel 1) and D.F. 80 properties, would be subject to direct impacts only between the point where it exits the project site (on the D.F. 80 property) and a point just west of the western boundary of the PV 356 property. The remainder would be avoided. As compared to the avoidance principles, this would result in the loss of approximately 1,940 linear feet (9%) of this primary drainage and approximately 9 acres (7%) of associated open space.

	Area (Ac.)
Total Impacted Wetlands	44.22
Total Indirectly Impacted Wetlands	19.03
Total Preserved Wetlands	96.42
Total Preserved Area	2571.8



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

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Revision Date: 2009-08-14

Alternative C - 85% avoidance of vernal pools resources

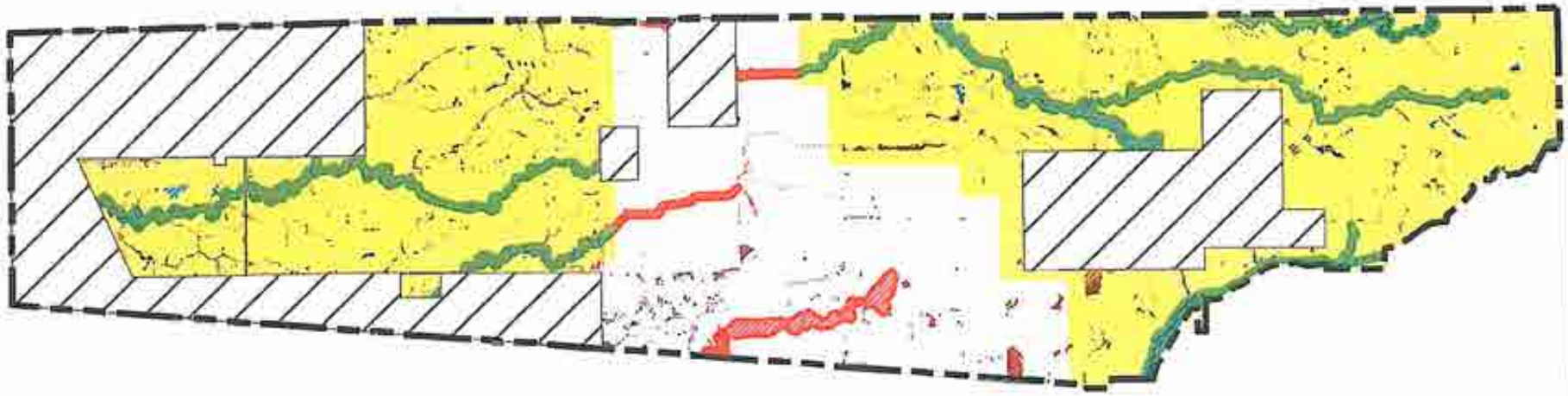
2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.4-C

	Impact	Indirect	Preserve	Total
Channel	0.00	0.04	1.41	1.46
Creek	0.16	0.18	5.67	6.01
Drainage Canal	0.22	0.04	0.17	0.44
Drainage Swale	1.83	0.25	0.00	2.09
Ephemeral Drainage	3.29	0.08	0.76	4.12
Intermittent Drainage	0.00	0.43	17.38	17.80
Pond	15.99	0.00	2.46	18.45
Riverine Perennial Marsh	0.00	0.04	0.54	0.58
Riverine Seasonal Marsh	0.00	0.14	0.50	0.64
Riverine Seasonal Wetland	1.35	1.10	22.83	25.28
Seasonal Marsh	0.00	0.00	0.21	0.21
Seasonal Wetland	12.81	7.73	16.29	36.84
Seasonal Wetland Swale	0.62	1.61	10.48	12.72
Vernal Pool	7.94	7.38	17.72	33.04
Total	44.22	19.03	96.42	159.67

	Area (Ac.)
Total Impacted Wetlands	44.22
Total Indirectly Impacted Wetlands	19.03
Total Preserved Wetlands	96.42
Total Preserved Area	2571.8



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

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Revision Date: 2014-06-24

Alternative C - 85% avoidance of vernal pools resources

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.4-D

Despite direct impacts to 44.22 acres of aquatic resources, Alternative C would preserve non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.) where they are included within the defined preserves. For the most part, this includes many concentrations of non-contiguous, non-linear wetlands associated with the primary drainage courses. As such, in that respect, to the extent that primary drainage courses would be avoided/preserved, it is coincidentally consistent with the avoidance and minimization principles used to plan the proposed project. Where large segments of these drainages might be piped, unless mitigated by appropriate design elements, significant degradation of downstream functions could occur. In either case, significant disruption of continuous wildlife movement corridors is considered likely.

Minimization

The primary drainage courses and associated wetland habitats would primarily be preserved within the vernal pool resource-focused preserves established under Alternative C in the eastern, northern and western portions of the Project Area. Coincidentally, adequate buffers would be provided along these preserved drainage corridors areas. However, with the concentration of urban development in the center of the Project Area and development impacts to primary drainage corridors in the center of the site, connectivity would be lost. Nonetheless, Alternative C avoids some of the key drainage corridors in the western, northern, and eastern portions of the Project Area, thereby maintaining these features as interconnected drainage corridors.

Alternative C would interrupt or truncate three primary drainage courses or wetland corridors through the center of the Project Area. As reported above, the primary drainage course that traverses the PV200 and PV 815 properties would be avoided for a little more than ½ of its length (between the point where it last exits the project site and a point just a little upstream of existing Palladay Road). Upstream from that point, it would be subject to direct impacts. As compared to the avoidance and minimization principles, this would result in the loss of approximately 15 acres (35%) of its associated open space. To the southeast, the entirety of the next primary drainage course, which crosses the PVA(b), PGG, PVA(a), and PV 88 properties (southeast corner) would be subject to direct impacts. As compared to the avoidance and minimization principles, this would result in the loss of approximately 46 acres of associated open space. To the north, near Baseline Road, the major drainage course which traverses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (parcel 1) and D.F. 80 properties, would be subject to direct impacts only between the point where it exits the project site (on the D.F. 80 property) and a point just west of the western boundary of the PV 356 property. As compared to the avoidance and minimization principles, this would result in the loss of approximately 9 acres (7%) of associated open space. As they would be eliminated under Alternative C, previously "channelized" or bermed portions of these primary corridors would not be enhanced or improved by the addition of a substantial buffer.

Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative C, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area.

Alternative C would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Alternative C would include preservation of on-site preserves in perpetuity. Buffers would be incorporated within the on-site preserve areas.

Enhancement

Alternative C probably includes only limited opportunities for enhancement of existing wetlands/ waterways because this alternative focuses primarily on preservation of "vernal pool" resources. Previously manipulated drainages in the center of the Project Area would be eliminated. Because no additional water supply would be generated by development in the eastern portion of the Project Area, depending upon detailed analysis, enhancement in that area might, in fact, be infeasible. Further, enhancement of the drainage systems in the northeast corner would be limited by the potential for indirect impacts to potential listed aquatic invertebrate habitat. In the western portion of the project area, only the primary drainage course which crosses the PV200 and PV815 properties might represent a reasonable candidate for enhancement. Although the portion that would remain intact under this alternative has not been channelized, its water regime has been influenced by agricultural flows. It is possible that, due to development in the central portion of the project site (under this alternative), more water could be added to the system. However, the desirability of enhancing this reach with physical manipulation (i.e., grading to create additional or larger associated wetland areas) remains, at this point, speculative.

Other Environmental Impacts

Land Use/Noise Incompatibility

On-Site Alternative C provides for a mixed-use environment and minimizes potential land use incompatibilities because the development would be concentrated and contiguous. Alternative C would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Similar to the Proposed Project, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area. Alternative C would maintain a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55.) Nonetheless, the power line corridor traverses diagonally through the western preserve area. The power line corridor is comprised of two easements containing multiple tower lines and the tower lines will need to be maintained thereby resulting in the potential for additional indirect effects to wetlands.

Biological Resources

Of the 44.22 total wetland acres anticipated to be directly impacted by the Project, 23.20 acres (i.e., wet areas) may be described as potential aquatic invertebrate habitat and 21.02 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, drainage swales, and seasonal wetland swales typically considered potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Placer Vineyards Development area, and one vernal pool tadpole shrimp cyst was reported from one wetland within the Development area.

The Applicants' proposed on-site avoidance and conservation strategy proposes to maintain the connectivity and integrity of drainage corridors throughout the Plan Area. Preservation, restoration and creation would compensate for the anticipated loss of habitat supporting special status species. The Applicants' proposed conservation strategy would achieve a mixed mosaic of habitats within the Plan Area that would preserve ecosystem stability and result in the long-term conservation of important biological resources. Although this alternative maximizes preservation of aquatic resources, it could result in indirect impacts to threatened and endangered species. Further, although Alternative C would preserve major portions of significant primary drainage courses within and adjacent to the Project Area, it would truncate or eliminate three. To the extent that these drainages would be eliminated, so would the continuity of their associated wildlife movement corridors.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards under Alternative C.

Traffic

As with the Proposed Project, Alternative C will result in an increased volume in traffic. This increase will only be about 38% of the traffic generated by the Proposed Project, however, since Alterative C proposes a proportionately lower number of units. Alternative C will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative C will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative C would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County by approximately 38% fewer trips than the Proposed Project. Alternative C would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and

roadways and intersections that are part of the state highway system. Alternative C is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line.

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These mitigation measures, however, could adversely affect the environment and traffic in other jurisdictions. These measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts.

Noise

As with the Proposed Project, Alternative C will likely result in an increase in noise levels due to the Alternative C's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 62% as compared to the Proposed Project due to the decreased number of dwelling units. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative C-generated traffic. In addition, the Alternative C will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will incorporate mitigation measures into the project as part of the CEQA process to mitigate impacts caused by Alternative C. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative C, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative C will likely result in an increase in ROG, NOx, CO, and PM10, but at about 38% of the Proposed Project emissions. Construction of Infrastructure Elements will result in adverse air quality impacts.

With respect to operational emissions, Alternative C will increase both mobile and stationary source emissions by 38% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative C may result in cumulative air quality impacts, and Alternative C-generated traffic would contribute to cumulative localized impact as is the case for the Proposed Project. Because development potential would be reduced

within Placer Vineyards, locating development in other areas of the County would need to compensate for additional housing and non-residential uses that would then relocate to other regions in the County. This would result in additional traffic and associated potential air pollutant emissions in other areas in Placer County, rather than in a net reduction in air pollutant emissions. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses.

In order to mitigate any adverse air quality impacts, the Applicants will adopt mitigation measures to lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative C does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. Although this alternative results in aquatic resources impacts, Alternative C results in fewer impacts to aquatic resources from an acreage perspective when compared to the Proposed Project and all other alternatives other than Alternative E. However, Alternative C is only partially consistent with the screening criteria, because the focus of this alternative is on minimizing direct impacts to vernal pool habitat, while it results in greater impacts to drainage corridors and potential indirect impacts compromising the functions and values of preserved wetlands. Finally, this alternative does not result in other significant environmental impacts when compared to the other development alternatives.

7.5.6 On-Site Alternative D – No Permit/No Fill Alternative

On-Site Alternative D consists of the Placer Vineyards Development, a residential mixed-use community, and the Infrastructure which provides the backbone infrastructure to serve the development with avoidance of all wetlands with a 50-foot buffer. (See Fig. 7.5-A.) To the extent that such infrastructure would occur on the Project Area, the types of impacts that could be anticipated to aquatic resources have been generally identified. This alternative would result in the development of at most 2,943 acres of the 3,744-acre site and avoidance/preservation of about 801 acres. In actuality, because of the fragmented development footprint, Alternative D would result in substantially less development acreage. Based on the 2,951-acre estimate, Alternative D consists of 9,579 units (compared to 11,585 units under the Proposed Project), including 2,484 low density residential units, 4,518 medium density residential units, 2,107 high density residential units, and 470 commercial mixed-use units. Alternative D preserves and/or avoids all wetlands/waters in the Project Area (159.68 acres) and results in no fill of any aquatic resources. However, indirect impacts would occur to 84.67 acres of wetlands, as all wetlands/waters, including habitat for federally-listed aquatic invertebrates would be buffered by only 50 feet.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING PLANNING AND SURVEYING
ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE D

Figure 7.5-A

Project Purpose

On-Site Alternative D does not fully meet the Applicants' Project Purpose. This on-site alternative design would provide for only about 85% of the residential units in the Proposed Project and it would eliminate development of about 19% of the acreage. Consequently, in addition to the loss of residential units, Alternative D would lose approximately 794 acres of development, including approximately 47 acres of commercial space, 28 acres for schools, 35 acres for parks, 61 acres in major roads, 258 acres in open space, and 19 acres for religious facilities as compared to the Proposed Project.

Alternative D eliminates the one proposed high school, the two proposed middle schools, and four of the 6 proposed elementary schools. This alternative also results in the loss of one cemetery, one corporation yard, two fire stations, and two community parks. In addition, Alternative D results in the elimination of residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative D. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the remaining unit count for Alternative D it is likely there will be a need for five elementary schools, two middle schools, and one high school. Sites for three elementary schools, two middle schools, and one high school will need to be restored in the remaining developable area. It is likely that the cemetery, corporation yard, fire station and community park land uses will need to be restored within the developable area of the Alternative.

A project developed under the constraints of any of the alternatives will need to provide a mixed use development, with the same range of uses that the project provides, even if the project is developed at a proportionately smaller scale as a result of lands that are set aside for preserve purposes. Placer County will require that a mix of residential uses be developed within the areas permitted for development under the respective alternatives in accordance with the General Plan.

Alternative D results in scattered, fragmented development because the wetlands that would be avoided are located throughout the Project Area. Given the fragmented and discontiguous areas allowed for development under this alternative, the alternative would result in the elimination of many key residential, commercial, and infrastructure uses of the property. Accordingly, this alternative does not meet the project purpose of creating a large scale mixed use community. It also would not provide for the growing population of Placer County because, although on a unit count basis, it may provide for 85% of the housing when compared to the Proposed Project, in actuality only a fraction of that development could occur. On-Site Alternative D would therefore not fully meet the Project Purpose.

Availability

This alternative is available.

Practicability

With respect to costs, Alternative D is not practicable because although it foregoes almost 15% of the residential units as compared to the Proposed Project, only limited pockets of development actually could occur under this alternative resulting in a greater reduction in allowable development by as much as 50% or more. This would then result in a proportionate reduction in the amount of development that would be able to support the costs of infrastructure such that the cost burden would increase above a reasonable amount for each development project that would proceed under Alternative D. While the reduction in the amount of Placer Vineyards Development may result in a proportionate reduction in the capacity of the Infrastructure Elements, infrastructure, utilities and services would nonetheless be required in order to assure that the provision of services and utilities would not impact the County's levels of service. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive.

For some specific projects within the Participating Properties, the developers would forego any development. For example, Fong, Capri, PV 815, Pan de Leon, PV 200, PV 88, PV 290, Parcel 1, PV 290, Parcel 2, PV 356, PV 179A, PV 179B, Watt x Baseline, Mourier, PV B, PV C, and Hodel/Doyle would have preserve areas scattered throughout their parcels effectively limiting the potential for any development. Consequently, the costs for these specific development proposals would be unreasonably high as compared to other specific development proposals because they would incur the costs for services and infrastructure for development that these landowners would not realize. Alternatively, these landowners would not contribute to the funding of such infrastructure and services because they would not be able to proceed with their development projects, thereby resulting in the allocation of infrastructure and services costs over a smaller number of development projects within the Placer Vineyards Development Area.

In terms of logistics, Alternative D would not be developed in a functionally-integrated manner as a master-planned mixed use community because the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. From a size perspective, a smaller area actually would be developable given the fragmented area available for proposed land uses resulting in higher densities that could not accommodate a reasonable range of densities as contemplated under the 1994 General Plan. Moreover, less land would be available for employment-generating uses and insufficient land would be available to accommodate a population of 30,000 people.

In terms of technological considerations, this alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to maintain the requisite levels of service.

The Infrastructure Elements would be impacted by Alternative D. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Element. Each major arterial roadway – Base Line Road, Watt Avenue, West Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by this alternative. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected.

Additionally, the shape of the proposed preserve areas will prevent construction of multiple short segments of road. Alternative D would be impracticable in terms of costs and technological considerations because numerous bridges and bores would be required to bridge he segments for road construction and boring and jacking utility improvements. As with the other alternatives, the inability to widen and improve Base Line Road and Watt Avenue will impose significant barriers to any development in the Plan Area. Internal arterials may be able to be realigned within the Project Area, provided that connections with the major arterials could still occur.

In addition to the major arterials described above, the sanitary sewer lift station to serve the portion of the Plan Area west of Watt Avenue, three potable water well and storage tank sites (out of 5 total proposed), proposed drainage channel corridors, and the two proposed fire stations will be significantly affected.

For these reasons, On-Site Alternative D is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

On-Site Alternative D would not result in the permanent fill or loss of any waters of the United States, including vernal pool habitat, seasonal wetland habitat, roadside ditch, and seasonal drainage channel. Above-ground functions associated with seasonal drainages would not be lost. As a result, future beneficial habitat values associated with the preservation of the drainage corridor on-site would be viable with this alternative, although reduced buffer widths along the primary drainage courses (as compared to those defined by the minimization and avoidance principles used to plan the Proposed Project) would result in increased potential for indirect impacts and diminished wildlife movement corridors. Moreover, all on-site vernal pools and swales would be preserved. (See Fig. 7.5-B.) Nonetheless, Alternative D results in the greatest amount of indirect impacts to wetlands of all of the alternatives evaluated in this analysis with approximately 84.67 acres of indirect impacts to aquatic resources, all of which would accrue to potential habitat for federally-listed aquatic invertebrates (i.e., vernal pools, seasonal wetlands, seasonal wetland swales, and drainage swales). This is approximately 70 acres more indirect impact than that resulting from the Proposed Project. The primary drainage corridors would not include a 100-foot buffer, so preserved drainage corridors may be more vulnerable to indirect impacts. Development around the existing aquatic resources would impact the functions and values associated with potential preservation areas as further discussed below. Accordingly, in comparison to the Proposed Project, this on-site alternative would result in less fill of aquatic resources, but greater indirect impacts to aquatic resources.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

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CIVIL ENGINEERING AND PLANNING AND SURVEYING
ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE D

Figure 7.5-B

In terms of acreage of impacts to delineated wetlands, development of the Participating Properties would result in the impacts described further below.

- **Fong:** Under Alternative D, 25% of the 92.6-acre parcel would not be developed. Most of the lost development potential consists of low and medium density residential use. Some of the proposed preserve area under Alternative D also would be protected as open space under the Proposed Project. However, Alternative D results in a significant loss in housing opportunities, given the fragmented, disconnected development, as the preserve would be scattered throughout the parcel. Under this alternative, Fong will avoid or preserve all 6.14 acres of its ephemeral drainage, pond, riverine seasonal wetlands, seasonal wetlands, and vernal pools. 2.47 acres of these wetlands would be indirectly impacted.

- **Capri**: Capri will forego the ability to develop about 60% of this 93.9-acre parcel, resulting in the loss of mostly low and medium residential uses. Although this alternative proposes preservation for some areas designated as open space under the Proposed Project, Alternative D results in a significant loss in housing opportunities on this site. Alternative D avoids or preserves 5.00 acres of drainage canal, riverine seasonal wetlands, seasonal wetlands, and vernal pools on the Capri parcel. It will indirectly impact 1.68 acres of wetlands.

- **PV 815**: Twenty-five percent of the 815.1 acre parcel could not be developed under Alternative D, resulting in the loss of office space, low, medium, and high density residential, power center, business park, cemetery, corporate yard, elementary school, middle school, and high school uses. The preservation proposed by Alternative D results in isolated, discontiguous pockets of development. PV 815 would avoid or preserve 33.68 acres of drainage canals, riverine seasonal wetlands, seasonal marsh, seasonal wetlands, and vernal pools under this alternative. It will indirectly impact 14.17 acres of wetlands.

- **Pan de Leon**: Alternative D results in the elimination of about 30% of the developable area on this 10.7-acre parcel. Preservation will result in a loss of low density residential use and five discontiguous "islands" of development. Approximately 0.33 acres of wetlands, including creeks, riverine seasonal wetlands, seasonal wetlands, and vernal pools would be avoided or preserved with indirect impacts to 0.24 acres of wetlands.

- **DF 80**: Alternative D retains most of the development potential on this 80-acre parcel, including a business park/power center and low density residential. About 5% of the proposed development would be eliminated under Alternative D in order to avoid or preserve about 0.60 acres of creeks, drainage canals, and seasonal wetlands. Alternative D will indirectly impact 0.33 acres of wetlands.

- **PV 200:** This 200-acre parcel towards the center of the project loses about 15% of its development potential under Alternative D. Although some of the area

recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, PV 200 loses the ability to develop a commercial mixed use project and medium density residential uses. Approximately 4.25 acres of wetlands would be avoided or preserved, and approximately 2.54 acres would be indirectly impacted.

- **Gulley 20:** This alternative will be required to preserve approximately 20% of its 19.5-acre parcel. The development consists mostly of low and medium density residential uses. The preservation scheme recommended by Alternative D results in fragmented, discontiguous areas of development on the parcel resulting in avoidance but indirect impacts to 0.44 acres of seasonal wetland swale and vernal pools.

- **PV 88:** Under Alternative D, PV 88 would develop approximately 60% of the 93.8-acre parcel, but the development layout would be fragmented. Religious facilities, and low and medium residential uses would be eliminated and only small islands and pockets of development would remain on this parcel. Under Alternative D, PV 88 would avoid or preserve 6.34 acres of riverine seasonal wetlands, seasonal wetlands, and vernal pools. 5.87 acres of these wetlands would be indirectly impacted.

- **PV 290(a)**: Approximately 15% of the land uses on PV 290(a) would be eliminated under Alternative D. Town center commercial/mixed use, library, police/government, and high density residential uses would be eliminated. The preservation area proposed by Alternative D essentially cuts the parcel into thirds, with no connectivity among the preserved areas, thereby resulting in additional isolated islands. This alternative would avoid or preserve 2.57 acres of ephemeral drainage and seasonal wetlands, and will indirectly impact 0.29 acres of wetlands.

- **PV 290(b):** Approximately 20% of the development potential on this parcel would be eliminated under Alternative D. This development consists mostly of an elementary school, medium density residential, and commercial/mixed use. Although most of the area designated for preservation under Alternative D is concentrated along the parcel edges, some of the preserve area is in the middle of the parcel, resulting in discontiguous development. This parcel would avoid or preserve 2.97 acres of ephemeral drainage, seasonal wetlands, seasonal wetland swale, and vernal pools. It will indirectly impact 2.47 acres of wetlands.

- **PV A(a):** Alternative D eliminates 10% of the development potential on this 60.5-acre parcel. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, low, medium, and high density residential uses would be eliminated. Furthermore, Alternative D divides the parcel into three distinct portions with no connectivity provided between the areas. Under this alternative, PV A(a) avoids or preserves 14.68 acres of drainage canals, ponds riverine seasonal wetlands, seasonal wetlands, and vernal pools. It indirectly impacts 9.24 acres of wetlands.

- **PGG Property**: Approximately 30% of this 79-acre property would not be developed under Alternative D. This loss consists mostly of low and medium density residential. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, a large portion of the PGG Property would forego development. Furthermore, Alternative D divides the parcel into three distinct areas with no connectivity. Limited, isolated islands of development would occur adjacent to preserved wetlands. PGG would avoid or preserve all 6.76 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. It will indirectly impact 0.99 acres of wetlands.

- **PV 356**: This parcel will be precluded from developing about 40% of its 356.9-acre area. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, PV 356 will lose its ability to develop an elementary school, transit, fire, religious facilities, commercial/mixed use, and low, medium, and high residential uses. Furthermore, since the preservation areas are scattered throughout the parcel, this alternative results in discontiguous development. PV 356 would avoid or preserve 28.31 acres of wetlands under this alternative, including intermittent drainage, seasonal wetlands, seasonal wetland swale, and vernal pools. It will indirectly impact 13.57 acres of wetlands.

- **PV 179A:** Approximately 20% of the 88-acre parcel could not be developed under Alternative D. The lost development includes commercial/mixed use, business park and power center, and medium density residential uses. Since the preservation areas are scattered throughout the parcel, this alternative results in discontiguous development on this parcel. Under this alternative, PV 179A would avoid or preserve 4.83 acres of wetlands, including intermittent drainage, seasonal wetlands, and seasonal wetland swale. It will indirectly impact 1.80 acres of wetlands.

- **PV 179B:** Alternative D precludes development of approximately 20% of the 92 acres and the corresponding loss of a power center and medium density residential. Since the preservation areas are scattered throughout the parcel, this alternative results in discontiguous development on this parcel. This alternative would allow PV 179B to avoid or preserve 2.84 acres of wetlands on the parcel, including intermittent drainage, seasonal wetlands, and seasonal wetland swale. It would indirectly impact 2.81 acres of wetlands.

- **PV 239**: Alternative D precludes development on about 5% of this 241.5-acre parcel. The lost area consists mostly of religious facilities, and low, medium, and high density residential uses. Alternative D will result in pockets of preservation on this parcel. Under Alternative D, 1.24 acres of wetlands would be avoided but indirectly impacted on this parcel. These wetlands includes seasonal wetlands and seasonal wetland swale.

- **PV A(b)**: PV A(b) would lose approximately 20% of its 265.6-acres under Alternative D. The lost area consists mostly of low and medium density residential development. Alternative D divides the parcel into three distinct chunks with no connectivity and isolated islands of developable area that effectively could not be developed. This parcel will preserve all 5.61 acres of wetlands under this alternative, including drainage canals, ponds, and riverine seasonal wetlands.

- **Watt x Baseline**: Approximately 65% of this 100.4-acre parcel will be developed under Alternative D, resulting in the elimination of commercial, religious, and medium and high density residential uses. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, Alternative D results in a net loss of development. In addition, the preservation scheme results in piecemealed development with no continuity and isolated pockets scattered throughout the parcel. Alternative D results in the avoidance, but indirect impact of 4.83 acres of wetlands, including seasonal wetland swale and vernal pools.

- **Mourier**: Alternative D eliminated development potential on about 20% of the 137.6 acres. The lost uses include religious and low and medium density residential uses. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, Alternative D results in a net loss of development for the Mourier parcel. In addition, the preservation scheme results in piecemealed development with no continuity and isolated pockets scattered throughout the parcel. Mourier will avoid or preserve 3.52 acres of wetlands on its property, including creeks, seasonal wetlands, and seasonal wetland swale. Approximately three acres of these wetlands would be indirectly impacted.

- **Hodel/Doyle:** Approximately 20% of this 462.3-acre parcel would not be developed. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, Alternative D will result in a loss of low density residential, religious facilities, and a private park/recreation center. Also, since the areas designated for preservation are scattered throughout the parcel, this alternative results in discontiguous development. Under Alternative D, 12.28 acres of wetlands would be avoided. Approximately 10.82 acres would be indirectly impacted. These wetlands include vernal pools, seasonal wetlands, and seasonal wetland swale.

- **PV C**: Under Alternative D, 10% of the 39.2-acre parcel would not be developed. The preservation will result in the loss of medium and high density residential use. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, Alternative D will still result in a net loss of development on parcel PV C and discontiguous development as a result of scattered preservation. PV C would avoid or preserve 1.17 acres of wetlands on its parcel under this alternative. It

would indirectly impact 0.53 acres of wetlands. These wetlands include riverine seasonal marsh, seasonal wetlands, and vernal pools.

- **PV B:** Approximately 25% of this 123.4-acre area would be preserved under Alternative D. Although some of the area recommended for preservation under Alternative D overlaps with open space area designated under the Proposed Project, Alternative D will still result in a loss of low and medium density residential use. Furthermore, because the areas designated for preservation are scattered throughout the parcel, this alternative results in discontiguous development on PV B. This parcel will avoid or preserve 11.29 acres of wetlands, including creeks, drainage canals, riverine perennial marsh, riverine seasonal wetlands, and seasonal wetlands. It will indirectly impact 5.34 acres of wetlands.

Infrastructure Elements

The Infrastructure Elements would be impacted by Alternative D as discussed above. Regarding impacts resulting from Infrastructure Elements, except where specific roadway improvements might be required, named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Project Area under Alternative D. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances. However, the ability to control water quality impacts and alterations to hydrology would be difficult given the fragmented nature of the development.

Avoidance, Minimization and Enhancement

Alternative D would not result in any direct impacts to aquatic resources, and would comply with many of the avoidance and minimization criteria described above in terms of aquatic resource functions and contribution to the aquatic ecosystem. Specifically, Alternative D would preserve contiguous core drainage course/wetland corridors in each drainage basin, along with all other wetlands/waters. Alternative D would preserve non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.), but they would not be included within corridors contiguous with other preserves established to meet the avoidance and minimization criteria described in item 1, above, or where they are large enough and/or concentrated enough to assure long-term maintenance of wetland function and value. Alternative D results in the preservation of 801 acres of open space including all wetlands and waters of the U.S. More than 84 acres of aquatic resources, however, would be indirectly impacted because buffers would not be provided.

With respect to the preservation of isolated and/or non-contiguous wetlands, Alternative D is designed to maintain the minimum viable wetland without adequate buffers. Wetlands would be isolated by development under this alternative. Although this alternative results in the preservation of the Dry Creek and Curry Creek corridors, and minimizes impacts to contiguous

wetlands, development would be immediately adjacent to the aquatic resources resulting in potential indirect effects. Thus, this alternative would facilitate only the preservation of reduced interconnected open space and drainage corridors, in accordance with the avoidance and minimization criteria above.

Avoidance

Alternative D was designed to avoid direct impacts to all waters/wetlands in the Project Area. It would result in approximately 801 acres of open space containing the avoided/preserved wetlands/waters (159.67 acres).

The PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the east and west ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. (See Fig. 7.5-C.) Further, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent, and particularly under this alternative, very nearby urban uses (both existing and proposed). Preservation of these resources with the reduced buffer would result in small preserve areas, sometimes fragmented from others by development, and all more susceptible to potential deleterious indirect impacts.

Minimization

All of the avoided wetlands would be buffered by only a 50-foot buffer (as opposed to the 100-foot buffer consistent with the avoidance principles), and so, in general terms, would be more subject to potential indirect impacts. Wider buffers would not be provided along preserved drainage corridors and aquatic resources under Alternative D because to do so would effectively foreclose any potential for development as reflected in Alternative E below. With respect to the preservation/buffering of isolated and/or non-contiguous wetlands, the Alternative D land use plan is designed to preserve aquatic resources, but it would not preserve as intact large watershed areas. This alternative provides narrower buffers and would result in isolation of wetlands by development.

	Impact	Indirect	Preserve	Total
Channel	0.00	0.00	1.46	1.46
Creek	0.00	0.00	6.01	6.01
Drainage Canal	0.00	0.00	0.44	0.44
Drainage Swale	0.00	2.09	0.00	2.09
Ephemeral Drainage	0.00	0.00	4.12	4.12
Intermittent Drainage	0.00	0.00	17.80	17.80
Pond	0.00	0.00	18.45	18.45
Riverine Perennial Marsh	0.00	0.00	0.58	0.58
Riverine Seasonal Marsh	0.00	0.00	0.64	0.64
Riverine Seasonal Wetland	0.00	0.00	25.28	25.28
Seasonal Marsh	0.00	0.00	0.21	0.21
Seasonal Wetland	0.00	36.81	0.02	36.84
Seasonal Wetland Swale	0.00	12.72	0.00	12.72
Vernal Pool	0.00	33.04	0.00	33.04
Total	0.00	84.67	75.00	159.67

	Area (Ac.)
Total Impacted Wetlands	0.00
Total Indirectly Impacted Wetlands	84.67
Total Preserved Wetlands	75.00
Total Preserved Area	801.0

Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area[2]

Avoidance and Minimization Criteria Not Preserve Area[3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

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Revision Date: 2008-08-28

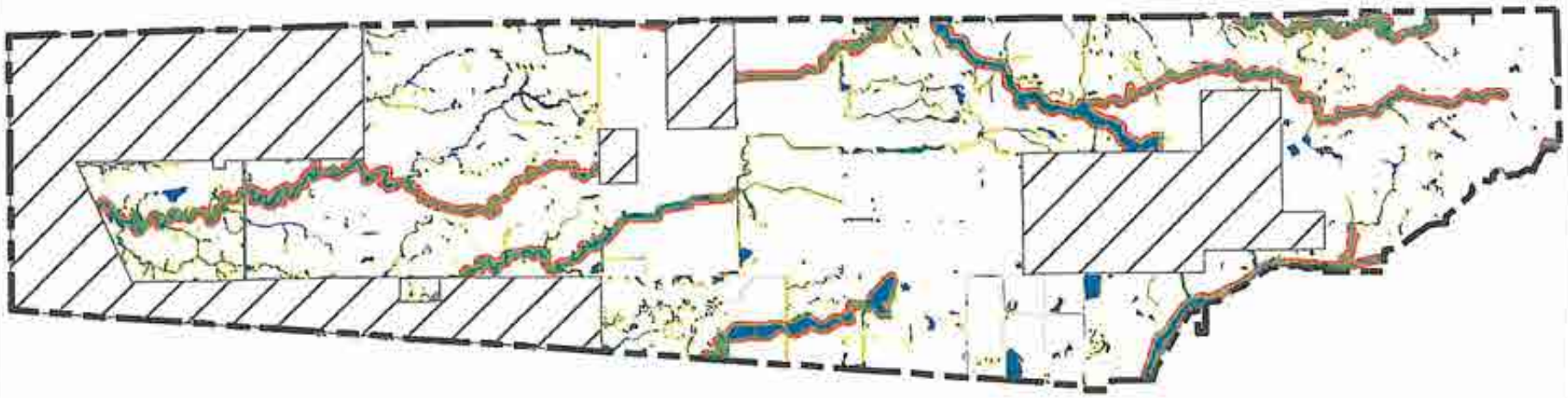
Alternative D - Avoidance of wetlands with a 50-foot buffer resulting in dev't of 3,015 acres of the Plan Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.5-D

	Area (Ac.)
Total Impacted Wetlands	0.00
Total Indirectly Impacted Wetlands	84.67
Total Preserved Wetlands	75.00
Total Preserved Area	801.0



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

Revision Date: 2010-09-24

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Alternative D - Avoidance of wetlands with a 50-foot buffer resulting in dev't of 3,015 acres of the Plan Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.5-C

As discussed above, the primary drainage courses were identified using HUC flow lines. In general theoretical terms, and disregarding the specific irregular geometries involved in buffering meandering drainage courses, the use of the narrower buffer (i.e., 50 feet versus 100 feet) could be expected to result in an approximate 50% reduction (disregarding the area of the wetlands contained therein) in upland open space/buffering of the primary drainage courses. For example, the westernmost primary drainage course, which crosses the PV 815, Capri and Fong properties would be completely avoided under this alternative, but compared to the avoidance and minimization principles, approximately 30 acres (39%) of associated upland open space would be lost to buffer constriction. However, the inclusion of additional wetlands in the avoidance scheme may, in some cases, effectively lengthen the open space corridors associated with the primary drainages.

For example, the primary drainage course that crosses the PV200 and PV815 properties would be avoided and effectively lengthened by approximately 2450 linear feet (29%). In this case, approximately 11 acres (26%) of upland buffer would be lost to buffer constriction, while approximately 6 acres of open space (5.5 acres of uplands) (14%) would be added by its lengthening. The same effect would be experienced along the northernmost and southernmost tributaries to this primary drainage course.

Regarding the northernmost tributary, the effective lengthening of the tributary (which is not an HUC flow line), would result in an additional 7,202 linear feet (+87%), and an increase of approximately 18 acres (+51%) of upland open space. Regarding the drainage immediately to the south (which is not an HUC flow line), the effective lengthening of this tributary would result in an additional 1,035 linear feet (+12%), and an increase of approximately 2.6 acres (7%) of upland open space. Regarding the southernmost (also not a HUC flow line), the effective lengthening of this tributary would result in an additional 1,687 line feet (20%) and an increase of approximately 4 acres (12%) of upland open space. Thus the cumulative effect for this particular drainage is an effective lengthening of approximately 12,375 linear feet (149%), and an increase of approximately 30 acres (+85%) of upland open space. To the east, the drainage course that crosses the PVA(b), PGG, PVA(a) and PV 88 properties would be avoided, but, approximately 10 acres (34%) of upland open space would be lost using the narrower buffer width. The drainage course which crosses Hodel/Doyle, PV356, PV179 (A and B), PV290 (parcel 1) and D.F. 80 properties, would be avoided as well, but approximately 46 acres (41%) of its associated upland open space would be lost. At Curry Creek, approximately 8 acres (27%) of associated upland would be lost. Finally, at Dry Creek. Approximately 18 acres (39%) of associated upland would be lost. The cumulative effect of all of these adjustments would be approximately 123 acres of upland open space lost to buffer constriction and approximately 30 acres of upland open space added due to the effective lengthening of the primary drainage courses. Thus, the net effect is the loss of approximately 93 acres (30%) of upland open space associated with the primary drainage courses.

Alternative D consists of 50-foot buffers around preserved wetlands which would result in increased exposure to potential indirect impacts, due to the proximity of development adjacent to preserved aquatic resources. Further, preserved upland areas around the primary drainage courses would be subject to increased exposure to edge effects. Nonetheless, Alternative D

avoids, preserves, and in some cases effectively lengthens key drainage corridors within the Project Area, thereby maintaining these features as interconnected drainage corridors.

Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative D, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. Alternative D would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Alternative D incorporates the preservation of on-site preserves in perpetuity. Buffers would be incorporated into the land plan within the on-site preserve areas.

Enhancement

Alternative D does not include opportunities for enhancement of existing wetlands/waterways because no fill or activity requiring a permit action would be pursued under this alternative.

Other Environmental Impacts

Land Use/Noise Incompatibility

On-Site Alternative D provides for a mixed-use environment and minimizes potential land use incompatibilities because the development would be concentrated and contiguous. Alternative D would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Similar to the Proposed Project, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area. The Specific Plan provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55.) Nonetheless, the power line corridor traverses diagonally through the western preserve area. The power line corridor is comprised of two easements containing multiple tower lines and the tower lines will need to be maintained thereby resulting in the potential for additional indirect effects to wetlands.

Biological Resources

Since none of the wetlands on site will be filled under this alternative, no aquatic invertebrate habitat will be directly impacted by this alternative. Alternative D, however, results in indirect impacts from the adjacent development to about 84.67 acres of wetlands, all of which represent potential habitat for federally-listed aquatic invertebrates (i.e., vernal pools, seasonal wetlands,

seasonal wetland swales, and drainage swales). Although some of the primary drainage courses/corridors would be effectively lengthened by the inclusion of wetlands preserved under this alternative, the 50-foot wide buffering of the primary drainage courses would provide diminished capacity for wildlife movement (as compared to the 100-foot buffering of the primary drainage courses defined by the avoidance and minimization principles used to plan the Proposed Project), and increased exposure to indirect impacts. With respect to non-contiguous wetlands, although direct impacts would be avoided, this alternative would result in many small preserve areas isolated and/or fragmented by intervening development.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards under Alternative D.

Traffic

As with the Proposed Project, Alternative D will result in an increased volume in traffic. This increase will only be about 83% of the Proposed Project traffic, and probably less than that amount due to the fragmented nature of the land available for development. Alternative D will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative D will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative D would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County by approximately 17% fewer trips than the Proposed Project. Alternative D would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. Alternative C is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line.

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These mitigation measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts.

Noise

As with the Proposed Project, Alternative D will likely result in an increase in noise levels due to the Alternative D's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 17% as compared to the Proposed Project due to the decreased number of dwelling units. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative D-generated traffic. In addition, the Alternative D will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will incorporate mitigation measures into the project as part of the CEQA process to mitigate impacts caused by Alternative D. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative D, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative D will likely result in an increase in ROG, NOx, CO, and PM10, but likely at about 83% of the Proposed Project. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, Alternative D will increase both mobile and stationary source emissions by 83% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative D may result in cumulative air quality impacts, and Alternative D-generated traffic would contribute to cumulative localized impact like the Proposed Project. Because development potential would be reduced within Placer Vineyards, locating development in other areas of the County would need to compensate for additional housing and non-residential uses that would then relocate to other regions in the County. This would result in additional traffic and associated potential air pollutant emissions in other areas in Placer County, rather than in a net reduction in air pollutant emissions. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses.

In order to mitigate any adverse air quality impacts, the Applicants will incorporate mitigation measures into their projects lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative D does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. Although this alternative would not fill aquatic resources or result in direct impacts, Alternative D results in substantially greater indirect impacts to aquatic resources from an acreage perspective when compared to the Proposed Project and all other alternatives other than Alternative E. However, Alternative D is only partially consistent with the screening criteria, because although the focus of this alternative is to avoid any direct impacts, Alternative D would fragment the drainage corridors, contiguous wetlands and result in water quality and secondary impacts to all of the preserved wetlands thereby compromising the functions and values of preserved wetlands. Finally, this alternative results in fewer significant environmental impacts when compared to the Proposed Project.

7.5.7 On-Site Alternative E – No Project Alternative

On-Site Alternative E is the "no project alternative," involving no development of the entire 3,744-acre Project Area and no infrastructure improvements. Existing land uses within the Project Area would remain the same, and development of the Project Area would not occur as envisioned under the Specific Plan with a mixed-use community including residential, retail, commercial, and business/professional uses, as well as public facilities such as parks, schools, and open space. Alternative E preserves 159.67 acres of wetlands and entire area as open space.

Project Purpose

On-Site Alternative E does not meet the Applicants' Project Purpose since it would not provide for development of a large-scale residential mixed use residential community in the western Placer County region.

Availability

This alternative is available.

Practicability

Absent the project, "current plans," defined as the *Placer County General Plan* and Exhibit 1 of the *Dry Creek/West Placer Community Plan*, would continue to call for adoption of a specific plan and the ultimate urban development of the Project Area. In other words, if the adopted Specific Plan were not implemented, the property would remain in ranching and agricultural use with limited existing residences. Absent amendments to the General Plan and Community Plan, the ultimate development pattern for the area would continue to be guided by Exhibit 1 to the Community Plan, adopted with the General Plan in 1994. Thus, the No Project Alternative is not practicable because it would require amendments to the Placer County General Plan, Placer Vineyards Specific Plan and related approvals resulting in a conflict with General Plan planning principles guiding the location of urban development in the County.

Aquatic Resources Impacts

On-Site Alternative E would not result in the permanent loss of any waters of the United States, including vernal pool habitat, seasonal wetland habitat, roadside ditch, and seasonal drainage channel. Above-ground functions associated with seasonal drainages would not be lost. This alternative, however does not provide any opportunities for restoration and enhancement of the aquatic resources. As a result, although future beneficial habitat values associated with the preservation of the drainage corridors and vernal pool resources on-site would be viable with this alternative, limited opportunities for enhancement would be provided. Farming practices, which in some instances can degrade wetland and upland habitat within the Plan Area, would continue.

Other Environmental Impacts

This alternative results in other significant environmental consequences. Under the No Project Alternative, areas intended under the Proposed Project to be maintained as open space available for public use would remain in private ownership. Further, if the Plan Area is not urbanized, groundwater extraction will continue for farming and limited domestic use. Building permits could still be issued for residential and agricultural structures, consistent with existing zoning and minimum parcel sizes. Small conversions of agricultural lands to nonagricultural uses might occur in the future. Cumulative impacts related to the ongoing loss of natural undisturbed open space in the region, increased human intrusion and activity levels in proximity to habitat areas, and removal of potential habitat for federally- and State-listed and other special-status species would likely occur due to urban development in the surrounding area. In order to offset the projected increase in population in Placer County (30,000 people), development would need to occur elsewhere in the County. The potential impacts associated with such development would occur at other locations in the County. Due to the potential scattered nature of development, potential greater land use impacts, loss of agricultural resources, traffic and air quality impacts also could occur.

Land Use/Noise Incompatibility

Since no development occurs under this alternative, there would be no land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Since no development occurs under Alternative E, sensitive receptors would not be located in proximity to power line corridors.

Biological Resources

Since none of the wetlands on site will be filled under this alternative, no aquatic invertebrate habitat will be directly impacted by this alternative. The wetlands may, however, suffer indirect impacts from adjacent development and farming practices would continue.

Flooding/Seismic Effects

No development would be exposed to potential flooding and seismic safety concerns.

Traffic

Unlike the Proposed Project, Alternative E will not affect traffic conditions.

Noise

There will be no increase in noise under this alternative as it involves no construction.

Air Quality

Alternative E will have no effect upon air quality as it involves no construction.

Conclusion

Alternative E does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability because no development would occur on any of the parcels. This alternative would not fill aquatic resources or result in direct or indirect impacts to aquatic resources from an acreage perspective when compared to the Proposed Project and all other alternatives. Alternative E would generally be consistent with the screening criteria, because impacts to aquatic resources would not occur. Finally, this alternative does not result in other significant environmental impacts when compared to the other development alternatives at the Project Site. However, this alternative would result in additional development in Placer County which would then relocate other environment impacts to other locations in the County. Although this alternative is the least environmentally damaging alternative, it is not practicable.

7.5.8 On-Site Alternative F – EPA/Corps Alternative "A"

On-Site Alternative F consists of the Placer Vineyards Development and the Infrastructure Elements necessary to serve the development. To the extent that such infrastructure would occur in the Project Area, the types of impacts that could be anticipated to aquatic resources have been generally identified. Where off-site infrastructure would be required to support this alternative, alignments and quantification of impacts to aquatic resources would be refined following selection of the land plan. It avoids impacts to aquatic resources located in the western, southwest-central, northeast central, northeastern, and southeastern portions of the Plan Area. Although the preserves are concentrated in several large areas, this alternative would result in largely discontiguous pockets of development in the central and eastern portions of the Project Area. (See Fig. 7.6-A.)

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

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ALTERNATIVE F

Figure 7.6-A

This alternative develops less than 2,246 acres of the 3,744-acre site and preserves about 1,498 acres. In actuality, it is likely that this alternative would result in a development footprint that is substantially less than the 2,246 acres due to the fragmented nature of the development area. Based on the 2,254-acre estimate, Alternative F consists of 8,011 units (compared to 11,585 units under the Proposed Project), including 1,924 low density residential units, 3,667 medium density residential units, 2,041 high density residential units, and 379 units of commercial mixed-use. Alternative F would result in the fill of approximately 66.12 acres of wetlands and avoidance or preservation of 93.55 acres. It will indirectly impact 28.53 acres of wetlands.

Project Purpose

On-Site Alternative F does not fully meet the Applicants' Project Purpose. This on-site alternative design would provide for less than 70% of the residential units included in the Proposed Project and it would eliminate development of about 40% of the acreage. Consequently, in addition to losing 3,574 residential units, Alternative F would lose approximately 1,488 acres of development, including approximately 81 acres of commercial space, 97 acres for schools, 71 acres for parks, 108 acres in major roads, 400 acres in open space, and 43 acres for religious facilities as compared to the Proposed Project.

Under Alternative F, the following uses will be eliminated: one of the two middle schools, one of the six elementary schools, one of two fire stations, and one transit center. Additionally, Alternative F results in the loss of residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative F. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the remaining unit count for Alternative F it is likely there will be a need for four elementary schools, one middle school, and one high school. A new site for one high school will need to be identified in the remaining developable area. Similarly, the cemetery, corporation yard, fire station and community park land uses will need to be relocated within the developable area of the Alternative.

A project developed under the constraints of Alternative F will need to provide a mixed use development, with the same range of uses that the project provides, even if the project is developed at a proportionately smaller scale as a result of lands that are set aside for preserve purposes. Placer County will require that a mix of residential uses be developed within the areas permitted for development under the respective alternatives in accordance with the General Plan.

Although the preserves included in Alternative F are primarily concentrated in the western and northeastern portions of the site, the design still results in scattered development in the northern portion of the Project Area that would be bifurcated by a major drainage corridor from

development in the center of the Project Area. In the eastern portion of the Project Area, development around the preserved areas and non-participating properties would be difficult.

Furthermore, the following parcels would be almost entirely precluded from development: Fong, Capri, PV 815, Gulley 20, and PV 88. Parcels PV 356, PV 179A, PV 179B, Watt x Baseline, Hodel/Doyle, PV C, and PV B similarly would be substantially impeded from development. In addition to the acreage described above, Alternative F eliminates two elementary schools, one middle school, one high school, religious facilities, a corporate yard, cemetery, and commercial areas. Given the scattered development proposed under this alternative and elimination of many key residential, commercial, and infrastructure uses of the property, this alternative would not provide for the development of a functionally integrated mixed use community. It also would not provide for the growing population of Placer County because it provides only 70% of housing when compared to the Proposed Project. On-Site Alternative F would therefore not fully meet the Project Purpose.

Availability

This alternative is available.

Practicability

With respect to costs, Alternative F is not practicable because it foregoes more than 30% of the residential units as compared to the Proposed Project. As the number of residential units decrease, so the related infrastructure costs would be prohibitively high to support the remaining 70% of the residential units. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive.

Furthermore, for some specific development projects within the Participating Properties, the landowners/developers would forego any development. For example, Fong, Capri, PV 815, Gulley 20, and PV 88 would be completely precluded from any development. Consequently, the costs for these specific development proposals would be unreasonably high as compared to other specific development proposals because they would incur the costs for services and infrastructure for development that these landowners would not realize. Alternatively, these landowners would not contribute to the funding of such infrastructure and services because they would not be able to proceed with their development projects, thereby resulting in the allocation of infrastructure and services costs over a smaller number of development projects within the Placer Vineyards Development Area. Similarly, PV 356, PV 179A, PV 179B, Watt x Baseline, Hodel/Doyle, Mourier, PV B, and PV C would be partially precluded from development, and the associated costs for developing these parcels would also be unreasonably high.

It is unlikely that any one landowner/developer or fewer Participating Property owners would be able to proceed with development independently, as the property owner would be required to construct all of the core backbone infrastructure to serve the other scattered development projects under Alternative F. Additionally, the remaining developers would be required to finance the required public facilities. Thus, it is unlikely that Alternative F development could fund the Infrastructure Elements at a cost because some of the roughly $854 million project infrastructure

costs in backbone infrastructure would still be required at buildout (See EPS Technical Memorandum dated September 6, 2006) even with development of only 70% of the Project.

In terms of logistics, Alternative F would not be developed in a functionally-integrated manner as a master-planned mixed use community because the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. Under Alternative F, an area that is less than what is identified as developable could actually be developed given the fragmented area available for proposed land uses.

In terms of technological considerations, this alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to maintain the requisite levels of service. Alternative F impacts the Infrastructure Elements. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Element. Each major arterial roadway – Base Line Road, Watt Avenue, West Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by Alternative F. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected.

Additionally, the shape of the proposed preserve areas will prevent construction of multiple long segments of road. Although the interior arterials may be able to be realigned to avoid wetlands, potential effects on these roads would occur if they cannot connect to Base Line Road and Watt. The construction of the following Infrastructure Elements will be completely prevented under this alternative: the sanitary sewer lift station to serve portion of Plan Area west of Watt Avenue, four potable water well and storage tank sites (out of 5 total proposed), proposed drainage channel corridors, and both fire station sites.

For these reasons, On-Site Alternative F is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

On-Site Alternative F results in the direct fill of approximately 15.99 acres of ponds, 8.19 acres of vernal pool, and 30.02 acres of seasonal wetlands. The total acreage for impacted wetlands is about 66.12 acres. This alternative results in the preservation of about one-third of the Proposed Project site and the associated loss of two-thirds of the development potential in order to preserve 32 acres of additional wetlands. Moreover, this alternative results in greater indirect impacts to aquatic resources than the Proposed Project. This alternative results in the avoidance of approximately 93.55 acres of wetlands, including 24.85 acres of vernal pools, 6.82 acres of seasonal wetlands, 17.20 acres of intermittent drainage, 7.75 acres of seasonal wetland swale, and 24.58 acres of riverine seasonal wetland. (See Fig. 7.6-B.)

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

Figure 7.6-B

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ALTERNATIVE F

In terms of acreage of impacts to delineated wetlands, the 66.12 acres of direct impacts under Alternative F include the specific impacts shown in Appendix A associated with the Applicants' individual development proposals on the Participating Properties. In summary, development of the Participating Properties would result in the impacts described further below.

- **Fong:** Under Alternative F, no development would occur on the 92.6 acre site resulting in the loss of low density residential and medium residential uses. This parcel will not impact any wetlands and instead would avoid or preserve 6.14 acres of ephemeral drainage, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. It will indirectly impact 1.50 acres of wetlands.

- **Capri**: Alternative F precludes development on the Capri parcel. The 93.9-acre parcel will be preserved thereby resulting in the loss of primarily low and medium density residential uses. Consequently, 5.00 acres of drainage canals, riverine seasonal wetlands, seasonal wetlands, and vernal pools would be avoided or preserved with indirect impacts to 0.59 acres of vernal pool and riverine seasonal wetland.

- **PV 815**: No development of office space, low, medium, and high density residential, power center, business park, cemetery, corporate yard, elementary school, middle school, and high school uses would occur on PV 815 under Alternative F. Alternative F would avoid or preserve 33.68 acres of drainage canals, riverine seasonal wetlands, seasonal marshes, seasonal wetlands, and vernal pools. Alternative F, however, will indirectly impact 5.38 acres of vernal pools (4.21 acres), seasonal wetlands (0.42 acres), riverine seasonal wetlands (0.73 acres), and drainage canal (0.02 acres).

- **Pan de Leon**: This 10.7-acre parcel will be completely developed with low density residential development under this alternatives as contemplated by the Proposed Project. It would avoid filling wetlands and thus would thus avoid or preserve 0.33 acres of wetlands. It will indirectly impact 0.28 acres of creeks, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **DF 80**: Alternative F provides for the development of a business park/power center and medium density residential. Consequently, it will directly impact all 0.60 acres of creeks, drainage canals, and seasonal wetlands. No wetlands would be preserved.

- **PV 200**: Alternative F provides for the development of all proposed religious facilities, commercial/mixed use, and low, medium, and high density residential uses. Under Alternative F, 2.83 acres of wetland will be directly impacted on this parcel. About 1.42 acres of wetlands would be avoided or preserved, and 1.32 of those acres would be indirectly impacted.

- **Gulley 20**: Under Alternative F, no development would occur on the 19.5 acre parcel resulting in the loss of low and medium density residential uses. As a

result, it would avoid or preserve 0.44 acres of seasonal wetland swale and vernal pools. 0.25 acres of these would be indirectly impacted.

- **PV 88**: Alternative F results in the elimination of 93.8 acres of religious facilities and low and medium residential uses. Under this alternative, direct impacts to 0.01 acres of wetlands would nonetheless occur, notwithstanding the avoidance of 6.33 acres of riverine seasonal wetlands, seasonal wetlands, and vernal pools. Alternative F will indirectly impact 3.36 acres of wetlands, due to the location of preserved areas in relation to nearby development.

- **PV 290(a):** This parcel would be developed as contemplated under the Proposed Project with commercial/mixed use, library, police/government, town center, and high density residential uses. Alternative F would fill 1.36 acres of ephemeral drainage and seasonal wetlands and indirectly impact 1.22 acres of wetlands.

- **PV 290(b)**: Under Alternative F, this 100 acre parcel would be developed with medium density residential, an elementary school, and commercial/mixed use. Alternative F would impact 2.95 acres of wetlands while indirectly impacting 0.02 acres of wetlands, including ephemeral drainage, seasonal wetlands, seasonal wetland swale, and vernal pools.

- **PV A(a):** Alternative F would result in the development of low, medium, and high density residential use, thereby resulting in the fill of all 14.68 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands would be preserved.

- **PGG Property**: This 79-acre property would be fully developed under Alternative F with primarily low and medium density residential uses. Alternative F would impact all 6.76 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands would be preserved.

- **PV 356**: Alternative F results in the preservation of roughly 30% of the 356.9 acre parcel. As a result, commercial/mixed use and low and medium residential uses would not be developed, however, two discontiguous islands could be developed. Under this alternative, development of the parcel will directly impact 12.39 acres of intermittent drainages, seasonal wetlands, seasonal wetland swale, and vernal pools and avoid or preserve 15.92 acres of wetlands. It would indirectly impact 2.14 acres of wetlands.

- **PV 179A**: Alternative F would preserve 30% of the 88 acres resulting in the elimination of religious facilities, commercial/mixed use, business park, and medium density residential. Consequently, development of this parcel will fill about 1.02 acres of wetlands and avoid or preserve approximately 3.82 acres of wetlands, including intermittent drainage, seasonal wetland, and seasonal wetland swale. It would indirectly impact 0.75 acres of wetlands.

- **PV 179B**: Alternative F would preserve about 30% of the 92 acres resulting in the elimination of a power center and medium density residential land uses. Alternative F results in the fill of 2.00 acres of wetlands and the avoidance or preservation of 0.83 acres of wetlands on this parcel. It will indirectly impact 0.63 acres of wetlands. These wetlands include intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 239**: Alternative F would allow development of the parcel as contemplated by the Proposed Project including an elementary school, religious facilities and low, medium, and high density residential uses. Under Alternative F, 1.24 acres of intermittent drainage, seasonal wetlands, and seasonal wetland swale would be impacted on this parcel. No wetlands would be preserved.

- **PV A(b)**: Under Alternative F, the entire 265.6-acre parcel would be developed with an elementary school and low and medium density residential uses as contemplated by the Proposed Project. This alternative would impact 5.61 acres of drainage canals, ponds, and riverine seasonal wetlands. No wetlands would be preserved.

- **Watt x Baseline**: Approximately 85% of the 100.4-acre parcel will be preserved under Alternative F. Land uses eliminated by this alternative consist of commercial, religious, and medium and high density residential uses. If Alternative F is implemented, Watt x Baseline will consist of two narrow segments of developable area resulting in fill of 0.67 acres of wetlands and avoidance or preservation of 4.16 acres of wetlands. It will indirectly impact 3.87 acres of wetlands. These wetlands include seasonal wetland swale and vernal pools.

- **Mourier**: Alternative F eliminates potential development on approximately 10% of the 137.6 acre parcel. Low and medium density residential uses would not occur. Alternative F would directly impact 2.99 acres of creeks, seasonal wetlands, and seasonal wetland swale on this parcel and preserve 0.53 acres of wetlands. It would indirectly impact 0.05 acres of wetlands.

- **Hodel/Doyle**: Under Alternative F, preservation would occur on about 40% of the 462.3 acre parcel. The preservation, however, generally will not result in a loss of development potential since the area designated for preservation under Alternative F is planned as open space under the Proposed Project. Some low density residential use could be eliminated, however, based on the preserve design. Under Alternative F, 3.86 acres of vernal pools, seasonal wetlands, and seasonal wetland swale will be directly impacted on this parcel. While 8.42 acres of wetlands would be preserved or avoided. It would indirectly impact 6.77 acres of wetlands.

- **PV C**: Approximately 25% of the 39.2-acre parcel will not be developed under Alternative F. The preservation will not result in a loss of development since the area designated for preservation under Alternative F is planned as open space

under the Proposed Project. Alternative F would fill about 1.13 acres of riverine seasonal marsh, seasonal wetlands, and vernal pools. In addition, 0.04 acres of riverine seasonal marsh would be avoided but indirectly impacted.

- **PV B**: Alternative F proposes the preservation of 10% of the 123.4-acre area as open space. The preservation will not result in a loss of development since the area designated for preservation under Alternative F is planned as open space under the Proposed Project. Alternative F directly impacts 6.02 acres of drainage canals, riverine perennial marsh, riverine seasonal wetlands, and seasonal wetlands. It preserves or avoids about 5.27 acres of creeks on this parcel and would indirectly impact 0.40 acres of creeks.

Infrastructure Elements

Impacts to the Infrastructure Elements are described above. Regarding impacts resulting from the Infrastructure Elements, except where specific roadway improvements might be required, named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Project Area under Alternative F. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/ maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances. However, the ability to control water quality impacts and alterations to hydrology would be difficult given the fragmented nature of the development and the fact that development would occur on either side of preserved drainages. Major road improvements and utilities could not be built.

Avoidance, Minimization and Enhancement

Alternative F results in the preservation of approximately 1,498 acres of open space including approximately 93 acres of wetlands and waters of the U.S. Although Alternative F would result in direct impacts to aquatic resources, it would comply with many of the avoidance and minimization criteria described above in terms of aquatic resource functions and contribution to the aquatic ecosystem. Specifically, Alternative F would preserve contiguous core drainage course/wetland corridors in each drainage basin in the western, northern, and eastern portions of the Project Area. Alternative F also would preserve non-contiguous, non-linear wetlands (e.g. vernal pools depressional seasonal wetlands, etc.) in the western portion of the Project Area. Within that portion of the Project, these non-contiguous wetlands would be included within corridors contiguous with other preserves established to meet the avoidance and minimization criteria described in item 1, above, or where they are large enough and/or concentrated enough to assure long-term maintenance of wetland function and value. Development would impact aquatic resources in the central portion of the Project Area, and would not preserve contiguous wetlands or drainage corridors. In the eastern portion, while primary drainage courses and associated wetlands would be preserved, isolated and non-contiguous wetlands, for the most part, would be impacted by development. Alternative F results in the preservation of 1,490 acres of open space including 65 acres of wetlands and waters of the U.S. More than 28 acres of aquatic

resources, would be indirectly impacted because adequate buffers would not be provided under this alternative.

Avoidance

Alternative F avoids impacts to vernal pool resources and drainage corridors in the western, southwest-central, northeast-central and northeastern portions of the Project Area. With respect to the preservation of isolated and/or non-contiguous wetlands, Alternative F focuses on preservation of these resources in the western and southwest-central portion of the project site. The PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. Because of surrounding land uses and the distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the west and northeastern ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. Further, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent urban uses (both existing and proposed). Accordingly, a large preserve area of about 1,000 acres would be located in the western portion of the Project Area which would coincidentally provide for protection of on complete primary drainage and a segment of another primary drainage.

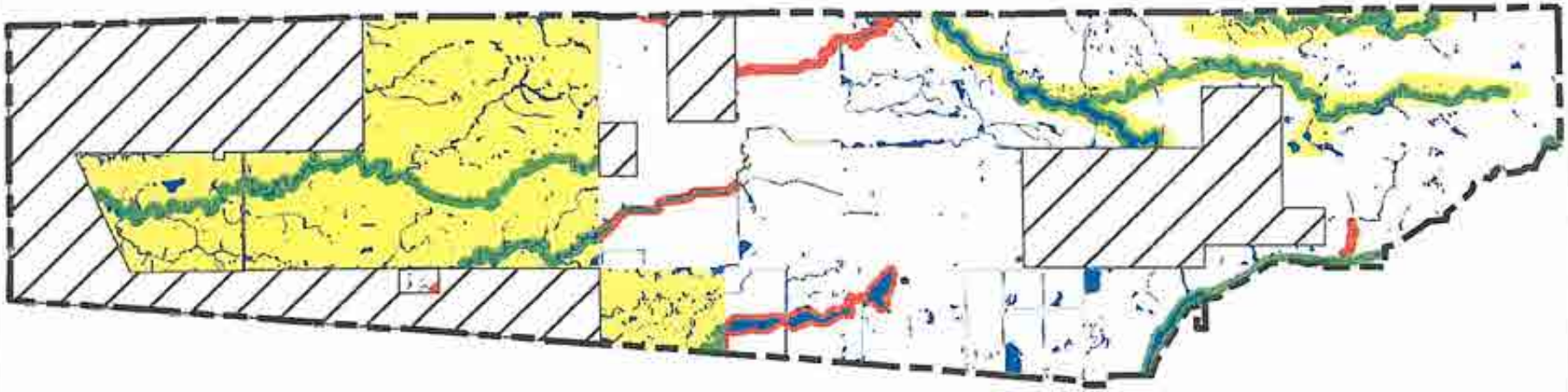
Alternative F is also designed to maintain viable wetlands preserve areas focused on the primary drainage courses and associated wetlands in the northeast-central and northeastern portions of the Project Site. Both Curry Creek and the unnamed primary drainage which crosses these areas would be avoided and adequately buffered. Dry Creek would also be avoided and buffered. In the central portion of the Project Area, except for a small segment that would be directly impacted at its extreme downstream end, the primary drainage course which crosses the PV200 and PV815 properties would be almost completely avoided, and effectively lengthened by approximately 3,780 linear feet (45%) by the avoidance of a tributary to it. This drainage would be adequately buffered where it crosses the PV 815 property, but buffer width would be reduced to 50 feet upstream of that point. Approximately 13 acres of associated upland open space would be lost to the reduced buffer width, while approximately 9 acres (26%) would be added back by the effective lengthening of this corridor. Two other primary drainages in this area would be eliminated over substantial portions of their length. The primary drainage that crosses the PVA (b), PGG, PVA(a) and PV88 properties would be directly impacted upstream of the PV88 property. This would result in the loss of approximately 4510 linear feet (73%) of this primary drainage, and approximately 24 acres of associated upland open space. The primary drainage that crosses Hodel/Doyle, PV356, PV179(A and B), PV290 (Parcel 1), and D.F. 80 would be directly impacted from its downstream end to the point upstream where it reenters the Project Area from off-site. This would result in the loss of approximately 4450 linear feet (21%) of this primary drainage course, along with approximately 24 acres (22%) of its associated upland open space. Thus, this alternative would only partially facilitate preservation of interconnected open space and drainage corridors, in accordance with the avoidance and minimization criteria above.

Minimization

Adequate buffers would be provided in the western and southwest-central preserve and along the preserved drainage corridors in the northeastern portion of the site under Alternative F. However, 100-foot buffers would not be provided along avoided primary drainage corridors in the central portions of the site. The reduction in buffer width along the primary drainage crossing the PV200 property would result in the loss of approximately 13 acres (35%) of open space associated with this drainage (as compared to the avoidance and minimization principles used to plan the proposed project) while increasing its effective length could be expected to add back approximately 9 acres (26%). The truncation of the primary drainage crossing the PVA(b), PGG, PVA(a), and PV88 properties would result in the loss of approximately 24 acres (82%) of the upland open space predicted by the avoidance and minimization principles. The elimination of that section of the northernmost primary drainage way, as it crosses the western portion of PV356, PV290 (Parcel 1), and D.F.80 would result in the loss of approximately 25 acres (22%) of the upland open space predicted by the avoidance and minimization principles. Direct impacts to the tributary located upon the Mourier 135 property would result in the loss of approximately 4.5 acres of open space, or approximately 10% of the open space associated with Dry Creek. Thus, Alternative F would result in reduced open space and increased exposure to indirect impacts due to the proximity of development adjacent to several primary drainage courses as depicted in Figure 7.6-C. Nonetheless, Alternative F avoids and preserves key drainage corridors along the western, west-central, northeast central, and northeastern portions of the Project Area, thereby maintaining these features as interconnected drainage corridors.

As reported above, Alternative F would interrupt or truncate several primary drainage courses or wetland corridors through the center of the Project Area. Moreover, "channelized" portions of the avoided primary corridors would not be improved by the addition of a substantial buffer due to its existing degraded nature. Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative F, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. Alternative F would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Alternative F would incorporate the preservation of on-site preserves in perpetuity. Buffers would be incorporated into the land plan within the on-site preserve areas.

	Area (Ac.)
Total Impacted Wetlands	66.12
Total Indirectly Impacted Wetlands	28.53
Total Preserved Wetlands	65.02
Total Preserved Area	1498.4



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

Alternative F - On-site alternative with further avoidance of impacts to aquatic resources located in the W and NE portions of the Plan Area

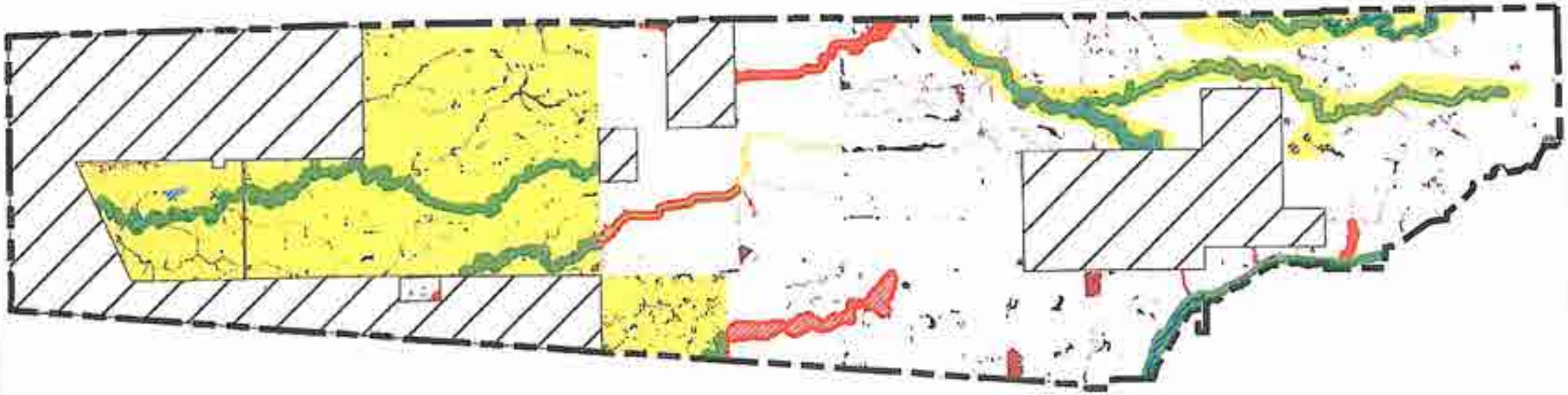
2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

FIGURE 7.6-C

	Impact	Indirect	Preserve	Total
Channel	0.01	0.04	1.41	1.46
Creek	0.16	0.46	5.39	6.01
Drainage Canal	0.34	0.02	0.07	0.44
Drainage Swale	2.06	0.02	0.00	2.09
Ephemeral Drainage	1.89	2.16	0.07	4.12
Intermittent Drainage	0.61	0.48	16.71	17.80
Pond	15.99	0.35	2.11	18.45
Riverine Perennial Marsh	0.58	0.00	0.00	0.58
Riverine Seasonal Marsh	0.60	0.04	0.00	0.64
Riverine Seasonal Wetland	0.70	1.22	23.36	25.28
Seasonal Marsh	0.00	0.00	0.21	0.21
Seasonal Wetland	30.02	3.49	3.33	36.84
Seasonal Wetland Swale	4.97	7.31	0.44	12.72
Vernal Pool	8.19	12.94	11.91	33.04
Total	66.12	28.53	65.02	159.67

	Area (Ac.)
Total Impacted Wetlands	66.12
Total Indirectly Impacted Wetlands	28.53
Total Preserved Wetlands	65.02
Total Preserved Area	1498.4



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area [2]

Avoidance and Minimization Criteria Not Preserve Area [3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

FIGURE 7.6-D

Alternative F - On-site alternative with further avoidance of impacts to aquatic resources located in the W and NE portions of the Plan Area

2001-196 Placer Vineyards

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Enhancement

Alternative F probably includes limited opportunities for enhancement of existing wetlands/waterways because this alternative focuses primarily on preservation of "vernal pool" resources in the west and southwest-central portions of the Project Area, and upon Primary drainage ways and associated wetlands in the northeast-central and northeastern portions of the Project Area. While additional and less seasonal water supply would probably be generated in the eastern portion of the Project Area (due to anticipated runoff from developed areas), because the unnamed primary drainage is a seasonal swale by nature, it would be undesirable to alter its hydrology by adding water to the system. The Dry Creek watershed within the eastern portion of the Project Area is relatively small, and although additional water might be available, wetland construction/enhancement would be limited to those areas with favorable topography. Further, such construction/enhancement would be limited to that which would have no deleterious effect on Essential Fish Habitat. It might be possible to augment the Curry Creek drainage with additional wetlands, as the system is becoming "perennialized" by runoff from development upstream. However, such enhancements would be limited by the potential for indirect impacts to potential listed aquatic invertebrate habitat. In the western portion of the project area, only the primary drainage course which crosses the PV200 and PV815 properties might represent a reasonable candidate for enhancement. Although the portion that would remain intact and adequately buffered under this alternative has not been channelized, its water regime has been influenced by agricultural flows. It is possible that, due to development in the central portion of the project site (under this alternative), more water could be added to the system. However, the desirability of enhancing this reach with physical manipulation (i.e., grading to create additional or larger associated wetland areas) remains, at this point, speculative. Previously manipulated drainages in the center of the Project Area would be eliminated and/or inadequately buffered..

Other Environmental Impacts

Land Use/Noise Incompatibility

On-Site Alternative F provides for a mixed-use environment and minimizes potential land use incompatibilities because the development would be concentrated and contiguous. Alternative F would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

Power Line Corridors

Similar to the Proposed Project, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area. The Specific Plan provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR,

pp. 4.1-54 to 4.1-55.) Nonetheless, the power line corridor traverses diagonally through the western preserve area. The power line corridor is comprised of two easements containing multiple tower lines and the tower lines will need to be maintained thereby resulting in the potential for additional indirect effects to wetlands.

Biological Resources

Of the 66.12 total wetland acres anticipated to be directly impacted by Alternative F, 45.24 acres (i.e., wet areas) may be described as potential aquatic invertebrate habitat and 20.88 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, and seasonal wetland swales typically considered potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Placer Vineyards Development area, and one vernal pool tadpole shrimp cyst was reported from one wetland within the Development area. Although effectively lengthening one primary drainage course substantially (by approximately 3850 linear feet), this alternative would truncate and/or effectively compress (by the provision narrower buffers) primary drainage courses (and associated upland corridors potentially used for wildlife movement) within the central portion of the project site.

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Plan Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards.

Traffic

As with the Proposed Project, Alternative F will result in an increased volume in traffic. This increase will only be about 69% of the Proposed Project, however, since Alterative F proposes a proportionately lower number of units. Alternative F will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative F traffic will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative F would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County with fewer trips than the Proposed Project. Alternative F would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. Alternative F is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line.

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These

mitigation measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts.

Noise

Like the Proposed Project, Alternative F will likely result in an increase in noise levels due to the Alternative F's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 31% as compared to the Proposed Project due to the decreased number of dwelling units. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative F-generated traffic. In addition, the Alternative F will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will incorporate into the project adopt mitigation measures as part of the CEQA process to mitigate impacts caused by Alternative F. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative F, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative F will likely result in an increase in ROG, NOx, CO, and PM10, but likely at about 69% of the Proposed Project emissions. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, Alternative F will increase both mobile and stationary source emissions by 69% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station emissions operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative F may result in cumulative air quality impacts, and Alternative F-generated traffic would contribute to cumulative localized impact like the Proposed Project. Because development potential would be reduced within Placer Vineyards, locating development in other areas of the County would need to compensate for additional housing and non-residential uses that would then relocate to other regions in the County. This would result in additional traffic and associated potential air pollutant emissions in other areas in Placer County, rather than in a net reduction in air pollutant emissions. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses.

In order to mitigate any adverse air quality impacts, the Applicants will adopt mitigation measures to lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative F does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. This alternative would fill 66 acres of aquatic resources and would result in 30 acres fewer direct impacts than the impacts resulting from the Proposed Project. Alternative F also results in indirect impacts to aquatic resources. Alternative F is only partially consistent with the screening criteria, because although the focus of this alternative is to lessen direct impacts, Alternative F would fragment the drainage corridors, contiguous wetlands and result in water quality and secondary impacts to the preserved wetlands thereby compromising the functions and values of preserved wetlands. Finally, this alternative results in fewer significant environmental impacts when compared to the Project and other development alternatives.

7.5.9 On-Site Alternative G – EPA/Corps Alternative "B"

On-Site Alternative G consists of the Placer Vineyards Development, a residential mixed-use community, and the Infrastructure which provides the backbone infrastructure to serve the development. To the extent that such infrastructure would occur on the Project Area, the types of impacts that could be anticipated to aquatic resources have been generally identified. Where off-site infrastructure would be required to support this alternative, alignments and quantification of impacts to aquatic resources would be refined following selection of the land plan. It avoids aquatic resources located predominantly in the southern and northeastern portions of the Project Area. This alternative results in a couple of isolated "islands" in the eastern portion of the Project Area, but for the most part creates the opportunity for a continuous band of development from the southeast-central portion of the Project Area west-northwest, and then westward to its western end. (See Fig. 7.7-A.)

This alternative develops approximately 2,248 acres of the 3,744-acre site and preserves about 1,496 acres. Alternative G consists of 7,075 units (compared to 11,585 units under the Proposed Project), including 1,537 low density residential units, 3,583 medium density residential units, 1,592 high density residential units, and 363 commercial mixed-use units. In addition, it would result in the fill of 80.00 acres of wetlands and preservation of 61.99 acres. It will indirectly impact 17.69 acres of wetlands, and the total area preserved under this alternative is 1,495.6 acres.

PLACER VINEYARDS SPECIFIC PLAN

Placer County, California

June, 2008

LEGEND:

- Impact
- Preserve
- SPA & NAPOTS Areas
- Wetlands
- Placer Vineyards Specific Plan Boundary

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ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE G

Figure 7.7-A

Project Purpose

On-Site Alternative G does not fully meet the Applicants' Project Purpose. Although this on-site alternative design would provide for about 61% of the residential units in the Proposed Project, it would eliminate development of about 39% of the acreage. Consequently, in addition to residential units, Alternative G would lose approximately 1,481 acres of development, including approximately 133 acres of commercial space, 15 acres for schools, 71 acres for parks, 92 acres in major roads, 312 acres in open space, and 48 acres for religious facilities as compared to the Proposed Project.

Under Alternative G, the following uses will be eliminated: 1 middle school (out of 2 total proposed), 1 elementary school (out of 6 total proposed), 1 fire station (out of 2 total proposed), 1 transit center (out of 1 total proposed), residential uses, neighborhood and mini parks, religious facilities, business park, power center, and commercial districts. When public or quasi-public land use parcels (cemetery, corporation yard, fire station, parks, transit center, library, government center, religious facilities) are eliminated, it can be expected that Placer County will require that suitable alternative locations for these uses be reserved in the remaining land allowed to be developed under Alternative G. The size or number of parcels may be reduced to reflect the reduction in residential units allowed by the alternative but the public and quasi-public uses cannot be eliminated entirely. Placer County will require that the identified public uses be provided for the community residents.

Based on the remaining unit count for Alternative G it is likely there will be a need for 4 elementary schools, 1 middle school, and 1 high school. It is likely that the transit center and fire station land uses will need to be restored within the developable area of Alternative G.

Although the preserves identified in Alternative G are mostly concentrated in the southern and northeastern portions of the site, the design still results in scattered development with portions that are either disconnected from the remainder of the development or connected to the main portions through narrow, discontiguous portions of the Project Area. Furthermore, for some specific development projects within the Participating Properties, the developers would forego any development. For example, Gulley 20, PV 88, PV 356, PV 179A, PV 179 B, Watt x Baseline, Hodel/Doyle, and Mourier 135 would be precluded from any development. PV 815, PV 200, PV C, and PV B would be substantially impeded from development. In addition to the acreage described above, Alternative G eliminates one elementary school, a business park, power center, religious facilities, and commercial areas.

Given the scattered development proposed under this alternative and elimination of many key residential, commercial, and infrastructure uses of the property, this alternative does not meet the project purpose of creating large-scale mixed use residential community. Although this alternative would allow mixed use development within Placer Vineyards, it would effectively create two separate areas of development with limited connectivity within the developed area, thereby isolating the provision of services and limiting circulation and accessibility in the developed areas. It also would not provide for the growing population of Placer County because it would not enable the development of 2/3 of the housing proposed by the Proposed Project that

is necessary to meet Placer County growth projections. On-Site Alternative G would therefore not fully meet the Project Purpose.

Availability

This alternative is available.

Practicability

With respect to costs, Alternative G is not practicable because it foregoes 39% of the residential units as compared to the Proposed Project. As the number of residential units decrease, so the related infrastructure costs would be prohibitively high to support the remaining 61% of the residential units. Therefore, the cost per residential unit increases to the point where the project is cost-prohibitive.

Furthermore, Gulley 20, PV 88, PV 356, PV 179A, PV 179B, Watt x Baseline, and Mourier would be completely precluded from any sort of development. Consequently, the costs for these parcels would be unreasonably high as compared to other developments since they do not receive the revenue from building the residential units. PV 815, PV 200, Hodel/Doyle, PV B, and PV C would be at least partially, if not substantially precluded from developing. The costs for developing these parcels would also be unreasonably high.

Further, it is unlikely that any one landowner/developer or fewer Participating Property owners would be able to proceed with development independently, as the property owner would be required to construct all of the core backbone infrastructure to serve scattered development projects under Alternative G. Additionally, the remaining developers would be required to finance the required public facilities. Thus, it is unlikely that Alternative G development could fund the Infrastructure Elements even at a lower cost because some of the roughly $854 million project infrastructure costs in backbone infrastructure would still be required at buildout (See EPS Technical Memorandum dated September 6, 2006).

In terms of logistics, Alternative G would not be developed in a functionally-integrated manner as a master-planned mixed use community because the residential uses would not be supported by neighborhood retail, commercial, public/quasi-public land uses, and associated infrastructure. Although the land uses included in this alternative are consistent with the Placer County General Plan, Placer Vineyards Specific Plan and related approvals and comply with General Plan planning principles in place for this region since 1994, the alternative would require General Plan amendments, Specific Plan and related zoning approvals to accommodate a Specific Plan that is less intensive and discontiguous. From a size perspective, a smaller area actually would be developable given the fragmented area available for proposed land uses.

In terms of technological considerations, this alternative likely would not meet the County's requirements for the Placer Vineyards Specific Plan to provide a comprehensively planned infrastructure system, since adequate infrastructure improvements would not be included to maintain the requisite levels of service. The Infrastructure Elements would be impacted by Alternative G. The proposed preserve areas would prevent the construction of all, or a portion, of the Infrastructure Element. Each major arterial roadway – Base Line Road, Watt Avenue, West

Dyer Lane, East Dyer Lane, and 16th Street – is affected to some degree by Alternative G. Furthermore, the wet (potable water, recycled water, sewer, and storm drainage) and dry (electric, telephone, gas, cable television, and broadband) utilities within the arterial road corridors are also affected. Additionally, the shape of the proposed preserve areas will prevent construction of multiple long segments of road. The construction of the following infrastructure elements will be completely prevented under this alternative: 2 potable water well and storage tank sites (out of 5 total proposed) and proposed drainage channel corridors.

For these reasons, On-Site Alternative G is not practicable with respect to costs, logistics, or technological considerations.

Aquatic Resources Impacts

On-Site Alternative G results in the loss of approximately 18 acres of pond, 17.08 acres of vernal pool, 21.05 acres of seasonal wetlands, and 19.70 acres of riverine seasonal wetlands. The total acreage for impacted wetlands is about 80.00 acres or only 17 acres less than the Proposed Project notwithstanding the loss of two-thirds of the housing units and 1,500 acres of the developable acreage. This alternative results in the avoidance or preservation of approximately 79.68 acres of wetlands, including 15.96 acres of vernal pools, 12.01 acres of seasonal wetland swale, 15.79 acres of seasonal wetlands, 5.79 acres of creeks, and 17.80 acres of intermittent drainage. (See Fig. 7.7-B.)

In terms of acreage of impacts to delineated wetlands, the 80.00 acres of direct impacts under Alternative G include the specific impacts shown in Appendix A associated with the Applicants' individual development proposals on the Participating Properties. In summary, development of the Participating Properties would result in the impacts described further below.

- **Fong:** Under Alternative G, the Fong parcel would be able to develop its 92.6 acre-parcel with primarily low density residential and medium residential uses. Consequently, it would impact 6.14 acres of wetlands, including ephemeral drainage, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands will be preserved.

- **Capri:** Under Alternative G, Capri can develop its entire 93.9-acre parcel. The result will be mostly low and medium residential uses. Under Alternative G, 5.00 acres of wetlands would be impacted on this parcel, including drainage canals, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands would be preserved.

- **PV 815**: Alternative G results in the development of about 90% of PV 815's its 815.1 acres. It will lose an elementary school and some low density residential use.. Consequently, Alternative G results in the fill of 27.53 acres of drainage canals, riverine seasonal wetlands, seasonal marsh, seasonal wetlands, and vernal pools. It would avoid or preserve 6.15 acres of riverine seasonal wetlands, seasonal wetlands, and vernal pools and indirectly impact 1.16 acres of riverine seasonal wetlands, seasonal wetlands, and vernal pools.

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Placer County, California

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ROSEVILLE, CALIFORNIA

0' 1200' 2400' 4800' 1 mile

ALTERNATIVE G

Figure 7.7-B

- **Pan de Leon**: This 10.7-acre parcel, will be able to develop its entire area as low density residential under the Alternative G. As a result, it would impact 0.33 acres of wetlands, including creeks, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands would be preserved on this parcel.

- **DF 80**: This 80-acre parcel, will be able to develop its entire parcel, including a business park/power center, substation, and low density residential. It would impact all 0.60 acres of wetland, including creeks, drainage canals, and seasonal wetlands. No wetlands would be preserved on this parcel.

- **PV 200**: This 200-acre parcel towards the center of the Project Area loses about 60% of its development potential under Alternative G and would be unable to develop a commercial mixed use as well as medium density residential and religious uses. No wetlands will be filled on this parcel. Under Alternative G, 4.25 acres of wetlands would be avoided or preserved. 1.23 acres of wetlands would be indirectly impacted, including drainage swales, ephemeral drainage and seasonal wetlands.

- **Gulley 20**: This parcel would be precluded from developing its 19.5 acres under Alternative G. The development consists mostly of low and medium density residential use. No wetland fill would occur under Alternative G. It would indirectly impact 0.05 acres of vernal pool and avoid or preserve 0.44 acres of seasonal wetland swale and vernal pools.

- **PV 88:** This parcel will be completely precluded from developing its entire parcel too. The development includes 93.8 acres of religious facilities, and low and medium residential uses. It would l impact 0.01 acres of wetlands and avoid or preserve 6.33 acres of wetlands. It would indirectly impact 2.11 acres of wetlands. The wetlands include riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PV 290 A**: This 200-acre area will be fully developed under Alternative G. Most of the development would be commercial/mixed use, library, police/ government, and high density residential. It would impact 1.26 acres of wetlands and avoid, but indirectly impact 1.32 acres of wetlands, including ephemeral drainage and seasonal wetland.

- **PV 290 B**: All of the 100 acre parcel could be developed under Alternative G with uses such as an elementary school, medium density residential, and commercial/mixed use. Consequently, it would impact 2.81 acres of ephemeral drainage, seasonal wetlands, seasonal wetland swale, and vernal pools and avoid but indirectly impact 0.16 acres of ephemeral drainage.

- **PV A(a):** Under Alternative G, PV A(a) can fully develop its 60.5 acre parcel. This results in low, medium, and high density residential use. Therefore, PV A(a) would impact all 14.68 acres of wetlands on its parcel, including drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools.

- **PGG Property**: Alternative G results in the development of this 79-acre property. This development consists primarily of low and medium density residential. As a result, development on PGG Property would impact 6.76 acres of drainage canals, ponds, riverine seasonal wetlands, seasonal wetlands, and vernal pools. No wetlands would be preserved.

- **PV 356:** This parcel will be completely precluded from development. This 356.9-acre area would have included an elementary school, transit, fire, religious facilities, commercial/mixed use, and low, medium, and high residential uses under the Proposed Project. It will still impact 0.28 acres of seasonal wetlands and avoid or preserve 28.03 acres of wetlands including intermittent drainage, seasonal wetland, seasonal wetland swale, and vernal pools. It would indirectly impact 6.11 acres of wetlands.

- **PV 179A:** This parcel would also be completed precluded from development. These 88 acres would have included commercial/mixed use, business park and power center, and medium density residential uses. It would impact 0.19 acres of wetlands and avoid or preserve 4.52 acres of wetlands, including intermittent drainage, seasonal wetlands, and seasonal wetland swale. It indirectly impacts 0.12 acres of wetlands.

- **PV 179B:** This parcel would be completely precluded from developing its 92 acres under Alternative G. This loss is mostly a power center and medium density residential. It would avoid but indirectly impact 1.10 acres of seasonal wetlands and seasonal wetland swale, and preserve another 1.73 acres of wetlands, including intermittent drainage, seasonal wetlands, and seasonal wetland swale.

- **PV 239**: This 241.5-acre parcel, would be able to fully develop its parcel under Alternative G. The area consists mostly of an elementary school, religious facilities, and low, medium, and high density residential uses. Under Alternative G, 1.16 acres of wetlands would be impacted on this parcel. Another 0.08 acres of wetlands would be avoided, but indirectly impacted. These wetlands include seasonal wetlands and seasonal wetland swale.

- **PV A(b):** This parcel would develop its entire 265.6-acre area under Alternative G. This area consists mostly of low and medium density residential development and an elementary school. This parcel would impact 5.61 acres of wetlands, including drainage canals, ponds, and riverine seasonal wetlands. No wetlands would be preserved.

- **Watt x Baseline:** This 100.4-acre parcel, would be completely preserved under Alternative G. The lost uses consist of commercial, religious, and medium and high density residential uses. It will impact 0.10 acres of wetlands and preserve or avoid 4.73 acres of wetlands, including seasonal wetland swale and vernal pools. It would indirectly impact 1.62 acres of wetlands.

- **Mourier:** This parcel would 1 not be able to develop its 137.6 acres under Alterative G. The lost uses include religious and low and medium density residential uses. This parcel will therefore avoid or preserve 3.52 acres of creeks, seasonal wetlands, and seasonal wetland swale. 0.29 acres of these wetlands would be indirectly impacted.

- **Hodel/Doyle:** This parcel would be unable to develop about 90% of its 462.3 acres. Alternative G will eliminate the potential development of low density residential, religious facilities, and a private park/recreation center, resulting in a an isolated pocket of development surrounded by preserve on one side of the parcel and two narrow pockets of development on the other end of the parcel. Under Alternative G, 0.39 acres of wetlands would be impacted on this parcel, while 11.88 acres of vernal pools, seasonal wetlands, and seasonal wetland swale will be avoided or preserved. It would also indirectly impact 1.9 acres of wetlands.

- **PV B:** Alternative F preserves about 10% of the 123.4-acre area. The preservation area would not result in a loss of development since the area designated for preservation under Alternative G is planned as open space under the Proposed Project. This parcel would impact 6.02 acres of wetlands, including creeks, drainage canals, riverine perennial marsh, riverine seasonal wetlands, and seasonal wetlands, and preserve 5.27 acres of creeks. It will indirectly impact 0.40 acres of wetlands.

- **PV C**: Alternative F preserves about 20% of this 39.2-acre parcel. However, the preservation would not result in a loss of development since the area designated for preservation under Alternative G is planned as open space under the Proposed Project. This parcel would impact 1.13 acres of wetlands, including riverine seasonal marsh, seasonal wetlands, and vernal pools.

Infrastructure Elements

Alternative G impacts the Infrastructure Elements. Regarding direct impacts that would result from the Infrastructure Element, except where specific roadway improvements might be required, named creeks within and/or bordering the Project Area would remain unaltered and in their natural conditions, but may receive storm water discharges from other portions of the Project Area under Alternative G. As with the Proposed Project, these discharges would be metered by outfall structures designed to mimic/maintain natural flow conditions in these waterways, and would be treated by appropriate water quality treatment methods/mechanisms in order to minimize alterations to the hydrological characteristics of these creeks by attenuating water volume discharged into surface conveyances. However, the ability to control water quality

impacts and alterations to hydrology would be difficult given the fragmented nature of the development and the fact that development would occur on either side of preserved drainages. Some major roads and infrastructure could not be built.

Avoidance, Minimization and Enhancement

Alternative G results in the preservation of 1,496 acres of open space including 79.68 acres of wetlands and waters of the U.S. More than 17 acres of aquatic resources, however, would be indirectly impacted because adequate buffers would not be provided. With respect to the preservation of isolated and/or non-contiguous wetlands, Alternative G is designed to maintain viable wetlands preserve in the southwest-central, northeast-central, northeastern and eastern portions of the Project Site. Wetlands would be impacted by development in the central and western portions of the Project Area. Although Alternative G would result in direct impacts to aquatic resources, it would comply with some of the avoidance and minimization criteria described above in terms of aquatic resource functions and contribution to the aquatic ecosystem. Specifically, Alternative G would preserve contiguous core drainage course/wetland corridors in drainage basin in the southwest-central, northeast-central, northeastern, and eastern portions of the Project Area. In these areas, non-contiguous wetlands would be included within expanded preserve corridors contiguous with other preserves established to meet the avoidance and minimization criteria described in item 1, above, or where they are large enough and/or concentrated enough to assure long-term maintenance of wetland function and value. Development would impact aquatic resources in the center and eastern portion of the Project Area, however, and drainage corridors and/or contiguous wetlands would not be preserved in the central or western portions of the Project Area.

Although this alternative results in the preservation of the Dry Creek corridor, some impacts to contiguous wetlands would occur. Thus, Alternative G would partially facilitate preservation of interconnected open space and drainage corridors, in accordance with the avoidance and minimization criteria above.

Avoidance

Alternative G avoids impacts to "vernal pool" resources and drainage corridors in the southwest-central, northeast-central, northeastern, and eastern portions of the Project Area. The Alternative G land use plan, which would avoid 79.68 acres of wetlands/waters within 1,496 acres of open space, is designed to preserve (some) watersheds, maintain the minimum viable preserve size, provide adequate buffers for avoided wetlands/waters, and avoid isolation of wetlands by development. All influence the ecological viability of preserving wetland and watershed functions of various wetlands. Other factors considered in the avoidance and minimization of impacts to non-contiguous, non-linear wetlands within the Plan Area include: (1) the quality of the wetlands (e.g., degree of disturbance); (2) internal fragmentation; (3) type of land/land uses between the aquatic resource and similar aquatic resources within the Plan Area; and (4) degree of incompatibility with adjacent land uses.

The PCCP calls for large (i.e., greater than 2,000 acre) preserves located adjacent to existing preserve areas, and located in areas where long-term management practices such as grazing and controlled burning are consistent with adjacent uses. Because of surrounding land uses and the

distribution of vernal pool/seasonal wetland resources within the Project Area specifically, and the Plan Area, as a whole, however, preservation of these resources in a manner consistent with the regional conservation goals and objectives in the PCCP is not possible. The distribution of these types of resources within the Plan Area (i.e., clustered at the west and northeastern ends) will not allow the establishment of a 2,000 acre contiguous preserve within the Plan Area. There are no adjacent existing preserve areas with which to join. Further, recommended long term management practices (i.e., grazing and controlled burning) are considered incompatible with the proposed adjacent urban uses (both existing and proposed).

Accordingly, a large preserve area of about 1,000 acres would be located in the north-central and northeastern portion of the Project Area to provide for protection of two primary drainages (Curry Creek, and one unnamed), contiguous and non-contiguous wetlands (See Fig. 7.6-C). This preserve area would abut and protect the easternmost portion of Dry Creek (and its unnamed tributary) that borders the Project Area. Another preserve area of approximately 200 acres would be established in the southwest-central and western portion of the Project Area to capture the primary drainage course that crosses the PV200 and PV815 properties and include a cluster of vernal pool resources in the south-central portion of the Project Area. This smaller preserve area would coincidentally contain and protect a short segment of another primary drainage, as discussed below.

Besides the named creeks (Curry Creek and Dry Creek), other primary drainage courses were identified using HUC flow lines. Under this alternative, the westernmost, which crosses the PV815, Capri, and Fong properties, would be completely eliminated. As compared to the avoidance principles, this would result in the loss of approximately 12,470 linear feet of drainage, and approximately 67 acres of associated open space. To the east, the primary drainage course which crosses the PV200 and PV815 properties would be effectively lengthened by about 3,780 linear feet (45%) to connect with the eastern preserve area. However, the lengthened portion of this drainage would be buffered by reduced width. Approximately 3,420 more linear feet of this drainage would be coincidentally protected within the northeastern preserve area. In the central portion of the Project Area, the primary drainage corridor which crosses the PV A(b), PGG, PV A(a), and PV88 properties would be truncated. As compared to the avoidance principles, this would result in the loss of approximately 4,500 linear feet (72%) of the drainage course, and approximately 39 acres (87%) of associated open space. In the northern central portion of the project area, the primary drainage course that crosses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (Parcel 1) and D.F. 80 properties, would be subject to direct impacts at the point where it exits the project area on the D.F. 80 property and throughout its entire length across the PV 290 (Parcel 1) property. As compared to the avoidance principles, this would result in a loss of approximately 3530 linear feet (17%) of the primary drainage and approximately 18 acres (13%) of associated open space.

Minimization

Adequate buffers would be provided in the northeastern/eastern preserve and along the preserved drainage corridors in the southwest-central preserve block of the site under Alternative G. However, buffers would not be provided along the additional length of the primary drainage in the central portion of the site (across PV290, Parcel 1).

Alternative G would interrupt or truncate several primary drainage courses or wetland corridors through the center of the Project Area. As discussed above, the westernmost, which crosses the PV815, Capri, and Fong properties, would be completely eliminated. As compared to the avoidance and minimization principles, this would result in the loss of approximately 67 acres of associated open space. To the east, the primary drainage course which crosses the PV200 and PV815 properties would be subject to direct impacts where it last leaves the project site, but would be effectively lengthened by about 3,780 linear feet to connect with the eastern preserve area. However, the lengthened portion of this drainage would be buffered by reduced width. Approximately 3,420 more linear feet of this drainage would be coincidentally preserved within the northeastern preserve area. As compared to the avoidance and minimization principles, direct impacts would reduce its associated open space by approximately 2 acres (5%), while its effective lengthening and inclusion within the northeastern preserve area could be anticipated to add back approximately 9 acres (27%). Although this drainage would be contained within the northeastern preserve area, because it is located near the property boundary, it would, in places, be inadequately buffered on the south side.

In the south-central portion of the project area, the primary drainage corridor which crosses the PV A(b), PGG, PV A(a), and PV88 properties would be truncated. As compared to the avoidance principles, this would result in the loss of approximately 39 acres (87%) of associated open space. In the northern central portion of the project area, the primary drainage course that crosses the Hodel/Doyle, Watt x Baseline, PV 356, PV 179 (A and B), PV 290 (Parcel 1) and D.F. 80 properties, would be subject to direct impacts at the point where it exits the Project Area on the D.F. 80 property and throughout its entire length across the PV 290 (Parcel 1) property. As compared to the avoidance principles, this would result in a loss of approximately 18 acres (13%) of associated open space. Nonetheless, Alternative G avoids and preserves key drainage corridors in the northeastern and southwestern portions of the Project Area, thereby maintaining these features as interconnected drainage corridors.

Minimization measures would be incorporated into drainage facilities and infrastructure throughout the proposed open space areas incorporated into Alternative G, although some indirect effects nonetheless would occur as indicated in Appendix A. LIDs and BMPs would be incorporated into the design of drainage facilities to convey storm water flows at the surface and in small, vegetated sinuous channels or swales located throughout the open space area. Alternative G would incorporate conservation design elements into Project Area roadways and landscaping where development abuts preserve areas in order to direct drainage toward urban features and away from the preserve boundaries. Alternative G would incorporate the preservation of on-site preserves in perpetuity.

Enhancement

Because no additional water supply would be generated by development, depending upon further analysis, enhancement in the eastern portion of the Project Area might be infeasible. Further, enhancement in this area would be subject to the limitation of avoiding potential indirect effects to potential listed aquatic invertebrate habitat. However, Alternative G probably includes limited opportunities for enhancement of existing wetlands/waterways resources in the southwest-central portion of the Project Area. While, for the most part, previously manipulated drainages in the central portion of the Project Area would be eliminated and/or inadequately buffered, the

segment of primary drainage which crosses PV200, previously channelized and currently influenced by agricultural flows represents an apparently reasonable restoration candidate. It is possible that, due to development in the central portion of the project site (under this alternative), more water could be added to the system. Downstream, where this drainage crosses the PV815 property, and has not been channelized, its water regime has also been influenced by agricultural flows. However, the desirability of enhancing this reach with physical manipulation (i.e., grading to create additional or larger associated wetland areas) remains, at this point, speculative. Nonetheless, this alternative could provide for some enhancement of aquatic resources in the southwest-central portion of the Project Area.

Other Environmental Impacts

Land Use/Noise Incompatibility

On-Site Alternative G provides for a mixed-use environment and minimizes potential land use incompatibilities because the development would be concentrated and contiguous. Alternative G would not result in land use incompatibility or noise issues associated with the location of a school or residential development (or other sensitive receptor) in proximity to McClellan Air Force Base.

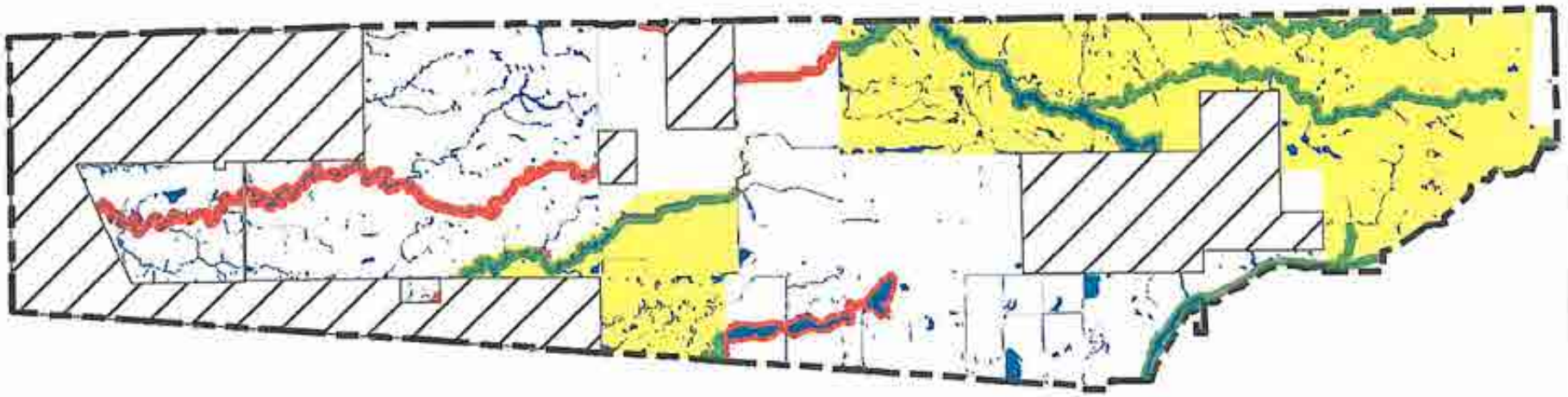
Power Line Corridors

Similar to the Proposed Project, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Plan Area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Plan Area. The Specific Plan provides a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west through the Plan Area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south. (RDEIR, pp. 4.1-54 to 4.1-55.)

Biological Resources

Of the 80.04 total wetland acres anticipated to be directly impacted by Alternative G, 38.84 acres (i.e., wet areas) may be described as potential aquatic invertebrate habitat and 41.20 acres (i.e., wet acres) are other types of wetlands/waters. Potential aquatic invertebrate habitat consists of vernal pools, seasonal wetlands, and seasonal wetland swales typically considered potential habitat for federally listed vernal pool branchiopods. Vernal pool fairy shrimp have been identified in some wetlands within the Placer Vineyards Development area, and one vernal pool tadpole shrimp cyst was reported from one wetland within the Development area. For the most part, primary drainage courses, and their associated upland buffer corridors in the western and central portions of the project site would be impacted or truncated. This would result in reduced opportunity for wildlife movement. Although a narrow corridor would be provided across the PV290 (Parcel 1 and 2) properties linking the southwest-central and northeast central preserve areas, the narrower buffer would inhibit some wildlife movement through this corridor.

	Area (Ac.)
Total Impacted Wetlands	80.00
Total Indirectly Impacted Wetlands	17.69
Total Preserved Wetlands	61.99
Total Preserved Area	1495.6



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area[2]

Avoidance and Minimization Criteria Not Preserve Area[3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

Alternative G - Avoidance of aquatic resources located predominantly in the S and NE portions of the Plan Area.

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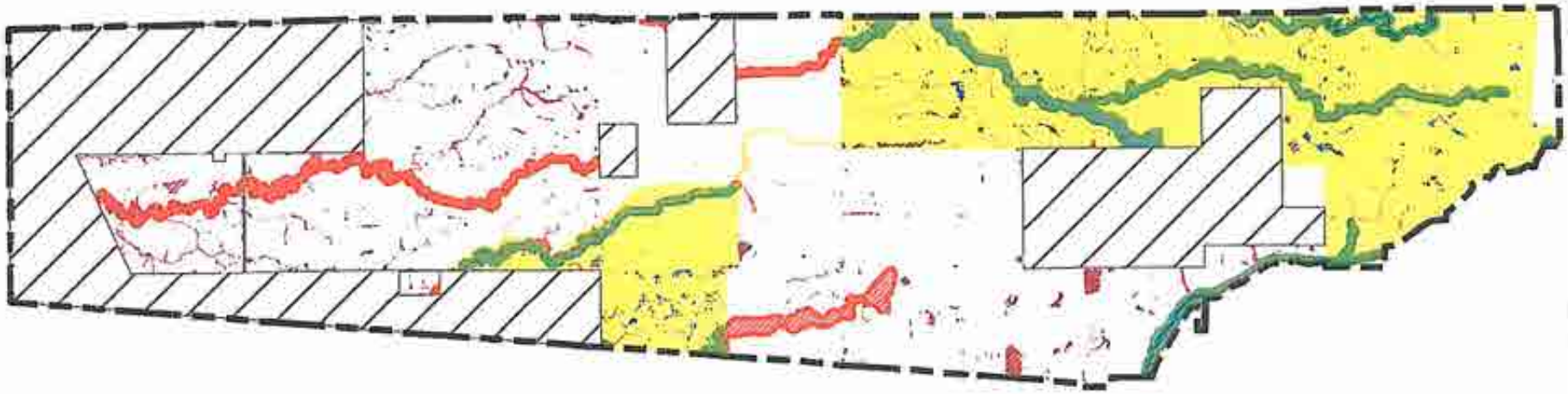
FIGURE 7.7-C

	Impact	Indirect	Preserve	Total
Channel	0.00	0.04	1.41	1.46
Creek	0.23	0.44	5.35	6.01
Drainage Canal	0.44	0.00	0.00	0.44
Drainage Swale	0.00	0.89	1.20	2.09
Ephemeral Drainage	1.41	1.47	1.24	4.12
Intermittent Drainage	0.00	0.44	17.36	17.80
Pond	18.00	0.00	0.45	18.45
Riverine Perennial Marsh	0.58	0.00	0.00	0.58
Riverine Seasonal Marsh	0.60	0.04	0.00	0.64
Riverine Seasonal Wetland	19.70	0.24	5.34	25.28
Seasonal Marsh	0.21	0.00	0.00	0.21
Seasonal Wetland	21.05	7.25	8.54	36.84
Seasonal Wetland Swale	0.71	1.90	10.11	12.72
Vernal Pool	17.68	4.96	11.00	33.04
Total	80.00	17.69	61.99	159.67

	Area (Ac.)
Total Impacted Wetlands	80.00
Total Indirectly Impacted Wetlands	17.69
Total Preserved Wetlands	61.99
Total Preserved Area	1495.6



Not a Part of this Project (NAPOTS)

Waters

Open Space to be Realized Under this Alternative[1]

Avoidance and Minimization Criteria Preserve Area[2]

Avoidance and Minimization Criteria Not Preserve Area[3]

[1] *Areas that would be preserved under the described alternative irrespective of the application of the avoidance and minimization criteria*

[2] *Areas that would be preserved if avoidance and minimization criteria were applied and also would be preserved under the described alternative*

[3] *Areas that would be preserved if avoidance and minimization criteria were applied but would not be preserved under the described alternative*

North

NOT TO SCALE

0 3,000

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Revision Date: 2008-09-25

Alternative G - Avoidance of aquatic resources located predominantly in the S and NE portions of the Plan Area.

2001-196 Placer Vineyards

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FIGURE 7.7-D

Flooding/Seismic Effects

All flooding and seismic safety considerations have been addressed in the Land Use Plan for the Placer Vineyards Development. All residences and schools would be located in the Project Area to avoid exposure of proposed residences and schools to unacceptable risks of flooding and seismic hazards.

Traffic

As with the Proposed Project, Alternative G will result in an increased volume in traffic. This increase will only be about 61% of the Proposed Project, however, since Alterative G proposes a proportionately lower number of units. Alternative G traffic will increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County compared to current conditions. Alternative G will also increase peak hour traffic volumes on study area intersections in the City of Roseville, Sacramento County, unincorporated Placer County, Sutter County, and roadways and intersections that are part of the state highway system.

Under a scenario forecasting future cumulative conditions, Alternative G would be expected to increase daily traffic volumes on study area roadways in unincorporated Placer County, Sacramento County, and Sutter County with fewer trips than the Proposed Project. Alternative G would also increase peak hour traffic volumes on study area intersections in unincorporated Placer County, the City of Roseville, Sacramento County, Sutter County, and roadways and intersections that are part of the state highway system. Alternative G is expected to increase vehicular traffic at the Riego Road crossing of the Union Pacific Rail line

The Applicants would incorporate mitigation measures into the proposed development to lessen these impacts such as preparing and implementing construction traffic management plans, constructing roadway improvements, and contributing fair share improvements. These measures, however, could adversely affect the environment and traffic in other jurisdictions. Due to the discontiguous nature of the development, although some residential subdivisions could be constructed in the Project Area, other residential and non-residential development would be located at other off-site locations in Placer County. This would result in leap frog development, and the potential development of areas located at a greater distance from urban areas thereby resulting in potential sprawl and greater associated traffic impacts.

Noise

Like the Proposed Project, Alternative G will likely result in an increase in noise levels due to the Alternative G's commercial uses, business parks, schools, public parks, fire stations, wastewater treatment plants, lift stations, and other stationary sources. This impact will be reduced by 39% as compared to the Proposed Project due to the decreased number of dwelling units. Both the on- and off-site noise levels will increase during construction as well. Furthermore, on- and off-site noise levels will likely increase as result of Alternative G-generated traffic. In addition, the Alternative G will contribute to cumulative noise increases both on- and off-site due to increased levels of traffic.

As they would for the Proposed Project, the Applicants will incorporate adopted mitigation measures into the alternative to mitigate impacts caused by Alternative G. These mitigation measures potentially include setbacks, site design/location of structures, berms, noise walls/ barriers, limited hours of operations, noise studies, and other standard noise mitigation measures.

Air Quality

Construction activities for Alternative G, such as excavation and grading, construction vehicle traffic, and wind blowing over exposed dirt, will generate exhaust and fugitive dust emissions like the Proposed Project. Specifically, Alternative G will likely result in an increase in ROG, NOx, CO, and PM10, but likely at about 61% of the Proposed Project. Construction of Infrastructure Elements will also result in adverse air quality impacts.

With respect to operational emissions, Alternative G will increase both mobile and stationary source emissions by 61% of the Proposed Project. It will also add additional vehicles on the local roadway system, and the sewer lift station emissions operations could potentially cause offensive odors. There may also be some air quality degradation as a result of increased volumes of wastewater requiring treatment off-site. Lastly, Alternative G may result in cumulative air quality impacts, and Alternative G-generated traffic would contribute to a cumulative localized impact like the Proposed Project. Because development potential would be reduced within Placer Vineyards, locating development in other areas of the County would need to compensate for additional housing and non-residential uses that would then relocate to other regions in the County. This would result in additional traffic and associated potential air pollutant emissions in other areas in Placer County, rather than in a net reduction in air pollutant emissions. Moreover, the greater potential for sprawl would generate increase air pollutant emissions associated with driving greater commute distances because residential development would no longer be in proximity to commercial uses.

In order to mitigate any adverse air quality impacts, the Applicants will incorporate mitigation measures into the Project to lessen these impacts. The mitigation measures include controlling dust, reducing wind erosion, shutting off construction equipment when not in use, requiring parking lot tree plantings, using the lowest-emitting architectural coatings during construction, participating in off-site mitigation programs, prohibiting open burning, and adopting other mitigation measures proposed by the air quality district.

Conclusion

Alternative G does not meet the Applicants' project purpose, although this alternative is available. Moreover, this alternative does not satisfy the logistical, technological, and cost criteria for practicability. This alternative would fill 80 acres of aquatic resources and would result in direct impacts to 17 fewer acres than the impacts resulting from the Proposed Project. Alternative G also results in indirect impacts to aquatic resources. Alternative G is only partially consistent with the screening criteria, because although the focus of this alternative is to lessen direct impacts, Alternative G would fragment the drainage corridors, contiguous wetlands and result in water quality and secondary impacts to the preserved wetlands thereby compromising the functions and values of preserved wetlands. Finally, this alternative results in other

significant environmental impacts but the impacts would be less that the Project and other development alternatives.

7.6 Conclusions Regarding On-Site Alternatives

Tables 2 and 6 summarize the findings regarding the screening of the on-site alternatives described above. Based on the screening analysis, On-Site Alternative E – Total Avoidance results in the fewest effects on aquatic resources with no impacts to aquatic resources. However, none of the on-site alternatives are practicable.

The Proposed Project is the only alternative that meets the project purpose, is available and practicable. Development of the mixed use community results in approximately 97 acres of direct impacts to wetlands. Due to the Proposed Project's configuration and ability to accommodate the project, as well as its ability to meet the cost, logistics, and technological criteria, and its avoidance and minimization of impacts to aquatic resources, development of the Proposed Project on the Project Site is the least environmentally damaging practicable alternative.

Table 6
Summary of On-Site Alternatives

Alternative	Summary of Evaluation	Rejected?
Proposed Project	• Achieves project purpose • Available • Practicable based on cost, logistics and technological considerations. • Results in total of approximately 97.43 acres of fill; avoidance or preservation to be realized under this alternative would be 62.25 acres, but 18.62 acres of those acres would be indirectly affected. • Other environmental impacts are primarily related to traffic, noise, and air quality. It will result in direct impacts to 73.78 acres of potential habitat for federally-listed aquatic invertebrates	No
On-Site Alternative A – Preservation of listed invertebrate habitat with a 250-foot buffer	• Does not achieve project purpose since it only provides for about half of the residential units as the Proposed Project and eliminates development of about half of the overall Project developable acreage. • Available • Not practicable because the substantial decrease in the number of residential units increases the cost of providing necessary backbone infrastructure; excludes many land owners from development; would not be developed in a functionally-integrated manner; results in pockets and islands of disconnected development. • Directly impacts 43.35 acres of wetlands (44% of the Proposed Project impacts); results in indirect effects to approximately 15.04 acres (81% of the Proposed Project impacts); complies with some of the avoidance and minimization criteria; total avoidance to be realized under this alternative would be 116.32 acres. • Other environmental impacts include traffic, noise, and air quality. It will result in direct impacts to 5.72	Yes

Alternative	Summary of Evaluation	Rejected?
	acres of potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	
On-Site Alternative B – Further minimization of impacts to aquatic resources in the west and northeast areas	• Does not achieve the project purpose because although it preserves only 2,008 acres of the 3,744-acre site, only a fraction of the remaining area would actually be developable given the fragmented area available for proposed land uses; provides for only about half of the residential units included in the Proposed Project. • Available • Not practicable because it foregoes about half of the residential units and the related infrastructure costs would be prohibitively high to support the remaining 50% of the residential uses; many landowners would have to forego any development; would not be developed in a functionally-integrated manner • Directly impacts 67.50 acres of wetlands (70% of the Proposed Project impacts); results in indirect effects to approximately 20.62 acres (111% of the Proposed Project impacts); complies with many of the avoidance and minimization criteria; total avoidance to be realized under this alternative would be 92.17 acres • Other environmental impacts include traffic, noise, and air quality. It will result in direct impacts to 33.58 acres of potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	Yes
On-Site Alternative C – 85% avoidance of vernal pools resources	• Does not achieve the project purpose because it only provides for about 38% of the residential units as compared to the Proposed Project; although it preserves 2,572 acres of the 3,744-acre site, only a fraction of the area would actually be developable given the fragmented area available for proposed land uses. • Available	Yes

Alternative	Summary of Evaluation	Rejected?
	• Not practicable because it foregoes 62% of the residential units as compared to the Proposed Project and the related infrastructure costs would be prohibitively high to support the remaining 38% of the residential uses; many landowners would forego any development; would not be developed in a functionally-integrated manner • Directly impacts 44.22 acres of wetlands (45% of the Proposed Project impacts); indirect impacts to 19.03 acres of wetlands (102% of the Proposed Project impacts); total avoidance to be realized under this alternative would be 115.45 acres • Other environmental impacts include traffic, noise, and air quality. It will result in direct impacts to 23.20 acres of potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	
On-Site Alternative D – Avoidance of wetlands with a 50-foot buffer, developing 3,015 acres	• Does not achieve the project purpose because it only provides for about 85% of the residential units as compared to the Proposed Project; because although it preserves only 794 acres of the 3,744-acre site, substantially less are would actually be developable given the fragmented area available for proposed land uses • Available • Not practicable because it foregoes 15% of the residential units as compared to the Proposed Project and the related infrastructure costs would be prohibitively high to support the remaining 85% of the residential uses; many land owners would have to forego any development; would not be developed in a functionally-integrated manner • No fill; indirect impacts to 84.67 acres of indirect impacts to aquatic resources (more than 4.5 times that of the Proposed Project impacts); total avoidance to be realized under this alternative would be 159.67 acres; complies with many of the avoidance and minimization criteria	Yes

Alternative	Summary of Evaluation	Rejected?
	• Other environmental impacts include traffic, noise, and air quality. It will result in no direct impacts to potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	
On-Site Alternative E – No development of the Plan Area	• Does not achieve the project purpose because it does not allow for any development • Available • Not practicable because it foregoes all of the development. • No fill; no direct or indirect impacts to aquatic resources. • Development would occur elsewhere to accommodate Placer County population growth and the same environmental impacts would occur elsewhere and may be greater due to the potential for development scattered throughout the region. It will result in no direct impacts to potential habitat for federally-listed aquatic invertebrates.	Yes
On-Site Alternative F – Further avoidance of impacts to aquatic resources in the west and northeast areas	• Does not achieve the project purpose because it provides for less than 70% of the residential units as compared to the Proposed Project; although it preserves only 1,490 acres of the 3,744-acre site, less than 2,000 acres would actually be developable given the fragmented area available for proposed land uses • Available • Not practicable because it foregoes 30% of the residential units as compared to the Proposed Project and the related infrastructure costs would be prohibitively high to support the remaining 70% of the residential uses; many land owners would have to forego any development; would not be developed in a functionally-integrated manner • Directly impacts 66.12 acres (68% of the Proposed Project impacts); indirect impacts to 28.53 acres of	Yes

Alternative	Summary of Evaluation	Rejected?
	aquatic resources (or 1.5 times the Proposed Project impacts); complies with many of the avoidance and minimization criteria; total avoidance to be realized under this alternative would be 93.55 acres • Other environmental impacts include traffic, noise, and air quality. It will result in direct impacts to 45.24 acres of potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	
On-Site Alternative G – Avoidance of aquatic resources in the south and northeast areas.	• Does not achieve the project purpose because it only provides for about 60% of the residential units as compared to the Proposed Project; because although it preserves only 1,489 acres of the 3,744-acre site, less than 2,000 acres would actually be developable given the fragmented area available for proposed land uses • Available • Not practicable because it foregoes 40% of the residential units as compared to the Proposed Project and the related infrastructure costs would be prohibitively high to support the remaining 60% of the residential uses; many land owners would have to forego any development; would not be developed in a functionally-integrated manner • Directly impacts 80.00 acres (82% of the Proposed Project); indirect impacts to 17.69 acres of aquatic resources (95% of the Proposed Project); complies with many of the avoidance and minimization criteria; total avoidance to be realized under this alternative would be 79.68 acres • Other environmental impacts include traffic, noise, and air quality. It will result in direct impacts to 38.84 acres of potential habitat for federally-listed aquatic invertebrates. Impacts are less than those associated with the Proposed Project due to reduction in development.	Yes

546193125469v2

APPENDIX A

Land Use Description	Proposed Project July 2007 Approved Placer Vineyards Specific Plan excluding SPA and non-participants	Alternative A Preservation of listed invertebrate habitat with a 250-foot buffer	Alternative B On-site alternative with futher minimization of impacts to aquatic resources located in the W and NE portions of the Plan Area	Alternative C 85% avoidance of vernal pools resources	Alternative D Avoidance of wetlands with a 50-foot buffer resulting in dev't of 3,015 acres of the Plan Area	Alternative E No dev't of the Plan Area	Alternative F On-site alternative with further avoidance of impacts to aquatic resources located in the W and NE portions of the Plan Area	Alternative G Avoidance of aquatic resources located predominantly in the S and NE portions of the Plan Area.
Dwelling Units								
Impacted Area								
Low Density Residential Units	2,961	1,246	1,547	821	2,484	0	1,924	1,537
Medium Density Residential Units	5,508	2,599	2,470	2,343	4,516	0	3,667	3,583
High Density Residential Units	2,537	1,452	1,452	1,034	2,107	0	2,041	1,592
Commercial Mixed Use Units	579	311	182	148	470	0	379	363
Total impacted area units	11,585	5,608	5,651	4,346	9,579	0	8,011	7,075
Preserved Area								
Low Density Residential Units	0	1,715	1,414	2,140	477	2,961	1,037	1,424
Medium Density Residential Units	0	2,909	3,038	3,165	990	5,508	1,841	1,925
High Density Residential Units	0	1,085	1,085	1,503	430	2,537	496	945
Commercial Mixed Use Units	0	268	397	431	109	579	200	216
Total preserved area units	0	5,977	5,934	7,239	2,006	11,585	3,574	4,510
Total number of dwelling units	**11,585**	**11,585**	**11,585**	**11,585**	**11,585**	**11,585**	**11,585**	**11,585**
Non-Residential Acreage								
Impacted acres	1,063.4	819.0	757.1	455.6	1,281.7	0.0	904.6	1,064.0
Preserved acres	675.5	919.9	981.8	1,283.3	457.2	1,738.9	834.3	674.9
Total non-residential acreage	1,738.9	1,738.9	1,738.9	1,738.9	1,738.9	1,738.9	1,738.9	1,738.9
Impacted Area								
Residential (acres)	2,005.5	920.9	978.9	717.0	1,669.2	0.0	1,349.2	1,191.7
Commercial (acres)	277.7	124.5	92.0	76.6	231.0	0.0	197.2	144.9
Public Use (acres)	50.5	16.1	13.0	8.3	41.9	0.0	15.2	46.0
Schools (acres)	167.0	86.9	48.2	27.4	138.6	0.0	70.5	151.8
Parks (acres)	199.0	101.4	93.1	44.6	163.7	0.0	127.9	128.5
Major Roads (acres)	295.2	144.4	162.4	103.8	234.3	0.0	187.2	203.2
Open Space (acres)	0.0	326.9	323.8	180.6	417.5	0.0	275.7	363.5
Religious Facilities (acres)	74.0	18.8	24.6	14.3	54.7	0.0	30.9	26.1
Other (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total impacted area	3,068.9	1739.9	1,736.0	1,172.6	2,950.9	0.0	2,253.8	2,255.7
Preserved Area								
Residential (acres)	0.0	1084.6	1,026.6	1288.5	336.3	2005.5	656.3	813.6
Commercial (acres)	0.0	153.2	185.7	201.1	46.7	277.7	80.5	132.8
Public Use (acres)	0.0	34.4	37.5	42.2	8.6	50.5	35.3	4.5
Schools (acres)	0.0	80.1	118.8	139.6	28.4	167.0	96.5	15.2
Parks (acres)	0.0	97.6	105.9	154.4	35.3	199.0	71.1	70.5
Major Roads (acres)	0.0	150.8	132.8	191.4	60.9	295.2	108.0	92.0
Open Space (acres)	675.5	348.6	351.7	494.9	258.0	675.5	399.8	312.0
Religious Facilities (acres)	0.0	55.2	49.4	59.7	19.3	74.0	43.1	47.9
Other (acres)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total preserved area	675.5	2004.5	2,008.4	2,571.8	793.5	3744.4	1,490.6	1,488.7
Total project acreage	**3,744.4**	**3,744.4**	**3,744.4**	**3,744.4**	**3,744.4**	**3,744.4**	**3,744.4**	**3,744.4**

Updated: 8/28/2008

			Wetlands Outside Record of Survey Boundary	Proposed Project							Alternative A					Alternative B				
				Impact: Fill Impact*	Impact: Enhancement/ Restoration Impact	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total
01a	Doyle	Channel	0.003	0.07	0.00	0.08	0.74	0.65	1.38	1.46	0.14	0.03	1.29	1.32	1.46	0.14	0.00	1.32	1.32	1.46
		Seasonal Wetland Swale	0.000	0.78	0.00	0.78	2.37	0.00	2.37	3.15	1.51	1.62	0.02	1.65	3.16	0.00	0.50	2.66	3.16	3.16
		Vernal Pool	0.000	3.54	0.09	3.64	1.09	0.00	1.09	4.73	0.00	0.00	4.73	4.73	4.73	0.39	2.06	2.28	4.34	4.73
	Doyle Total		0.003	4.40	0.10	4.50	4.20	0.65	4.84	9.34	1.65	1.65	6.04	7.70	9.34	0.53	2.56	6.26	8.82	9.34
01b	Hodel	Seasonal Wetland Swale	0.000	0.24	0.30	0.54	0.01	0.00	0.01	0.55	0.19	0.34	0.03	0.37	0.55	0.00	0.00	0.55	0.55	0.55
		Vernal Pool	0.000	2.38	0.00	2.38	0.00	0.00	0.00	2.38	0.00	0.00	2.38	2.38	2.38	0.00	1.73	0.64	2.38	2.38
	Hodel Total		0.000	2.62	0.30	2.92	0.01	0.00	0.01	2.93	0.19	0.34	2.40	2.74	2.93	0.00	1.73	1.20	2.93	2.93
02	Mourier 135	Creek	0.000	0.04	0.00	0.04	0.04	0.44	0.48	0.52	0.52	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.52
		Seasonal Wetland	0.000	2.26	0.00	2.26	0.00	0.00	0.00	2.26	0.00	0.00	2.26	2.26	2.26	2.26	0.00	0.00	0.00	2.26
		Seasonal Wetland Swale	0.000	0.52	0.00	0.52	0.22	0.00	0.22	0.74	0.38	0.36	0.00	0.36	0.74	0.74	0.00	0.00	0.00	0.74
	Mourier 135 Total		0.000	2.82	0.00	2.82	0.26	0.44	0.70	3.52	0.90	0.36	2.26	2.62	3.52	3.52	0.00	0.00	0.00	3.52
03	Watt x Baseline	Seasonal Wetland Swale	0.067	2.31	0.61	2.92	0.42	0.00	0.42	3.34	0.46	2.23	0.66	2.89	3.34	0.00	0.95	2.39	3.34	3.34
		Vernal Pool	0.000	1.24	0.11	1.36	0.13	0.00	0.13	1.49	0.00	0.00	1.49	1.49	1.49	0.00	0.67	0.82	1.49	1.49
	Watt x Baseline Total		0.067	3.55	0.73	4.28	0.55	0.00	0.55	4.83	0.46	2.23	2.15	4.38	4.83	0.00	1.62	3.21	4.83	4.83
04a	PV 179a	Intermittent Drainage	0.000	0.08	1.15	1.23	0.67	1.14	1.80	3.03	1.15	0.07	1.82	1.89	3.03	0.00	0.00	3.03	3.03	3.03
		Seasonal Wetland	0.000	1.17	0.08	1.25	0.00	0.00	0.00	1.25	0.00	0.00	1.25	1.25	1.25	0.00	0.28	0.97	1.25	1.25
		Seasonal Wetland Swale	0.000	0.31	0.20	0.52	0.04	0.00	0.04	0.56	0.06	0.41	0.08	0.49	0.56	0.00	0.03	0.52	0.56	0.56
	PV 179a Total		0.000	1.56	1.43	2.99	0.71	1.14	1.85	4.83	1.21	0.48	3.15	3.62	4.83	0.00	0.31	4.52	4.83	4.83
04b	PV 179b	Intermittent Drainage	0.000	0.00	0.00	0.00	0.03	0.00	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03
		Seasonal Wetland	0.001	1.74	0.36	2.10	0.00	0.00	0.00	2.10	0.00	0.00	2.10	2.10	2.10	0.00	0.85	1.25	2.10	2.10
		Seasonal Wetland Swale	0.000	0.68	0.03	0.70	0.01	0.00	0.01	0.71	0.19	0.44	0.07	0.52	0.71	0.00	0.10	0.61	0.71	0.71
	PV 179b Total		0.001	2.42	0.39	2.80	0.03	0.00	0.03	2.84	0.19	0.44	2.20	2.64	2.84	0.00	0.95	1.88	2.84	2.84
06	PV C	Riverine Seasonal Marsh	0.000	0.17	0.00	0.17	0.04	0.43	0.47	0.64	0.32	0.16	0.15	0.31	0.64	0.64	0.00	0.00	0.00	0.64
		Seasonal Wetland	0.000	0.15	0.00	0.15	0.26	0.00	0.26	0.42	0.00	0.00	0.42	0.42	0.42	0.42	0.00	0.00	0.00	0.42
		Vernal Pool	0.000	0.00	0.00	0.00	0.12	0.00	0.12	0.12	0.00	0.00	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.12
	PV C Total		0.000	0.32	0.00	0.32	0.42	0.43	0.85	1.17	0.32	0.16	0.68	0.85	1.17	1.17	0.00	0.00	0.00	1.17
07	PV 356	Intermittent Drainage	0.000	0.94	1.51	2.45	2.02	10.27	12.29	14.75	9.28	1.29	4.18	5.47	14.75	0.09	0.45	14.20	14.65	14.75
		Seasonal Wetland	0.000	8.69	0.22	8.91	0.13	0.00	0.13	9.03	0.00	0.00	9.03	9.03	9.03	4.45	0.98	3.60	4.58	9.03
		Seasonal Wetland Swale	0.000	2.15	0.66	2.81	0.09	0.00	0.09	2.90	1.43	1.44	0.03	1.47	2.90	0.10	0.58	2.22	2.80	2.90
		Vernal Pool	0.000	1.63	0.00	1.63	0.00	0.00	0.00	1.63	0.00	0.00	1.63	1.63	1.63	0.00	0.00	1.63	1.63	1.63
	PV 356 Total		0.000	13.41	2.39	15.80	2.24	10.27	12.51	28.31	10.71	2.73	14.87	17.60	28.31	4.65	2.02	21.65	23.66	28.31
08	PV B	Creek	0.000	0.33	0.00	0.33	0.22	4.72	4.94	5.27	4.26	0.54	0.46	1.00	5.27	5.27	0.00	0.00	0.00	5.27
		Drainage Canal	0.000	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01
		Riverine Perennial March	0.000	0.00	0.00	0.00	0.09	0.49	0.58	0.58	0.58	0.00	0.00	0.00	0.58	0.58	0.00	0.00	0.00	0.58
		Riverine Seasonal Wetland	0.000	0.09	0.00	0.09	0.00	0.00	0.00	0.09	0.05	0.00	0.04	0.04	0.09	0.09	0.00	0.00	0.00	0.09
		Seasonal Wetland	0.000	5.34	0.00	5.34	0.00	0.00	0.00	5.34	0.00	0.00	5.34	5.34	5.34	5.34	0.00	0.00	0.00	5.34
	PV B Total		0.000	5.77	0.00	5.77	0.32	5.21	5.52	11.29	4.89	0.55	5.85	6.40	11.29	11.29	0.00	0.00	0.00	11.29
09a	PV A(a)	Drainage Canal	0.000	0.04	0.04	0.07	0.02	0.01	0.03	0.10	0.01	0.01	0.07	0.09	0.10	0.10	0.00	0.00	0.00	0.10
		Pond	0.000	0.07	0.00	0.07	0.93	4.22	5.14	5.22	2.93	0.65	1.63	2.28	5.22	5.22	0.00	0.00	0.00	5.22
		Riverine Seasonal Wetland	0.000	0.12	0.00	0.12	0.01	0.00	0.01	0.12	0.04	0.02	0.07	0.09	0.12	0.12	0.00	0.00	0.00	0.12
		Seasonal Wetland	0.000	8.73	0.26	8.99	0.01	0.00	0.01	9.00	0.00	0.00	9.00	9.00	9.00	9.00	0.00	0.00	0.00	9.00
		Vernal Pool	0.000	0.05	0.16	0.21	0.03	0.00	0.03	0.24	0.00	0.00	0.24	0.24	0.24	0.24	0.00	0.00	0.00	0.24
	PV A(a) Total		0.000	9.01	0.46	9.47	0.99	4.22	5.22	14.68	2.98	0.68	11.02	11.70	14.68	14.68	0.00	0.00	0.00	14.68
09b	PV A(b)	Drainage Canal	0.000	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.02
		Pond	0.000	0.17	0.00	0.17	0.74	4.68	5.42	5.59	4.88	0.27	0.43	0.71	5.59	5.59	0.00	0.00	0.00	5.59
		Riverine Seasonal Wetland	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PV A(b) Total		0.000	0.18	0.00	0.18	0.74	4.68	5.42	5.61	4.89	0.27	0.45	0.72	5.61	5.61	0.00	0.00	0.00	5.61
10	Dyer Lane	Seasonal Wetland	0.000	1.11	0.00	1.11	0.00	0.00	0.00	1.11	0.00	0.00	1.11	1.11	1.11	1.11	0.00	0.00	0.00	1.11
		Seasonal Wetland Swale	0.000	0.13	0.00	0.13	0.00	0.00	0.00	0.13	0.03	0.10	0.00	0.10	0.13	0.13	0.00	0.00	0.00	0.13
	Dyer Lane Total		0.000	1.24	0.00	1.24	0.00	0.00	0.00	1.24	0.03	0.10	1.11	1.21	1.24	1.24	0.00	0.00	0.00	1.24
11	PGG	Drainage Canal	0.000	0.08	0.01	0.10	0.00	0.00	0.01	0.10	0.04	0.00	0.06	0.07	0.10	0.10	0.00	0.00	0.00	0.10
		Pond	0.000	0.00	0.00	0.00	0.12	5.06	5.18	5.18	2.36	0.92	1.91	2.82	5.18	5.18	0.00	0.00	0.00	5.18
		Riverine Seasonal Wetland	0.000	0.23	0.00	0.23	0.04	0.21	0.25	0.48	0.05	0.04	0.39	0.43	0.48	0.26	0.02	0.20	0.22	0.48
		Seasonal Wetland	0.000	0.28	0.00	0.28	0.15	0.00	0.15	0.43	0.00	0.00	0.43	0.43	0.43	0.36	0.08	0.00	0.08	0.43
		Vernal Pool	0.000	0.32	0.00	0.32	0.24	0.00	0.24	0.56	0.00	0.00	0.56	0.56	0.56	0.23	0.32	0.00	0.32	0.56
	PGG Total		0.000	0.91	0.01	0.93	0.56	5.27	5.83	6.76	2.45	0.96	3.35	4.31	6.76	6.13	0.42	0.20	0.63	6.76
12a	PV 290a	Ephemeral Drainage	0.000	2.29	0.00	2.29	0.00	0.00	0.00	2.29	1.00	0.09	1.19	1.28	2.29	2.29	0.00	0.00	0.00	2.29
		Seasonal Wetland	0.000	0.29	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.29
	PV 290a Total		0.000	2.57	0.00	2.57	0.00	0.00	0.00	2.57	1.00	0.09	1.48	1.57	2.57	2.57	0.00	0.00	0.00	2.57
12b	PV 290b	Ephemeral Drainage	0.000	0.40	0.10	0.50	0.00	0.00	0.00	0.50	0.40	0.04	0.06	0.11	0.50	0.46	0.04	0.00	0.04	0.50
		Seasonal Wetland	0.000	0.09	0.00	0.09	0.00	0.00	0.00	0.09	0.00	0.00	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.09
		Seasonal Wetland Swale	0.000	0.55	0.04	0.60	0.00	0.00	0.00	0.60	0.16	0.41	0.03	0.44	0.60	0.00	0.37	0.22	0.60	0.60
		Vernal Pool	0.000	1.78	0.00	1.78	0.00	0.00	0.00	1.78	0.00	0.00	1.78	1.78	1.78	1.57	0.17	0.04	0.20	1.78
	PV 290b Total		0.000	2.82	0.15	2.97	0.00	0.00	0.00	2.97	0.55	0.46	1.96	2.42	2.97	2.13	0.58	0.26	0.84	2.97
14	DF 80	Creek	0.000	0.14	0.00	0.14	0.02	0.00	0.02	0.16	0.14	0.01	0.01	0.02	0.16	0.16	0.00	0.00	0.00	0.16
		Drainage Canal	0.000	0.11	0.00	0.11	0.00	0.00	0.00	0.11	0.06	0.01	0.04	0.05	0.11	0.05	0.05	0.00	0.05	0.11
		Seasonal Wetland	0.000	0.33	0.00	0.33	0.00	0.00	0.00	0.33	0.00	0.00	0.33	0.33	0.33	0.33	0.00	0.00	0.00	0.33
	DF 80 Total		0.001	0.58	0.00	0.58	0.02	0.00	0.02	0.60	0.20	0.02	0.38	0.40	0.60	0.55	0.05	0.00	0.05	0.60
15	PV 200	Drainage Swale	0.000	1.37	0.63	1.99	0.09	0.00	0.09	2.09	1.31	0.78	0.00	0.78	2.09	2.09	0.00	0.00	0.00	2.09
		Ephemeral Drainage	0.000	0.90	0.12	1.03	0.23	0.00	0.23	1.26	0.67	0.11	0.48	0.59	1.26	1.26	0.00	0.00	0.00	1.26
		Pond	0.000	0.33	0.06	0.39	0.06	0.00	0.06	0.45	0.24	0.13	0.08	0.21	0.45	0.45	0.00	0.00	0.00	0.45
		Seasonal Wetland	0.000	0.45	0.00	0.45	0.00	0.00	0.00	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.00	0.00	0.00	0.45
	PV 200 Total		0.000	3.06	0.81	3.86	0.39	0.00	0.39	4.25	2.22	1.02	1.01	2.03	4.25	4.25	0.00	0.00	0.00	4.25
16	PV 88	Riverine Seasonal Wetland	0.000	0.15	0.09	0.24	0.11	0.12	0.22	0.47	0.00	0.00	0.47	0.47	0.47	0.03	0.09	0.35	0.44	0.47
		Seasonal Wetland	0.000	0.68	0.03	0.72	0.24	0.00	0.24	0.96	0.00	0.00	0.96	0.96	0.96	0.14	0.56	0.27	0.83	0.96
		Vernal Pool	0.000	3.65	0.78	4.43	0.49	0.00	0.49	4.91	0.00	0.00	4.91	4.91	4.91	1.74	2.06	1.11	3.18	4.91
	PV 88 Total		0.000	4.48	0.91	5.39	0.84	0.12	0.95	6.34	0.00	0.00	6.34	6.34	6.34	1.90	2.71	1.73	4.44	6.34
17	Gully 20	Seasonal Wetland Swale	0.000	0.02	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.02	0.00	0.02	0.00	0.02	0.02
		Vernal Pool	0.000	0.42	0.00	0.42	0.00	0.00	0.00	0.42	0.00	0.00	0.42	0.42	0.42	0.10	0.32	0.00	0.32	0.42
	Gully 20 Total		0.000	0.44	0.00	0.44	0.00	0.00	0.00	0.44	0.00	0.00	0.44	0.44	0.44	0.10	0.34	0.00	0.34	0.44
19	PV 815	Drainage Canal	0.002	0.03	0.00	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.02	0.03	0.03	0.00	0.02	0.00	0.03	0.03
		Riverine Seasonal Wetland	0.004	9.89	0.09	9.99	1.40	7.89	9.29	19.27	6.76	1.72	10.79	12.51	19.27	5.08	0.47	13.72	14.19	19.27
		Seasonal Marsh	0.000	0.21	0.00	0.21	0.00	0.00	0.00	0.21	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.21	0.21	0.21
		Seasonal Wetland	0.000	2.28	0.04	2.31	0.35	0.00	0.35	2.66	0.00	0.00	2.66	2.66	2.66	0.14	0.50	2.01	2.52	2.66
		Vernal Pool	0.083	9.09	0.25	9.35	2.16	0.00	2.16	11.51	0.00	0.00	11.51	11.51	11.51	0.84	3.46	7.20	10.66	11.51
	PV 815 Total		0.089	21.50	0.38	21.88	3.91	7.89	11.79	33.68	6.76	1.73	25.19	26.92	33.68	6.07	4.46	23.15	27.61	33.68
21	Pan de Leon	Creek	0.002	0.07	0.00	0.07	0.00	0.00	0.00	0.07	0.00	0.01	0.06	0.07	0.07	0.07	0.00	0.00	0.00	0.07
		Riverine Seasonal Wetland	0.000	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01
		Seasonal Wetland	0.000	0.09	0.00	0.09	0.00	0.00	0.00	0.09	0.00	0.00	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.09
		Vernal Pool	0.001	0.16	0.00	0.16	0.00	0.00	0.00	0.16	0.00	0.00	0.16	0.16	0.16	0.13	0.03	0.00	0.03	0.16
	Pan de Leon Total		0.004	0.33	0.00	0.33	0.00	0.00	0.00	0.33	0.00	0.01	0.32	0.33	0.33	0.28	0.04	0.00	0.04	0.33
23	Capri	Drainage Canal	0.000	0.00	0.00	0.00	0.01	0.06	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07
		Riverine Seasonal Wetland	0.000	2.06	0.29	2.35	0.19	0.70	0.89	3.25	0.58	0.37	2.30	2.67	3.25	0.00	0.03	3.22	3.25	3.25
		Seasonal Wetland	0.000	0.01	0.00	0.01	0.02	0.00	0.02	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03
		Vernal Pool	0.000	0.65	0.15	0.80	0.85	0.01	0.85	1.66	0.00	0.00	1.66	1.66	1.66	0.00	0.86	0.80	1.66	1.66
	Capri Total		0.000	2.72	0.44	3.16	1.07	0.77	1.84	5.00	0.58	0.37	4.06	4.42	5.00	0.00	0.89	4.11	5.00	5.00
24	Fong	Ephemeral Drainage	0.000	0.00	0.00	0.01	0.01	0.06	0.07	0.08	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.07	0.08	0.08
		Pond	0.000	0.00	0.00	0.00	0.01	2.00	2.01	2.01	1.17	0.39	0.45	0.84	2.01	0.02	0.09	1.89	1.99	2.01
		Riverine Seasonal Wetland	0.000	0.96	0.17	1.13	0.04	0.42	0.46	1.59	0.01	0.00	1.57	1.58	1.59	0.13	0.49	0.97	1.46	1.59
		Seasonal Wetland	0.003	0.70	0.01	0.71	0.25	0.04	0.29	1.00	0.00	0.00	1.00	1.00	1.00	0.68	0.26	0.06	0.32	1.00
		Vernal Pool	0.000	0.07	0.31	0.38	1.04	0.04	1.08	1.46	0.00	0.00	1.46	1.46	1.46	0.00	1.09	0.38	1.46	1.46
	Fong Total		0.003	1.73	0.50	2.23	1.35	2.56	3.91	6.14	1.18	0.40	4.56	4.96	6.14	0.83	1.93	3.38	5.31	6.14
Total			0.168	88.45	8.98	97.43	18.62	43.63	62.25	159.67	43.35	15.04	101.28	116.32	159.67	67.50	20.62	71.56	92.17	159.67

			Alternative C					Alternative D					Alternative E					Alternative F					Alternative G				
			Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total	Impact Total	Preserve: Indirect	Preserve: Preserve	Preserve: Total	Total
01a	Doyle	Channel	0.00	0.04	1.41	1.46	1.46	0.00	0.00	1.46	1.46	1.46	0.00	0.00	1.46	1.46	1.46	0.01	0.04	1.41	1.45	1.46	0.00	0.04	1.41	1.46	1.46
		Seasonal Wetland Swale	0.00	0.08	3.08	3.16	3.16	0.00	3.16	0.00	3.16	3.16	0.00	0.00	3.16	3.16	3.16	0.52	2.61	0.03	2.64	3.16	0.05	0.03	3.08	3.11	3.16
		Vernal Pool	0.00	0.77	3.96	4.73	4.73	0.00	4.73	0.00	4.73	4.73	0.00	0.00	4.73	4.73	4.73	2.98	1.74	0.02	1.75	4.73	0.00	0.86	3.87	4.73	4.73
	Doyle Total		0.00	0.89	8.46	9.34	9.34	0.00	7.89	1.46	9.35	9.35	0.00	0.00	9.34	9.34	9.34	3.51	4.38	1.46	5.84	9.34	0.05	0.93	8.36	9.29	9.34
01b	Hodel	Seasonal Wetland Swale	0.00	0.00	0.55	0.55	0.55	0.00	0.55	0.00	0.55	0.55	0.00	0.00	0.55	0.55	0.55	0.00	0.41	0.15	0.55	0.55	0.00	0.00	0.55	0.55	0.55
		Vernal Pool	0.00	1.30	1.07	2.38	2.38	0.00	2.38	0.00	2.38	2.38	0.00	0.00	2.38	2.38	2.38	0.35	1.98	0.04	2.03	2.38	0.34	0.97	1.07	2.04	2.38
	Hodel Total		0.00	1.30	1.63	2.93	2.93	0.00	2.93	0.00	2.93	2.93	0.00	0.00	2.93	2.93	2.93	0.35	2.39	0.19	2.58	2.93	0.34	0.97	1.63	2.59	2.93
02	Mourier 135	Creek	0.00	0.04	0.48	0.52	0.52	0.00	0.00	0.52	0.52	0.52	0.00	0.00	0.52	0.52	0.52	0.00	0.04	0.48	0.52	0.52	0.00	0.04	0.48	0.52	0.52
		Seasonal Wetland	0.00	0.12	2.14	2.26	2.26	0.00	2.26	0.00	2.26	2.26	0.00	0.00	2.26	2.26	2.26	2.26	0.00	0.00	0.00	2.26	0.00	0.20	2.06	2.26	2.26
		Seasonal Wetland Swale	0.00	0.05	0.70	0.74	0.74	0.00	0.74	0.00	0.74	0.74	0.00	0.00	0.74	0.74	0.74	0.73	0.01	0.00	0.01	0.74	0.00	0.05	0.70	0.74	0.74
	Mourier 135 Total		0.00	0.20	3.32	3.52	3.52	0.00	3.00	0.52	3.52	3.52	0.00	0.00	3.52	3.52	3.52	2.99	0.05	0.48	0.53	3.52	0.00	0.29	3.23	3.52	3.52
03	Watt x Baseline	Seasonal Wetland Swale	0.00	0.95	2.39	3.34	3.34	0.00	3.34	0.00	3.34	3.34	0.00	0.00	3.34	3.34	3.34	0.12	3.06	0.16	3.22	3.34	0.01	1.04	2.29	3.33	3.34
		Vernal Pool	0.01	0.66	0.82	1.48	1.49	0.00	1.49	0.00	1.49	1.49	0.00	0.00	1.49	1.49	1.49	0.55	0.81	0.13	0.94	1.49	0.09	0.58	0.82	1.40	1.49
	Watt x Baseline Total		0.01	1.61	3.21	4.82	4.83	0.00	4.83	0.00	4.83	4.83	0.00	0.00	4.83	4.83	4.83	0.67	3.87	0.29	4.16	4.83	0.10	1.62	3.11	4.73	4.83
04a	PV 179a	Intermittent Drainage	0.00	0.00	3.03	3.03	3.03	0.00	0.00	3.03	3.03	3.03	0.00	0.00	3.03	3.03	3.03	0.00	0.00	3.03	3.03	3.03	0.00	0.00	3.03	3.03	3.03
		Seasonal Wetland	0.00	0.28	0.97	1.25	1.25	0.00	1.25	0.00	1.25	1.25	0.00	0.00	1.25	1.25	1.25	0.75	0.49	0.00	0.49	1.25	0.19	0.09	0.97	1.06	1.25
		Seasonal Wetland Swale	0.00	0.03	0.52	0.56	0.56	0.00	0.56	0.00	0.56	0.56	0.00	0.00	0.56	0.56	0.56	0.26	0.26	0.03	0.29	0.56	0.00	0.03	0.52	0.56	0.56
	PV 179a Total		0.00	0.31	4.52	4.83	4.83	0.00	1.80	3.03	4.83	4.83	0.00	0.00	4.83	4.83	4.83	1.02	0.75	3.06	3.82	4.83	0.19	0.12	4.52	4.65	4.83
04b	PV 179b	Intermittent Drainage	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03
		Seasonal Wetland	0.53	0.43	1.14	1.58	2.10	0.00	2.10	0.00	2.10	2.10	0.00	0.00	2.10	2.10	2.10	1.49	0.43	0.17	0.61	2.10	0.00	0.96	1.14	2.10	2.10
		Seasonal Wetland Swale	0.00	0.14	0.56	0.71	0.71	0.00	0.71	0.00	0.71	0.71	0.00	0.00	0.71	0.71	0.71	0.51	0.19	0.01	0.20	0.71	0.00	0.14	0.57	0.71	0.71
	PV 179b Total		0.53	0.58	1.73	2.31	2.84	0.00	2.81	0.03	2.84	2.84	0.00	0.00	2.84	2.84	2.84	2.00	0.63	0.21	0.83	2.84	0.00	1.10	1.73	2.84	2.84
06	PV C	Riverine Seasonal Marsh	0.00	0.14	0.50	0.64	0.64	0.00	0.00	0.64	0.64	0.64	0.00	0.00	0.64	0.64	0.64	0.60	0.04	0.00	0.04	0.64	0.60	0.04	0.00	0.00	0.64
		Seasonal Wetland	0.00	0.38	0.04	0.42	0.42	0.00	0.42	0.00	0.42	0.42	0.00	0.00	0.42	0.42	0.42	0.42	0.00	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.42
		Vernal Pool	0.00	0.12	0.00	0.12	0.12	0.00	0.12	0.00	0.12	0.12	0.00	0.00	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.00	0.12
	PV C Total		0.00	0.63	0.54	1.17	1.17	0.00	0.53	0.64	1.17	1.17	0.00	0.00	1.17	1.17	1.17	1.13	0.04	0.00	0.04	1.17	1.13	0.04	0.00	0.00	1.17
07	PV 356	Intermittent Drainage	0.00	0.43	14.32	14.75	14.75	0.00	0.00	14.75	14.75	14.75	0.00	0.00	14.75	14.75	14.75	0.61	0.52	13.66	14.14	14.75	0.00	0.44	14.30	14.75	14.75
		Seasonal Wetland	0.00	0.93	8.10	9.03	9.03	0.00	9.03	0.00	9.03	9.03	0.00	0.00	9.03	9.03	9.03	8.08	0.83	0.13	0.95	9.03	0.28	5.13	3.62	8.75	9.03
		Seasonal Wetland Swale	0.00	0.28	2.62	2.90	2.90	0.00	2.90	0.00	2.90	2.90	0.00	0.00	2.90	2.90	2.90	2.09	0.77	0.04	0.81	2.90	0.00	0.54	2.37	2.90	2.90
		Vernal Pool	0.00	0.00	1.63	1.63	1.63	0.00	1.63	0.00	1.63	1.63	0.00	0.00	1.63	1.63	1.63	1.61	0.02	0.00	0.02	1.63	0.00	0.00	1.63	1.63	1.63
	PV 356 Total		0.00	1.64	26.67	28.31	28.31	0.00	13.57	14.75	28.31	28.31	0.00	0.00	28.31	28.31	28.31	12.39	2.14	13.82	15.92	28.31	0.28	6.11	21.92	28.03	28.31
08	PV B	Creek	0.00	0.12	5.15	5.27	5.27	0.00	0.00	5.27	5.27	5.27	0.00	0.00	5.27	5.27	5.27	0.00	0.40	4.87	5.27	5.27	0.00	0.40	4.87	5.27	5.27
		Drainage Canal	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01
		Riverine Perennial March	0.00	0.04	0.54	0.58	0.58	0.00	0.00	0.58	0.58	0.58	0.00	0.00	0.58	0.58	0.58	0.58	0.00	0.00	0.00	0.58	0.58	0.00	0.00	0.00	0.58
		Riverine Seasonal Wetland	0.00	0.00	0.09	0.09	0.09	0.00	0.00	0.09	0.09	0.09	0.00	0.00	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.09
		Seasonal Wetland	0.00	4.17	1.17	5.34	5.34	0.00	5.34	0.00	5.34	5.34	0.00	0.00	5.34	5.34	5.34	5.34	0.00	0.00	0.00	5.34	5.34	0.00	0.00	0.00	5.34
	PV B Total		0.00	4.34	6.95	11.29	11.29	0.00	5.34	5.95	11.29	11.29	0.00	0.00	11.29	11.29	11.29	6.02	0.40	4.87	5.27	11.29	6.02	0.40	4.87	5.27	11.29
09a	PV A(a)	Drainage Canal	0.10	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.10	0.10	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.10
		Pond	5.22	0.00	0.00	0.00	5.22	0.00	0.00	5.22	5.22	5.22	0.00	0.00	5.22	5.22	5.22	5.22	0.00	0.00	0.00	5.22	5.22	0.00	0.00	0.00	5.22
		Riverine Seasonal Wetland	0.12	0.00	0.00	0.00	0.12	0.00	0.00	0.12	0.12	0.12	0.00	0.00	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.00	0.12
		Seasonal Wetland	8.80	0.20	0.00	0.20	9.00	0.00	9.00	0.00	9.00	9.00	0.00	0.00	9.00	9.00	9.00	9.00	0.00	0.00	0.00	9.00	9.00	0.00	0.00	0.00	9.00
		Vernal Pool	0.24	0.00	0.00	0.00	0.24	0.00	0.24	0.00	0.24	0.24	0.00	0.00	0.24	0.24	0.24	0.24	0.00	0.00	0.00	0.24	0.24	0.00	0.00	0.00	0.24
	PV A(a) Total		14.48	0.20	0.00	0.20	14.68	0.00	9.24	5.44	14.68	14.68	0.00	0.00	14.68	14.68	14.68	14.68	0.00	0.00	0.00	14.68	14.68	0.00	0.00	0.00	14.68
09b	PV A(b)	Drainage Canal	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.02
		Pond	5.59	0.00	0.00	0.00	5.59	0.00	0.00	5.59	5.59	5.59	0.00	0.00	5.59	5.59	5.59	5.59	0.00	0.00	0.00	5.59	5.59	0.00	0.00	0.00	5.59
		Riverine Seasonal Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PV A(b) Total		5.61	0.00	0.00	0.00	5.61	0.00	0.00	5.61	5.61	5.61	0.00	0.00	5.61	5.61	5.61	5.61	0.00	0.00	0.00	5.61	5.61	0.00	0.00	0.00	5.61
10	Dyer Lane	Seasonal Wetland	0.57	0.51	0.03	0.54	1.11	0.00	1.11	0.00	1.11	1.11	0.00	0.00	1.11	1.11	1.11	1.11	0.00	0.00	0.00	1.11	1.11	0.00	0.00	0.00	1.11
		Seasonal Wetland Swale	0.00	0.08	0.05	0.13	0.13	0.00	0.13	0.00	0.13	0.13	0.00	0.00	0.13	0.13	0.13	0.13	0.00	0.00	0.00	0.13	0.06	0.08	0.00	0.08	0.13
	Dyer Lane Total		0.57	0.58	0.08	0.67	1.24	0.00	1.24	0.00	1.24	1.24	0.00	0.00	1.24	1.24	1.24	1.24	0.00	0.00	0.00	1.24	1.16	0.08	0.00	0.08	1.24
11	PGG	Drainage Canal	0.10	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.10	0.10	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.10
		Pond	5.18	0.00	0.00	0.00	5.18	0.00	0.00	5.18	5.18	5.18	0.00	0.00	5.18	5.18	5.18	5.18	0.00	0.00	0.00	5.18	5.18	0.00	0.00	0.00	5.18
		Riverine Seasonal Wetland	0.48	0.00	0.00	0.00	0.48	0.00	0.00	0.48	0.48	0.48	0.00	0.00	0.48	0.48	0.48	0.48	0.00	0.00	0.00	0.48	0.48	0.00	0.00	0.00	0.48
		Seasonal Wetland	0.43	0.00	0.00	0.00	0.43	0.00	0.43	0.00	0.43	0.43	0.00	0.00	0.43	0.43	0.43	0.43	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.43
		Vernal Pool	0.56	0.00	0.00	0.00	0.56	0.00	0.56	0.00	0.56	0.56	0.00	0.00	0.56	0.56	0.56	0.56	0.00	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.56
	PGG Total		6.76	0.00	0.00	0.00	6.76	0.00	0.99	5.77	6.76	6.76	0.00	0.00	6.76	6.76	6.76	6.76	0.00	0.00	0.00	6.76	6.76	0.00	0.00	0.00	6.76
12a	PV 290a	Ephemeral Drainage	1.65	0.03	0.61	0.63	2.29	0.00	0.00	2.29	2.29	2.29	0.00	0.00	2.29	2.29	2.29	1.09	1.19	0.00	1.19	2.29	0.99	1.29	0.00	1.29	2.29
		Seasonal Wetland	0.24	0.00	0.05	0.05	0.29	0.00	0.29	0.00	0.29	0.29	0.00	0.00	0.29	0.29	0.29	0.26	0.03	0.00	0.03	0.29	0.26	0.03	0.00	0.03	0.29
	PV 290a Total		1.89	0.03	0.65	0.68	2.57	0.00	0.29	2.29	2.57	2.57	0.00	0.00	2.57	2.57	2.57	1.36	1.22	0.00	1.22	2.57	1.26	1.32	0.00	1.32	2.57
12b	PV 290b	Ephemeral Drainage	0.50	0.00	0.00	0.00	0.50	0.00	0.00	0.50	0.50	0.50	0.00	0.00	0.50	0.50	0.50	0.48	0.02	0.00	0.02	0.50	0.34	0.16	0.00	0.16	0.50
		Seasonal Wetland	0.09	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.09	0.09	0.00	0.00	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.09
		Seasonal Wetland Swale	0.60	0.00	0.00	0.00	0.60	0.00	0.60	0.00	0.60	0.60	0.00	0.00	0.60	0.60	0.60	0.60	0.00	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.60
		Vernal Pool	1.78	0.00	0.00	0.00	1.78	0.00	1.78	0.00	1.78	1.78	0.00	0.00	1.78	1.78	1.78	1.78	0.00	0.00	0.00	1.78	1.78	0.00	0.00	0.00	1.78
	PV 290b Total		2.97	0.00	0.00	0.00	2.97	0.00	2.47	0.50	2.97	2.97	0.00	0.00	2.97	2.97	2.97	2.95	0.02	0.00	0.02	2.97	2.81	0.16	0.00	0.16	2.97
14	DF 80	Creek	0.16	0.00	0.00	0.00	0.16	0.00	0.00	0.16	0.16	0.16	0.00	0.00	0.16	0.16	0.16	0.16	0.00	0.00	0.00	0.16	0.16	0.00	0.00	0.00	0.16
		Drainage Canal	0.00	0.00	0.10	0.11	0.11	0.00	0.00	0.11	0.11	0.11	0.00	0.00	0.11	0.11	0.11	0.11	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.00	0.11
		Seasonal Wetland	0.33	0.00	0.00	0.00	0.33	0.00	0.33	0.00	0.33	0.33	0.00	0.00	0.33	0.33	0.33	0.33	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.33
	DF 80 Total		0.49	0.01	0.10	0.11	0.60	0.00	0.33	0.27	0.60	0.60	0.00	0.00	0.60	0.60	0.60	0.60	0.00	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.60
15	PV 200	Drainage Swale	1.83	0.25	0.00	0.25	2.09	0.00	2.09	0.00	2.09	2.09	0.00	0.00	2.09	2.09	2.09	2.06	0.02	0.00	0.02	2.09	0.00	0.89	1.20	2.09	2.09
		Ephemeral Drainage	1.13	0.05	0.08	0.13	1.26	0.00	0.00	1.26	1.26	1.26	0.00	0.00	1.26	1.26	1.26	0.32	0.94	0.00	0.94	1.26	0.00	0.02	1.24	1.26	1.26
		Pond	0.00	0.00	0.45	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.00	0.35	0.10	0.45	0.45	0.00	0.00	0.45	0.45	0.45
		Seasonal Wetland	0.45	0.00	0.00	0.00	0.45	0.00	0.45	0.00	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.00	0.00	0.00	0.45	0.00	0.32	0.13	0.45	0.45
	PV 200 Total		3.42	0.30	0.53	0.83	4.25	0.00	2.54	1.71	4.25	4.25	0.00	0.00	4.25	4.25	4.25	2.83	1.32	0.10	1.42	4.25	0.00	1.23	3.02	4.25	4.25
16	PV 88	Riverine Seasonal Wetland	0.47	0.00	0.00	0.00	0.47	0.00	0.00	0.47	0.47	0.47	0.00	0.00	0.47	0.47	0.47	0.00	0.06	0.41	0.47	0.47	0.00	0.06	0.41	0.47	0.47
		Seasonal Wetland	0.96	0.00	0.00	0.00	0.96	0.00	0.96	0.00	0.96	0.96	0.00	0.00	0.96	0.96	0.96	0.00	0.51	0.45	0.96	0.96	0.00	0.38	0.58	0.96	0.96
		Vernal Pool	4.91	0.00	0.00	0.00	4.91	0.00	4.91	0.00	4.91	4.91	0.00	0.00	4.91	4.91	4.91	0.01	2.79	2.11	4.90	4.91	0.01	1.68	3.22	4.90	4.91
	PV 88 Total		6.34	0.00	0.00	0.00	6.34	0.00	5.87	0.47	6.34	6.34	0.00	0.00	6.34	6.34	6.34	0.01	3.36	2.97	6.33	6.34	0.01	2.11	4.21	6.33	6.34
17	Gully 20	Seasonal Wetland Swale	0.02	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.02
		Vernal Pool	0.42	0.00	0.00	0.00	0.42	0.00	0.42	0.00	0.42	0.42	0.00	0.00	0.42	0.42	0.42	0.00	0.25	0.17	0.42	0.42	0.00	0.05	0.37	0.42	0.42
	Gully 20 Total		0.44	0.00	0.00	0.00	0.44	0.00	0.44	0.00	0.44	0.44	0.00	0.00	0.44	0.44	0.44	0.00	0.25	0.19	0.44	0.44	0.00	0.05	0.39	0.44	0.44
19	PV 815	Drainage Canal	0.00	0.02	0.00	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.02	0.00	0.03	0.03	0.03	0.00	0.00	0.00	0.03
		Riverine Seasonal Wetland	0.28	0.66	18.33	18.99	19.27	0.00	0.00	19.27	19.27	19.27	0.00	0.00	19.27	19.27	19.27	0.00	0.73	18.55	19.27	19.27	14.16	0.19	4.93	5.11	19.27
		Seasonal Marsh	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.21	0.21	0.21	0.21	0.00	0.00	0.00	0.21
		Seasonal Wetland	0.00	0.37	2.29	2.66	2.66	0.00	2.66	0.00	2.66	2.66	0.00	0.00	2.66	2.66	2.66	0.00	0.42	2.24	2.66	2.66	2.47	0.15	0.04	0.19	2.66
		Vernal Pool	0.00	3.42	8.09	11.51	11.51	0.00	11.51	0.00	11.51	11.51	0.00	0.00	11.51	11.51	11.51	0.00	4.21	7.30	11.51	11.51	10.66	0.82	0.02	0.84	11.51
	PV 815 Total		0.28	4.48	28.92	33.40	33.68	0.00	14.17	19.51	33.68	33.68	0.00	0.00	33.68	33.68	33.68	0.00	5.38	28.30	33.68	33.68	27.53	1.16	4.99	6.15	33.68
21	Pan de Leon	Creek	0.00	0.03	0.04	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.00	0.03	0.04	0.07	0.07	0.07	0.00	0.00	0.00	0.07
		Riverine Seasonal Wetland	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01
		Seasonal Wetland	0.02	0.07	0.00	0.07	0.09	0.00	0.07	0.02	0.09	0.09	0.00	0.00	0.09	0.09	0.09	0.00	0.09	0.00	0.09	0.09	0.09	0.00	0.00	0.00	0.09
		Vernal Pool	0.02	0.14	0.00	0.14	0.16	0.00	0.16	0.00	0.16	0.16	0.00	0.00	0.16	0.16	0.16	0.00	0.16	0.00	0.16	0.16	0.16	0.00	0.00	0.00	0.16
	Pan de Leon Total		0.04	0.24	0.05	0.29	0.33	0.00	0.24	0.09	0.33	0.33	0.00	0.00	0.33	0.33	0.33	0.00	0.28	0.05	0.33	0.33	0.33	0.00	0.00	0.00	0.33
23	Capri	Drainage Canal	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.07
		Riverine Seasonal Wetland	0.00	0.03	3.22	3.25	3.25	0.00	0.00	3.25	3.25	3.25	0.00	0.00	3.25	3.25	3.25	0.00	0.03	3.22	3.25	3.25	3.25	0.00	0.00	0.00	3.25
		Seasonal Wetland	0.00	0.00	0.03	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.03
		Vernal Pool	0.00	0.57	1.09	1.66	1.66	0.00	1.66	0.00	1.66	1.66	0.00	0.00	1.66	1.66	1.66	0.00	0.57	1.09	1.66	1.66	1.66	0.00	0.00	0.00	1.66
	Capri Total		0.00	0.59	4.41	5.00	5.00	0.00	1.68	3.32	5.00	5.00	0.00	0.00	5.00	5.00	5.00	0.00	0.59	4.41	5.00	5.00	5.00	0.00	0.00	0.00	5.00
24	Fong	Ephemeral Drainage	0.00	0.00	0.07	0.08	0.08	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.07	0.08	0.08	0.08	0.00	0.00	0.00	0.08
		Pond	0.00	0.00	2.01	2.01	2.01	0.00	0.00	2.01	2.01	2.01	0.00	0.00	2.01	2.01	2.01	0.00	0.00	2.01	2.01	2.01	2.01	0.00	0.00	0.00	2.01
		Riverine Seasonal Wetland	0.00	0.40	1.18	1.59	1.59	0.00	0.00	1.59	1.59	1.59	0.00	0.00	1.59	1.59	1.59	0.00	0.40	1.18	1.59	1.59	1.59	0.00	0.00	0.00	1.59
		Seasonal Wetland	0.39	0.27	0.34	0.61	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.69	0.31	1.00	1.00	1.00	0.00	0.00	0.00	1.00
		Vernal Pool	0.00	0.40	1.06	1.46	1.46	0.00	1.46	0.00	1.46	1.46	0.00	0.00	1.46	1.46	1.46	0.00	0.40	1.06	1.46	1.46	1.46	0.00	0.00	0.00	1.46
	Fong Total		0.39	1.09	4.66	5.74	6.14	0.00	2.47	3.67	6.14	6.14	0.00	0.00	6.14	6.14	6.14	0.00	1.50	4.63	6.14	6.14	6.14	0.00	0.00	0.00	6.14
Total			44.22	19.03	96.42	115.45	159.67	0.00	84.68	75.00	159.67	159.67	0.00	0.00	159.67	159.67	159.67	66.12	28.53	65.02	93.55	159.67	80.00	17.69	61.99	79.67	159.67

*Note: Impacts include approximately one acre of Waters of the US within the Open Space - Active Use areas based on the assumption that at the site's average wetland density of 4.3%, the 30 acre OS-AU area would yield 1.3 acres of wetlands and that these areas will be impacted by the construction/installation of bike/pedestrian trails, landscaping, and other structures related to recreational uses.

APPENDIX 3.5

Greenhouse Gas Emissions Calculations

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction GHG.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	CO2
2013 TOTALS (tons/year unmitigated)	29,449.51
2013 TOTALS (tons/year mitigated)	29,449.51
Percent Reduction	0.00

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	59,343.84

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	354,902.27

3/5/2012 2:13:30 PM

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	414,246.11

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: Z:\EBell\Placer Vineyards\Modeling\Construction Blueprint GHG.urb924

Project Name: Placer Vineyards

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	CO2
2013 TOTALS (tons/year unmitigated)	40,053.41
2013 TOTALS (tons/year mitigated)	40,053.41
Percent Reduction	0.00

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	83,011.71

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	444,246.42

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	527,258.13

Summary Results

Project Name: PV Base Operational

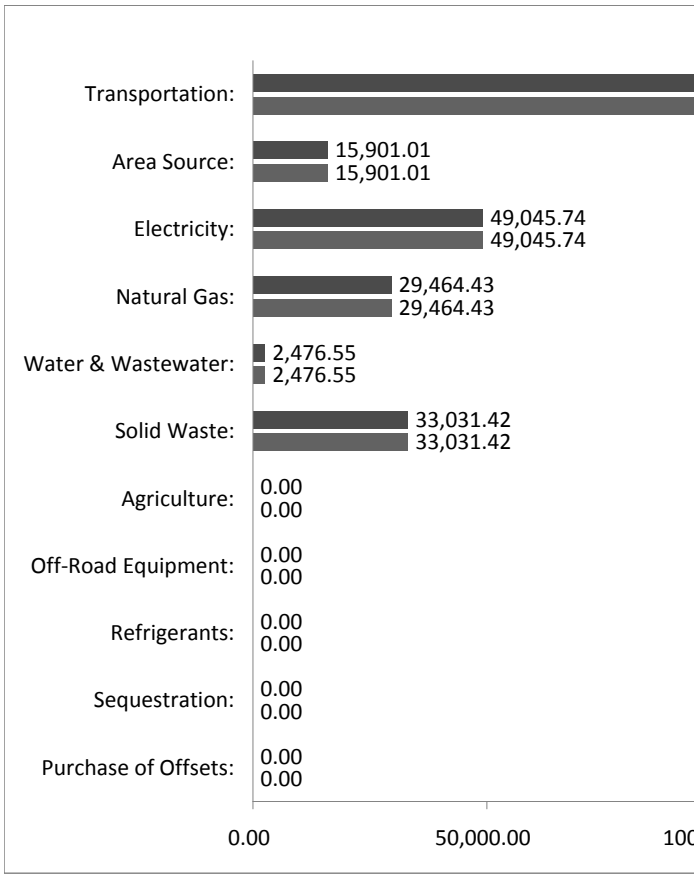
Project and Baseline Years: 2030 N/A

Results	Unmitigated Project-Baseline CO2e (metric tons/year)	Mitigated Project-Baseline CO2e (metric tons/year)
Transportation:	279,851.49	279,851.49
Area Source:	15,901.01	15,901.01
Electricity:	49,045.74	49,045.74
Natural Gas:	29,464.43	29,464.43
Water & Wastewater:	2,476.55	2,476.55
Solid Waste:	33,031.42	33,031.42
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	409,770.64	409,770.64

Baseline is currently: **OFF**

Baseline Project Name:

Go to Settings Tab to Turn On Baseline



Detailed Results

Unmitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				279,851.49	68.29%
Area Source:	14,682.00	56.38	0.11	15,901.01	3.88%
Electricity:	48,967.37	0.41	0.23	49,045.74	11.97%
Natural Gas:	29,389.10	2.77	0.06	29,464.43	7.19%
Water & Wastewater:	2,472.59	0.02	0.01	2,476.55	0.60%
Solid Waste:	229.69	1,561.99	N/A	33,031.42	8.06%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				409,770.64	100.00%

* Several adjustments were made to transportation emissions after they have been imported from URBEMIS.
After importing from URBEMIS, CO2 emissions are converted to metric tons and then adjusted to account for the "Pavley"
regulation. Then, CO2 is converted to CO2e by multiplying by 100/95 to account for the contribution of other GHGs (CH4, N2O, and HFCs [from leaking air condi
Finally, CO2e is adjusted to account for th low carbon fuels rule.

Mitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				279,851.49	68.29%
Area Source:	14,682.00	56.38	0.00	15,901.01	3.88%
Electricity:	48,967.37	0.41	0.23	49,045.74	11.97%
Natural Gas:	29,389.10	2.77	0.06	29,464.43	7.19%
Water & Wastewater:	2,472.59	0.02	0.01	2,476.55	0.60%
Solid Waste:	229.69	1,561.99	N/A	33,031.42	8.06%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	0.00	0.00%
Purchase of Offsets:	N/A	N/A	N/A	0.00	0.00%
Total:				409,770.64	100.00%

Summary Results

Project Name: PV Blueprint Operational

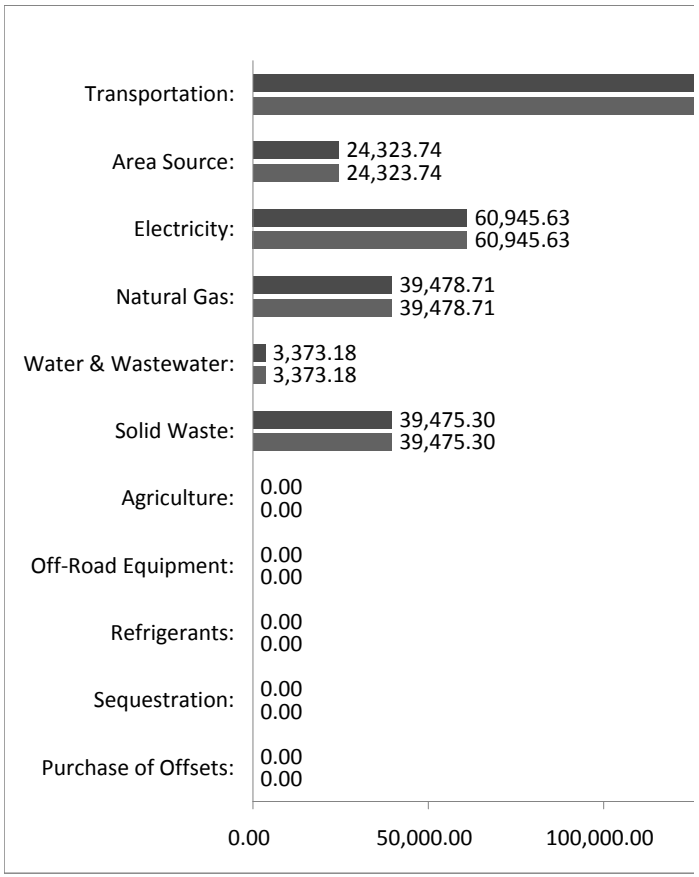
Project and Baseline Years: 2030 N/A

Results	Unmitigated Project-Baseline CO2e (metric tons/year)	Mitigated Project-Baseline CO2e (metric tons/year)
Transportation:	342,068.95	342,068.95
Area Source:	24,323.74	24,323.74
Electricity:	60,945.63	60,945.63
Natural Gas:	39,478.71	39,478.71
Water & Wastewater:	3,373.18	3,373.18
Solid Waste:	39,475.30	39,475.30
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	509,665.52	509,665.52

Baseline is currently: **OFF**

Baseline Project Name:

Go to Settings Tab to Turn On Baseline



Detailed Results

Unmitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				342,068.95	67.12%
Area Source:	22,458.81	86.30	0.17	24,323.74	4.77%
Electricity:	60,848.24	0.51	0.28	60,945.63	11.96%
Natural Gas:	39,377.78	3.71	0.07	39,478.71	7.75%
Water & Wastewater:	3,367.79	0.03	0.02	3,373.18	0.66%
Solid Waste:	274.50	1,866.70	N/A	39,475.30	7.75%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				509,665.52	100.00%

* Several adjustments were made to transportation emissions after they have been imported from URBEMIS.
After importing from URBEMIS, CO2 emissions are converted to metric tons and then adjusted to account for the "Pavley"
regulation. Then, CO2 is converted to CO2e by multiplying by 100/95 to account for the contribution of other GHGs (CH4, N2O, and HFCs [from leaking air condi
Finally, CO2e is adjusted to account for th low carbon fuels rule.

Mitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				342,068.95	67.12%
Area Source:	22,458.81	86.30	0.00	24,323.74	4.77%
Electricity:	60,848.24	0.51	0.28	60,945.63	11.96%
Natural Gas:	39,377.78	3.71	0.07	39,478.71	7.75%
Water & Wastewater:	3,367.79	0.03	0.02	3,373.18	0.66%
Solid Waste:	274.50	1,866.70	N/A	39,475.30	7.75%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	0.00	0.00%
Purchase of Offsets:	N/A	N/A	N/A	0.00	0.00%
Total:				509,665.52	100.00%

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: Z:\EBell\Placer Vineyards\Modeling\Operational GHG.urb924

Project Name: PV Base Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	61,523.04

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	408,015.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	469,538.52

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name:

Project Name: PV Base Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	85,190.91

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	498,726.75

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	583,917.66

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name:

Project Name: PV Base Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	61,523.04

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	410,806.93

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	472,329.97

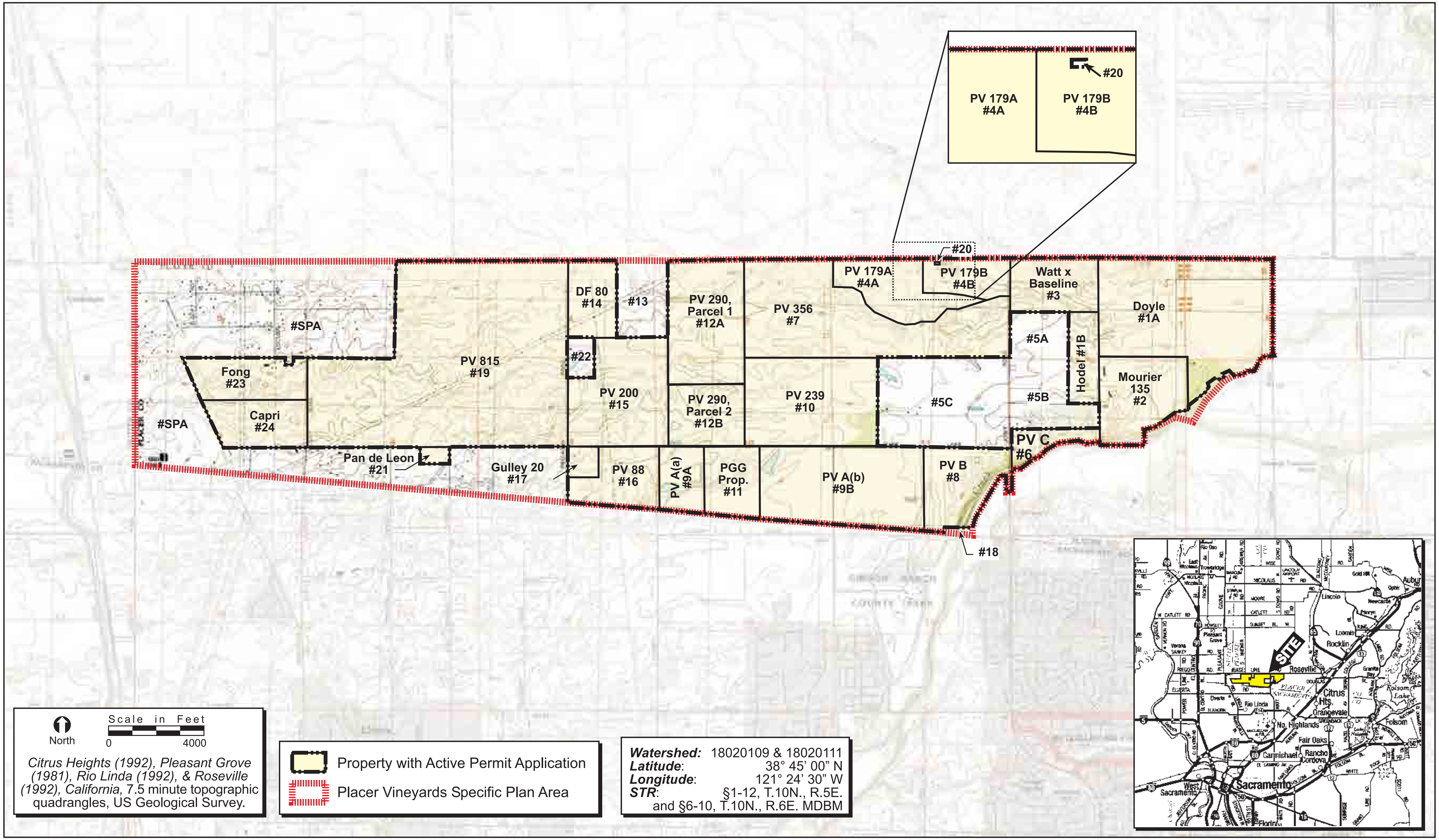

Figure 1. Placer Vineyards Specific Plan Area and Properties with Active Applications

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2001-196 Placer Vineyards

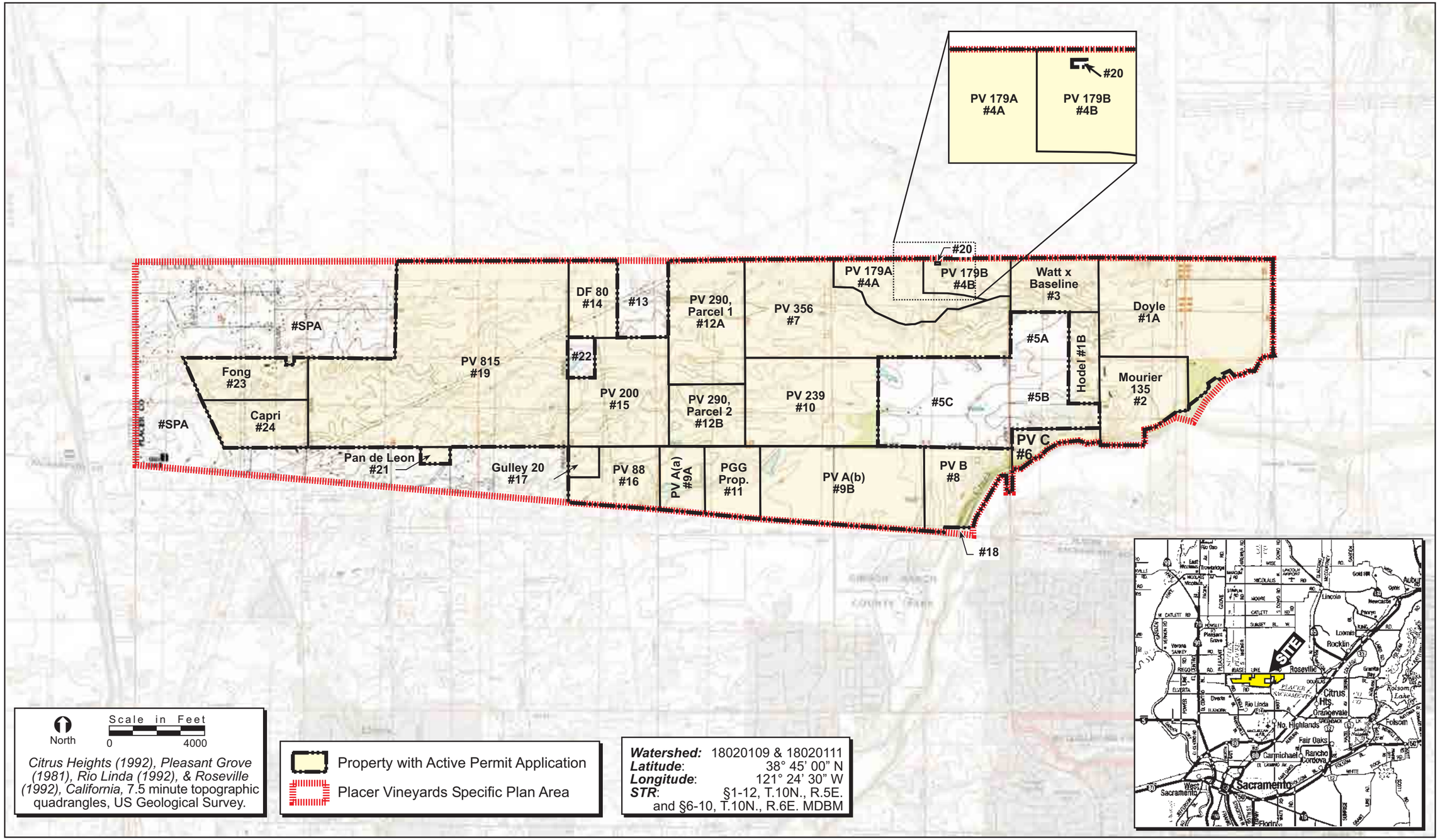

Figure 1. Placer Vineyards Specific Plan Area and Properties with Active Permit Applications

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2001-196 Placer Vineyards

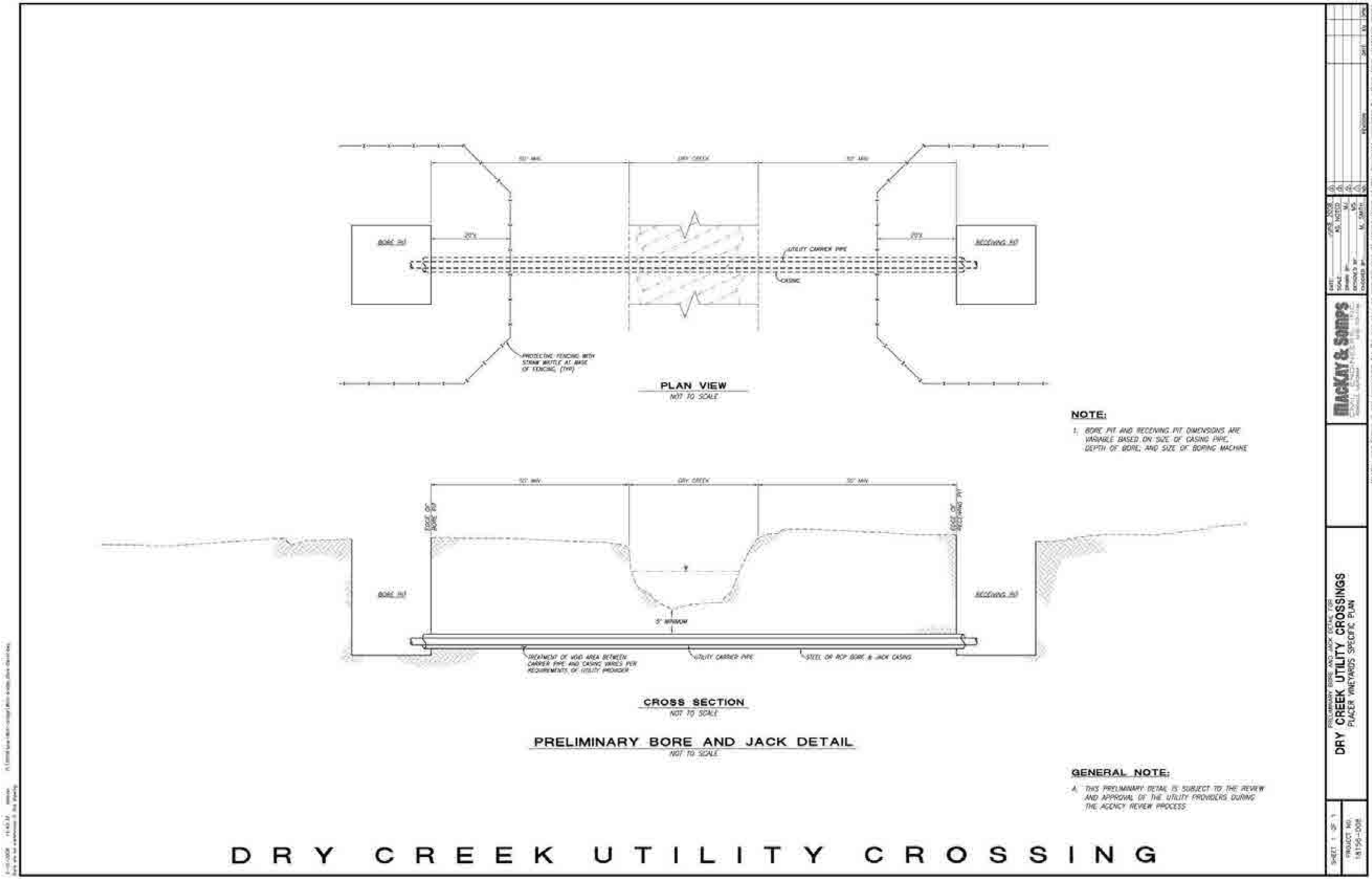

FIGURE 4. Representative Schematic for Jack and Bore Utility Crossings on Dry Creek

ECORP Consulting, Inc.
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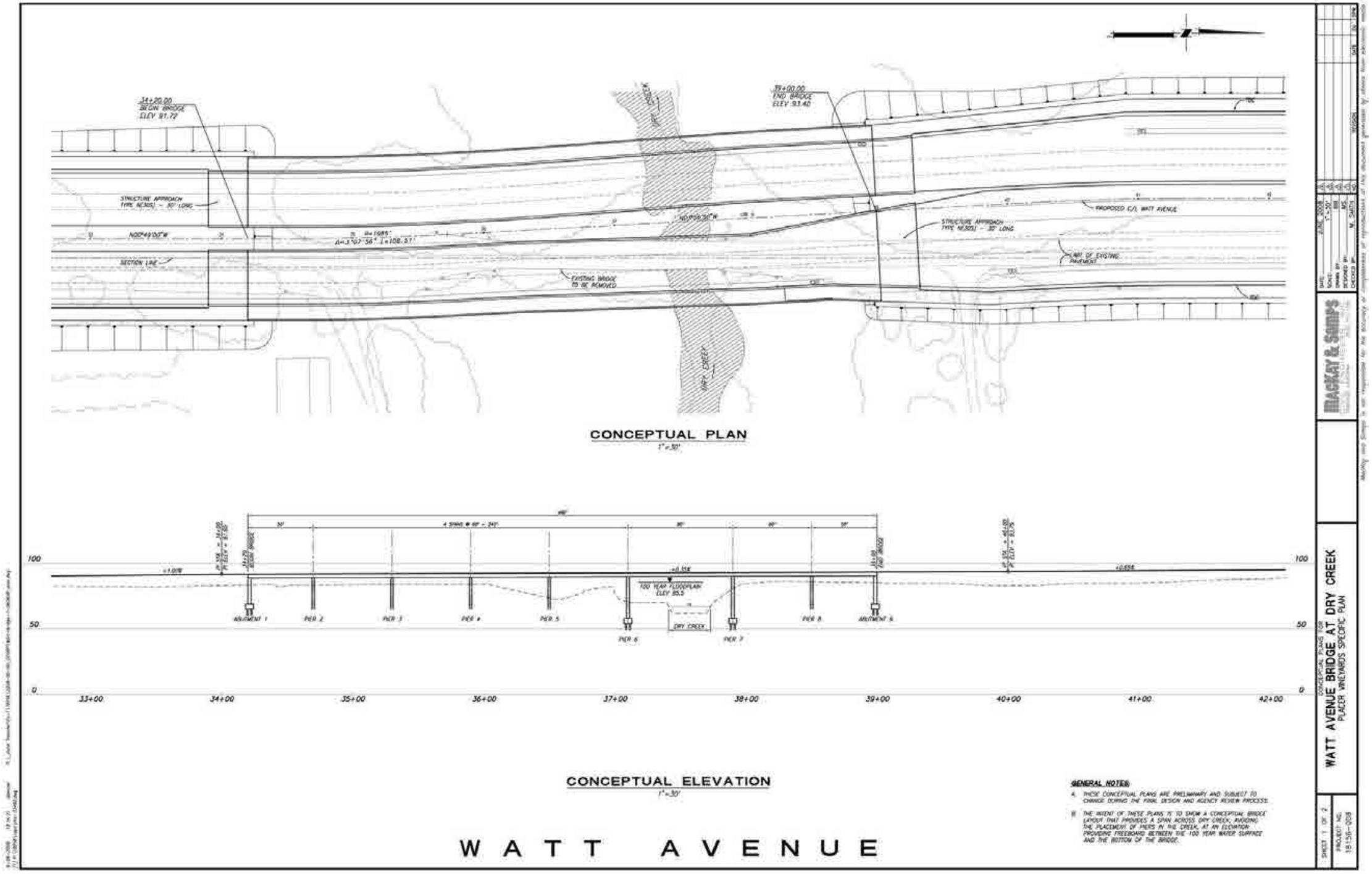

FIGURE 5. Conceptual Plan for the Proposed Watt Avenue Bridge Replacement at Dry Creek

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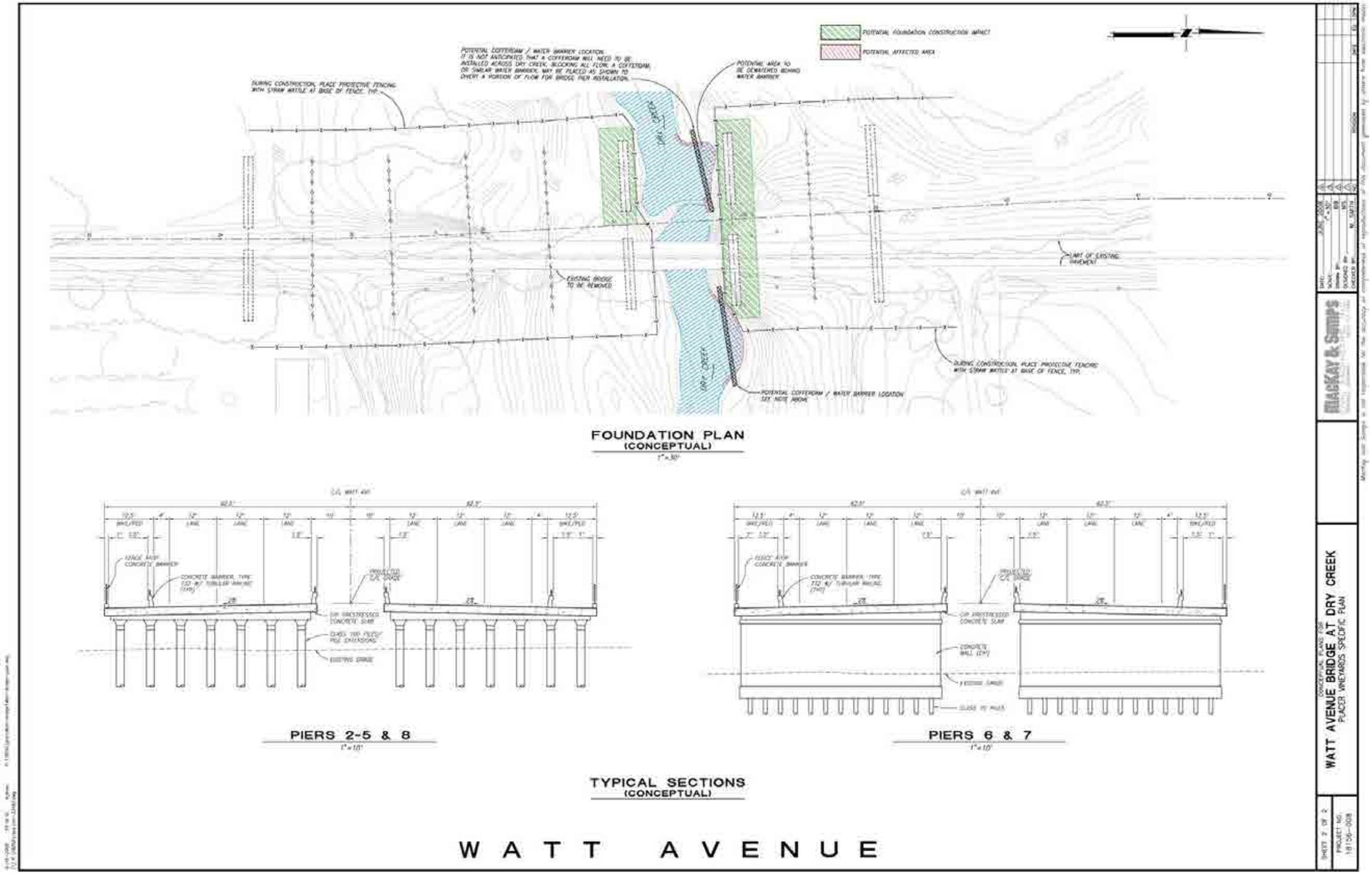

FIGURE 6. Proposed Foundation Plan for the Watt Avenue Bridge Replacement at Dry Creek

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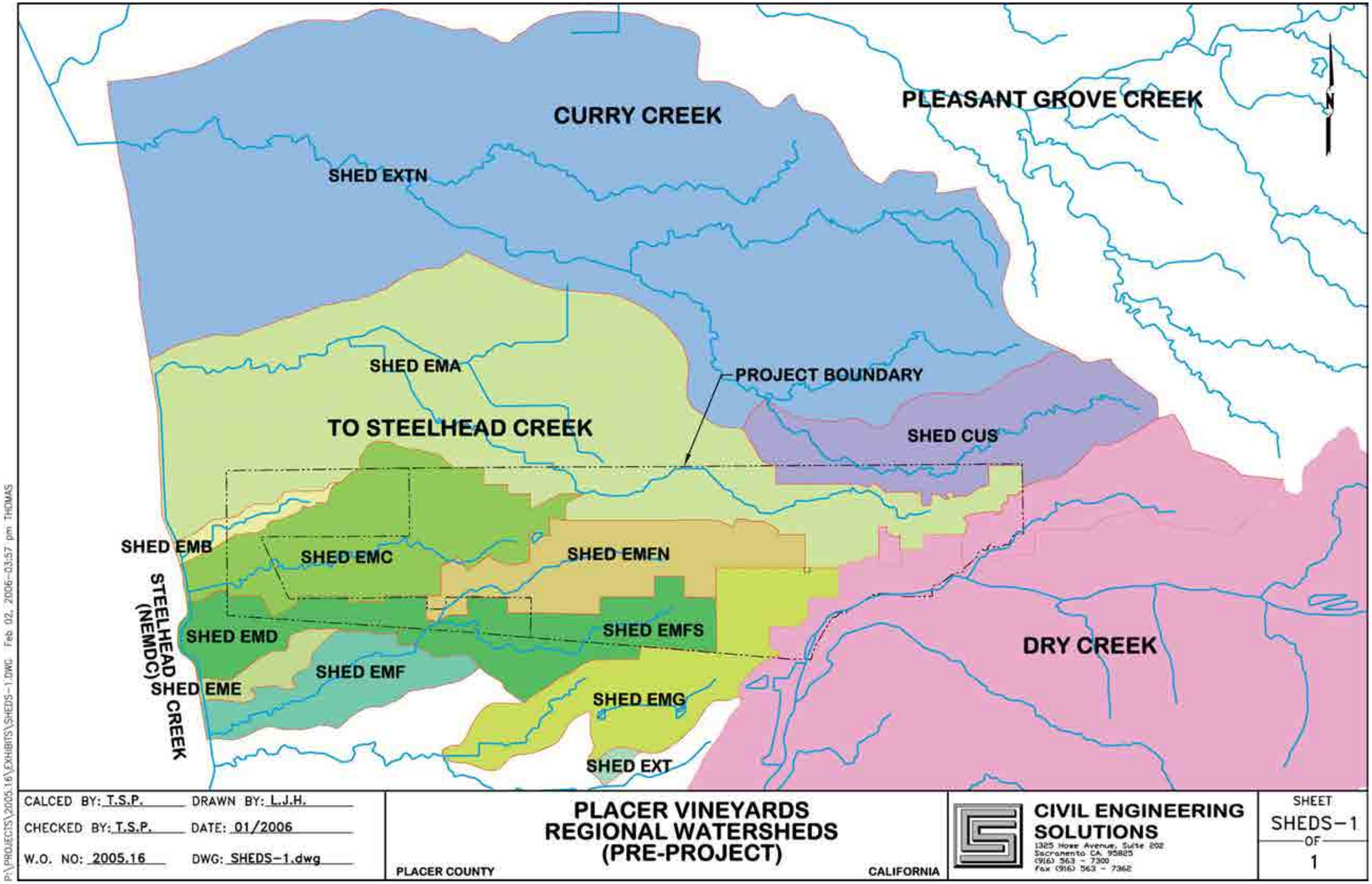

FIGURE 7. Placer Vineyards Regional Watersheds (Pre-Project)

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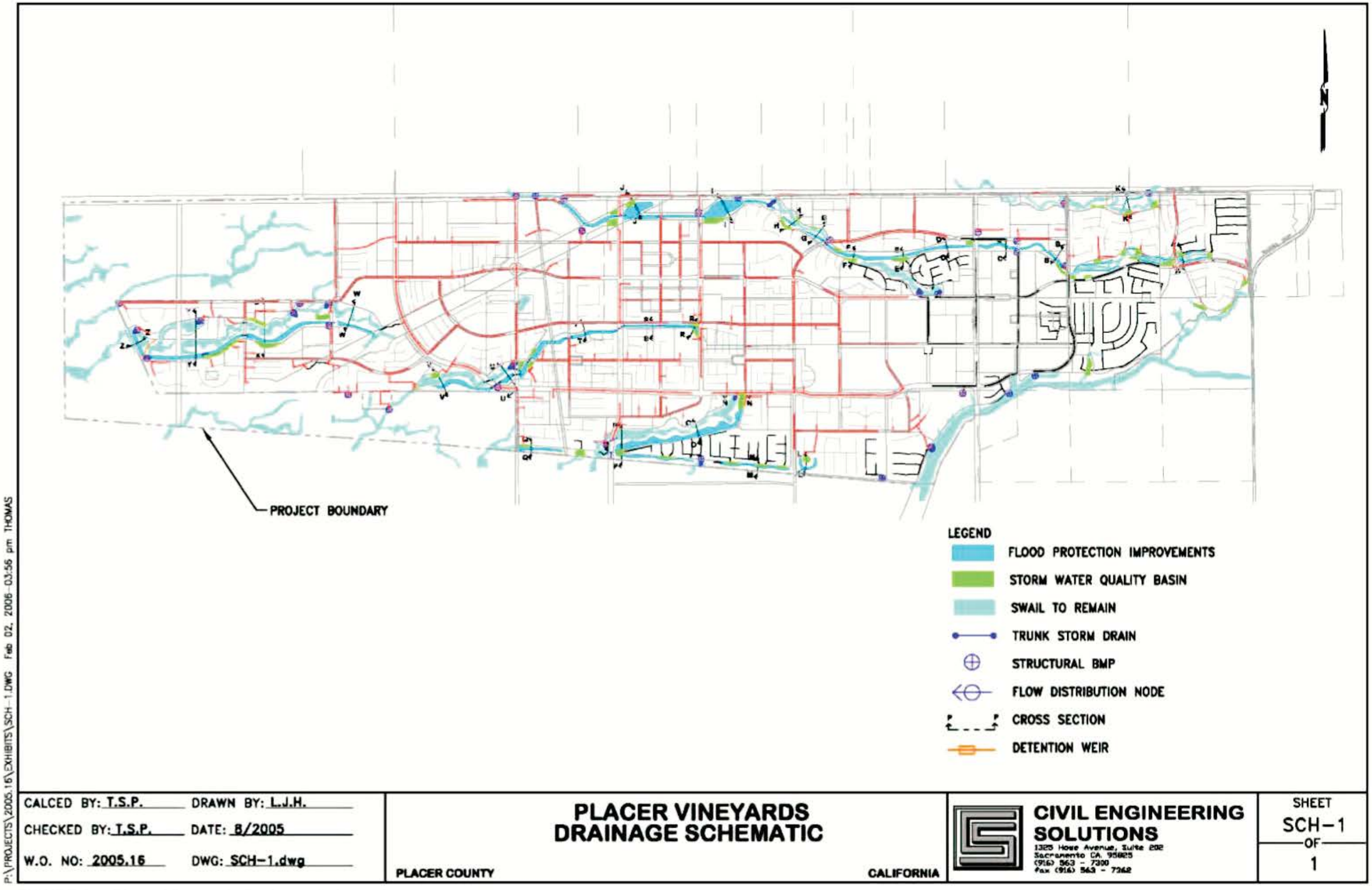

FIGURE 8. Placer Vineyards Drainage Schematic

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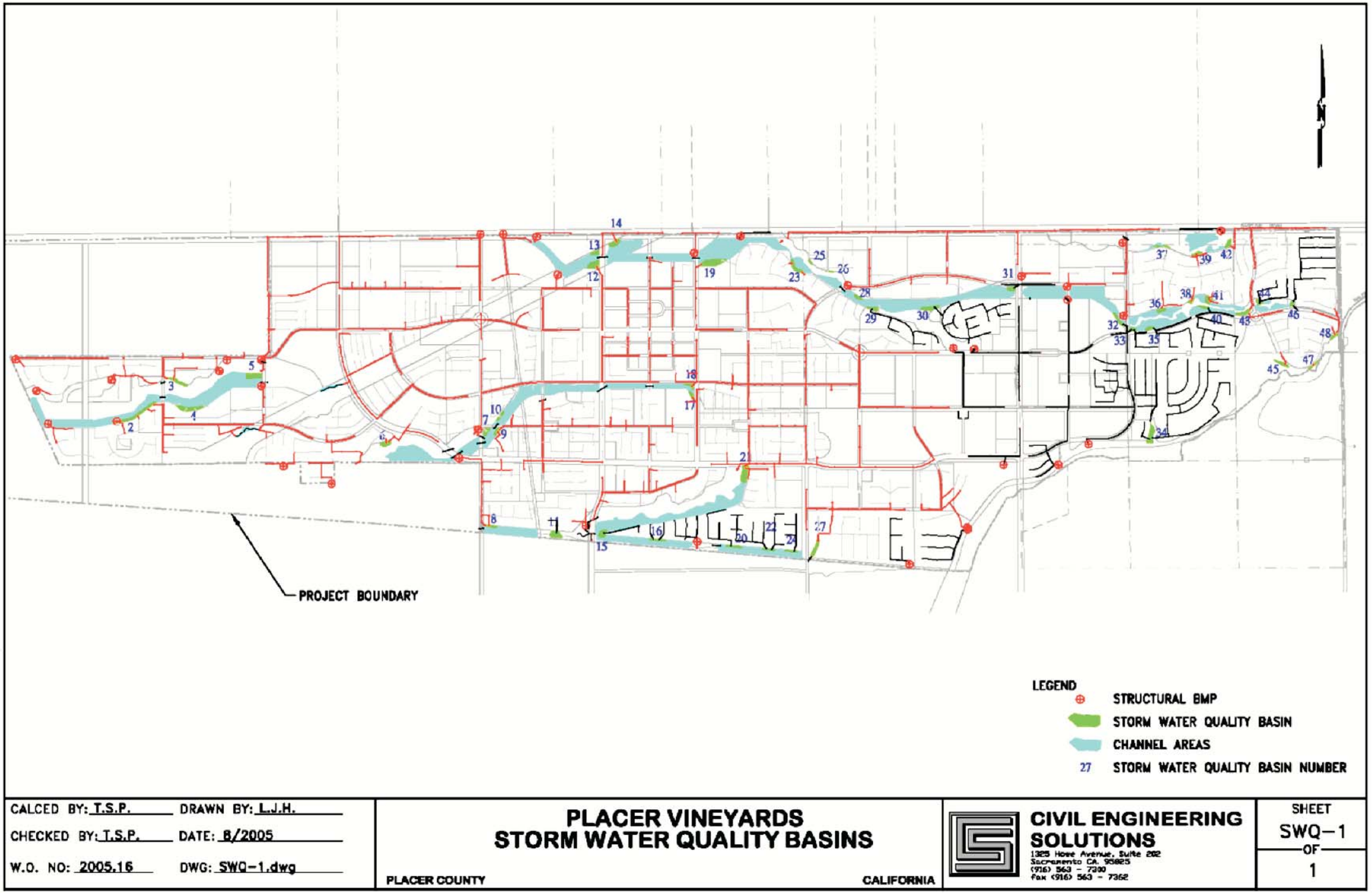

FIGURE 9. Placer Vineyards Storm Water Quality Basins

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