4.0 CUMULATIVE IMPACTS

4.1 INTRODUCTION

This section of the Draft EIS presents the cumulative impacts of the Proposed Action and its alternatives. National Environmental Policy Act (NEPA) regulations require that cumulative impacts of a proposed action be assessed and disclosed in an EIS. The Council on Environmental Quality (CEQ) regulations define a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

According to a 1997 CEQ guidance document entitled, "Considering Cumulative Effects Under the National Environmental Policy Act," cumulative effects must be evaluated along with the direct effects and indirect effects (those that occur later in time or farther removed in distance) of each alternative. The range of alternatives considered must include the no action alternative which can be used as a baseline against which to evaluate cumulative effects. The CEQ guidance also describes the concept of baseline as "[T]he baseline condition of the resource of concern should include a description of how conditions have changed over time and how they are likely to change in the future without the proposed action" (CEQ 1997). The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects.

4.2 APPROACH TO CUMULATIVE IMPACT ANALYSIS

This Draft EIS uses a six-step approach in developing a cumulative impact analysis. These steps include the following: (1) identify resources to consider in the cumulative impact analysis; (2) define the timeframe for cumulative impact assessment; (3) define study area for each resource; (4) identify other present and reasonably foreseeable future actions that could also affect the resource; (5) assess and report potential cumulative impacts by first describing the current health and historical context for each resource and then identifying the direct and indirect impacts of the Proposed Action that might contribute to a cumulative impact; and (6) assess the need for mitigation. These steps are described in more detail below.

4.2.1 Identification of Resources to Consider in the Cumulative Impact Analysis

The U.S. Army Corps of Engineers (USACE) used NEPA guidance to identify resource topics that would be considered in the cumulative impact analysis (40 CFR 1508.25). From a review of the likely environmental impacts analyzed in **Chapter 3.0**, the USACE determined that the analysis of cumulative impacts would be limited to the following resource topics: Biological Resources, Aesthetics, Agricultural Resources, Air Quality, Cultural Resources, Hydrology, Noise, and Utilities.

With respect to the remaining topics, the analysis in **Chapter 3.0** shows that the Proposed Action and its alternatives would either not result in any direct or indirect impacts and therefore would not contribute

to a cumulative impact (i.e., there would be no impact related to environmental justice; therefore the Proposed Action would not contribute to a cumulative impact related to environmental justice); or that the nature of the resource is such that impacts do not have the potential to cumulate (i.e., impacts related to geology are site specific and do not cumulate); or that the analysis in **Chapter 3.0** is in essence a cumulative analysis and no further evaluation is required. For example because climate change is global in nature, the analysis in **Section 3.5** is inherently a cumulative impact assessment. Similarly, the traffic analysis in **Section 3.14** evaluates the effects from traffic that would result from growth in regional traffic through 2025 combined with the growth in traffic due to the Proposed Action at buildout. That analysis, therefore, presents the cumulative traffic impacts which were determined to be significant and the Proposed Action's contribution to the cumulative impacts was found to be significant. Mitigation measures are proposed to address the Proposed Action's contribution to the cumulative traffic impacts.

No scoping comments were received that identified specific resources that should be considered in the cumulative impact analysis.

4.2.2 Definition of Timeframe for Analysis

For each resource topic that was carried forth for cumulative impact assessment, the timeframe for cumulative analysis was defined based on the specific characteristics of the resource.

Timeframe for Analysis - Biological Resources

As required by NEPA, this analysis considers cumulative effects of the Proposed Action in combination with other past, present and reasonably foreseeable future projects. The Clean Water Act (33 USC §1251 et seq.) was enacted in 1972. This law gave authority to the USACE to issue permits for the discharge of dredge or fill materials into the waters of the U.S. As the USACE has been regulating the filling of wetlands since 1972, the timeframe that bounds the cumulative impact analysis in this Draft EIS for wetland and related special-status species impacts is approximately 40 years in the past (i.e., year 1970).

As noted in **Chapter 2.0**, the Proposed Action is anticipated to be fully built out between 2025 and 2040 depending on housing market conditions. Therefore, 30 years in the future would serve as an appropriate timeline for the identification of other reasonably foreseeable future actions to be considered in the cumulative impact analysis. Another point of reference is the draft Placer County Conservation Plan (PCCP). The draft PCCP is based on long-range growth projections for western Placer County which go out 50 years into the future. Based on the above, the timeframe used to bound the analysis is approximately 50 years in the future (i.e., year 2060).

Timeframe for Analysis – All Other Resources

The timeframe for evaluation of cumulative impacts of most of the other resources is also development that has occurred in the area around the project site in the past 40 years and future development that is anticipated through 2060. For a few topics such as transportation and traffic where conditions through 2060 cannot be reasonably predicted, the timeframe for cumulative impacts has a horizon year of 2025.

4.2.3 Definition of Study Area

For each resource that was carried forth for cumulative impact assessment, the study area was defined based on the nature and characteristics of the resource.

Study Area - Biological Resources

Extensive areas of vernal pool habitat occur throughout California. According to the California Department of Fish and Wildlife (CDFW), vernal pools occur in a diverse array of areas in California including the Central Valley and cismontane foothills, lowlands in the Transverse and Coast Ranges, southern coastal mesas and the extreme northeast corner of the state on the Modoc Plateau (CDFG 1998). Within the Central Valley, vernal pool habitat occurs in a number of areas, including the transitional zone between the Sierra Nevada foothills and the valley flatlands. The Proposed Action is located in this transitional zone and therefore would contribute to the loss of vernal pool habitat in the entire Central Valley. However, to provide a more focused analysis of cumulative impacts, the study area for vernal pools and other biological resource impacts was defined to include a subregion of the Central Valley vernal pool area. This subregion, shown in **Figure 4.0-1, Study Area for Cumulative Impacts**, includes all of western Placer County, the northern portion of Sacramento County, and the western portion of Sutter County.

To delineate the boundaries of this study area, the USACE conducted a review of aerial photographs from 1970 of western Placer County and adjoining portions of Sutter and Sacramento counties, which is close to the time when the Clean Water Act was enacted. As vernal pools typically occur in landscapes that are shallowly sloping or nearly level at a broad scale, and typically occur embedded in grasslands, all areas that exhibited these characteristics on the aerial photographs from 1970 were assumed to support vernal pools and were included in the study area by the USACE. Lands that did not support grasslands or showed other landscapes such as agricultural fields or urban development were excluded. This approach was used to define the northern, western, and southern boundary of the study area (see **Figure 4.0-1, Study Area for Cumulative Impacts**). The eastern boundary of the study area was defined based on elevation above sea level. Based on the observed distribution of vernal pools, vernal pools primarily occur at elevations below 200 feet (61 meters). Therefore, a generalized eastern boundary was drawn corresponding roughly to the 200-foot (61-meter) contour. The study area defined in this manner encompasses the Western Placer County core area in the Vernal Pool Recovery Plan.

The analysis of cumulative biological resource impacts is focused on this study area and documents the losses of vernal pool habitat that have occurred in this area since 1970 and additional losses that would result from the Proposed Action and other reasonably foreseeable future development through approximately 2060. As the study area is a subregion of the Central Valley vernal pool area, past and present trends of habitat losses in the Central Valley are also briefly described in this chapter to provide the broader context for the cumulative impact.

Study Area – All Other Resources

The cumulative context for visual impacts is the area immediately surrounding the project site that has been previously developed or is proposed for development. Within this area, the study area is defined to include areas that are visible from major roadways, namely, Walerga Road, Baseline Road, and Watt Avenue.

The study area for cumulative impacts to farmland is defined to be the northern Central Valley, particularly southwestern Placer County, northern Sacramento County, and southeastern Sutter County, which contain a wide range of agricultural uses, from grazing and row corps to orchards, and contain soils that are similar to the project site.

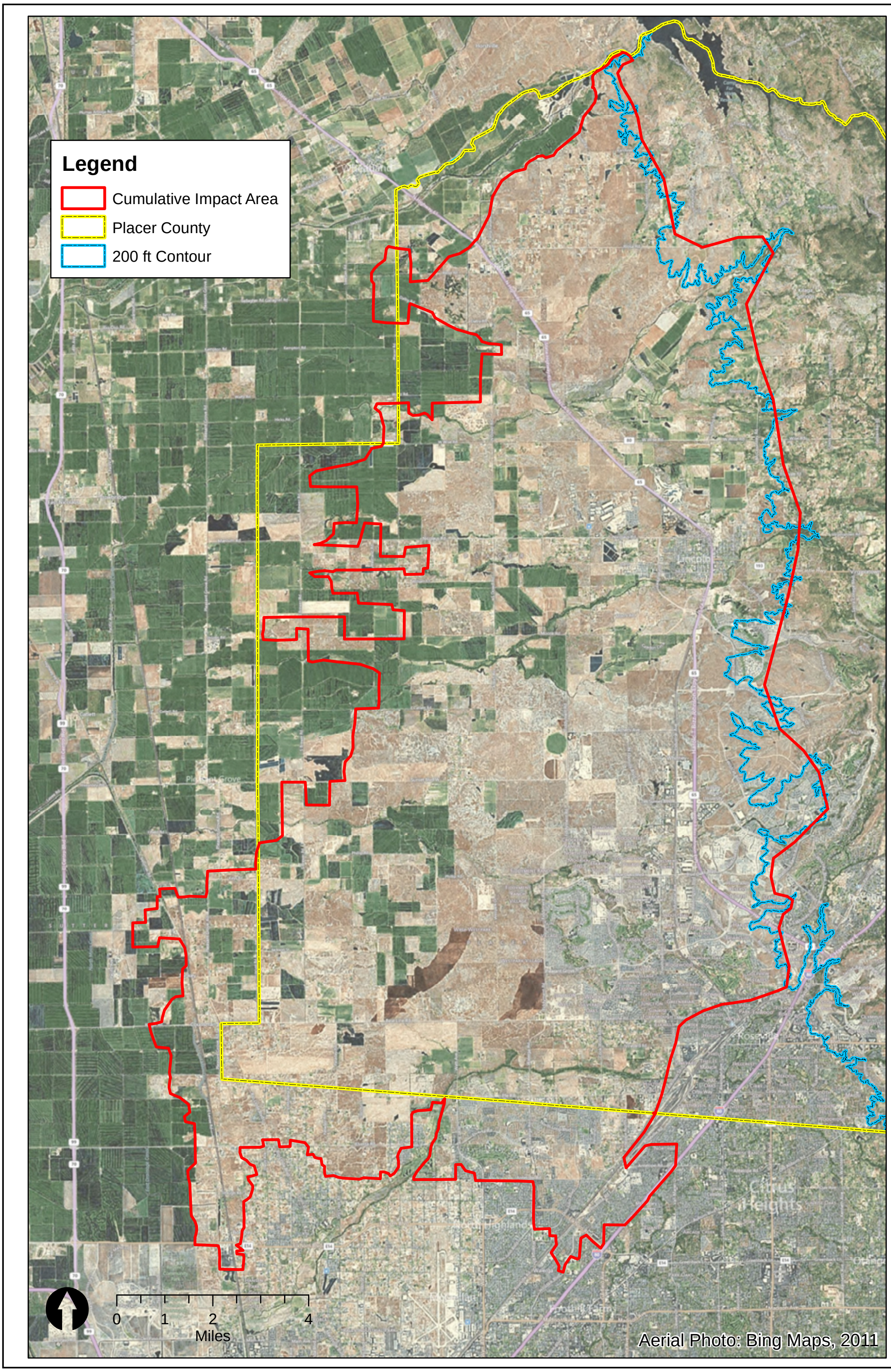
The study area for cumulative air quality impacts is the Sacramento Valley Air Basin, which includes Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties, the western urbanized portion of Placer County, and the eastern portion of Solano County.

The study area for cumulative impacts on cultural resources is western Placer County because, to the extent that there are any prehistoric and historic resources within the project site, their significance is generally expected to be confined to the local area, and they are generally not expected to have a broader significance to the State of California. Therefore the cumulative impacts of the Proposed Action are not anticipated to cumulate with the impacts of projects outside of western Placer County.

The study area for cumulative effects to surface water hydrology and water quality comprises the Curry Creek and Dry Creek watersheds within which the Proposed Action would be located. The cumulative context for effects to groundwater is the North American Groundwater Subbasin.

The cumulative context for noise depends on whether the source is mobile (traffic related) or stationary source related (factory, generator, etc.). Traffic from the Proposed Action would result in noise both inside and outside the project site. At the same time, the project site development would also be subjected to traffic noise associated with the development of other nearby areas. Consequently, the study area for noise is southwestern Placer County.

The study area for potential cumulative impacts related to provision of utilities is the service area for each utility district, including the service areas of the Placer County Water Agency for water supply, the Sacramento Regional County Sanitation District for wastewater, and the service area of the Western Regional Sanitary Landfill for solid waste impacts.



SOURCE: Salix Consulting – 2011

FIGURE **4.0-1**

Study Area for Cumulative Impacts

1090.002•11/12

4.2.4 Identification of Other Past, Present, and Reasonably Foreseeable Future Actions and Projects

As noted above, the timeframe selected for most of the resource topics addressed in this cumulative impact assessment is 40 years in the past to approximately 50 years in the future. Two methods were used to analyze the changes in the study area due to historical agricultural practices and land development over the last 40 years. Firstly, the USACE conducted a review of historical aerial photographs to characterize the changes in land use patterns at a landscape scale. Secondly, USACE conducted a review of DA permits issued for projects within the study area between approximately 1990 and 2011 to characterize the changes in the study area with respect to the waters of the U.S. Furthermore, the conditions that exist in the study area at this time, which are reflective of the effects of past actions, were fully considered in the evaluation of cumulative impacts.

With respect to reasonably foreseeable future projects and actions, the USACE identified these based on both a list of reasonably foreseeable projects/actions and a summary of growth projections. Because the development of the Proposed Action would occur over a long period of time (estimated between 12 and 27 years from authorization), the projections-based approach was used to identify other foreseeable growth in the study area. In order to provide a more detailed analysis of certain cumulative impacts, the growth projections were supplemented by a list of reasonably foreseeable projects. The list was developed by contacting the Cities of Roseville, Lincoln, and Placer County. **Table 4.0-1** presents the other present and reasonably foreseeable projects in the cumulative study area.

The analysis of cumulative impacts was completed based on the Placer County General Plan, the proposed PCCP, the City of Roseville General Plan, City of Lincoln General Plan, and the growth projections prepared by the Sacramento Area Council of Governments (SACOG). Each of these plans/projections used in developing the cumulative impact analysis is briefly described below.

Present and Reasonably Foreseeable Future Actions under the Placer County General Plan

The Placer County General Plan, adopted by the Board of Supervisors in 1994, consists of two types of documents: the Countywide General Plan and a set of more detailed community plans covering specific areas of the unincorporated County. The Countywide General Plan provides an overall framework for development of the County and protection of natural and cultural resources. The goals and policies contained in the Countywide General Plan are applicable throughout the County, except to the extent that County authority is preempted by cities within their corporate limits. Community plans, adopted in the same manner as the Countywide General Plan, provide a more detailed focus on specific geographic areas within the unincorporated County. The goals and policies contained in the community plans supplement and elaborate upon, but do not supersede, the goals and policies of the Countywide General Plan.

Table 4.0-1
Present and Reasonably Foreseeable Actions in the Study Area

Project	Acreage	Residential Units
Fiddyment Road Widening[a]	NA	NA
Amoruso Specific Plan	674	2,785
Creekview Specific Plan[b]	501	2,011
Regional University Specific Plan[c]	1,157.5	1,155
Westbrook Project[d]	397	2,029
Riolo Vineyards Specific Plan[e]	525.8	933
Placer Parkway Alternative 5[f]	NA	NA
Reason Farms Retention[g]	1,500	NA
Sierra Vista Specific Plan[h]	1,612	6,650
Elverta Specific Plan[i]	423	2,454
Lincoln 270[j]	270	NA
Sutter Pointe Specific Plan[k]	7,528	16,901
Village 7 Lewis Property[l]	515.9	2,470
Westbrook Project[m]	397	2,029

Note: NA – not applicable

[a] *Department of the Army Permit SPK-2010-00735. August 5, 2011.*

[b] *City of Roseville. December 2010. Draft EIR Creekview Specific Plan.*

[c] *Placer County. December 2007. Draft EIR Regional University Specific Plan. Prepared by PBS&J.*

[d] *Impact Sciences. 2013.*

[e] *Placer County. January 2008. Draft EIR Riolo Vineyards Specific Plan. Prepared by URS.*

[f] *Placer County. June 2007. Draft EIR Placer Parkway. Prepared by URS. (note: Alternative 5 was determined to be the preferred alternative)*

[g] *City of Roseville. 16 October 2002. Draft EIR for the City of Roseville Retention Basin Project. Prepared by URS.*

[h] *Impact Sciences. 2012.*

[i] *U.S. Army Corps of Engineers. December 2012. Elverta Specific Plan Draft EIS. (note: Alternative A was determined to be the preferred alternative)*

[j] *Department of Army Permit application for Lincoln 270.*

[k] *Measure M Group. 10 September 2007. Wetland Delineation for Sutter Pointe Specific Plan. Prepared by ECORP.*

[l] *City of Lincoln. June 2009. Draft EIR Village 7 Specific Plan Project. Prepared by PBS&J.*

[m] *Department of Army permit application for Westbrook Specific Plan.*

The County has recently approved several large development and infrastructure projects[1] in the vicinity of the Proposed Action. These include:

- Riolo Vineyards Specific Plan site, which is a 500-acre (202-hectare) residential community subdivision that has been approved by the County.

1 Placer County has not yet initiated a planning process to develop the Curry Creek Community Plan but may in the future. This Community Plan would be for the area northwest of the project site.

- The Regional University and Community Specific Plan project is an approximately 1,100-acre (445-hectare) site, located approximately 1.5 miles (2.4 kilometers) north of Baseline Road. It includes a 600-acre (242-hectare) area designated for a private university campus, and other areas designated for residential and commercial uses.
- The Placer Parkway Corridor selection has been completed by Placer County. The proposal is to eventually construct an approximate 15-mile (24.1 kilometers) long, high-speed transportation facility, which will connect State Route (SR) 65 in western Placer County to SR 70/99 in south Sutter County. The selected corridor passes through the central portion of the study area.
- An expansion of the Western Regional Sanitary Landfill, operated by the Western Placer Waste Management Authority.

Present and Reasonably Foreseeable Future Actions under the City of Roseville General Plan

The City of Roseville General Plan, adopted by the City Council in 2010, serves as a long-term policy guide and vision for the physical, economic, and environmental growth of the City. Land designated and zoned for residential development within the existing City of Roseville City limits is fully entitled for future development, and according to development projections is anticipated to be built out by 2025.

The City has previously approved or is processing several development and infrastructure projects in the vicinity of the Proposed Action. These include the following:

- West Roseville Specific Plan area, to the north of Pleasant Grove Boulevard, is currently under development.
- Creekview Specific Plan is a proposed specific plan for the development of an approximately 500-acre (202.3-hectare) site located immediately west and north of the City's existing boundary. The Specific Plan includes 2,011 residential units and additional area designated for open space, parks, and commercial development. This project has been approved by the City but is awaiting annexation. An application for a DA permit is on file with the USACE for this project.
- Amoruso Ranch Specific Plan is a proposed specific plan for the development of an approximately 674-acre (272-hectare) site located on the south side of West Sunset Boulevard about 1.5 miles (2.4 kilometers) west of Fiddyment Road. The proposed land use plan includes 2,785 residential units and two commercial parcels, a school site, parks, and a public facilities site.
- Placer Ranch Specific Plan includes 6,796 acres (2,750 hectares) in unincorporated Placer County. Originally proposed in the County, a development application was submitted to the City of Roseville in 2007. The project has been on hold since early 2008. While inactive at this time, it is likely that some development will occur on this site in the future.
- Sierra Vista Specific Plan is a City-approved SP project which would develop a large scale, master-planned mixed-use community with approximately 6,650 residential units on an approximately 1,600-acre (332 hectare) site in the northwestern portion of Roseville. Applications for DA permits have been filed with the USACE for this project.
- Fiddyment Road will be widened between Baseline Road and Pleasant Grove Boulevard by adding two additional lanes along the western side of the existing roadway. This project was approved by the City of Roseville and a DA permit was issued by the USACE to authorize

0.44 acre (0.2 hectare) of fill associated with the roadway-widening project. The project is scheduled for construction in summer 2012.

- Westbrook Project is a City-approved SP project which would develop a 397-acre (162-hectare) site to the northwest of the Sierra Vista Specific Plan site. The land use plan includes about 2,029 residential units, a school site, parks, open space, and land for commercial uses. An application for a DA permit has been filed with the USACE for this project.
- Reason Farms is a 1,700-acre (688-hectare) area located northwest of the City boundary and west of the Creekview Specific Plan area. This area is currently maintained as open space by the City and the City plans to develop flood control projects on the site.

Reasonably Foreseeable Future Actions under the City of Lincoln General Plan

The City of Lincoln General Plan, adopted by the City Council in 2008, provides the City with a consistent framework for land use and resource decision making. The General Plan's diagrams, goals, policies, and implementation measures form the basis for City zoning, subdivisions, specific plans, and City projects. The General Plan's Land Use Diagram would allow for up to an additional 34,010 housing units, or an additional population of approximately 101,000 persons at buildout in the year 2050.

The City has approved the following two development projects within the study area:

- The Lincoln 270 Project would develop 117.7 acres of a 270-acre parcel of land with 47.9 acres of commercial space, 37.8 acres of light industrial, and 32 acres for medical care facilities. The approximately 120 remaining acres are non-developable and would be reserved as wildlife habitat, wetlands, and vernal pools. The City has approved the Lincoln 270 project which is in the study area and an application for a DA permit is on file with the USACE for this project.
- The Village 7 Specific Plan Project would develop 703 acres of unincorporated land, southwest of the City of Lincoln. The land would be annexed into the City of Lincoln. The project would consist of four planning areas: the Lewis property which consists of 526 acres, the Aitken Ranch II property which consists of 121 acres, the Scheiber property which consists of 26 acres, and the Remainder Area which consists of 40 acres. The project would develop a maximum of 3,285 residential units and a centrally located Village Center.

Reasonably Foreseeable Future Actions under the County of Sacramento General Plan

The County of Sacramento adopted the County of Sacramento 2030 General Plan in November 2011. The County of Sacramento 2030 General Plan provides for between 103,500 and 150,000 new housing units in Sacramento County. According to the plan, the portion of Sacramento County to the south of the Placer County boundary is generally designated for agricultural residential, low-density residential, and agricultural cropland land uses.

Sacramento County approved the Elverta Specific Plan, which encompasses 1,744 acres (796 hectares) of land. The specific plan provides a set of policies and programs primarily for development of 4,950 residences, including urban residential and agricultural-residential uses. The plan also includes a commercial site, parks, and open space areas. The Elverta Specific Plan was adopted by the Board of Supervisors in August, 2007. The project has not been implemented at this time.

Reasonably Foreseeable Future Actions under the Sutter County General Plan

The Sutter County Board of Supervisors approved a comprehensive update of the Sutter County General Plan in April 2011. According to the approved land use diagram, the area immediately west of the Placer County boundary is designated for agricultural uses.

At this time, one major land development project is approved for the portion of Sutter County within the cumulative study area. Sutter Pointe Specific Plan, which encompasses approximately 7,528 acres (3,046 hectares) of land in southern Sutter County, envisions establishment of a new city for about 43,000 residents. The project proposes a diverse mix of land uses, including employment centers, many different housing types, retail shopping villages, recreation amenities, schools, community services, supporting on-and off-site infrastructure, roadway improvements, open space, and various public uses including a town center. The Sutter Pointe Specific Plan was approved by the Board of Supervisors on June 30, 2009.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is a regional organization that provides a variety of planning functions over its six-county region (Sacramento, Yolo, Placer, Sutter, Yuba, and El Dorado counties). SACOG's primary functions are to provide transportation planning and funding for the region and to study, and support, resolution of regional issues. SACOG conducted several local community workshops to help determine how the Sacramento region should grow through the year 2050. The result of these efforts was the SACOG Blueprint, a transportation and land use analysis suggesting how cities and counties should grow based on a set of smart growth principles that include transportation choices, mixed-use development, compact development, housing choices and diversity, use of existing assets, quality design and natural resources conservation.

In December 2004, the SACOG Board of Directors adopted the Preferred Blueprint Scenario (SACOG Blueprint), a vision for the growth of the six-county region that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. The project site, which includes the Proposed Action and on-site alternatives, is designated in the SACOG Blueprint for single-family small lots, attached residential, medium- and high-density mixed residential uses, and low- and medium-density mixed-use commercial centers in the near term.

Under the SACOG Blueprint, most of the area in Sacramento County to the south of the Proposed Action site is designated for single-family residential use and some medium-density residential and mixed residential uses. Areas in the southeastern portion of Sutter County are designated for industrial and medium-density mixed residential uses. North of this, the area along the Placer–Sutter County boundary is mostly designated for agricultural uses.

In April 2012, SACOG adopted the 2035 Metropolitan Transportation Plan (MTP)/Sustainable Communities Strategy (SCS) as required by Senate Bill 375. SB 375 requires the formation of an SCS to reach greenhouse gas target emissions by reducing vehicle miles. The 2035 MTP/SCS is a long-range transportation plan and sustainable communities strategy that will serve existing and projected residents

and workers within the Sacramento region through the year 2035. The Preferred Blueprint Scenario was used as the starting point in the development of the SCS. The 2035 MTP/SCS accommodates another 871,000 residents, 362,000 new jobs, and 303,000 new homes with a transportation investment strategy of $35 billion. The SCS includes land use maps identifying areas that SACOG considered appropriate for development and those not appropriate for development. The land use vision embodied in the SCS is consistent with the SACOG Blueprint.

Proposed Placer County Conservation Plan

The Placer County Conservation Plan (PCCP) is a proposed regional partnership between local jurisdictions (the County of Placer, South Placer Regional Transportation Authority (SPRTA), Placer County Water Agency (PCWA), Placer County Resource Conservation District, and the City of Lincoln) and state and federal agencies (California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, the National Marine Fisheries Service, USACE, U.S. EPA, and the California Regional Water Quality Control Board). The PCCP has not been adopted by any jurisdiction as of the publication of this Draft EIS.

The purpose of the PCCP is to protect and enhance ecological diversity and function in the greater portion of western Placer County, while allowing appropriate and compatible growth in accordance with applicable laws. To this end, the draft PCCP describes how to avoid, minimize, and mitigate impacts on Endangered and Threatened species, thereby addressing the permitting requirements under the federal and state Endangered Species Acts relevant to these species for activities conducted in the plan area by the permittees, including Placer County, the City of Lincoln, SPRTA, and PCWA. These covered activities include urban growth and a variety of road, water, and other needed infrastructure construction and maintenance activities. The draft PCCP also describes the responsibilities associated with operating and maintaining the new habitat reserves that will be created to mitigate anticipated impacts resulting from growth and development activities. The area proposed for permit coverage under the draft PCCP covers approximately 212,000 acres (86,000 hectares) in the City of Lincoln and unincorporated Placer County. The draft PCCP analyzes land use patterns and forecasts the extent and location of urban, suburban, and rural growth and seeks to reconcile potential future growth with the conservation strategy.

4.2.5 Evaluation of Potential Cumulative Impacts and Mitigation Measures

For each resource that was carried forth for cumulative impact assessment, the current health and historical context of the resource is described based on the best available information. The information was drawn from **Chapter 3.0** of this Draft EIS, supplemented with additional data as necessary.

For each resource that was carried forth for cumulative impact assessment, potential cumulative impacts were evaluated either qualitatively or based on quantitative information where available. For each cumulative impact, the Proposed Action's contribution to the cumulative impact was evaluated to determine whether the contribution would be significant. As appropriate, mitigation measures were identified to be implemented by either the Applicants or the USACE, or both.

4.3 CUMULATIVE IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

Cumulative impacts of the Proposed Action and its alternatives are presented below by environmental resource topic. The significance criteria that were used to evaluate project impacts in **Section 3.0** were also used to evaluate cumulative impacts. The discussion of the Proposed Action's cumulative impact is followed by a summary discussion identifying whether the cumulative impacts of the alternatives would be the same, greater, or lesser than those of the Proposed Action. As appropriate, mitigation measures are identified for significant cumulative impacts.

4.3.1 Biological Resources

Direct and Indirect Impacts of the Proposed Action

Section 3.4, Biological Resources, presents the Proposed Action's direct and indirect impacts on biological resources at the project site and in its vicinity. The analysis addresses the Proposed Action's impacts on wetlands, other sensitive natural communities, special-status plant and wildlife species, and wildlife corridors. The Proposed Action would result in the filling of wetlands and direct and indirect effects on vernal pool crustacean habitat. Given past and reasonably foreseeable losses of wetland/vernal pool habitat in the region, the effects of the Proposed Action would have the potential to cumulate with other losses in the region. In addition, the Proposed Action would affect wildlife movement by fragmenting open space habitat. The obstruction of wildlife habitat throughout the region could also result in cumulative effects on wildlife. Additionally, the Proposed Action would remove grassland habitat which is used for foraging by protected raptors and other birds.

Other biological resource impacts of the Proposed Action would not have the potential to cumulate and result in substantial adverse cumulative impacts. For instance, impacts to Valley Elderberry Longhorn Beetle would be reduced with implementation of **Mitigation Measure BIO-5** and impacts to western pond turtle from potential construction-phase losses would be minimized by **PVSP EIR Mitigation Measure 4.4-4**. Similarly, construction-phase effects on protected raptor species and nesting birds would be minimized by the implementation of **PVSP EIR Mitigation Measures 4.4-7 and 4.4-8**. Off-site effects to fish species would be reduced by **PVSP EIR Mitigation Measures 4.4-12** and **4.4-30.** In addition, construction activity impacts to roosting bats would be reduced by implementation of **PVSP EIR Mitigation Measure 4.4-9**. As these impacts would not have the potential to cumulate, they are not analyzed below.

Current Status of the Resource

Central Valley Vernal Pools

The Central Valley of California encompasses an area of more than 13 million acres (5 million hectares). According to Holland, the Central Valley encompassed up to 7 million acres (3 million hectares) of vernal pool landscapes in the early 1800s (Holland 2009). However, according to a study by Frayer, the seasonal wetlands of the Central Valley totaled about four million acres (two million hectares) in the 1850s (Frayer

et a. 1989). Through the 1800s, these landscapes were destroyed or fragmented by conversion to agriculture, mineral extraction, and water conveyance and storage projects. Between the 1930s and 1970s, agricultural conversion and urbanization of the landscape further reduced the habitat (Frayer et al. 1989).

Based on aerial photographs of the Central Valley taken over a period from 1976 to 1995, with most taken between 1982 and 1992, Holland noted that only 995,000 acres (403,000 hectares) of vernal pool habitat was left in the Central Valley in 1997. This represents an 87 percent reduction in the original habitat acreage (Holland 2009).

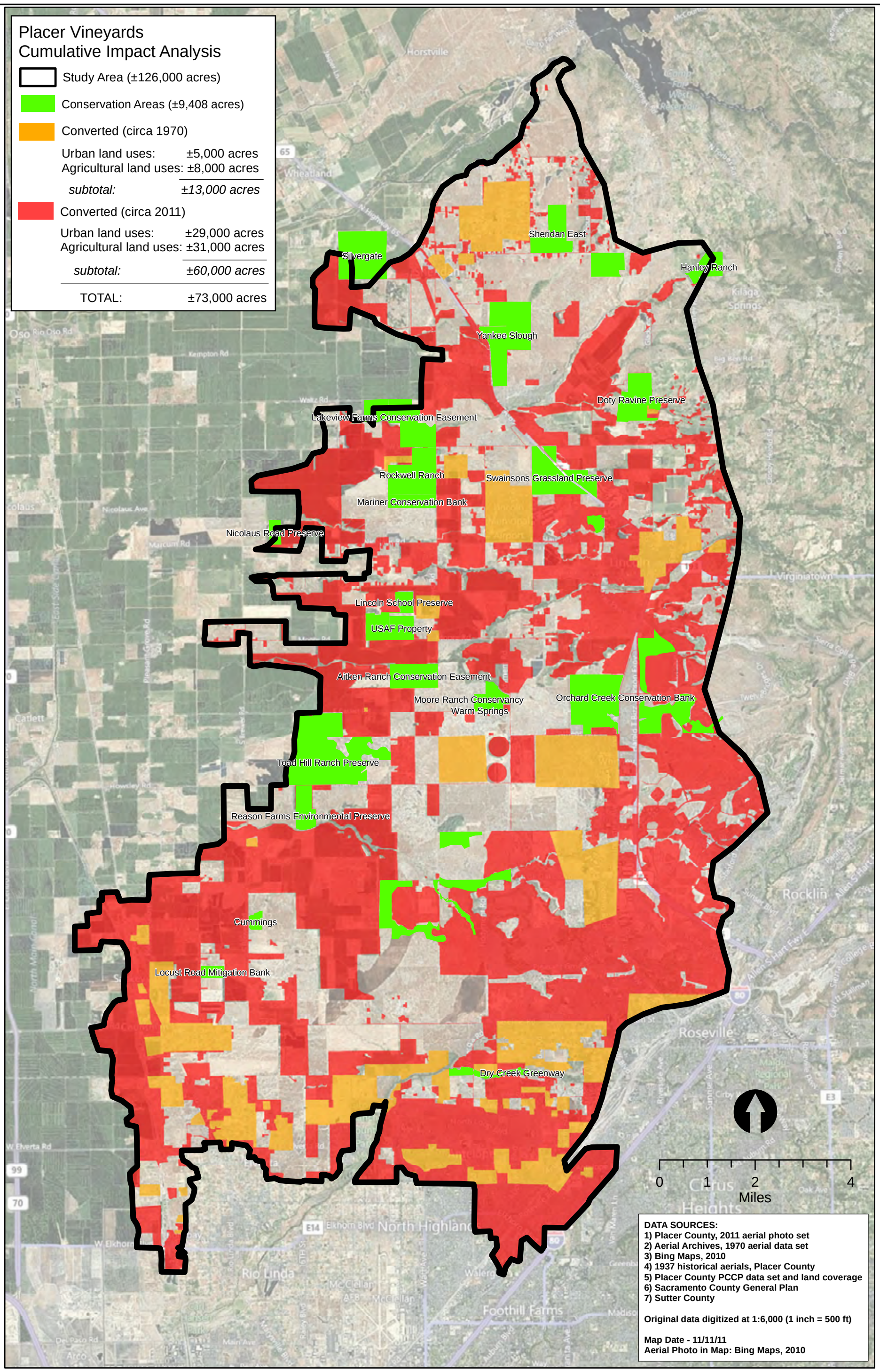
According to the U.S. Fish and Wildlife Service (USFWS), from 1992 to 1998, 125,591 acres (50,824 hectares) of grazing land were converted to other agricultural uses in the Central Valley (USFWS 2005). It is likely that much of this land supported vernal pools.

Conversion of vernal pool habitats to intensive agricultural uses continues to contribute to the decline of vernal pools. In recent years, the habitats have also been destroyed as a result of urban development, including residential, commercial, and industrial projects, and infrastructure associated with urbanization (USFWS 2005). As of 2005, the vernal pool habitat in the Central Valley was reduced further to 896,000 acres (363,000 hectares) of the remaining habitat (Holland 2009). The amount of loss over this period of time was not distributed evenly across Central Valley. For example, Merced County lost 6,100 acres (2,500 hectares) between 1986 and 1997, and an additional 18,000 acres (7,300 hectares) of habitat between 1997 and 2005. Placer County lost 10,440 acres (4,225 hectares) between 1994 and 1997, and an additional 6,600 acres (2,670 hectares) of habitat between 1997 and 2005. On the other hand, Mariposa County did not have any vernal pool habitat losses in this timeframe (Holland 2009).

According to Holland, the majority (81 percent) of vernal pool grasslands were lost because of conversion of range land to agricultural land, which is typically outside of the normal regulatory processes that apply to other land use conversions (urban, commercial, infrastructure, and industrial) under both federal and state laws. Therefore, the vernal pool losses associated with converting grazing land to agricultural land are mostly unmitigated (AECOM 2009). Little to no vernal pool habitat has been created or preserved to compensate for these losses due to agricultural conversions (Holland 2009).

Study Area Vernal Pool Habitat and Wetlands

As noted earlier, according to Holland, Placer County lost 10,440 acres (4,224 hectares) between 1994 and 1997 and an additional 6,600 acres (2,670 hectares) of vernal pool habitat between 1997 and 2005 (Holland 2009). The change in vernal pool grassland habitat within the study area is shown on **Figure 4.0-2, Converted Vernal Pool Grassland in Cumulative Study Area Circa 2011**. The graphic shows the vernal pool grassland areas that had been converted by 1970, with about 8,000 acres (3,000 hectares) (62 percent) converted by agricultural uses and about 5,000 acres (2,000 hectares) (38 percent) by urban development. The graphic also shows vernal pool grassland areas that were converted between 1970 and 2011, with about 31,000 acres (13,000 hectares) due to agricultural conversions and about 29,000 acres (12,000 hectares) due to urban development. During this timeframe, approximately 9,400 acres (3,800 hectares) of vernal pool grassland habitat within the study area was placed in preserves or conservation areas.



SOURCE: Salix Consulting – 2011

FIGURE **4.0-2**

Converted Vernal Pool Grassland in Cumulative Study Area Circa 2011

Between approximately 1990 and 2010, 252 projects were permitted by the USACE in the study area. Of these permitted projects, 230 permits contained complete data regarding impacts and mitigation that the USACE used to estimate the magnitude of wetland impacts within the study area (see **Appendix 4.1** which presents details of the permits that were reviewed to develop the data reported below). The 230 permits included 27 individual permits, 190 nationwide permits, one regional general permit, and eight letters of permission. **Table 4.0-2, Study Area Wetland Impacts and Mitigation (in Acres) based on USACE Permits Issued since 1990,** below, presents the acres of wetlands filled as a result of development authorized by these permits, as well as the mitigation to compensate for the filling of wetlands. The permits authorized the fill of about 438.93 acres (177.63 hectares) of wetlands. This included approximately 148 acres (60 hectares) (44 percent of total) of vernal pools and 291 acres (118 hectares) (66 percent) of other waters of the U.S. The projects authorized by the permits provided various forms of mitigation, which included on-site preservation, creation, and restoration, payment towards the National Fish and Wildlife Fund, purchase of mitigation credits in study area mitigation banks, and purchase of mitigation credits in mitigation banks outside the study area. As **Table 4.0-2** shows, a total of about 1,254 acres (507 hectares) of mitigation were required under the permits issued. In general, the USACE required compensatory mitigation, which includes creation, restoration/enhancement, as well as preservation, for vernal pool losses at an average rate of 3.15 acres (1.27 hectares) for every acre filled whereas losses of other waters of the U.S. were compensated at an average rate of about 2.71 acres (1.1 hectares) for every acre filled. However, if the impacts are compared only to mitigation provided in the form of creation, restoration or enhancement of wetlands, vernal pool losses were compensated at an average rate of 1.41 acres (0.57 hectare) for every acre filled and losses of other waters of the U.S. were compensated at an average rate of about 1.46 acres (0.59 hectare) for every acre filled. Approximately 93 percent of the mitigation was provided within the study area and 7 percent outside the study area. It is noted that the numbers reported above are based on a review of permits issued by the USACE. These do not take into account the rates of success or failure of wetlands mitigation.

Table 4.0-2
Wetland Impacts and Mitigation (in Acres) based on Recent Permits Issued by the USACE in Study Area

Wetland Type	Total Impact	Total Mitigation	On-site Mitigation			Mitigation Banks within Study Area		Mitigation Banks Outside of Study Area[a]	
			Creation	Restored/ Enhanced	Preserved	Creation	Preservation	Creation	Preservation
Vernal Pools	147.55[b]	465.24	71.33	0	76.41	121.05	132.09	16.35	48.01
Other Waters of U.S.	291.38[c]	788.69	180.30	13.95[d]	296.36	231.68	39.95	26.45	0
Total	**438.93**	**1,253.93**	**251.63**	**13.95**	**372.77**	**352.73**	**172.04**	**42.8**	**48.01**
Total Delineated	1,099.51								

Notes:

[a] *Includes mitigation sites that are in unknown locations*

[b] *Total impact does not include 0.87 acre of temporary impact to vernal pools.*

[c] *Total impact does not include 13.79 acres of temporary impact to other waters of the U.S.*

[d] *Includes 11.9 acres of restored and 2.05 acres of enhanced wetlands*

Other Present and Reasonably Foreseeable Future Actions and Projects

Based on the permit applications that are on file with the USACE and information on the development projects that have received approval from the local jurisdictions, the projects listed in **Table 4.0-3, Present and Reasonably Foreseeable Actions in the Cumulative Study Area**, are present and reasonably foreseeable future actions and projects within the cumulative study area for biological resources.

Table 4.0-3
Present and Reasonably Foreseeable Actions in the Cumulative Study Area

Project	Total Vernal Pools and Other Waters of the U.S. * (acres)	Estimated Impacts** (acres)
Fiddyment Road Widening[a]	0.44	0.44
Amoruso Specific Plan	ND	ND
Creekview Specific Plan[b]	33.83	14.17
Regional University Specific Plan[c]	85.28	18.00
Sierra Vista Specific Plan[d]	36.07	24.81
Riolo Vineyards Specific Plan[e]	12.58	1.17
Placer Parkway Alternative 5[f]	152.00	ND
Reason Farms Retention[g]	71.44	0.75
Westbrook Specific Plan[h]	12.55	9.56
Elverta Specific Plan[i]	36.40	~36.40
Lincoln 270[j]	30.37	10.56
Sutter Pointe Specific Plan[k]	70.00	ND
Village 7 Lewis Property[l]	30.63	6.87

Note: ND – not determined

[a] *Department of the Army Permit SPK-2010-00735. August 5, 2011. (note: these impacts are permitted for fill)*

[b] *Granite Bay Development II, LLC. 30 November 2010. Biological Resources Assessment for the 560-Acre Creekview Specific Plan. Prepared by North Fork Associates.*

[c] *Placer County. December 2007. Draft EIR Regional University Specific Plan. Prepared by PBS&J.*

[d] *Gibson and Skordal. 2012. Memorandum. May 18.*

[e] *Placer County. January 2008. Draft EIR Riolo Vineyards Specific Plan. Prepared by URS.*

[f] *Placer County. June 2007. Draft EIR Placer Parkway. Prepared by URS. (note: Alternative 5 was determined to be the preferred alternative)*

[g] *City of Roseville. 16 October 2002. Draft EIR for the City of Roseville Retention Basin Project. Prepared by URS.*

[h] *Department of Army permit application for Westbrook Specific Plan*

[i] *Sacramento County. 2007. Elverta Specific Plan Final EIR.*

[j] *Department of Army permit application for Lincoln 270.*

[k] *Measure M Group. 10 September 2007. Wetland Delineation for Sutter Pointe Specific Plan. Prepared by ECORP.*

[l] *City of Lincoln. June 2009. Draft EIR Village 7 Specific Plan Project. Prepared by PBS&J.*

* *Jurisdictional waters of the U.S.*

** *On-site impacts, not yet approved by USACE*

Placer County's population is expected to increase by 270,837 people from 2005 to reach a total of 570,709 by 2035 (SACOG 2008) and increase by 484,000 people from 2007 to reach a total of 811,000 by 2060 (Hausrath Economics Group 2008). Most of this growth is expected to occur in the cities and unincorporated areas of western Placer County. The majority of the population and employment growth requires land for urban/suburban residential, commercial, office and industrial uses, and associated infrastructure and public support facilities (e.g., wastewater treatment plants, libraries, landfills, etc.). Based on plans and proposals for development in the cities and the unincorporated areas and on planning level assumptions about development density, an estimated 68,000 acres (28,000 hectares) of land conversion would accommodate this growth, of which 57,000 acres (23,000 hectares) would be in unincorporated Placer County and Lincoln. The remainder would be in the cities of Auburn, Loomis, Rocklin, and Roseville (PCCP 2011). According to the draft PCCP, the far western portions of Placer County are expected to be preserved.

As explained above, the Sacramento County 2030 General Plan identifies some growth areas to the south of the Placer County southern boundary, within the study area. The area identified for growth is designated for low-density residential uses. The remaining areas within the Sacramento County portion of the study area are designated for agricultural uses, so would not likely be developed.

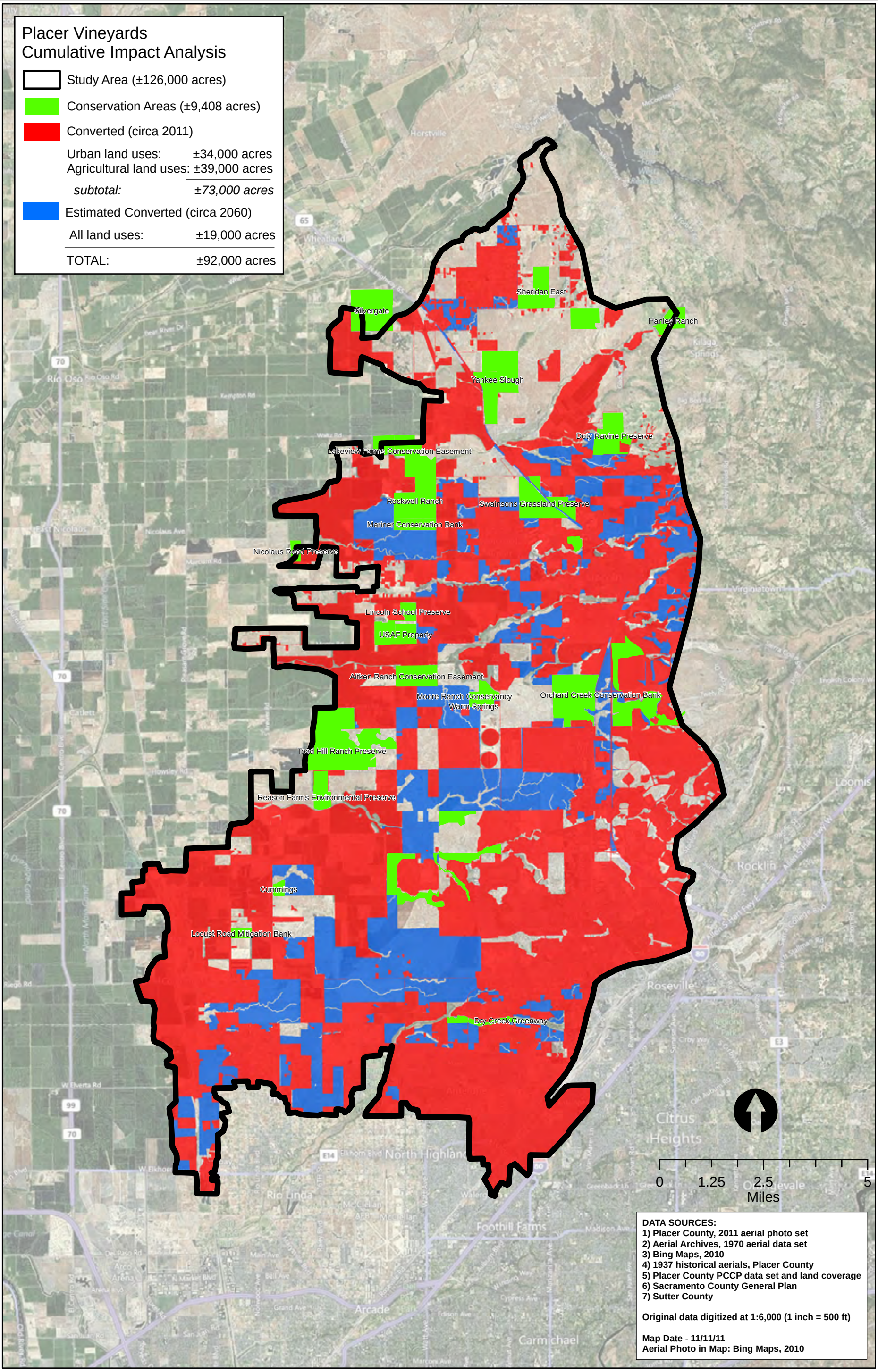
The study area also includes a portion of Sutter County. With respect to the Sutter County portion of the study area, the County General Plan designates most of the area for agricultural and open space uses and a portion of it for development of a new town under the Sutter Pointe Specific Plan.

Figure 4.0-3, Converted Vernal Pool Grassland in Cumulative Study Area Circa 2060, shows the additional areas of vernal pool grassland habitat within the study area that are anticipated to be converted between 2010 and 2060 based on the projected growth in the area as reported in the draft PCCP and other information. As shown in this figure, approximately 19,000 acres (7,700 hectares) of additional potential habitat would be converted if the projected growth occurs in the study area.

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be considered significant if the Proposed Action or an alternative would:

- Result in a net loss of wetlands
- Result in an unmitigated loss of vernal pool grassland habitat; or
- Result in an unmitigated loss of wildlife foraging and movement habitat.



SOURCE: Salix Consulting – 2011

FIGURE **4.0-3**

Converted Vernal Pool Grassland in Cumulative Study Area Circa 2060

The first threshold listed above relates to the federal policy of "no net loss" of wetland acreage and function. As stated in the Memorandum of Agreement between the USACE and U.S. EPA for the determination of mitigation under the Clean Water Action Section 404(b)(1) Guidelines,

> *the Clean Water Act and the Section 404(b)(1) Guidelines set forth a goal of restoring and maintaining existing aquatic resources. The Corps will strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, will strive to achieve a goal of no overall net loss of values and functions…. The determination of what level of mitigation constitutes "appropriate" mitigation is based solely on the values and functions of the aquatic resource that will be impacted. "Practicable" is defined at Section 230.3(q) of the Guidelines. However, the level of mitigation determined to be appropriate and practicable under Section 230.10(d) may lead to individual permit decisions which do not fully meet this goal because the mitigation measures necessary to meet this goal are not feasible, not practicable, or would accomplish only inconsequential reductions in impacts. Consequently, it is recognized that no net loss of wetlands functions and values may not be achieved in each and every permit action. However, it remains a goal of the Section 404 regulatory program to contribute to the national goal of no overall net loss of the nation's remaining wetlands base.*

Consequently, the USACE's compensatory mitigation program has been designed to ensure to the maximum extent practicable that each project that will fill wetlands provide compensatory mitigation that takes into account not just the acreage of wetlands affected but also their functions and values. The USACE's compensatory mitigation program requires mitigation in kind and in amounts (ratios) that take into account temporal loss as well as risk of failure. Based on the above, if a proposed project, after avoidance and minimization, provides mitigation that meets the USACE's requirements for compensatory mitigation, it is presumed that such a project would not result in a net loss of wetlands and would not make a substantial contribution to a cumulative impact on wetlands.

Cumulative Impact BIO-1 Loss of Wetlands and Other Waters of the U.S.

No Action Alt. The No Action Alternative would not result in filling of any wetlands on the project site because filling of the waters of the U.S. would be avoided by design. Therefore, this alternative would have a **less than significant** cumulative impact on wetlands, and no mitigation is required.

Proposed Action (Base Plan and Blueprint Scenarios) Agricultural practices and conversions, urban development, and infrastructure development have resulted in a cumulative loss of wetlands, including vernal pools, in the study area. Future growth is anticipated to further add to this cumulative impact and the Proposed Action would contribute to this impact by filling 119.2 acres (48.2 hectares) of vernal pools and other waters of the U.S. Compliance with the USACE's regulatory requirements will reduce the Proposed Action's contribution to the cumulative impact to less than significant. However, because a final wetlands mitigation plan has not been submitted to the USACE by the Applicants, the USACE cannot determine whether a no net loss of wetlands will be achieved and therefore concludes that the Proposed Action's contribution to the cumulative impact will be **significant**.

As noted earlier, conversion of grasslands with embedded vernal pools to intensive agricultural uses has contributed to the decline of vernal pools and other wetlands in the study area. The total amount of wetland fill that has occurred in the study area is not available. However, data on fills permitted by the USACE are available and as noted above, based on DA permits issued by the USACE between 1990 and 2010, the USACE authorized the filling of about 438.93 acres (177.63 hectares) of wetlands in the study area. This included approximately 148 acres (60 hectares) (34 percent of the total amount of wetlands filled in the study area) of vernal pools and 291 acres (118 hectares) (66 percent) of other waters of the U.S.

Future growth in the study area is anticipated to further add to this cumulative impact. As shown in **Table 4.0-2**, foreseeable projects subject to the USACE regulatory program, if approved as proposed, could potentially result in the filling of approximately 114 acres (46 hectares) of wetlands and other waters of the U.S. The Proposed Action would also contribute substantially to the cumulative loss of wetlands in the study area by filling approximately 119 acres (48 hectares) of wetlands and other waters of the U.S., including vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds.

However, all new urban and infrastructure development projects listed in **Table 4.0-2** that would result in impacts to the waters of the U.S. would be subject to the regulatory and permitting requirements of the USACE, the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the Regional Water Quality Control Board. In compliance with the no net loss policy of the federal government, these projects would be required to demonstrate that after avoidance and minimization, any compensatory mitigation put forth by the project proponents for loss of wetland habitats would result in no net loss of wetland functions and values and that adverse impacts to special-status species that might be affected by filling of wetland habitat are avoided, minimized or mitigated. As noted earlier, the USACE's compensatory mitigation program requires mitigation in kind and in amounts (ratios) that take into account temporal loss as well as risk of failure. Therefore, if a proposed project, after avoidance and minimization, provides mitigation that meets the USACE's requirements for compensatory mitigation, it is presumed that such a project would not result in a net loss of wetlands and would not make a substantial contribution to a cumulative impact on wetlands. Because all development projects, including the Proposed Action, are required by law to comply with the no net loss policy and provide compensatory mitigation that meets USACE requirements, the projects are generally not expected to result in a significant cumulative loss of wetlands and other waters of the U.S. in the study area.

However, the USACE has not received DA permit applications as yet for some of the reasonably foreseeable development and infrastructure projects in the study area,

and in those instances that it has received DA permit applications, it has not yet received detailed mitigation plans and therefore cannot determine whether or not the reasonably foreseeable development and infrastructure projects will adequately mitigate all losses of wetlands. Therefore conservatively, the USACE concludes that there could be a **significant cumulative** impact on wetlands in the study area. As discussed under **Impact BIO-1**, the mitigation plan put forth by the Applicants is conceptual at this time, and because a final wetlands mitigation plan has not been submitted by the Applicants to the USACE, the USACE cannot determine whether a no net loss of wetlands will be achieved for the Proposed Action. Therefore, the USACE concludes that the Proposed Action's contribution to the cumulative impact will be **significant**.

To address the Proposed Action's contribution to the cumulative impact, **Mitigation Measure BIO-1** will be implemented. In addition, the USACE will impose **Mitigation Measure CUM BIO-1** on future development in the study area to further minimize loss of wetlands and vernal pools.

Alts. 1 through 5 Although the acreage of wetlands and other waters of the U.S. filled under each alternative varies, Alternatives 1 through 5 (individually or combined) would result in the loss of similar types of wetlands and vernal pools. The alternatives would therefore also contribute to the cumulative impact on wetlands. As with the Proposed Action, development under any of the alternatives would be required to comply with the federal and state regulatory programs for the protection of wetlands and would implement **Mitigation Measure BIO-1** to provide compensatory mitigation for wetland impacts at ratios acceptable to the USACE. Therefore, the contribution of any of the alternatives (singly or combined) to any cumulative effect on wetlands and vernal pools would be rendered less than significant. However, because a detailed mitigation plan is currently not available for any of the alternatives, conservatively the USACE assumes that the alternatives will make a significant contribution to the cumulative loss of wetlands in the study area. As noted above, the USACE will impose **Mitigation Measure CUM BIO-1** on future development in the study area to further minimize loss of wetlands and vernal pools.

Mitigation Measure CUM BIO-1:

For development and infrastructure projects proposed in the study area, the USACE will, in general, require greater than 1 acre of mitigation for each acre of aquatic resources lost for all future losses authorized under Department of the Army permits. The USACE will factor into its mitigation requirements the risk of mitigation failure or uncertainty of success and the temporal loss of function.

Cumulative Impact BIO-2 Loss of Vernal Pool Grassland Habitat

No Action Alt.

As described above, substantial amount of vernal pool grassland habitat in the study area has already been removed in conjunction with past agricultural practices, urban development, and infrastructure projects. As of 2011, approximately 73,000 acres (30,000 hectares) of potential vernal pool grassland habitat in the study area had been converted although about 9,400 acres (3,800 hectares) of this habitat was put in preserves within the study area between 1970 and 2011. Based on growth projected for the City of Lincoln and unincorporated western Placer County over the next 50 years, urban and rural development and major infrastructure projects are expected to result in the elimination, loss, or modification of approximately 12,000 acres (4,900 hectares) of vernal pool habitat (TRA Environmental Sciences 2011). In addition, reasonably foreseeable future development within the City of Roseville and its sphere of influence and in the Sutter and Sacramento County portions of the study area is anticipated to result in additional losses. **Figure 4.0-3** shows the vernal pool grassland habitat conversions projected to occur through 2060 based on projected growth in the study area. The figure is a generalized representation of the resource and is largely based on the projections of land conversions developed for western Placer County and Lincoln under the PCCP, supplemented with other data for the City of Roseville, as well as with available data for portions of the study area that are in Sutter and Sacramento counties. As the graphic shows, an estimated 19,000 acres (7,700 hectares) of vernal pool grassland areas are anticipated to be converted over the next 50 years. This includes approximately 3,500 acres (1,400 hectares) of vernal pool grassland habitat that exists on the project site.

The No Action Alternative has been developed to avoid the filling of all waters of the U.S. on the project site. In addition to avoiding all wetlands, the land use plan for the No Action Alternative provides a 50-foot buffer around all wetlands that would further protect the preserved wetlands. Consequently, this alternative would not result in filling of any wetlands on the project site and therefore would avoid the direct take of vernal pool crustacean species. However, the No Action Alternative would indirectly affect the quality of vernal pool habitat by removing the grassland areas and developing upland areas that discharge into vernal pools and wetlands. Therefore, the alternative would contribute to the cumulative loss of vernal pool grassland habitat in the study area by developing 1,300 acres (530 hectares) of upland habitat.

Absent the need for a DA permit from the USACE, impacts to vernal pool crustaceans under this alternative would require authorization under Section 10 of the ESA. Compliance with Section 10 requirements will render the No Action Alternative's contribution to the cumulative impact on vernal pool grassland habitat **less than significant.**

With respect to other reasonably foreseeable future projects, implementation of **Mitigation Measure CUM BIO-1** and **Mitigation Measure CUM BIO-2** would be required to minimize the effect to **less than significant**.

Proposed Action (Base Plan and Blueprint Scenarios)

As discussed above, cumulative development in the study area has resulted in the conversion of a substantial amount of vernal pool grassland habitat to agricultural, rural residential, urban and infrastructure land uses. Future growth is anticipated to further add to this cumulative impact and the Proposed Action would contribute to this impact by developing approximately 3,500 acres (1,400 hectares) of annual grassland habitat with embedded vernal pools. However with mitigation, the Proposed Action's contribution to this cumulative impact would be rendered **less than significant**.

Based on the historical losses of vernal pool grassland habitat and the fact that vernal pool grassland habitat losses due to agricultural conversions would continue unmitigated, the USACE has determined that the cumulative impact on vernal pool habitat within the study area would be **significant**. By converting about 3,500 acres (1,400 hectares) of grassland habitat, including about 100 acres (40 hectares) of crustacean habitat, the Proposed Action would contribute to this impact.

As stated above, all new development, including the Proposed Action, would be subject to the regulatory and permitting requirements of the USACE, the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and the Regional Water Quality Control Board. Projects subject to these requirements must demonstrate that mitigation for loss of wetland habitats would result in no net loss of wetland functions and values and that mitigation would be sufficient to ensure that adverse impacts to special-status species that might be affected by filling of wetland habitat would be avoided or mitigated. Specifically, **Mitigation Measure BIO-1** would reduce the Proposed Action's effects on waters of the U.S., including vernal pools and the effects on listed crustacean aquatic habitat to **less than significant**. Furthermore, as part of the mitigation for wetland impacts and to address the Proposed Action's impact on state special-status species foraging habitat, the Applicants will be required to conserve an equivalent acreage of grazing land or farmland elsewhere in the County which would also help preserve vernal pool grasslands within the study area. With the implementation of these mitigation measures, the Proposed Action's contribution to the cumulative impact on vernal pool grassland habitat would be rendered **less than significant.**

Because all development projects would comply with the no net loss policy and would compensate for the filling of crustacean habitat, the cumulative impact on vernal pool crustacean habitat would be reduced to less than significant. In addition, the USACE will impose **Mitigation Measure CUM BIO-1** on future development in the study area to minimize loss of wetlands and vernal pools. With respect to loss of vernal pool grassland habitat due to other reasonably foreseeable future projects, **Mitigation Measure CUM BIO-2** would be implemented by the USACE to minimize the effect to **less than significant**.

Alts. 1 through 5 Although the acreage of open space preserved on the site varies under each on-site alternative, Alternatives 1 through 5 (individually or combined) would nonetheless result in the loss of vernal pool grassland habitat. Therefore, the alternatives would contribute to a **significant** cumulative impact on vernal pool grassland habitat. However, the effects of the alternatives would be reduced to **less than significant** by the same mitigation measures listed above under the Proposed Action.

With respect to other reasonably foreseeable future projects, implementation of **Mitigation Measure CUM BIO-1** and **Mitigation Measure CUM BIO-2** would be required to minimize the effect to **less than significant**.

Mitigation Measure CUM BIO-2:

The USACE will work with the study area cities and counties to encourage regional and local planning efforts, such as the SACOG Blueprint and the proposed PCCP, that are designed to focus and concentrate growth in certain portions of the study area, minimize future losses of wetlands and vernal pool grassland habitat within the study area, and compensate for unavoidable losses.

Cumulative Impact BIO-3 Effects on Wildlife Foraging and Movement Habitat

No Action Alt., Proposed Action, Alts. 1 through 5 Cumulative development has resulted in the conversion and fragmentation of a substantial amount of natural habitat in the study area. As a result, areas available to wildlife for foraging and movement have been reduced and fragmented. Future growth, including any of the alternatives, is anticipated to further add to this cumulative impact. Mitigation is proposed in this Draft EIS to reduce the contribution of any of the alternatives to **less than significant**.

As noted in **Cumulative Impact BIO-2** above, approximately 12,000 acres (4,900 hectares) of habitat would be lost due to future development within the Placer County portion of the study area. Additional losses, estimated at about 7,000 acres (3,000 hectares) of habitat, would occur in association with future projects in Sutter and Sacramento County portions of the study area and with future projects within the City of Roseville or its sphere of influence.

The Proposed Action and Alternatives 1 through 5 would develop the project site with urban uses and infrastructure and in conjunction with that development remove about 4,500 acres (1,800 hectares) of foraging and movement habitat for wildlife species. The No Action Alternative would remove approximately 2,300 acres (930 hectares) of foraging and movement habitat. The combined effect of past, current, and future projects, including all of the alternatives, on wildlife foraging and movement habitat is a **significant** cumulative effect.

The loss of grassland habitat on the project site (which also represents Swainson's hawk foraging habitat) would be compensated by preserving grassland habitat at the CDFW-

specified ratios. **Mitigation Measure BIO-1** would also preserve uplands that support grassland habitat, and the implementation of **Mitigation Measure BIO-9** would ensure that wildlife movement within the open space corridors on the project site is not obstructed, that stream habitat that is disturbed during construction is restored, and that human intrusion in stream corridors is minimized. The mitigation measure requires the use of either bridges or culverts large enough that wildlife have enough space to pass through road crossings without having to travel over the road surface, the implementation of bank stabilization measures, and/or restoration and revegetation of stream corridor habitat that has been damaged due to the project's construction, and the use of signage to discourage access to the riparian areas by humans. Therefore, with mitigation, the contribution of the No Action Alternative, Proposed Action, or Alternatives 1 through 5 (individually or combined) to the cumulative impact would be rendered **less than significant**.

It is reasonable to assume that other future projects would also be required to reduce their individual impacts as part of their environmental review process and permitting. However, despite these measures, some reduction in wildlife habitat would still occur as a result of cumulative development. **Mitigation Measure CUM BIO-2** would be implemented to address this impact. As noted in that mitigation measure, the USACE will work with study area cities and counties to focus and concentrate growth in certain portions of the study area, minimize future losses of wetlands and vernal pool grassland habitat within the study area, and compensate for unavoidable losses. These efforts would minimize further fragmentation of and reductions in wildlife movement habitat in the study area and would concentrate the habitat preservation efforts in certain portions of western Placer County that would lead to the preservation of large tracts of land that are contiguous and provide wildlife movement opportunities. Therefore, the cumulative impact would be reduced to **less than significant**.

4.3.2 Aesthetics

Direct and Indirect Impacts of the Proposed Action

Section 3.1, Aesthetics, presents the Proposed Action's direct and indirect impacts on visual resources at the project site and in its vicinity. The Proposed Action would have a significant effect on scenic vistas and visual character by altering views of open rangeland, foothills, and Sierra Nevada, and by converting undeveloped rangeland to urban development. No feasible mitigation measures are available to fully mitigate these effects. The Proposed Action would also result in substantial effects from new sources of light and glare. As the effects of the Proposed Action on scenic vistas, visual character, and light and glare could cumulate with the effects of other projects in the vicinity, those are discussed below. The Proposed Action will not damage scenic resources and therefore has no potential to contribute to cumulative effects on scenic resources.

Current Status of the Resource

The project site is located in the western portion of Placer County. At the present time, the project site is developed with 150 rural residences mostly in the northwest corner. The majority of the project site is not developed and appears as undeveloped rangeland. Natural features on the project site include Dry Creek and riparian oak woodland which abuts the project site's southeastern boundary. Prominent man-made features in the vicinity of the project site include three major utility line corridors (Placer County 2006).

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in an unmitigated substantial change in the visual character of the study area or an unmitigated substantial increase in light and glare.

Cumulative Impact AES-1 Effect on Visual Resources

No Action Alt., Proposed Action, Alts. 1 through 5

All of the alternatives, including the Proposed Action, would have a **significant** cumulative effect on scenic vistas and the visual character of the project vicinity by altering views of open rangeland, foothills, and Sierra Nevada, and by converting undeveloped rangeland to urban development as viewed from Walerga Road, Watt Avenue, and Baseline Roads.

With the development of the Proposed Action or any of the alternatives and the Sierra Vista Specific Plan, the areas on both sides of Baseline Road west of Walerga Road would change from a primarily rural landscape to urban development, thereby permanently altering the visual character of the area, both under daytime conditions and at night, although unlike the Proposed Action and Alternatives 1 through 5, the No Action Alternative would leave certain areas on the project site adjacent to Baseline Road undeveloped and thereby would have a lesser impact on the visual character of the Baseline Road corridor. Similarly, the Proposed Action and all of the alternatives would place urban uses on the west side of Walerga Road and in conjunction with existing development on the east side of Walerga Road, would alter the visual character of the area as viewed from that roadway. The views from Watt Avenue both to the east and to the west would be altered by the proposed development under all alternatives. All of the alternatives, including the Proposed Action, and the Sierra Vista Specific Plan development would also introduce new sources of light and glare. Although all of the alternatives would be required to meet the County's Design Guidelines, ensuring that proposed development would be visually compatible with surrounding development, it would, in conjunction with existing and other proposed projects, nonetheless permanently and substantially alter the environment. No feasible mitigation measures are available to fully address the effect. Therefore, the contribution of the No Action Alternative, Proposed Action, and Alternatives 1 through 5 to the cumulative effect would be **significant**.

4.3.3 Agricultural Resources

Direct and Indirect Impacts of the Proposed Action

Section 4.2, Agricultural Resources, presents the direct and indirect impacts of the Proposed Action on agricultural resources. The Proposed Action would result in significant effects on agricultural resources from the loss of Important Farmland in active agricultural production. **PVSP EIR Mitigation Measure 4.4-1a,** which requires the Applicants to compensate for the loss of Important Farmland by placing conservation easements on an equivalent acreage of undeveloped land or agricultural land to the acreage affected, would be implemented to reduce this effect.

Current Status of the Resource

The loss of farmland is occurring throughout California, including in western Placer County. Since the Placer County General Plan was adopted in 1994, areas within the project vicinity have changed from being rural, undeveloped, or agricultural in nature to urban residential and commercial development. Similarly, lands in the City of Roseville that were at one time in agricultural uses have since been developed with infrastructure and urban uses. As discussed in **Section 3.2, Agricultural Resources**, between 1992 and 2008, approximately 2,625 acres (1,062 hectares) of Prime Farmland in Placer County was converted to other uses. Sacramento and Sutter Counties lost approximately 20,048 acres (8,113 hectares) and 5,593 acres (2,263 hectares), respectively, of Prime Farmland during the same period (California Department of Conservation 1994 through 2008).

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in a substantial unmitigated loss of Important Farmland.

Cumulative Impact AG-1 Conversion of Important Farmland

No Action Alt., Proposed Action, Alts. 1 through 5

Within western Placer County, a majority of agricultural land has been identified as Farmland of Local Importance and Grazing Land. The vast majority of the project site is designated as Farmland of Local Importance; however it also contains lands that are classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

While the No Action Alternative would result in the conversion of about 1,091 acres (442 hectares) of Important Farmland, the Proposed Action and all of the other alternatives would result in the conversion of about 2,300 acres (930.8 hectares) of Important Farmland to non-agricultural uses. Because farmland is being lost to development throughout the region, the direct loss of Important Farmland and agricultural productivity would be a significant cumulative impact. **PVSP EIR Mitigation Measure 4.4-1a** would address the effect related to loss of Important Farmland which provides substantial off-site mitigation. However, as stated in **Section 3.2**, despite mitigation the effect of the Proposed Action and the alternatives

would remain significant. Consequently, the No Action, Proposed Action, and Alternatives 1 through 5 would make a **significant** contribution to the cumulative loss of Important Farmland in the study area.

4.3.4 Air Quality

Direct and Indirect Impacts of the Proposed Action

Section 3.3, Air Quality, presents the direct and indirect impacts of the Proposed Action on air quality, including impacts from construction and operational emissions, carbon monoxide hot spots, and odors. The Proposed Action would have an adverse effect on air quality from construction activities that would be substantially reduced with implementation of **PVSP EIR Mitigation Measures 4.8-1a** through **4.8-1e,** although the impact from the emissions of reactive organic gases (ROG), oxides of nitrogen (NOx), and respirable particulate matter (PM10) would remain significant. The Proposed Action would also have adverse effects related to criteria pollutant emissions generated during project occupancy and use. As these impacts would have the potential to cumulate, they are analyzed below.

The Proposed Action would result in less than significant effects related to exposure to toxic air contaminants and exposure to objectionable odors. Therefore, it has a minimal potential to contribute to cumulative effects related to toxic air contaminant emissions and odors.

Current Status of the Resource

As discussed in **Section 3.3, Air Quality,** the Placer County portion of the Sacramento Valley Air Basin (SVAB) is under the jurisdiction of the Placer County Air Pollution Control District (Air District). At the present time, the entire SVAB, including the Placer County portion of the Air Basin, is designated as "severe" federal nonattainment for ozone (8-hour) and nonattainment for fine particulate matter (PM2.5). The Placer County portion of the Air Basin is also in nonattainment of the state standards of ozone (1-hour), ozone (8-hour), and PM10. As discussed in detail in **Section 3.3**, the Air District has prepared attainment plans for the area in order to demonstrate achievement of the state and federal ambient air quality standards for ozone, PM10, and PM2.5. The County and City General Plans contain policies intended to improve air quality in the region.

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in substantial unmitigated emissions of air pollutants (ozone, PM10, and PM2.5) for which the Air Basin is in nonattainment.

Cumulative Impact AIR-1 Effects from Criteria Pollutant Emissions

No Action Alt., Proposed Action, Alts. 1 through 5

All of the alternatives, including the Proposed Action, would have a **less than significant** cumulative impact from emissions of carbon monoxide (CO) but would have a **significant** cumulative impact on air quality due to construction and operational emissions of other criteria pollutants, including nitrogen oxides (NO_x) and reactive organic gases (ROG), which contribute to the formation of ozone for which the Air Basin is in nonattainment, and particulate matter (PM10 and PM2.5), also for which the Air Basin is in nonattainment.

Construction Emissions

Cumulative development would result in multiple construction projects occurring at the same time, generating emissions from earthmoving activities, heavy equipment operation, workers traveling to and from construction sites, and miscellaneous activities such as paving roadways and parking lots and painting of commercial/residential structures. Innumerable projects are proposed in the 11-county Sacramento Valley Air Basin and a complete listing of reasonably foreseeable projects cannot be reasonably developed. However all reasonably foreseeable projects in the vicinity of the Proposed Action are identified in **Table 4.0-4 Other Present and Reasonably Foreseeable Projects in the Project Vicinity, Construction Emissions**. In addition, **Table 4.0-5, Other Major DA Permit Projects in the SVAB,** presents information on all major projects under the authority of the USACE that are proposed in the remainder of the Air Basin. Both tables report estimated construction emissions associated with these projects where data were readily available. As shown in the tables below, the emissions from some of these actions would result in ROG, NOx, and particulate matter emissions that exceed significance thresholds. Earthmoving activities for the Proposed Action and any of the alternatives could result in substantial fugitive dust (PM10) emissions, and would be likely to result in localized PM10 concentrations in excess of state and federal standards. A major portion of PM10 would settle on the construction site or its immediate vicinity, while a small fraction would contribute to regional ambient particulate concentrations. As shown in **Section 3.3**, PM10 emissions associated with construction of any of alternatives are estimated to exceed the Air District threshold of 82 lbs/day (37 kg/day), even with **PVSP EIR Mitigation Measures 4.8-1a** through **4.8-1e** which require the implementation of dust control measures.

Table 4.0-4
Other Present and Foreseeable Future Projects in Project Vicinity
Construction Emissions (Pounds per Day)

Project	ROG	NOx	PM10	PM2.5
Fiddyment Road Widening[a]	NA	NA	NA	NA
Amoruso Specific Plan	NA	NA	NA	NA
Creekview Specific Plan[b]	49	**119**	39	13
Regional University Specific Plan[c]	**532**	**3,457**	**138**	NA
Westbrook Project[d]	**156**	30	34	9
Riolo Vineyards Specific Plan[e]	**143**	**773**	60	NA
Placer Parkway Alternative 5[f]	**8,960**	9,940	**1,460**	180
Reason Farms Retention[g]	**121**	872	**948**	ND
Sierra Vista Specific Plan[h]	**1,607**	80	**169**	37
Elverta Specific Plan[i]	257	47	630	133
Lincoln 270[j]	NA	NA	NA	NA
Sutter Pointe Specific Plan[k]	NA	NA	NA	NA
Village 7 Lewis Property[l]	**125**	**146**	**343**	84

Note:
NA – not available
Bold: *Exceeds Significance Thresholds. Significance Thresholds are not the same for all of the projects listed.*

[a] *Department of the Army Permit SPK-2010-00735. August 5, 2011.*
[b] *City of Roseville. December 2010. Draft EIR Creekview Specific Plan. (note: emissions are for the year 2013)*
[c] *Placer County. December 2007. Draft EIR Regional University Specific Plan. Prepared by PBS&J. (note: emissions are for the year 2009)*
[d] *Department of Army permit application for Westbrook Specific Plan.*
[e] *Placer County. January 2008. Draft EIR Riolo Vineyards Specific Plan. Prepared by URS.*
[f] *Placer County. June 2007. Draft EIR Placer Parkway. Prepared by URS. (note: Alternative 5 was determined to be the preferred alternative)*
[g] *City of Roseville. 16 October 2002. Draft EIR for the City of Roseville Retention Basin Project. Prepared by URS.*
[h] *Impact Sciences. 2012.*
[i] *U.S. Army Corps of Engineers. December 2012. Elverta Specific Plan Draft EIS. (note: Alternative A was determined to be the preferred alternative)*
[j] *Department of Army permit application for Lincoln 270.*
[k] *Measure M Group. 10 September 2007. Wetland Delineation for Sutter Pointe Specific Plan. Prepared by ECORP.*
[l] *City of Lincoln. June 2009. Draft EIR Village 7 Specific Plan Project. Prepared by PBS&J. (note: emissions are for the year 2013)*

Table 4.0-5
Other Major DA Permit Projects in the SVAB
Construction Emissions (Pounds per Day)

Project	ROG	NOx	PM10	PM2.5
Folsom South[a]	**120**	**128**	579	126
Natomas Levee, Phase 2[b]	NA	NA	NA	NA
Natomas Levee, Phase 3b[c]	NA	NA	NA	NA
Natomas Levee, Phase 4A[d]	**303**	**1,846**	15,388	NA
Rio Del Oro[e]	**627**	**2,071**	NA	NA
Sunridge Properties[f]	**385**	**501**	276	NA
Arboretum	NA	NA	NA	NA
Cordova Hills[g]	**3,616**	**405**	2,723	576
River Islands at Lathrop	NA	NA	NA	NA
Suncreek[h]	**194**	**141**	289	64

Note:
NA – not available
Bold: *Exceeds Significance Thresholds. Significance Thresholds are not the same for all of the projects listed.*

[a] *Department of the Army Permit SPK-2007-02159. August 11, 2011.*
[b] *Department of the Army Permit SPK-2007-00211. January 21, 2009.*
[c.] *Department of the Army Permit SPK-2008-01039. April 2, 2010.*
[d] *Department of the Army Permit SPK-2009-00480. November 8, 2010.*
[e] *Department of the Army Permit SPK-1999-00590. June 13, 2012.*
[f] *Department of the Army Permit SPK-2009-00511. January 25, 2011.*
[g] *Cordova Hills: Sacramento County, Cordova Hills FEIR, Document Control Number 2008-00142*
[h] *Suncreek Specific Plan Project Draft EIR. Prepared for the City of Rancho Cordova by AECOM, October 2012.*

Emissions of CO, ROG, NOx, sulfur dioxide (SO_2), and particulate matter would be generated by construction equipment operations and construction employee vehicle trips. Painting and paving of roadways would primarily release ROG into the atmosphere. Emissions associated with construction of the No Action Alternative, Proposed Action, or Alternatives 1 through 5 are estimated to exceed Air District thresholds of 82 lbs/day for ROG and NOx, even with **PVSP EIR Mitigation Measures 4.8-1a** through **4.8-1e** which require implementation of vehicle air pollutant control strategies.

The No Action Alternative, Proposed Action, or Alternatives 1 through 5 (individually or combined) would contribute to these cumulative impacts during the 12- to 27-year buildout of the site. The emissions would exceed the Air District thresholds for ROG and NOx, and together with all other emissions in the nonattainment area, the resulting emissions are expected to exceed the emissions budgets specified in the applicable SIP for the Sacramento Valley Air Basin. Therefore, the contribution of the construction phases of any of the alternatives to the cumulative impact on air quality in the Air Basin would remain **significant** even after implementation of **PVSP EIR Mitigation Measures 4.8-1a** through **4.8-1e**.

Operational Emissions

The project site is located in an area that is designated non-attainment for ozone, PM10, and PM2.5. Vehicles, commercial operations, and some residential activities associated with the Proposed Action would generate ozone precursors contributing to the ozone problem within the Air Basin. Area sources, such as residential wood burning stoves and fireplaces, are substantial sources of particulate matter. Operational emissions from buildout of the Proposed Action are estimated to exceed Air District thresholds for ROG, NOx, and PM10.

Other past, present and reasonably foreseeable future projects in the project vicinity are also expected to result in additional emissions of criteria pollutants and contribute to the existing exceedances of ambient air quality standards in the Air Basin. The estimated emissions associated with other present and reasonably foreseeable future projects are reported in **Table 4.0-6, Other Present and Reasonably Foreseeable Actions in the Project Vicinity, Construction Emissions**. Future development in the rest of the Air Basin (which is substantially larger than the project vicinity) would also result in additional emissions which cannot be reasonably quantified, although **Table 4.0-7, Other Major DA Permit Projects in the SVAB, Operational Emissions,** presents data that are available for some of the major projects in the Air Basin that are under USACE authority.

Table 4.0-6
Other Present and Reasonably Foreseeable Actions in Project Vicinity
Operational Emissions (Pounds per Day)

Project	ROG	NOx	PM10	PM2.5
Fiddyment Road Widening[a]	NA	NA	NA	NA
Amoruso Specific Plan	NA	NA	NA	NA
Creekview Specific Plan[b]	**242**	**99**	**293**	56
Regional University Specific Plan[c]	**761**	**457**	**476**	NA
Westbrook Project[d]	**273**	**139**	**460**	88
Riolo Vineyards Specific Plan[e]	**156**	**141**	**96**	NA
Placer Parkway Alternative 5[f]	60	60	20	NA
Reason Farms Retention[g]	0	0	0	0
Sierra Vista Specific Plan[h]	**1,585**	**994**	**3,225**	614
Elverta Specific Plan[i]	**659**	**238**	1,736	974
Lincoln 270[j]	NA	NA	NA	NA
Sutter Pointe Specific Plan[k]	NA	NA	NA	NA
Village 7 Lewis Property[l]	**288**	**143**	**336**	65

Note:
NA – not available
Bold: *Exceeds Significance Thresholds. Significance Thresholds are not the same for all of the projects listed.*

[a] *Department of the Army Permit SPK-2010-00735. August 5, 2011.*
[b] *City of Roseville. December 2010. Draft EIR Creekview Specific Plan.*
[c] *Placer County. December 2007. Draft EIR Regional University Specific Plan. Prepared by PBS&J. (note: emissions are for the year 2010)*
[d] *Department of Army permit application for Westbrook Specific Plan.*
[e] *Placer County. January 2008. Draft EIR Riolo Vineyards Specific Plan. Prepared by URS.*
[f] *Placer County. June 2007. Draft EIR Placer Parkway. Prepared by URS. (note: Alternative 5 was determined to be the preferred alternative)*
[g] *City of Roseville. 16 October 2002. Draft EIR for the City of Roseville Retention Basin Project. Prepared by URS.*
[h] *Impact Sciences. 2012.*
[i] *U.S. Army Corps of Engineers. December 2012. Elverta Specific Plan Draft EIS. (note: Alternative A was determined to be the preferred alternative)*
[j] *Department of Army permit application for Lincoln 270.*
[k] *Measure M Group. 10 September 2007. Wetland Delineation for Sutter Pointe Specific Plan. Prepared by ECORP.*
[l] *City of Lincoln. June 2009. Draft EIR Village 7 Specific Plan Project. Prepared by PBS&J.*

Table 4.0-7
Other Major DA Permit Projects in the SVAB
Operational Emissions (Pounds per Day)

Project	ROG	NOx	PM10	PM2.5
Folsom South[a]	**2,061**	**709**	2,433	1,529
Natomas Levee, Phase 2[b]	NA	NA	NA	NA
Natomas Levee, Phase 3b[c]	NA	NA	NA	NA
Natomas Levee, Phase 4A[d]	NA	NA	NA	NA
Rio Del Oro[e]	**733**	**676**	1,115	NA
Sunridge Properties[f]	**NA**	**NA**	NA	NA
Arboretum	NA	NA	NA	NA
Cordova Hills[g]	**857**	**415**	1,326	252
River Islands at Lathrop	NA	NA	NA	NA
Suncreek[h]	**523**	**335**	961	185

Note:
NA – not available
Bold: *Exceeds Significance Thresholds. Significance Thresholds are not the same for all of the projects listed.*

[a.] *Department of the Army Permit SPK-2007-02159. August 11, 2011.*
[b.] *Department of the Army Permit SPK-2007-00211. January 21, 2009.*
[c.] *Department of the Army Permit SPK-2008-01039. April 2, 2010.*
[d] *Department of the Army Permit SPK-2009-00480. November 8, 2010.*
[e.] *Department of the Army Permit SPK-1999-00590. June 13, 2012.*
[f.] *Department of the Army Permit SPK-2009-00511. January 25, 2011.*
[g] *Cordova Hills: Sacramento County, Cordova Hills FEIR, Document Control Number 2008-00142*
[h] *Suncreek Specific Plan Project Draft EIR. Prepared for the City of Rancho Cordova by AECOM, October 2012.*

In order to bring an air basin into compliance with state and federal air pollutant standards, air districts use general plans and similar planning documents to determine where and how future growth will occur within the region. When development occurs that is not consistent with the intensity of development presented in a general plan or if it was not previously accounted for, it is assumed that the emissions associated with that development are unaccounted for in the SIP, which could hinder the region's ability to come into compliance with state and federal air pollutant standards. As the Proposed Action (base plan scenario) was approved by the County in 2007, its emissions of criteria air pollutants within are likely accounted for in the SIP; however, it is not possible to demonstrate this fact and it is likely that the emissions from the Proposed Action Blueprint scenario are not accounted in the SIP. Therefore, conservatively this analysis concludes that emissions associated with operation and occupancy of the No Action Alternative, Proposed Action, or Alternatives 1 through 5 (individually or combined) and buildout of cumulative development would cause direct adverse effects to the region's

ability to achieve compliance with air quality standards.

PVSP EIR Mitigation Measures 4.8-3a through **4.8-3k** and **4.13-1a** through **4.13-1p**, which require implementation of a number of measures to reduce vehicular and area source emissions, would reduce the amount of emissions generated by the No Action Alternative, Proposed Action, or Alternatives 1 through 5. All of the alternatives would also be subject to a variety of policies that would promote the use of alternative forms of transportation and pedestrian access to commercial and office uses within the project site. However, because the operational air emissions associated with the No Action Alternative, the Proposed Action, and Alternatives 1 through 5 (individually or combined) are not accounted for in regional air quality attainment plans, even with mitigation, the emissions would be significant and all of the alternatives would make a **significant** contribution to the cumulative impact on regional air quality.

The above conclusion notwithstanding, transportation conformity analysis performed for the Metropolitan Transportation Plan and Sustainable Communities Strategy 2035 (MTP/SCS) for the SACOG region (which is substantially the same as the Sacramento Valley Air Basin) shows that although the region will experience growth in population (including the growth in population and employment as a result of the Proposed Action (both scenarios)[2], the region's daily air pollutant emissions from transportation sources will decrease in the future. The conformity analysis provides the estimates of population growth, increase in vehicle miles traveled (VMT), and daily air pollutant emissions for the region for 2014, 2017, 2018, 2025, and 2035 (SACOG 2012). The results for 2018, 2025, and 2035 are shown in **Table 4.0-8, Projected Population Growth, Traffic and Air Pollutant Emissions.**

Table 4.0-8
Projected Population Growth, Traffic and Air Pollutant Emissions

	2018	2025	2035
Population	2,459,000	2,713,000	3,086,000
Daily VMT (1,000s of miles)	64,666	69,174	75,658
Daily NOx Emissions (tons)	35.87	22.05	16.25
Daily ROG Emissions (tons)	24.04	19.17	15.73

Source: SACOG 2012

2 Based on a review of Appendix E-3 Land Use Forecast Background Documentation in the SACOG MTP/SCS 2035 Update, the Proposed Action (both scenarios) is included in the regional growth projections for Placer County. Therefore the Proposed Action is accounted for in the MTP/SCS analysis of the growth in the SACOG region.

As the table above shows, even though population and vehicle traffic are projected to increase by 25 percent and 17 percent respectively in the SACOG region, daily emissions of ozone precursors are expected to decrease substantially, with NOx emissions decreasing by 55 percent and ROG by 35 percent between 2018 and 2035 as a result of vehicle fleet improvements, fuel efficiency measures, transportation control measures in the SIP for the SACOG region, and denser future development pursuant to the SCS. These population and traffic increases represent the best understanding of overall growth projections for the region and include projects such as Placer Vineyards Specific Plan as well as other projects in the region.[3]

CO Concentrations

Background CO concentrations in Placer County are low, and despite anticipated increases in traffic volumes, future roadside CO concentrations are expected to decrease from existing concentrations due to improved fuel combustion efficiency (Placer County 2006). Therefore, all of the alternatives, in conjunction with buildout of reasonably foreseeable development in the area, would have a **less than significant** effect related to CO concentrations.

4.3.5 Cultural Resources

Direct and Indirect Impacts of the Proposed Action

The Proposed Action would potentially damage undiscovered historic properties or human remains during construction, though implementation of **Mitigation Measures CR-1** through **CR-3** would render the effects less than significant. As these effects would have the potential to cumulate, they are analyzed below.

Current Status of the Resource

Section 3.6 provides a description of regional prehistory, ethnography, and prehistoric and contact period archaeology, in addition to a description of regional history and the historic built environment. Loss of cultural resources in the project area due to previous ground disturbing activities is unquantifiable.

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3 Please see SACOG MTP/SCS 2035 Update Appendix E-3 for projected changes in land use, population, and employment in the SACOG region through 2035.

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in an unmitigated loss of significant prehistoric and historic resources.

Cumulative Impact CR-1 Damage to Historic Properties or Human Remains

No Action Alt., Proposed Action, Alts. 1 through 5

Development in the region could result in the damage or destruction of known archaeological and historical resources, as well as any existing undiscovered subsurface artifacts. Based on record searches conducted with the North Central Information Center, California State University, Sacramento and field surveys for a number of proposed projects in western Placer County, including but not limited to the Proposed Action and Sierra Vista Specific Plan, the project vicinity is known to include both prehistoric and historic cultural resources, some of which have been determined to be eligible for the National Register of Historic Places (NRHP). Historic and prehistoric resources were discovered during field studies on the project site. Historic resources and prehistoric sites are also known to occur elsewhere in southwestern Placer County. The combination of the No Action Alternative, Proposed Action, or Alternatives 1 through 5, and other foreseeable projects would increase density of development in the area which would increase the potential for impacts to cultural resources, including sites that are eligible for the NRHP. Numerous laws, regulations, and statues, at both the federal and state levels, seek to protect cultural resources. These would apply to all development within the study area. In addition, the Placer County General Plan provides local policies for the protection of cultural resources from unnecessary impacts. These policies include inventory and evaluation processes and require consultation with qualified archaeologists in the event that previously undiscovered cultural materials are accidentally exposed. By ensuring that cultural resources discovered within the project Area of Potential Effect are properly recorded and handled, **Mitigation Measures CR-1** through **CR-3** would reduce the contribution of all alternatives to the cumulative effect on cultural resources to **less than significant**.

4.3.6 Hydrology and Water Quality

Direct and Indirect Impacts of the Proposed Action

As analyzed in **Section 3.10, Hydrology and Water Quality**, the Proposed Action would result in potentially adverse effects related to water quality, flooding, and groundwater. As these effects of the Proposed Action would have the potential to cumulate with similar impacts from other past, present and future actions in the Curry Creek watershed as well as the lower portion of Pleasant Grove Creek watershed, they are analyzed below. Other hydrology and water quality impacts analyzed in **Section 3.10** would not have the potential to cumulate and are not discussed below.

Current Status of the Resource

As discussed in **Section 3.10,** the Proposed Action is located in three major watersheds: Dry Creek Drainage Basin, Curry Creek Drainage Basin, and Steelhead Creek Drainage Basin. The Dry Creek watershed is about 80 square miles (207 square kilometers) in area, but encompasses only 477 acres (198 hectares) of the project site along the southeast boundary of the project site. The Curry Creek watershed encompasses a total of 1,360 acres (550 hectares) with about 240 acres (97 hectares) within the project site. The Upper Steelhead Creek watershed flows west across the property and takes up a total of 4,380 acres (1,772 hectares) of the project site.

Historic development within the Dry Creek, Curry Creek, and Steelhead Creek watersheds have increased the amount of impervious surfaces, increasing runoff discharged into the creeks and ultimately into Pleasant Grove Canal. Steelhead Creek is part of a flood control system that surrounds the Natomas Basin located west of the project site in Sutter and Sacramento counties. With additional upstream development in Placer County, there is the potential for increased flows into the Natomas Basin at Sankey Gap and into areas of Sutter County east of Steelhead Creek.

The project site is located in the North American subbasin of the Sacramento Valley groundwater basin. Total storage capacity in the subbasin is estimated at approximately 4.9 million acre-feet (maf) (604,000 hectare-meters), and recent data suggest that withdrawals of up to 95,000 acre-feet per year (afy) (11,700 hectare-meters per year) are within the basin's safe yield (Department of Water Resources 2006; Placer County 2006). The majority of groundwater production occurs in the northern portion of the subbasin.

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Contribute runoff to facilities susceptible to flooding;
- Release sediment and other pollutants such that there could be downstream water quality effects;
- Require groundwater withdrawal which, combined with other withdrawals, exceeds the safe yield of the aquifer; or
- Interfere substantially with groundwater recharge.

Cumulative Impact HYDRO-1 Flooding, Water Quality, and Groundwater

No Action Alt., Proposed Action, Alts. 1 through 5	Cumulative development in the study area, including all of the alternatives, would increase the amount of impervious surfaces which would, in turn, generate increased storm water runoff and would have the potential to result in downstream flooding and water quality impacts in the Dry Creek, Curry Creek, and Steelhead Creek watersheds. Cumulative urban development would also have the potential to affect groundwater levels through potential reduction in recharge and from withdrawal of groundwater for consumptive use. For reasons presented below, the contribution of any of the

alternatives, including the Proposed Action, to these cumulative impacts would be **less than significant**.

Flooding

Steelhead Creek is part of a flood control system that surrounds the Natomas Basin located west of the project site in Sutter and Sacramento counties. Steelhead Creek intercepts drainage from the Steelhead Creek Drainage Basin and diverts it around and through the Natomas Basin. The Natomas Basin is historically an area that experienced significant flooding and is now partially protected by a system of levees, canals, and pumps. In the 100-year storm event, the capacity of the current system is exceeded and flows enter the Natomas Basin where Sankey Road crosses Steelhead Creek. The location where the flows occur is referred to as the Sankey Gap. With additional upstream development in Placer County, there is the potential for increased flows into the Natomas Basin at Sankey Gap and into areas of Sutter County east of Steelhead Creek.

Placer County General Plan Policy 4.E.11 requires that individual projects mitigate their direct contribution of increased surface water flows to minimize the potential for increased on- and off-site flooding (Placer County 1994b). Placer County requires each project to provide on-site detention to avoid contributing flows that would exasperate the downstream flooding problem as described in the Stormwater Management Manual (Placer County 1994a). Two future projects in unincorporated Placer County (Regional University and Placer Parkway) have incorporated on-site detention capacity and other measures to avoid downstream flooding (Placer County 2008; Placer County 2007). Similarly, as described under **PVSP EIR Mitigation Measure 4.3.2-1**, the drainage system design for the all of the alternatives will limit post-project flows into Curry Creek and Steelhead Creek watersheds. A variety of on-site attenuation facilities are proposed to be constructed in the tributaries to Steelhead Creek. The results of the 100-year comparison analysis for Steelhead Creek for the Proposed Action indicate that the proposed detention would adequately mitigate the peak discharge rates to less than the pre-project amounts. In the 200-year analysis, the pre-project and post-project mitigated peak flows are virtually identical. Runoff from Curry Creek and Steelhead Creek drainage basins are therefore not expected to cause downstream flooding impacts.

Detention and retention of flows within the Dry Creek watershed are not currently recommended by the Flood Control District downstream of the City of Roseville. The Dry Creek watershed has substantial upstream proposed and current development, which combined with the any of the alternatives, would increase the flows in Dry Creek, and increased runoff from cumulative development in the Dry Creek watershed is expected to result in adverse downstream flooding impacts. The contribution of any of the alternatives would be **significant**. **PVSP EIR Mitigation Measures 4.3.2-11a** and **4.3.2-11b** would reduce the contribution of all alternatives to the cumulative flooding

effect but not to less than significant. The cumulative flooding effect would remain **significant and unavoidable**.

Water Quality

Development on the project site would drain into Dry Creek, Curry Creek, and Steelhead Creek drainage basins. Changes in water quality could occur as a result of project construction activities. Similarly, other urban development would also involve soil disturbing construction activities, such as vegetation removal, grading, and excavation. These soil disturbances would expose soil to wind and water-generated erosion. As previously described, sediment from erosion can have long and short-term water quality effects, including increased turbidity, which could result in adverse impacts on fish and wildlife habitat and the physical integrity of stream channels.

All construction projects that would disturb 1 acre (0.4 hectare) or more, which is assumed to be the case for each construction phase of any of the alternatives, would be required to comply with the applicable State General Permit (2009-0009-DWQ Construction General Permit) requirements for storm water runoff during construction. The permit would reduce potential degradation of receiving water quality attributable to the No Action Alternative, Proposed Action, or Alternatives 1 through 5 as well as other development in the Dry Creek, Curry Creek, and Steelhead Creek watersheds.

With respect to post-construction storm water runoff, all new development in the study area would be required to comply with National Pollutant Discharge Elimination System (NPDES) requirements related to post-construction runoff. All of the alternatives are subject to the County's Storm Water Management Plan requirements and is required to include storm water quality improvements and LID measures to reduce the volumetric increase in flows as well as improve water quality (Placer County 1994). As a result of existing regulations and local requirements, the contribution of any of the alternatives to a cumulative impact on water quality from urban runoff would be **less than significant**.

Groundwater Use

The cumulative context for groundwater impacts is the North American River groundwater sub-basin that generally underlies western Placer County and northern Sacramento County. The sub basin is located within the Sacramento Valley Groundwater Basin. It includes a surface area of 548 square miles (1,429 square kilometers) (Department of Water Resources 2006).

Urban growth and agriculture production in northern Sacramento County increased the demand on groundwater such that the groundwater elevation trend along the Sacramento/Placer county line began to show a steady decline from the late 1940s (earliest measurement) to approximately 1980. The test wells in the area however indicate that groundwater elevations have stabilized in recent years (MWH 2007).

The regional groundwater management efforts are focused on controlling the fluctuations in groundwater levels to keep them within an acceptable range. The City of Roseville, the City of Lincoln, Placer County Water Agency (PCWA), and the California American Water Company have cooperatively developed the Western Placer County Groundwater Management Plan (WPCGMP). The overarching goal of the WPCGMP is to maintain the quality and ensure the long-term availability of groundwater to meet backup, emergency, and peak demands without adversely affecting other groundwater uses within the WPCGMP area (MWH 2007). The Water Forum Agreement currently represents the most likely long-term plan for development of groundwater and surface water supplies in Placer and Sacramento counties, and it reflects projected land use and water demand throughout the two counties in year 2030 as envisioned in current approved general plans (Water Forum 2000).

The project site is currently used for agriculture which uses groundwater for irrigation. All of the alternatives would eliminate the groundwater demand as build out continues. Other western Placer County projects that would replace groundwater-irrigated agriculture would also continue to reduce demand on the groundwater basin. During normal water years, groundwater supplies would not be needed for the project. However, during dry years, if a significant amount of recycled water (12,000 afy to 15,000 afy) is not available to supplement the potable water supply, pumping of groundwater would increase in order to serve the No Action Alternative, the Proposed Action, or Alternatives 1 through 5. All of the alternatives would have an adequate supply of recycled water if the project's wastewater is treated at the Dry Creek Waste Water Treatment Plant (DCWWTP). However, if the wastewater generated under any of the alternatives is treated at Sacramento Regional County Sanitation District (SRCSD), the necessary amount of recycled water needed during dry years would not be available and more water from PCWA would be required which could include increased withdrawal of groundwater.

Groundwater Recharge

Development in Placer County would result in the creation of new impervious surfaces by converting primarily undeveloped grazing land to urban uses. As discussed in **Section 3.10, Hydrology and Water Quality**, recharge occurs primarily along stream channels and through applied irrigation water. Much of western Placer County consists of hydrologic group "d" soils, which are characterized by high runoff and low infiltration potential. Therefore, Placer County provides a very limited amount of recharge into the Sacramento Valley groundwater basin. Other areas of western Placer County are situated on soil and rock units similar to the project site, and do not have water intensive irrigation uses (Placer County 2006). Given the low levels of recharge that occurs under existing conditions, the fact that all of the alternatives (and other foreseeable development in the area) would protect and maintain creek corridors where infiltration

would continue to occur, and the fact that all of the alternatives (and all future development) would include low impact development (LID) measures to infiltrate runoff to the extent feasible, the contribution of the No Action Alternative, Proposed Action, or Alternatives 1 through 5 to a cumulative effect on groundwater recharge would be **less than significant**.

PVSP EIR Mitigation Measure 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.

PVSP EIR Mitigation Measure 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.

4.3.7 Noise

Identification of Direct and Indirect Impacts of the Proposed Action

As discussed in **Section 3.12**, **Noise**, associated with traffic generated by the Proposed Action would impact sensitive receptors adjacent to area roadways. This effect is significant and would not be rendered less than significant by implementation of **PVSP EIR Mitigation Measure 4.9-4.** This effect is analyzed below to determine whether it would cumulate with the effects from other past, present and reasonably foreseeable future actions to result in a significant adverse effect. All other noise impacts of the Proposed Action would be limited to the project site and would not cumulate with noise from other cumulative projects.

Current Status of the Resource

Urban and rural development in the study area has resulted in increased ambient noise levels from the addition of mobile and stationary noise sources associated with these land uses. Vehicular traffic is the predominant source of noise in the area. As discussed in **Section 3.12, Noise**, ambient noise levels already exceed or nearly exceed the County's thresholds along Walerga Road, Baseline Road, and Watt Avenue.

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in an unmitigated increase in noise levels.

Cumulative Impact NOISE-1 Construction and Operational Noise Effects

No Action Alt., Proposed Action, Alts. 1 through 5

Construction Noise

Noise impacts would result from operation of construction equipment and from noise generated by vehicular traffic traveling to and from a construction site. The magnitude of the impact would depend on the type of construction activity, the noise level associated with each piece of construction equipment, the duration of construction, availability of noise barriers, and the distance between the source of the noise and receptors. Properties located adjacent to construction sites would be affected temporarily; therefore short-term construction noise impacts are anticipated. Project residents could be exposed to noise from construction activities related to development under the Sierra Vista Specific Plan to the north, and the Elverta Specific Plan and the Riolo Vineyards Specific Plan to the south.

It is unlikely that construction activities within the project site and the other concurrent projects would be close enough to a particular sensitive receptor to create a substantial combined noise level. The only exception would be Sierra Vista Specific Plan development. Both the Sierra Vista project and the Proposed Action could involve concurrent construction activities on both sides of Baseline Road. However, both projects would comply with the Noise Ordinance of each jurisdiction which limits the hours during which construction may occur. The Placer County Health Services "Standard Construction Noise Conditions of Approval" limits construction of any project that occurs within the County to the hours of 6:00 AM and 8:00 PM Monday through Friday (during Daylight Savings Time), 7:00 AM and 8:00 PM Monday through Friday (during Standard Time) and 8:00 AM to 6:00 PM on Saturday. Furthermore, any periods in which more than one project would be under construction in proximity to the same sensitive receptor would likely be very short, and would only occur during the hours mentioned above. For these reasons, the cumulative impact would be less than significant and the contribution of the No Action Alternative, Proposed Action, or Alternatives 1 through 5 (individually or combined) would be **less than significant**.

Stationary Source Noise

It is not expected that urban uses within the study area would be exposed to or generate, multiple sources of stationary noise that would be close enough to each other to exceed noise thresholds. The sources of noise within the project, and surrounding new developments such as Sierra Vista, Elverta, and Riolo Vineyards, would include schools, parks, and commercial areas. No industrial or heavy manufacturing uses are proposed under any of the alternatives or any of the other foreseeable projects that could cumulate and affect a sensitive receptor. Therefore, there would be a **less than significant** cumulative noise impact from multiple stationary sources.

Traffic Noise

As discussed in **Section 3.12, Noise**, several roadways adjacent to proposed residential areas under the No Action Alternative, Proposed Action, and Alternatives A through E including Fiddyment Road, Walerga Road, Watt Avenue, Elverta Road, and Baseline Road would have noise levels that exceed 60 decibels (dB) day-night average sound level (Ldn). Depending on the distance to residences at these locations, the exterior noise levels could exceed County standards under 2025 conditions. The 2025 noise analysis represents a cumulative noise analysis as it takes into account traffic from not just the Proposed Action but also other past, present, and reasonably foreseeable future development. **PVSP EIR Mitigation Measure 4.9-4** requires new development on the project site to include noise reduction measures such as berms, setbacks, and other feasible measures to reduce noise impacts in residential areas of the project site. However, noise reduction measures may not be applicable in some cases and it is unlikely that the noise impact would be eliminated at all affected locations. The cumulative impact on sensitive receptors near major roadways would remain **significant**.

Similarly, cumulative traffic, including traffic associated with the No Action Alternative, Proposed Action, and Alternatives 1 through 5 (individually or combined), would increase ambient noise levels along off-site roadways and despite installation of noise barriers where feasible, it is unlikely that the significant noise impact would be eliminated at all affected locations off-site. The cumulative impact on off-site receptors near major roadways would remain significant and the project's contribution to the cumulative impact would be **significant**.

4.3.8 Utilities and Service Systems

Identification of Direct and Indirect Impacts of the Proposed Action

For reasons presented in **Section 3.15, Utilities and Service Systems**, the effects of the Proposed Action on surface and groundwater supplies and water conveyance infrastructure would be less than significant with implementation of **PVSP EIR Mitigation Measures 4.11.7-1a** through **4.11.7-1c**. However, because substantial new development is planned for western Placer County at this time, the Proposed Action's impact on water supply and infrastructure has the potential to cumulate with the impact from other development and is therefore evaluated below.

As described in **Section 3.15** under **Impact UTIL-3**, the Proposed Action would require the expansion of the Dry Creek Wastewater Treatment Plant (WWTP) to treat the flows that would be generated at buildout of the Proposed Action. The treatment requirement for the Proposed Action could be handled by the planned capacity of Dry Creek WWTP. Therefore, **Impact UTIL-3** analyzes the combined effect of the Proposed Action and other reasonably foreseeable projects in the area on WWTP capacity. That

analysis is therefore an assessment of the cumulative impact of the Proposed Action in conjunction with the impacts of other future development. Similarly **Impact UTIL-4** presents the impact of the Proposed Action in conjunction with the impacts of other reasonably foreseeable future development on solid waste handling and disposal facilities, and also represents a cumulative analysis. As they are adequately addressed in **Section 3.15**, these issues are not analyzed further below.

Current Status of the Resource

The initial water supplied to the Proposed Action would be from the Placer County Water Agency's (PCWA) Foothill Water Treatment Plant. Once the infrastructure is put into place, the long-term water supply would be provided by the Sacramento River. The PCWA has three sources of water: 100,400 afy (12,384 hectare-meters per year) from the Yuba/Bear River, 120,000 afy (14,801 hectare-meters per year) from the Middle Fork Project (American River), and 35,000 afy (4,317 hectare-meters per year) from the Central Valley Project (Sacramento River). Within PCWA's service area, the majority of treated water is delivered to residential and commercial users. The total demand for treated water was 35,573 acre-feet (4,587 hectare-meters) in 2004 (Placer County Water Agency 2005).

With respect to groundwater resources, as explained in **Section 3.15**, the sustainable safe yield for the western Placer County portion of the North American Sub-basin is approximately 95,000 afy (11,700 hectare-meters per year). Total groundwater usage from agricultural and urban demands within the Placer County portion of the North American Sub-basin on average is about 90,000 afy (11,100 hectare-meters per year) in 2003 (Placer County Water Agency 2006). Under these pumping conditions, the groundwater levels at the southern end of the basin have been stable since the 1980s, indicating that 90,000 afy (11,100 hectare-meters per year) is also within the safe yield of the basin. These groundwater levels indicate that groundwater pumping is currently in balance with the natural groundwater recharge rate. This is attributed to the conversion of agricultural lands to urban uses over the past several decades as well as introduction of surface water supplies to serve urban development. It is expected that basin pumping demands will continue to decrease over time as urban development increases in the area (Placer County 2006).

Significance Thresholds

The contribution of the Proposed Action or an alternative to a cumulative impact would be significant if the Proposed Action or an alternative would:

- Result in a demand for water that requires the development of new sources of water.

Cumulative Impact UTIL-1 Effect on Water Supply

No Action Alt., Proposed Action, and Alts. 1 through 5	The cumulative effect from the Proposed Action and alternatives on water supply would be **less than significant.** Development of the Proposed Action, along with other foreseeable future development within Placer County, including current demands on PCWA contracted water, would not exceed the PCWA's existing currently contracted surface water supplies. Total cumulative water demand is estimated to be between 180,286 afy to 183,102 afy (22,238 to 22,585 hectare-meters per year) as shown in

Table 4.0-9, Cumulative Water Demand. This leaves between 75,114 and 72,298 afy (9,265 and 8,918 hectare-meters per year) of the PCWA contracted water in surplus. The PCWA has 255,400 afy (31,503 hectare-meters per year) contracted from three different sources. In addition, there is 5,000 afy (617 hectare-meters per year) in temporary surplus water available from the South Sutter Water District. The PCWA would be able to provide water to accommodate the cumulative demand from the Proposed Action (or any of its alternatives) and other existing and future development in its service area. The cumulative impact would be **less than significant**.

Table 4.0-9
Cumulative Water Demand

Development Area	Surface Water Demand (afy)
PCWA Zones 1 and 5	113,563
City of Roseville and San Juan Water District	55,000
Proposed Action – Base Plan Scenario [a]	11,723
Proposed Action – Blueprint Scenario [b]	14,539
Total Demand	**180,286 [a] – 183,102 [b]**
PCWA Water Contracts	255,400
PCWA Surplus	**75,114 [a] – 72,298 [b]**

Source: Impact Sciences 2011, Placer County Water Agency. February 3, 2006

[a] *reflects the sum that includes surface water demand associated with Base Plan Scenario*

[b] *reflects the sum that includes surface water demand associated with the Blueprint Scenario*

The water supply infrastructure is capable of serving the existing needs and the Proposed Action but additional projects would require infrastructure improvements. There are no infrastructure limitations on the delivery of Yuba/Bear River water. However, existing infrastructure is not currently able to deliver all water contracted to PCWA from the American River and Sacramento River. PCWA has a variety of completed and planned infrastructure projects which would provide enough water to accommodate the cumulative demand for water. A new American River Pump Station was completed in 2008, which increased the raw water delivery capacity to western Placer County (Placer County Water Agency 2008). An additional pipeline would be needed to supply the project site with water from the American River Pump Station. Two water conveyance projects are underway currently. The Auburn Tunnel Outlet Modification Project would supply water from the North Fork of the American River to western Placer County. The project is expected to be completed by the end of 2012 (PCWA 2012a). The Ophir Road Pipelines Project would construct part of the transmission main for the future Ophir Road Water Treatment Plant to deliver irrigation water from the American River and is expected to be complete in mid-2013 (PCWA 2012b). Additional infrastructure

improvements would be needed to supply water to the project site.

In summary, the cumulative water demand in the PCWA service area would be supplied by PCWA's existing currently contracted surface water supplies and cumulative impact to long-term water supply would be **less than significant.** However, the cumulative impact on current infrastructure capacity would be potentially **significant**. Implementation of **PVSP EIR Mitigation Measures 4.11.7-1a** through **4.11.7-1c** would reduce the contribution of the alternatives to this impact to **less than significant.**

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