Revised Draft Environmental Impact Report
Volume I
Placer Vineyards Specific Plan
Placer County, California

March, 2006
REVISED DRAFT ENVIRONMENTAL IMPACT REPORT
VOLUME I

for

Placer Vineyards Specific Plan
Placer County, California

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CHAPTER TWO
INTRODUCTION

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This document is a Revised Draft Environmental Impact Report (Revised Draft EIR) prepared in accordance with Section 15088.5 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines), found in Title 14 of the California Code of Regulations. This document revises and supersedes the document titled Draft Environmental Impact Report Placer Vineyards Specific Plan (SCH #1999062020) dated September, 2004. This Revised Draft EIR has been prepared for Placer County by Quad Knopf Inc. pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended) Pub. Resources Code, Section 21000 et seq.

As provided in the CEQA Guidelines, public agencies are charged with the duty to avoid or minimize significant environmental damage where feasible. In discharging this duty, the public agency has an obligation to balance a variety of public objectives, including economic, environmental and social issues. An EIR is an information document that provides decision-makers and the general public with information about the significant environmental effects of a proposed project. An EIR must identify possible means to minimize the significant effects and describe reasonable alternatives to the project. The lead agency, in this case Placer County, is required, in making its decision on the project, to consider the information in the EIR along with any other available information in the administrative record, in making its decision. The basic informational requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, significant irreversible changes, growth-inducing impacts and cumulative impacts.

2.2 BACKGROUND

A Notice of Preparation (NOP) for the Placer Vineyards Specific Plan EIR was prepared by the County and circulated to responsible and trustee agencies and other interested parties in June, 1999. A subsequent NOP was circulated in May, 2001 that specifically addressed a change in the proposed water supply and outlined alternatives for both interim and long-term water supplies. The June, 1999 NOP and response letters are included as Appendix A of this Revised Draft EIR. The May, 2001 NOP and response letters are included as Appendix B of this Revised Draft EIR. Appendix P contains letters recently sent to Sacramento and Sutter counties advising them of their role as a potential responsible agency for the proposed project along with a response letter from Sutter County.

Preparation of an EIR is a CEQA requirement for all discretionary projects in California that have a potential to result in significant environmental impacts. EIRs must disclose, analyze, and provide mitigation measures for all potentially significant environmental effects associated with adoption and implementation of proposed projects. Consistent with these requirements, the
County in September, 2004 published the first Draft EIR for the proposed *Placer Vineyards Specific Plan* and circulated the document for review and comment by responsible and trustee agencies as well as interested members of the public.

Following the receipt of written comments on that Draft EIR, the project proponent (Placer Vineyards Property Owners Group) modified the project to address concerns raised in these comments. The revised project is described in detail in Chapter Three of this Revised Draft EIR. A summary of the more significant project changes is provided below in Section 2.4.

### 2.3 RECIRCULATION

CEQA Guidelines section 15088.5 sets forth the legal standards and principles governing the recirculation of Draft EIRs. Subdivision (a) of that provision states that recirculation of an EIR should occur if

…significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term ‘information’ can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not ‘significant’ unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project…

The project has been modified to respond to comments received during the circulation period and to respond to potentially significant effects identified in this Revised Draft EIR. Placer County has made a determination to recirculate the document in order to provide the public with a meaningful opportunity to comment on the additional data available as a result of modifications to the project. The recirculation is ‘full’ (meaning that the entire document has been revised and reissued) rather than “partial” (meaning that only chapters or portions of the prior Draft EIR have been revised and reissued).

Subdivisions (f) and (g) of Section 15088.5 describe the specific procedural and noticing requirements associated with the two kinds of recirculation (full and partial):

(f) The lead agency shall evaluate and respond to comments as provided in Section 15088. Recirculating an EIR can result in the lead agency receiving more than one set of comments from reviewers. Following are two ways in which the lead agency may identify the set of comments to which it will respond. This dual approach avoids confusion over whether the lead agency must respond to comments which are duplicates or which are no longer pertinent due to revisions to the EIR. In no case shall the lead agency fail to respond to pertinent comments on significant environmental issues.

(1) *When the EIR is substantially revised and the entire EIR is recirculated, the lead agency may require that reviewers submit new comments and need not respond to those comments received during the earlier
circulation period. The lead agency shall advise reviewers, either within the text of the revised EIR or by an attachment to the revised EIR, that although part of the administrative record, the previous comments do not require a written response in the final EIR, and that new comments must be submitted for the revised EIR. The lead agency need only respond to those comments submitted in response to the recirculated revised EIR. The lead agency shall send directly to every agency, person, or organization that commented on the prior draft EIR a notice of the recirculation specifying that new comments must be submitted. (Italics added to the original for emphasis.)

(2) When the EIR is revised only in part and the lead agency is recirculating only the revised chapters or portions of the EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions. The lead agency need only respond to (i) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (ii) comments received during the recirculation period that relate to the chapters or portions of the earlier EIR that were revised and recirculated. The lead agency’s request that reviewers limit the scope of their comments shall be included either within the text of the revised EIR or by an attachment to the revised EIR.

(g) When recirculating a revised EIR, either in whole or in part, the lead agency shall, in the revised EIR or by an attachment to the revised EIR, summarize the revisions made to the previously circulated draft EIR.

Because the County has opted for a complete, rather than partial, recirculation, the County has elected to follow option (f)(1), and not respond in the Final EIR to comments received during the initial circulation period (October 18, 2004 – January 5, 2005), as those comments have largely been rendered moot by preparation of this Revised Draft EIR. Written comments received on significant environmental issues during the initial circulation period have been considered and in some instances expressly addressed in this Revised Draft EIR. All comments received on this Revised Draft EIR during its 45-day review period will be responded to in the Final EIR. To the extent that individuals or entities who submitted comments on the September, 2004 Draft EIR are not satisfied with the manner in which the County and project proponents have addressed their earlier comments, it is incumbent on such individuals or entities to make the County aware of such concerns through new comments on this Revised Draft EIR.

In accordance with Section 15088.5(g), revisions that have been made to the Draft EIR are summarized in the Executive Summary of this Revised Draft EIR. The changes to the previous Specific Plan are summarized below.
2.4 **SUMMARY OF CHANGES TO THE SPECIFIC PLAN**

As noted previously, the Specific Plan has been modified in response to concerns raised during the circulation of the Draft EIR. The previous Draft EIR contained two separate sets of analyses in which Phase 1 of the project was analyzed at a project-specific level of detail and the remainder of the Specific Plan area was analyzed on a programmatic level. This Revised Draft EIR analyzes the entire Specific Plan area at a project-specific level, including analysis of a number of changes that have been made to the Specific Plan in response to comments. The separate Phase 1 analysis has been eliminated. This approach has resulted in more detail about the entire project area and the effects of its development, but has simultaneously reduced some repetition and redundancy found in the earlier approach. Primary changes to the Specific Plan include:

**Land Use Changes:**

- Timeframe for buildout reduced from a 30- to 50-year period to a 20- to 30-year time period.

- Added Project Goal: Concentrate higher density housing within clusters at the town center, the village centers and commercial nodes.

- Added Project Goal: Anchor neighborhoods with community serving facilities, including schools, parks and quasi-public uses.

- Decreased the amount of land dedicated to job generating land uses from 10% of the Specific Plan area to 5%, reducing the overall job generation from 14,000 jobs (one per household) to 7,594 jobs, equal to 0.54 jobs for every household.

- Six elementary schools proposed, as compared to seven elementary schools in the previous Specific Plan. One elementary school in the eastern portion of the Specific Plan area was eliminated since this area is now planned for an age-restricted community.

- Community and neighborhood park facilities increased from 196 acres to 217 acres.

- Open space areas increased from 406 acres to 714 acres. The additional open space is in the same general location as the previous Specific Plan, but has been expanded to provide additional protection for drainageways and wetland areas.

- Town Center increased from 100 acres to 190 acres. Primary access into the Town Center has been reoriented from Baseline Road to Town Center Drive.

- A 200-foot landscape buffer at the southern edge of the project added (reduced to 50 feet adjacent to Gibson Ranch Park).

- Buffers added adjacent to the Special Planning Area (SPA) to protect existing uses.
Environmental Resource Changes:

- Added Project Goal: Use greenways to help manage stormwater runoff.
- Added Project Goal: Incorporate significant on-site wetlands and existing oak groves into greenway and open space systems.

Circulation Changes:

- Added Project Goal: Provide a network of streets with a clear system of hierarchy that interconnects the communities and contributes to their character.
- Added Project Goal: Provide a continuous system of trails to link neighborhoods together and provide safe routes to schools, parks and community serving areas.
- Expand capacity on the Baseline Road east-west thoroughfare to serve local and regional traffic needs, initially to four lanes and ultimately to six lanes.
- Improve the following intersections:
  - Riego Road and East Natomas Road;
  - Riego Road and Pleasant Grove Road;
  - Baseline Road and Pleasant Grove Road; and
  - Baseline Road and Locust Road.
- Expand capacity of Watt Avenue initially to four lanes and ultimately to six lanes from Baseline Road to approximately 1,000 feet south of the Placer County line. An additional two lanes of right of way access is reserved on Watt Avenue for a BRT lane on each side of the roadway.
- Construct Dyer Lane to four lanes from Baseline Road east of Watt Avenue to Watt Avenue and easterly looping back to Baseline Road.
- Construct 16th Street as a four-lane roadway.
- Construct new signals on Baseline Road at the intersections of Locust Road, Dyer Lane (east and west), Palladay Road, 16th Street, 14th Street, 12th Street and Park Street; on Watt Avenue at the intersections of A Street, East Town Center Drive, Oak Street and Dyer Lane; and on Dyer Lane at the intersections of A Street (east and west), Town Center Drive (east and west), 18th Street, Palladay Road, 16th Street, Tanwood Avenue and 11th Street.
- Construct traffic signals into proposed commercial properties on A Street at the intersections of Palladay Road and 12th Street.
- Construct two traffic signals at the proposed Town Center on A Street at the intersections of 16th Street and 14th Street.
Infrastructure Changes:

- Added Project Goal: Provide a comprehensively planned infrastructure system to serve the needs of future residents and allow existing residents to tie into upgraded facilities.

- Added Project Goal: Provide adequate infrastructure improvements without adversely affecting existing levels of service.

- Added Project Goal: Conserve energy and water through the use of recycled water and other designs.

Community Design Changes:

- Added Project Goal: Maintain vegetated corridors along circulation routes to preserve the scenic quality of the landscape.

- Added Policy: To the extent that sound walls are used to screen residential areas from the noise generated along major streets in the projects, such walls are to be screened by landscape and/or setback techniques intended to soften the visual effect of the wall.

- Added Policy: As much as possible, residential development should be designed to front upon streets at pedestrian-oriented centers, parks and/or open space when average daily traffic is projected to be less than 2,500 trips.

- Added Policy: Provide landscaping as a transition between developed areas, rural areas and open space, and to screen accessory structures, accessory roads and parking.

Another major change reflected in this Revised Draft EIR, and not found in the original September, 2004 Draft EIR, is a very detailed consideration of a new project alternative responding to comments submitted by the Sacramento Area Council of Governments (SACOG). The SACOG Board of Directors adopted the Preferred Blueprint Scenario (Blueprint Plan) in December, 2004. The Blueprint Plan is a regional vision to accommodate the longer-term growth needs of the region, including Placer County. The Blueprint Plan proposes a concentrated, compact development pattern in the region with a balance of employment, residential, shopping and recreational uses linked to transportation system improvements. The vision is intended to guide land use and transportation choices over the next fifty years as the region’s population grows from its current population of 2 million to include more than 3.8 million people. The Blueprint Plan is structured around seven growth principles: transportation choices, mixed-use development, compact development, housing choice and diversity, use of existing assets, quality design, and natural resources conservation.

To illustrate how development will occur under SACOG’s recommended growth principles, a “Blueprint Alternative” was developed by the project proponents for this Revised Draft EIR with specific densities for residential, commercial, and public/quasi-public land uses that differ from
those of the proposed project. The Blueprint Alternative proposes construction of 21,631 residential dwelling units compared with 14,132 dwelling units, a 53% numerical increase. Density in residential-only areas, excluding Commercial Mixed-Use development that includes residential dwelling units, will increase from 5.4 under the proposed project to 8.6 in the Blueprint Alternative. The number of jobs will also increase from 7,594 to 8,163. The jobs-housing ratio under the Blueprint Alternative is .38, compared with .54 under the proposed project.

The increased density of the Blueprint Alternative addresses SACOG’s growth principles in the following ways:

- Providing residents more opportunities to reduce vehicle miles traveled by increasing the amount of mixed-use development, thereby locating housing closer to jobs and retail.

- Shifting the balance of residential development away from large lots toward small lots and attached housing, which has the potential to reduce water consumption on a per-resident basis.

- Creating potential opportunities to preserve habitat and avoid sensitive resources in other parts of the Sacramento region by providing an increased supply of housing that will otherwise have been built in areas that are currently in agriculture/open space.

The amount of detail devoted in this Revised Draft EIR to the Blueprint Alternative exceeds what is normally required in an EIR. The court in *Laurel Heights Improvement Association of San Francisco, Inc. v. Regents of the University of California* (1988) 47 Cal.3d 533, 404-406, held that an EIR’s discussions of alternatives should include “meaningful detail,” but did not require that such discussions include the same level of detail devoted to proposed projects themselves. In some instances, lead agencies may fully satisfy this requirement while not including sufficient detailed information to make agency decision-makers comfortable that, in actually approving an alternative (as opposed to a proposal as put forward by an applicant), they have enough data and analysis to fully comprehend the environmental consequences of such alternatives. Because the applicants would like the County Board of Supervisors, if it is so inclined, to be able to approve the Blueprint Alternative without further revisions to this Revised Draft EIR, the County has addressed that alternative at a heightened level of detail. This detail is comparable to that devoted to the revised project, which the applicants continue to propose as their preferred version of the Specific Plan. Thus, when the Final EIR is prepared and the project is finally brought to the Board for its final decision, this elected body will have the discretion, subject to the need to make appropriate findings (see Pub. Resources Code, Section 21081), to choose either one of these two options without the need for further formal CEQA documentation.

### 2.5 USES OF THIS REVISED DRAFT EIR

Placer County, as the primary land use authority that will consider approval of the Specific Plan, is the lead agency for the preparation of this Revised Draft EIR (see CEQA Guidelines Section 15051). This document has been prepared in sufficient detail to support approval of the proposed
Specific Plan and can be characterized as a Project EIR that reflects site-specific environmental information in its analysis of the Specific Plan area. There is one exception to this approach within the Specific Plan area boundaries where the analysis is programmatic only. This exception applies to the Special Planning Area (SPA) (see Figure 3-12 in Chapter Three) where existing zoning will not change under the current Specific Plan and urban development is not proposed. Consistent with Exhibit 1 to the Dry Creek/West Placer Community Plan, as adopted in 1994 at the time of General Plan adoption, the Specific Plan does reserve 261 new dwelling units for potential future use in the SPA, but because no development plans exist for the SPA, no project-specific analysis can be performed. Although the analysis contained in this Revised Draft EIR will be useful if landowners seek zone changes, or other discretionary entitlements within the SPA, additional site-specific analysis will be required. Notably, should the Board adopt the Specific Plan as proposed (or any of the alternatives), such action, by itself, will not permit SPA landowners to develop their property at intensities or densities greater than permitted by current zoning, which will remain unchanged by Specific Plan approval. Additional legislative actions by the Board of Supervisors will thus be necessary to permit urban-type intensities or densities within the SPA. Under current zoning, the maximum number of new units that could be developed is 63.

In addition, programmatic-level analysis is provided with respect to certain off-site infrastructure, including an off-site water line necessary to convey the long-term surface water supply to the project area (see Figure 3-5 in Chapter Three), a future recycled water line extending from the Pleasant Grove Wastewater Treatment Plant to the project area (see Figure 3-5), potential required improvements to the Dry Creek Wastewater Treatment Plant and Sacramento Regional Wastewater Treatment Plant, and recycled water storage facilities at the Lincoln Wastewater Treatment and Reclamation Facility (Figure 3-9), as more specifically described in Chapter Three. This Revised Draft EIR also contains a programmatic discussion of a groundwater potable water supply that may be developed as part of Placer County Water Agency’s (PCWA) integrated water management strategy for western Placer County.

In summary, programmatic analysis occurs only within the SPA and where the construction of proposed off-site improvements will be under the control of an agency other than Placer County, and separate environmental analysis is being undertaken, or will be undertaken by that agency, upon final project definition. All off-site infrastructure improvements to be undertaken directly by the applicants are assessed at a project level. This project EIR has been prepared pursuant to Section 15161 of the State CEQA Guidelines and provides programmatic analysis only with respect to the exceptions described above.

For proposed residential projects consistent with the Specific Plan as ultimately approved, the rules governing the extent of any future environmental review are set forth in Government Code Section 65457 and CEQA Guidelines Section 15182 depending on whether, at the time such projects are proposed, County staff determines they are consistent with the Specific Plan and with land use patterns and assumptions anticipated in detail in this Revised Draft EIR. Pursuant to those provisions, no EIR or Negative Declaration need be prepared prior to approving such a residential project. A subsequent EIR, supplemental EIR, or Addendum for the Specific Plan may be required if triggered by circumstances or events identified in Sections 15162, 15163 or 15164 of the CEQA Guidelines. In this context, the term “residential project” includes, but is
not limited to, land subdivisions, zoning changes implementing and consistent with the Specific Plan, and residential planned unit developments (CEQA Guidelines, Section 15182; Gov. Code, Section 65457).

The statutory process created by Sections 65457 and 15182 is normally not available for non-residential projects. Here, however, non-residential projects consistent with the approved Specific Plan may not be subject to additional formal CEQA review, given the project-level analysis contained herein. The applicants and the County agree, however, that despite the County’s best attempts to provide full “project-level” analysis in this document, it is uncertain whether any particular residential tentative subdivision map will avoid the need for additional formal environmental review pursuant to Sections 65457 and 15182. Rather, each map will be judged on its own merits. Thus, the applicants understand that when they propose a particular tentative subdivision map, the County’s decision whether to proceed under Sections 65457 and 15182 will turn on whether, in reviewing such a proposal, the County determines that this Revised Draft EIR addressed site-specific issues at a reasonable level of detail for the particular site at issue. In making such a determination, a primary focus will be on whether the development associated with the proposed tentative map reflects and is consistent with the densities assumed for the affected area in the approved Specific Plan and this Revised Draft EIR.

Another factor will be how well the proposed map has complied with mitigation requirements formulated and adopted in connection with Specific Plan approval. These same considerations will also apply to non-residential projects requiring discretionary approvals from the County to go forward. To accomplish the above, for each application for a development entitlement that is submitted after approval of the Specific Plan, the County will use a detailed subsequent conformity review process, as more fully described in the Specific Plan and in Section 2.7.2 below.

For all portions of the Specific Plan area for which site-specific zoning will be instituted concurrently, or shortly after, adoption of the Specific Plan based on this Revised Draft EIR, future environmental review, to the extent it may be necessary, can also be streamlined pursuant to Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183. These provisions generally limit the scope of necessary environmental review for site-specific approvals following the preparation of an EIR for a “zoning action.” For such site-specific approvals, CEQA generally applies only to impacts that are “peculiar to the parcel or to the project,” except where “substantial new information” shows that previously-identified impacts will be more significant than previously assumed. Notably, impacts are considered not to be “peculiar to the parcel or to the project” if they can be substantially mitigated pursuant to previously adopted uniformly applied development policies or standards.

Future site-specific approvals may also be narrowed pursuant to the rules for tiering set forth in CEQA Guidelines Section 15152. That section, which will not come into play unless the County determines that future project proposals were not fully analyzed in this Revised Draft EIR, provides, for example, that, where a first tier EIR has “adequately addressed” the subject of cumulative impacts, such impacts need not be revisited in detail in second- and/or third-tier documents. Furthermore, second- and third-tier documents may limit the examination of effects to those that “were not examined as significant effects” in the prior EIR or “[a]re susceptible to
substantial reduction or avoidance by the choice of specific revisions in the project, the imposition of conditions, or other means.”

The County intends this Revised Draft EIR to be used by other local, State and federal agencies in the approval process of related entitlements, approvals and/or permits associated with development within the Specific Plan area. These agencies are identified preliminarily in Table 3.6-1 of Chapter Three. To the extent that the CEQA streamlining processes described above are available to such agencies, they may choose to rely on them as well.

2.6 ORGANIZATION OF THIS REVISED DRAFT EIR

This Revised Draft EIR includes eight principal parts in several volumes: Executive Summary, Introduction, Project Description, Environmental Analysis (Setting, Impacts, and Mitigation Measures), Other CEQA Considerations (Statutorily Required Sections), Alternatives, Mitigation Monitoring and Reporting Program, and Appendices.

The Executive Summary presents an overview of the results and conclusions of the environmental evaluation. This section identifies project impacts and available mitigation measures for use by the County in reviewing the Specific Plan and establishing conditions under which the Specific Plan may be developed.

The Project Description includes a discussion of the location of the proposed Specific Plan and proposed plans for development of the Specific Plan area.

The Environmental Analysis includes an analysis of impacts by subject area that will or could result from implementation of the proposed Specific Plan. The results of field visits, data collection and review and agency contacts are presented in the text.

The Alternatives section includes an assessment of alternative methods for accomplishing the basic objectives of the proposed Specific Plan. This assessment, required under CEQA, must provide adequate information for decision-makers to make a reasonable choice between alternatives based on the environmental aspects of the proposed Specific Plan and alternatives.

Other CEQA Considerations includes a discussion of issues required by CEQA: unavoidable adverse impacts; irreversible environmental changes; growth inducement; and cumulative impacts.

The Draft Mitigation Monitoring and Reporting Program includes the standard mitigation monitoring program adopted by Placer County, as well as project-specific mitigation measures. The components of the specific reporting plan are presented in a table.

The Appendices contain a number of reference items providing support and documentation of the analysis performed for this Revised Draft EIR. The Appendices are bound separately in two volumes.
2.7 **SCOPE OF THIS REVISED DRAFT EIR**

This Revised Draft EIR evaluates the existing environmental resources in the vicinity of the Specific Plan area and off-site infrastructure, analyzes potential impacts on those resources due to the proposed project and identifies mitigation measures that could avoid or reduce the magnitude of those significant impacts. The environmental analysis chapter of this Revised Draft EIR discusses the environmental and regulatory settings, impacts and mitigation measures for each of the following twelve topics:

- Land Use and Planning Policies
- Visual Quality and Aesthetics
- Hydrology, Water Resources and Water Quality
- Biological Resources
- Geology and Soils
- Archaeological and Paleontological Resources
- Transportation and Circulation
- Air Quality
- Noise
- Population, Employment and Housing
- Public Services and Infrastructure
- Hazards

The evaluation of these topics is presented on a resource-by-resource basis in Sections 4.1 through 4.12 of the Revised Draft EIR. Each section is generally divided into four subsections: Introduction, Environmental Setting, Regulatory Setting, and Impacts and Mitigation Measures. In addition to these discussions in each section, those impacts that cannot be mitigated to a level that is less than significant (and are therefore considered significant unavoidable adverse impacts) are summarized in Section 5.4 of this Revised Draft EIR.

In each environmental section, impacts that will be caused by the project individually are identified. In addition, each section provides an evaluation of cumulative impacts that will be caused by the Specific Plan taken together with other future projects or growth that will also affect a particular environmental resource. In this fashion, the cumulative impact analysis considers the additive effect of numerous projects, including the proposed Specific Plan. Cumulative impacts are addressed in each environmental evaluation section and are also summarized in Section 5.2 of this Revised Draft EIR.

CEQA requires an analysis of growth-inducing impacts. These impacts are environmental impacts that could be due to other growth that could be induced by the proposed Specific Plan, either through removal of an obstacle to development or by generating a substantial increase in growth in the local or regional economy. Growth-inducing impacts resulting from implementation of the proposed Specific Plan are analyzed in Section 5.1 of this Revised Draft EIR.
2.7.1 SECTION FORMAT

Each section begins with a description of the regional and site-specific setting, followed by a presentation of any relevant regulatory setting as it pertains to the particular environmental issue. The regulatory setting is followed by a discussion of impacts and potential mitigation measures, which includes a presentation of the relevant Specific Plan, General Plan, Community Plan and related policies that could reduce or avoid significant environmental impacts. The impact and mitigation portion of each section includes specific impact statements for each issue. An explanation of each impact and an analysis of its significance follow each impact statement.

All mitigation measures pertinent to each individual impact follow directly after the impact statement. The ability of identified mitigation measures to reduce the impacts to less than significant levels is also evaluated. The format is shown below.

4.X.1 Statement of impact in bold type.

Discussion of impact is in paragraph format.

A statement of the level of significance of impact is included at the end of each impact discussion. [As shown, the significance statement is printed in bold type and italics.]

Mitigation Measures

A statement that “Implementation of the following mitigation measure would/would not reduce this impact to a less than significant level.” [As shown, the mitigation condition is printed in italics.]

4.X-1 Recommended mitigation measures are presented in italics and numbered to match the impact number to which they correspond.

The following is a simplified example of the format.

4.X-X Construction of the proposed project could result in the loss of trees.

The proposed project would result in the loss of XX trees. This is considered a significant impact.

Mitigation Measure

The following mitigation measure would decrease the magnitude of this impact to a less than significant level:

4.X-X The project applicant shall replace all removed trees.
2.7.2 MITIGATION APPROACH

To the extent feasible, this Revised Draft EIR relies on Specific Plan policies, standards and implementation measures to “self mitigate” potential impacts. Where this can be shown, it is so noted and specific references are provided. Similarly, existing regulations may also address identified concerns. Such regulations are discussed, but not treated as mitigation, because they are already required of the project. Where possible, project-specific mitigation measures contain a measurable performance standard and are quantified whenever feasible (e.g., replacement of XX trees). Mitigation measures have been evaluated for their effectiveness, and are written in clear declaratory language specifying what is required to be done and how it is to be done.

The Specific Plan also contains as a part of its implementation strategy a list of subsequent reports (e.g., site-specific drainage and grading plans, geotechnical reports, and acoustical studies) that will be provided to various County and other agencies prior to development of any of the affected parcels. The Specific Plan identifies a “trigger point” at which these reports must be submitted (e.g., tentative map application, building permit issuance). Where such reports form the basis for mitigation of potentially significant impacts, this Revised Draft EIR provides mitigation measures that specify the content of these reports and a measurable performance standard, ensuring that the level of desired mitigation is achieved.

Based on the content of future submittals, the County will determine if performance standards are still achievable taking into consideration the nature of the submittal, current conditions and/or any changed circumstances. In the event the performance standard does not appear to be achievable, the County may perform subsequent environmental review pursuant to Sections 15162, 15163 or 15164 of the CEQA Guidelines to identify additional or alternative mitigation measures.

In the case of the SPA, the Specific Plan reserves 261 additional dwelling units for the area. Some of these dwelling units (63 in number) could potentially be placed on existing parcels under existing zoning. In those instances, where conformity with existing zoning can be shown, there will be no requirement for subsequent review. Where a zone change or other discretionary action will be required to receive any of the reserved dwelling units, the County will have to prepare a project-level environmental document, building on the program-level analysis in this Revised Draft EIR with respect to the SPA, before considering whether to grant any such proposal; therefore, the review process described below would not apply to those circumstances.

To implement the strategy above, the County will use a “subsequent conformity review process” to ensure that all future submittals conform to the Specific Plan and EIR mitigation measures. As drafted by the County, the process is generally described as follows:

Environmental Review

Each application for a development entitlement that is submitted after approval of the Placer Vineyards Specific Plan shall be reviewed for conformity with the Specific Plan and for compliance with the requirements of the California Environmental Quality Act. An EIR was certified concurrent with the approval of
the Specific Plan and the zoning designations in the Specific Plan. The Placer Vineyards Specific Plan EIR is a project EIR and shall serve as the base environmental document for subsequent entitlement approvals within the Specific Plan area.

Under Government Code section 65457 and Section 15182 of the CEQA Guidelines, if a public agency has prepared an EIR on a specific plan, no additional environmental document is necessarily required for approval of a residential project that is undertaken in conformity with that specific plan. Moreover, under CEQA Guidelines section 15183, no additional environmental review is required for projects that are consistent with the zoning for which an EIR was certified, except as might be necessary to examine whether there are project-specific effects that are peculiar to the project or its site.

The determination as to whether the requested subsequent development entitlement is consistent with the Specific Plan and whether the Specific Plan EIR considered the project-specific effects will be made through the Subsequent Conformity Review Process as described below.

**Subsequent Conformity Review Process**

In addition to submitting any required County application for approval of a subsequent discretionary development entitlement (such as a small lot tentative map or conditional use permit) within the Specific Plan area, the applicant for each proposed project shall complete a Subsequent Conformity Review Questionnaire. The purpose of the Questionnaire will be to enable the County to determine whether the proposed project is consistent with the Specific Plan and to examine whether there are project-specific effects that are peculiar to the project or its site that were not considered in the Specific Plan EIR, or whether an event as described in CEQA Guidelines section 15162 has occurred. The County may require such additional information as it may need to make such a determination, including, but not limited to:

A. Preliminary Grading Plan (including off-site improvements)
B. Preliminary Geotechnical Report
C. Preliminary Drainage Report
D. Preliminary Water Quality BMP Plan
E. Traffic Circulation Plan
F. Traffic Study, including traffic calming, trail connections and crossings, traffic level of service (internal and external), safety considerations, and roadway and traffic signal phasing
G. Tentative Map (16.12.040 of the PCC)
H. Noise Studies (acoustic analysis and associated transportation and circulation studies)
I. Hazards/Past Uses Studies (Phase I Environmental Site Assessments, and Phase 2 limited soils investigation, and/or Preliminary Endangerment
Based upon such information, the County will determine whether the proposed development entitlement is consistent with the Specific Plan, whether additional environmental review is required and if so, the scope of such additional review.

### 2.7.3 ALTERNATIVES

This Revised Draft EIR evaluates a range of alternative land use plans and other alternatives for the proposed Specific Plan in Chapter Six. As explained in Section 2.3, one alternative, the Blueprint Alternative, modeled after SACOG’s Blueprint Plan for the Placer Vineyards Specific Plan area, is analyzed at a project level, similar to the analysis for the Specific Plan. The remaining alternatives are analyzed at a lesser level of detail, though sufficient to satisfy legal requirements. As stated in Section 15126.6(a) of the CEQA Guidelines, the intent of the alternatives analysis is to “describe a range of reasonable alternatives to the project, or to the location of the project, which will feasibly attain the basic objectives of the project but will avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” The feasibility of an alternative may be determined based on a variety of factors including, but not limited to, site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control (CEQA Guidelines Section 15126.6(f)(1)). The ultimate arbiter of feasibility is the Board of Supervisors, acting in its legislative capacity. The opinions of staff or consultants, to the extent reflected herein, are in no way binding on the elected decision-makers. (See Mira Mar Mobile Home Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 489 (“[a]lternatives included in an EIR need only be ‘potentially feasible’”) (quoting CEQA Guidelines, Section 15126.6, subd. (a)); Sierra Club v. County of Napa (2004) 121 Cal.App.4th 1490, 1503 (public agency decision-makers, not staff, are ultimately responsible for addressing the feasibility of alternatives, and are not limited to the text of the EIR, but may rely on “evidence found anywhere in the record”); and City of Del Mar v. City of San Diego (1982) 133 Cal.App.3d 401, 418 (“‘feasibility’ under CEQA encompasses...
‘desirability’ to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors”).

2.7.4 LEVELS OF SIGNIFICANCE

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance” (CEQA Guidelines, Section 15382). Definitions of significance vary with the physical conditions affected, and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make “mandatory findings of significance” (Section 15065).

For all environmental issues, specific standards of significance are identified. Where explicit quantification of significance is identified, such as exceedance of a threshold related to an ambient air quality standard, this quantity is used to assess the level of significance of a particular impact in this Revised Draft EIR. Where the “substantial” effect of an impact is not so identified in the Guidelines, criteria for evaluating the significance of potential impacts were identified based on other standards, such as the Placer County General Plan. Where reasonable, quantification of levels of significance was provided.

For less easily quantifiable impacts, events or occurrences that will be regarded as significant or potentially significant were identified. For example, a criterion for determining the level of significance of the loss of a particular habitat will be that habitat’s importance to rare, threatened, endangered, or “special status” species and/or whether the habitat itself has become depleted within the region.

This assessment of levels of significance promotes consistent evaluation of impacts for all topics considered. In this Revised Draft EIR, conclusions of significance are described as follows:

- **Significant Impact** – Impacts that exceed the defined standards of significance.

- **Potentially Significant Impact** – Impacts that could occur as a result of the Specific Plan and could prove significant, but whose likelihood or severity is either dependent upon uncertain future events or cannot be determined upon the basis of current information. Potentially significant impacts are treated as significant impacts for the purposes of assessing appropriate mitigation measures in this Revised Draft EIR. Such effects are also intended to be treated as significant for purposes of the County’s obligations to make findings and a statement of overriding considerations before approving the project, if that is the Board of Supervisors’ ultimate decision. (See CEQA Guidelines, Sections 15091 and 15093.)

- **Significant and Unavoidable Impact** – Significant impacts that, after implementation of all potentially feasible mitigation measures, continue to exceed the defined standards of significance.
• **Potentially Significant and Unavoidable Impact** – Potentially significant impacts that, if they occur, and after implementation of all potentially feasible mitigation measures, would continue to exceed the defined standards of significance.

• **Short-Term Significant and Unavoidable Impact** – Short-term significant and unavoidable impacts that would be reduced to less-than-significant impacts once the mitigation is implemented.

• **Less-Than-Significant Impact** – Impacts that are adverse but that do not exceed the defined standards of significance.

• **No Impact** – Impacts that would not occur with implementation of the Specific Plan.

### 2.8 ECONOMIC AND FISCAL EFFECTS

Economic and fiscal effects of a project are not required to be evaluated under CEQA. Section 15131(a) of the CEQA Guidelines states:

> Economic or social effects of a project shall not be treated as significant effects on the environment.

Nonetheless, lead agencies may choose to present economic or fiscal information in, or associated with, an EIR in order to disclose the relative impact of a project, or series of projects, on these important community considerations. In addition, there are specific ways that economic or fiscal effects may be considered as part of the EIR. Section 15131 of the CEQA Guidelines states that economic and fiscal information may be presented in an EIR in the following situations:

…An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

…Economic or social effects of a project may be used to determine the significance of physical changes caused by the project.

…Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR.

Hausrath Economics Group has prepared a fiscal impact study of the proposed project for Placer County. A complete copy of this study is available at the Placer County Planning Department at the address appearing in Section 2.9 below, and will be considered by the Placer County Planning Commission.
Planning Commission and Board of Supervisors as part of their consideration of the proposed project.

2.9 **EIR PROCESS**

This Revised Draft EIR will be published and will be subject to review and comment by the public, as well as all responsible agencies and other interested parties, agencies and organizations for a period of no less than 45 days.

This Revised Draft EIR and the documents referenced herein are available for public review at:

Placer County Planning Department  
11414 B Avenue  
Auburn, CA  95603  
(530) 886-3000  
Email - planning@placer.ca.gov  
www.placer.ca.gov/planning

Auburn-Placer County Library  
350 Nevada Street  
Auburn, CA  95603

In accordance with Section 15150(b) of the CEQA Guidelines, all documents and/or portions of documents incorporated into this Revised Draft EIR by reference are also available for public inspection at the Placer County Planning Department at the above address.

Following the close of the comment period, the County will prepare the Final EIR. The Final EIR will include all comments received in writing during the comment period and at the public hearing. The Final EIR will also include written responses to all comments on this Revised Draft EIR, oral and written. (As explained in Section 2.3, the Final EIR will not respond to comments on the original September, 2004 Draft EIR.) The Final EIR will be published and made available to commenting agencies a minimum of ten days prior to a hearing by the Placer County Planning Commission to consider its adequacy in accordance with the CEQA Guidelines and County Guidelines.

In the event that the County Board of Supervisors approves the proposed Specific Plan, written findings of fact will be prepared and adopted in which the Board identifies all significant effects and adopts mitigation measures. In the findings of fact, the Board may, if it so chooses, reject mitigation measures and/or alternatives, and provide a written explanation of its reasons for doing so. (See Pub. Resources Code, Section 21081, subd. (a); CEQA Guidelines, Section 15091, subd. (a).) If the Board chooses to approve a project that would result in an unavoidable significant impact, it must adopt a statement of overriding considerations, which must explain the benefits of the project that, on balance, have caused the Board to choose to accept a significant adverse environmental impact.
2.10 **HOW YOU MAY COMMENT ON THE ADEQUACY OF THIS REVISED DRAFT EIR**

As a member of the public or a representative of a public agency you may provide comments on the adequacy of this Revised Draft EIR. You may send in written comments to Placer County at the following address:

Placer County Planning Department  
11414 B Avenue  
Auburn, CA 95603  
Attn: Paul Thompson, Principal Planner

Section 15204 of the State CEQA Guidelines states, in pertinent part, as follows:

In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors.
CHAPTER THREE
PROJECT DESCRIPTION

3.1 INTRODUCTION

The Placer Vineyards Property Owners Group (project applicant) proposes approval and development of a specific plan known as the Placer Vineyards Specific Plan in the unincorporated area of western Placer County. The Draft Placer Vineyards Specific Plan was originally prepared by The Spink Corporation (in association with Fehr & Peers Associates and Sugnet Associates) and first submitted to the County of Placer in December, 1996. Subsequent revisions have been incorporated in the Specific Plan by G.C. Wallace in 2003 (in association with MacKay & Somps, Inc., Fehr & Peers Associates, Civil Solutions and ECORP Consulting) and most recently by EDAW, Inc. in 2005 (in association with MacKay & Somps, Inc., Fehr & Peers Associates, Civil Solutions and ECORP Consulting). While the Specific Plan area includes 5,230± acres, only 4,251 acres are planned for urban development under the proposed Specific Plan. The remaining 979 acres are reserved as a Special Planning Area (SPA) and will continue to be used for large lot rural residential development, consistent with current zoning under the proposed Specific Plan, unless individual landowners apply for zone changes in the future (in which case additional project-level CEQA analysis will be required, as explained in Section 2.5). It is estimated that full buildout of the Specific Plan will occur over a 20- to 30-year time period. The proposed development includes residential, employment, commercial, open space, recreational and public/quasi-public land uses.

The August, 1994 Placer County General Plan identified this area as appropriate for urbanization following adoption and implementation of a comprehensive Specific Plan. This project, requesting approval of a Specific Plan, is the first in a series of steps in the approval process required prior to any new urban construction in the Specific Plan area.

The Specific Plan area is currently designated “Urban” on the Generalized Land Use Diagram within the Placer County General Plan, and “West Placer Specific Plan” in the Dry Creek/West Placer Community Plan. As part of the countywide General Plan Update, the Placer County Board of Supervisors adopted Resolution 94-238 on August 16, 1994 designating the Specific Plan area as “West Placer Specific Plan” and adding to the Dry Creek/West Placer Community Plan a list of development standards to be incorporated into the future West Placer Specific Plan. This section of the General Plan is referred to as “Exhibit 1.” Exhibit 1 is included as Appendix D of this Revised Draft EIR, as well as in Section 4.1 of this Revised Draft EIR. The County has determined that Exhibit 1 supersedes the other goals and policies of the Dry Creek/West Placer Community Plan for the area identified as “West Placer Specific Plan” (the Placer Vineyards Specific Plan area).

Exhibit 1 provides that the 5,230-acre “West Placer Specific Plan Area” shall be limited to a total of 14,132 dwelling units. Under the proposed Placer Vineyards Specific Plan, it is proposed to allocate 13,721 of the 14,132 allowable dwelling units to the 4,251 acres proposed for urban development. The remaining area, the 979-acre SPA, will be allocated 411 dwelling units,
including 150 existing dwelling units. For purposes of the analysis contained in this Revised Draft EIR, a total of 14,132 dwelling units is assumed for the project, although only 13,721 will be built by project proponents. As explained in Section 2.5, additional project-level CEQA analysis will be necessary before the County can approve any zoning change that will allow a SPA landowner to develop property at densities greater than those allowed under current zoning. Because the current zoning will allow, at most, construction of a total of 63 new dwelling units in the entire SPA, legislative action by the Board of Supervisors will be necessary before all 411 dwelling units reserved for the SPA can actually be developed.

This project is an application for a Specific Plan to (a) define a comprehensive set of rules and policies to govern all future urban development in the 5,230±-acre Specific Plan area; (b) adopt a Land Use Diagram showing the location and density/intensity of future residential, commercial, office and business park development, parks, schools, open space and other needed public facilities; (c) identify all major infrastructure (roads, water, sewer, drainage, etc.) and public services needed for proposed new development; and (d) impose standards for phasing and the implementation and financing of all requirements set forth in the Specific Plan. The Specific Plan proposes a mandatory series of stepped or sequential actions which must be approved by Placer County after approval of the Specific Plan, but before any urban construction occurs. This Revised Draft EIR will serve as the principal disclosure document for the probable environmental effects associated with the related entitlements, approvals and/or permits that are or will be sought from Placer County, shown in Table 3.1-1.

| Table 3.1-1 |
| Placer County Entitlements, Approvals and Permits |
| Entitlement/Approval or Permit Needed | Agency |
| General Plan Amendments, *Dry Creek/West Placer Community Plan* Amendments, and Specific Plan Adoption | Placer County Board of Supervisors |
| Rezoning | Placer County Board of Supervisors |
| Large Lot Tentative Map(s) | Placer County Planning Commission |
| Project-level Tentative Maps | Placer County Planning Commission |
| Development Agreements | Placer County Board of Supervisors |
| Public Facilities Financing Plan | Placer County Board of Supervisors |
| Improvement Plans/Encroachment Permits | Placer County Community Development and Resources Agency |
| Final Subdivision Map(s) | Placer County Board of Supervisors |
| Use Permits for Specified Commercial, Industrial, and Recreational Projects | Placer County Zoning Administrator Placer County Planning Commission |
| Design Review | Placer County Design/Site Review Committee |
| Formation of new County Service Area (CSA), Creation of additional Zones of Benefit within CSA #28, and Creation of a Community Facilities District | Placer County LAFCo Placer County Board of Supervisors |

Some of these approvals are described in more detail as follows:
Placer County General Plan: The following describes proposed General Plan and Dry Creek/West Placer Community Plan amendments. Note: The Blueprint Alternative, as described in Chapter Six of this Revised Draft EIR, would require one additional General Plan amendment, the deletion of the reference to a maximum of 14,132 dwelling units in Exhibit 1 to the Dry Creek/West Placer Community Plan and the substitution of the figure of 21,631 units instead.

<table>
<thead>
<tr>
<th>General Plan Page No.</th>
<th>Policy</th>
<th>General Plan Language Proposed for Amendment</th>
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</thead>
<tbody>
<tr>
<td>21</td>
<td>LAND USE BUFFER ZONE STANDARDS: Amend 2nd paragraph as follows: This General Plan requires the use of buffer zones in several types of development. While the exact dimensions of the buffer zones and specific uses allowed in buffer zones will be determined through the County's specific plan, land use permit, and/or subdivision review process, buffer zones must conform to the following standards (as illustrated conceptually in Figures I-2 through I-7); provided, however, different buffer zone standards may be established within a Specific Plan as part of the Specific Plan approval.</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Circulation Diagram – Amend diagram to include Specific Plan roadways, including 16th Street and Dyer Lane. Change the designation for Watt Avenue to “Thoroughfare.”</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Table I-7 – Amend table to include Specific Plan roadways.</td>
<td></td>
</tr>
<tr>
<td>40 1.H.5</td>
<td>The County shall require development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses except as may be determined to be unnecessary or inappropriate within a Specific Plan as part of the Specific Plan approval.</td>
<td></td>
</tr>
<tr>
<td>40 1.H.6</td>
<td>The County shall require new non-agricultural development immediately adjacent to agricultural lands to be designed to provide a buffer in the form of a setback of sufficient distance to avoid land use conflicts between the agricultural uses and the non-agricultural uses except as it may be determined to be unnecessary or inappropriate within a Specific Plan as part of the Specific Plan approval. Such setback or buffer areas shall be established by recorded easement or other instrument, subject to the approval of County Counsel. A method and mechanism (e.g., a homeowners association or easement dedication to a non-profit organization or public entity) for guaranteeing the maintenance of this land in a safe and orderly manner shall be also established at the time of development approval.</td>
<td></td>
</tr>
<tr>
<td>47 1.O.1</td>
<td>Except as otherwise provided in the Design Guidelines of an approved Specific Plan, the County shall require all new development to be designed in compliance with applicable provisions of the Placer County Design Guidelines Manual.</td>
<td></td>
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</tbody>
</table>
The County shall develop and manage its roadway system to maintain the following minimum levels of service (LOS), or as otherwise specified in a Community or Specific Plan.

a. LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D."

b. LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D."

c. An LOS no worse than specified in the Placer County Congestion Management Program (CMP) for the State highway system.

The County may allow exceptions to these levels of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exception to the standards, the County shall consider the following factors:

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

Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.
### General Plan

<table>
<thead>
<tr>
<th>General Plan Page No.</th>
<th>Policy</th>
<th>General Plan Language Proposed for Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>3.A.8.</td>
<td>The County’s level of service standards for the State highway system shall be no worse than those adopted in the Placer County Congestion Management Program (CMP).</td>
</tr>
<tr>
<td>70</td>
<td>3.A.12.</td>
<td>The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project consistent with Policy 3.A.7. Such improvements may include a fair share of improvements that provide benefits to others.</td>
</tr>
<tr>
<td>98</td>
<td>5.A.16</td>
<td>Except as otherwise provided in an approved Specific Plan, the County should not become involved in the operation of organized, activity-oriented recreation programs, especially where a local park or recreation district has been established.</td>
</tr>
<tr>
<td>99</td>
<td>5.A.25.</td>
<td>The County shall encourage the establishment of activity-oriented recreation programs for all urban and suburban areas of the County. Except as otherwise provided in an approved Specific Plan, such programs shall be provided by jurisdictions other than Placer County including special districts, recreation districts or public utility districts.</td>
</tr>
<tr>
<td>123</td>
<td>7.B.1.</td>
<td>The County shall identify and maintain clear boundaries between urban/suburban and agricultural areas and require land use buffers between such uses where feasible, except as may be determined to be unnecessary or inappropriate within a Specific Plan as part of the Specific Plan approval. These buffers shall occur on the parcel for which the development permit is sought and shall favor protection of the maximum amount of farmland.</td>
</tr>
</tbody>
</table>

### Community Plan

<table>
<thead>
<tr>
<th>Community Plan Page No.</th>
<th>Goal/Policy</th>
<th>Community Plan Language Proposed to be Revised.</th>
</tr>
</thead>
<tbody>
<tr>
<td>122</td>
<td>6</td>
<td>The Capital Improvement Program (CIP) shall be sufficient to ensure a minimum level of service (LOS) “C” on the Community Plan area’s road network – Given the projected buildout of the Community Plan area and implementation of the CIP.</td>
</tr>
</tbody>
</table>
| 124                     | 9           | The level of service (LOS) on roadways and intersections identified on the Capital Improvement Program (CIP) shall be a Level C or better. The first priority for available funding shall be the correction of potential hazards. Land development projects shall be approved only if LOS C can be sustained on the CIP roads and intersections after:  
   a. Traffic from approved projects has been added to the system.  
   b. Improvements funded by this program have been constructed. |
The County may allow exceptions to this level of service (LOS) standard where it finds that the improvements or other measures required to achieve the LOS standard are unacceptable based on established criteria. In allowing any exception to the standard, the County shall consider the following factors:

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

Exceptions to the standard will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.

- **Placer County Zoning Ordinance:** Rezoning from the existing F-B-X-DR (Farming, Combining Development Reserve, Combining 80-acre minimum parcel size), F-DR (Farming, Combining Development Reserve), IN-UP-DR (Industrial, Combining Limited Use [Use Permit], Combining Development Reserve), RA-B-X-DR (Residential Agricultural, Combining Development Reserve, 10-acre minimum parcel size), and C1-DC-DR (Neighborhood Commercial, Combining Design Scenic Corridor, Combining Development Reserve) zoning classifications to a new zone district, “Specific Plan” (SPL), with the exception of the SPA, which will remain in its current zoning classifications. The SPL zone will be combined with the Specific Plan to function as the zoning text and map for
the Placer Vineyards Specific Plan area (with the exception of the SPA). It is anticipated that the actual land use designation will be identified for each property in the Specific Plan area (e.g., SPL [PVSP-LDR]).

- **Financing Plan:** Concurrent with approval of the Specific Plan, the Board of Supervisors will consider adoption of the Public Facilities Financing Plan. This Financing Plan defines the specific mechanisms that will be required to fund the capital costs of all infrastructure necessary to accomplish Specific Plan buildout. The Financing Plan also defines funding for the maintenance of new infrastructure and public services needed by future residents and businesses.

- **Development Agreements:** At the time of approval of the Specific Plan, the County may enter into development agreements with individual landowners within the Specific Plan area. A development agreement sets forth individual property owners’ specific obligations relating to the construction and financing of infrastructure; financial contributions for infrastructure maintenance and public services; and other obligations that may be imposed by the County as a condition of development. A development agreement also provides the property owner with certain vested development rights. Development agreements are authorized by California Government Code Section 65864 et seq. and Section 17.58.210 of the Placer County Zoning Ordinance. They are recorded and bind future property owners to the terms of the agreement.

- **Large Lot Tentative Map(s):** Concurrent with or subsequent to the approval of the Specific Plan, a large lot tentative map or maps may be filed for all or a portion of the Specific Plan area, showing arterial and collector street rights-of-way, open space corridors, park and school sites, and the boundaries between different land use categories. The large lot tentative map or maps establish a framework for subsequent project-level tentative subdivision maps which will define, in detail, the local streets, lotting patterns and other specific design features for Specific Plan sub-areas. Large lot maps also establish the basis for allocation of financial responsibilities as implemented via a Community Facilities District.

- **Design Review:** A number of subsequent approvals within the Specific Plan area will be subject to Design Review. The purpose of the County’s Design Review Process is to prevent the poor quality of design and other harmful effects of exterior appearances of buildings constructed in any specific zoning district, from affecting the desirability of the immediate area and neighboring areas for residential and business purposes. Within the Specific Plan area all commercial, multi-family, public/quasi-public, and industrial development will be subject to design guidelines/standards, and subject to design review. Through this process, applications are approved, conditionally approved, or denied, based on consistency with the design standards and guidelines established for each district and the Specific Plan area in general. Design review will occur in conjunction with the following development activities: grading and drainage, lighting, parking and circulation areas, signs (new and copy changes), exterior building alterations, painting, fences and walls, water storage tank installation, and landscaping.
Other approvals and/or permits needed from other agencies are listed in Section 3.6-1 below.

3.2 PROJECT LOCATION

SPECIFIC PLAN AREA

The project site is located in unincorporated western Placer County, bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line and Pleasant Grove Road, and on the east by Dry Creek and Walerga Road, as shown in Figures 3-1, 3-2, 3-3 and 3-4. The east-west length of the Specific Plan area is approximately six miles. It encompasses portions of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, Township 10 North, Range 5 East, and portions of Sections 6 and 7, Township 10 North, Range 6 East, Mount Diablo Base and Meridian.

OFF-SITE INFRASTRUCTURE

This Revised Draft EIR identifies and evaluates the impacts of constructing and operating proposed off-site infrastructure. Included in this evaluation are proposed routes for sewer trunk lines and water and recycled water transmission lines, as well as wastewater treatment plant improvements. It is assumed that, in most instances, utility lines will be placed within existing roadways or other disturbed areas, so as to minimize environmental impacts. In some instances, though, the facilities may be placed outside existing roads and thus could disturb lands outside such areas. With respect to all of these utilities, the area to be disturbed as well as adjacent areas are analyzed for impacts to biological, cultural and other resources. Off-site utility alignments have been identified for the Specific Plan area as discussed below, and as shown in Figures 3-5, 3-6 and 3-7.

SURFACE WATER SUPPLY CONNECTION

Long-Term Water Connection

As shown in Figure 3-5, the long-term surface water supply pipeline corridor generally follows the alignment of Baseline/Riego Road (Riego Road is the extension of Baseline Road in Sutter County), south along Pleasant Grove Road and then westerly along Elverta Road to the Sacramento River. Additional environmental review and construction of this joint pipeline will be undertaken by Placer County Water Agency (PCWA); therefore, it is described and discussed at a programmatic level in this Revised Draft EIR. The diversion structure, pumps and water treatment facilities are not described or evaluated in this Revised Draft EIR, but are being evaluated separately by PCWA and the Bureau of Reclamation in a joint Environmental Impact Statement (EIS)/EIR (SCH #2003082076). The Notice of Preparation for the joint EIS/EIR was issued in the summer of 2003 and public scoping meetings were held during September of the same year (Steve Yaeger, PCWA, pers. comm., January 2006). The Draft EIS/EIR is currently projected for completion during the winter of 2006/2007.
Initial Water Connection

Also as shown in Figure 3-5, an initial surface water supply pipeline 24 inches in diameter extends from the Specific Plan area easterly along Baseline Road to connect to the City of Roseville pipeline at Fiddyment Road, through which PCWA wheels treated water from its existing Foothill Treatment Plant system.

A secondary initial surface water supply could also be made available by PCWA if the Sacramento River diversion has not begun delivery of water before additional supplies are required. In this case, as shown in Figure 3-5, a new pipeline extending from the San Juan/Sacramento Suburban cooperative transmission pipeline that currently terminates in Antelope Road near Walerga Road will be constructed westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Also as shown in Figure 3-5, this supply could similarly be conveyed in a 16 inch pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area. To deliver this secondary initial surface water supply, improvements will also be required at the San Juan Water District’s Folsom Lake diversion facility and water treatment plant. This Revised Draft EIR assesses only the water transmission facilities that might be constructed by project proponents. Evaluation of any changes to San Juan Water District’s present facilities (including a full CEQA/NEPA assessment) would be handled separately by PCWA, San Juan Water District, and the Bureau of Reclamation, similar to the ongoing process for the Sacramento River diversion.

Recycled Water Connection

It is also proposed to provide recycled water to the project site from the Dry Creek Wastewater Treatment Plant (DCWWTP) and ultimately from the Pleasant Grove Wastewater Treatment Plant (PGWWTP). Initially, a connection will be made to an existing 24-inch gravity recycled water line constructed as part of the Dry Creek West Placer Community Facilities District #1. The pipeline currently terminates south of Dry Creek on the east side of Walerga Road. The line will be extended in a northerly direction along Walerga Road to Baseline Road where it will turn west to the project site (see Figure 3-5). In the future, as the west Placer area builds out, a recycled water line will be constructed from the PGWWTP to serve the Specific Plan area and other areas. It is currently proposed to extend the future recycled water line westward from PGWWTP along Phillip Road to the alignment of Watt Avenue, and then south to Baseline Road where it will tie into other recycled water infrastructure. The PGWWTP supply will supplement and/or ultimately replace the DCWWTP supply (see Figure 3-5). Although wastewater from the Specific Plan area is proposed to be treated at the DCWWTP, it will be necessary to use recycled water from the PGWWTP at buildout in order to “balance” the system.

SEWER SYSTEM CONNECTION

The preferred option (DCWWTP Option) for long-term sewer service is to connect the entire Specific Plan area to the DCWWTP. As discussed in more detail in Section 3.4.1, the amount of capacity available at this facility has been the subject of a recent analysis for the South Placer Wastewater Authority (SPWA), which suggests that sufficient capacity could be made available
As described in the *Placer Vineyards Specific Plan Sewer Master Plan*, (MacKay & Somps, Jan. 2006), wastewater flows from the western 4,340 acres (Shed A) of the site would be directed to DCWWTP by way of two 16 - 20 inch diameter force main pipelines in the same utility corridor. This corridor would extend from the Specific Plan area southerly along the alignment of Watt Avenue, then easterly along the alignment of PFE Road and northerly to the plant by way of one of two proposed alignments. The primary alignment will proceed northerly to the plant on the easterly segment of Hilltop Circle through the Roseville Corporation Yard (there is also an alternative alignment just east of the City of Roseville Corporation Yard). An alternative alignment will leave PFE Road at Cook Riolo Road, turning easterly to the DCWWTP just north of Dry Creek (see Figures 3-6 and 3-7). This latter alternative alignment could, however, physically impede the northerly expansion of the DCWWTP.

The majority of flows from the easterly 890 acres (Shed B) would discharge to an off-site trunk sewer line connection point at its southerly boundary, and then cross Dry Creek (using jack and bore construction methods) and be carried by a gravity sewer trunk line to a lift station. From the lift station, wastewater flows will be carried in a 12 inch diameter force main, to be installed along the south side of Dry Creek, to an existing force main located approximately 1,400 feet east of Walerga Road (see Figures 3-6 and 3-7). Because this corridor does not follow existing public right-of-ways, it would be necessary to acquire a right-of-way as a condition of other future project entitlements, or through use of eminent domain.

As an option for Shed A, Sacramento Regional County Sanitation District (SRCSD) facilities could be utilized (SRCSD Option). In this event, the utility corridor for connection of the Specific Plan area to SRCSD would extend from the Specific Plan area southerly following the alignment of Sorrento Road to the SRCSD Upper Northwest Interceptor at a point in Elkhorn Boulevard (see Figure 3-6, Alternative A). An alternative corridor has also been identified for the proposed connection to SRCSD. This alternative corridor would extend south from the Specific Plan area following the alignment of Elwyn Avenue, west along Elverta Road and finally south along the alignment of West 6th Street to the SRCSD Upper Northwest Interceptor at a point in Elkhorn Boulevard (Figure 3-6, Alternative B).

**OTHER OFF-SITE INFRASTRUCTURE**

In addition to the utility lines described above, it would also be necessary to widen Watt Avenue between the southern Specific Plan boundary at Dry Creek and Pepperidge Drive in Sacramento County, including improvements at the Watt Avenue/PFE Road intersection, as shown on Figures 3-8 and 3-8A. This right-of-way would also include a 10-foot wide Class I Trail along the east side of Watt Avenue (see Figure 4.11-4 in Section 4.11 of this Revised Draft EIR). Baseline Road would also be widened adjacent to the Specific Plan area and between the Specific Plan area and Fiddyment/Walerga Roads. Five intersections would be improved on Riego/Baseline Road. Intersections to be improved along Riego/Baseline Road include both legs of Pleasant Grove Road, East Natomas Road, Locust Road and West Dyer/Brewer Road (see Figures 3-8B, 3-8C, 3-8D, 3-8E, and 3-8F).
As noted above, if the DCWWTP is used for service to the Specific Plan area, additional improvements will be required at the DCWWTP to accommodate the additional flows. These improvements will be undertaken by the City of Roseville for the South Placer Wastewater Authority, and are described and discussed at a programmatic level. In conducting the analysis of the additional improvements at DCWWTP, this Revised Draft EIR has relied, in part, upon information contained in the Roseville Regional Wastewater Treatment Service Area Master Plan Environmental Impact Report, which was certified by the City of Roseville City Council on November 16, 1996 (SCH #93092079). This document is incorporated herein by reference. Similarly, if flows are directed to the SRCSD, additional improvements to existing facilities may be necessary. Analysis with regard to SRCSD facilities relies, in part, on the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Environmental Impact Report (SCH #2002052004), also incorporated herein by reference.

In order to comply with Development Standard 8 (Agricultural Water Supply) of Exhibit 1 of the Dry Creek/West Placer Community Plan, the Specific Plan proponents intend to pay a fee to Placer County to facilitate the construction of additional recycled wastewater storage facilities. The fee may subsequently be transferred to the PCWA, if it constructs the agricultural water supply project. In order to arrive at an estimated fee, a project has been conceptualized that would use the fee paid by Specific Plan proponents to construct recycled wastewater storage facilities at the City of Lincoln Wastewater Treatment and Reclamation Facility (WWTRF) for subsequent conveyance to agricultural lands. The City of Lincoln would be the lead agency under CEQA.

The present wastewater treatment and reclamation facilities are located on both sides of Fiddyment Road west of the City of Lincoln. The location of the proposed improvements is shown in Figure 3-9. These improvements are generally described and discussed at a programmatic level in this Revised Draft EIR. In conducting the analysis of the recycled wastewater storage facility at the City of Lincoln WWTRF, this Revised Draft EIR has relied upon information contained in the Environmental Impact Report, City of Lincoln Wastewater Treatment and Reclamation Facility, which was certified by the City of Lincoln City Council on March 9, 1999 (SCH# 1998122071). This document is incorporated herein by reference.

3.2.1 PROJECT SITE CHARACTERISTICS

Most of the Specific Plan area is undeveloped grazing land with a few stands of native and non-native trees and agricultural lands. Approximately 150 residences are located primarily in the northwest corner of the Specific Plan area. Current access to the Specific Plan area is provided by Baseline Road and several other two-lane roads, including Palladay Road, Watt Avenue, Tanwood Avenue and Dyer Lane.

Three powerline easement corridors cross the Specific Plan area. These easements and facilities are owned by Pacific Gas & Electric (PG&E), Sacramento Municipal Utility District (SMUD) and the Western Area Power Administration (WAPA). A 375-foot-wide SMUD and WAPA easement traverses the Specific Plan area in a northeast to southwest alignment located west of
The Specific Plan area is generally flat. Elevations range from 35 feet above sea level at the western edge of the Specific Plan area to 115 feet at the eastern edge. The southeast corner of the Specific Plan area abuts Dry Creek, and Curry Creek bisects the northeasterly portion of the Specific Plan area. Several minor drainage swales, intermittent creeks and scattered vernal pools are features of the site.

3.2.2 LAND OWNERSHIP

Twenty-four property owners who control approximately 4,251± acres (or approximately 81%) of the Specific Plan area hold parcels identified for urban development under the Specific Plan (see Figure 3-11). The remainder of the Specific Plan area (approximately 979 acres) consists almost entirely of land located in the far western portion of the Specific Plan area (most of which is known as the Riego area, although it has an Elverta mailing address). This area, while included in the Specific Plan area, is not planned for urbanization under the proposed Specific Plan. The Riego area consists mostly of rural residential/agricultural parcels ranging in size from 1 to 96 acres. Approximately 200 or 87% of the 230 existing parcels are 5 acres or less in size, with the majority being less than 2 acres and primarily located in the Riego township. The remaining 30 parcels range in size from 5 to 96 acres and are generally located in the vicinity of Newton Street, south of Browning and Colburn Streets. While some owners have expressed interest in building new homes or subdividing their land, others have expressed a desire to maintain large parcels and a rural lifestyle. Accordingly, the proposed Specific Plan designates this area as a “Special Planning Area” (SPA) and reserves a total of 411 residential dwelling units for the eventual buildout of this area. The 411 units include existing dwellings (150 in number), leaving 261 new units that could be constructed within the SPA. As explained in Sections 2.5 and 3.1 of this Revised Draft EIR, however, only 63 new dwelling units can be built under current zoning, therefore, zoning changes, as well as one or more project-level environmental documents, would be necessary before the remaining 198 units of the 411 units currently “allocated” to the SPA can actually be developed.

3.3 APPLICANT’S PROJECT OBJECTIVES

The purpose of the Specific Plan, as stated in the Specific Plan, is to “…define a comprehensive set of policies to govern urban development in the 5,230±-acre Placer Vineyards Specific Plan area.” The Specific Plan and subsequent entitlement process allow for a sequence of community input and government review to ensure that development occurs in a logical, consistent and timely manner.

In fashioning the proposed Specific Plan, the applicants have been guided by Exhibit 1 to the Dry Creek/West Placer Community Plan, as adopted at the time of Placer County General Plan approval in 1994. The applicant’s intention has been to conform to the development policies and standards set forth in Exhibit 1 (discussed more fully in Section 4.1 of this Revised Draft EIR) and to avoid the need, to the extent possible, for any General Plan amendments. Even so, however, the applicants are proposing a handful of General Plan amendments, as well as
amendments to the 1990 Dry Creek/West Placer Community Plan. (These proposed amendments are set forth earlier in this chapter, starting on page 3-2.)

The applicants believe that the most important of these amendments are necessary due to the passage of more than a decade since 1994, and due to some lack of clarity regarding the interplay between certain policies in the General Plan Transportation and Circulation Element. Certain proposed amendments are also intended to achieve greater clarity than can be found in the current language and to give the Board of Supervisors flexibility, in approving specific plans such as the Placer Vineyards Specific Plan, to tailor certain requirements to the needs of particular specific plan areas.

The proposed amendments to Policies 3.A.7, 3.A.8, and 3.A.12 of the Transportation and Circulation Element of the General Plan are intended to eliminate the existing lack of clarity regarding the extent to which the long-standing “exception” language found in existing Policy 3.A.7 was intended to apply with equal force to less qualified language currently found in Policies 3.A.8 and 3.A.12. This lack of clarity can be remedied by importing language from 3.A.8 directly into 3.A.7, deleting 3.A.8 as a stand-alone policy, and by cross-referencing 3.A.7 within 3.A.12. As amended, Policy 3.A.7 will be the one policy setting forth acceptable levels of service (LOS) for various types of roadways in the County, and will permit the Board of Supervisors to consider “exceptions” to such LOS with respect to proposed transportation improvements that might be unacceptable for various specified reasons.

Similarly, there is currently some uncertainty regarding whether, in enacting Policy 3.A.7 in 1994 as part of the updated General Plan, the Board intended that the policy’s “exception” language apply to similar pre-existing community plan policies setting forth acceptable LOS standards within individual community plan areas. Based on the belief that the 1994 exception language was probably intended to also apply in such situations, and based on the further belief that any ambiguity on that point should be eliminated in the interest of achieving greater consistency with regards to transportation policy, the applicants propose to expressly add the exception language from Policy 3.A.7 directly into Policy 9 of the Transportation and Circulation Element of the Dry Creek/West Placer Community Plan.

The exception language in Policy 3.A.7 has taken on greater significance than was perhaps anticipated in 1994 when the Board approved the updated General Plan, based on the most current and thorough traffic studies available at that time. In creating Exhibit 1 to the Dry Creek/West Placer Community Plan at the same time, the Board clearly intended to ultimately approve a specific plan consistent with the standards and policies set forth therein. Planning decisions and considerations not in play in western Placer County when the Dry Creek/West Placer Community Plan was adopted in 1990 and the General Plan was updated in 1994, such as annexations to Roseville and the proposed Curry Creek Community Plan, will result in an increase in the number of trips generated and projected for this portion of the County. Even without the Placer Vineyards Specific Plan, congestion on western County roads will exceed the normally applicable LOS thresholds set forth in Policy 3.A.7. This reality has been demonstrated by the traffic impact analysis prepared as part of this Revised Draft EIR. Because the applicants assume that, in enacting Exhibit 1 together with Policy 3.A.7, the Board did not intend the LOS standards set forth in 3.A.7 and related policies to defeat the Board’s ability to approve a specific
plan consistent with Exhibit 1, the applicants are proposing to eliminate language from the Transportation and Circulation Element that, if taken out of context or interpreted in certain ways, could possibly frustrate the Board’s ability to approve a specific plan in a form consistent with Exhibit 1. Similar considerations lay behind the proposal to amend Policy 9 of the Transportation and Circulation Element of the Dry Creek/West Placer Community Plan.

The applicants consider the proposed General Plan amendments dealing with buffers and the need to minimize urban/rural conflicts to be desirable for two reasons. The first is that there is some ambiguity in the existing policies that makes them unclear in terms of exactly what might be required of the Placer Vineyards Specific Plan. The second reason is that, by allowing the Board to address these issues within individual specific plans without the need to be encumbered by the existing General Plan language, the proposed amendments, the applicants believe, will allow the Board to address the contents of the proposed Specific Plan based on the unique facts associated with the proposed Specific Plan.

The applicants are proposing General Plan amendments to allow the Board to use the Design Guidelines for individual specific plans to vary from the more generic Placer County Design Guidelines Manual where the Board deems such variance to be appropriate. This change will allow specific plan proponents to suggest, and the Board to approve if it desires, Design Guidelines for specific plans tailored to the unique circumstances of, and land use types contemplated by, those specific plans.

Finally, the applicants are proposing very minor amendments to General Plan policies dealing with “activity-oriented recreation programs.” Policy 5.A.16 and 5.A.25 from the Recreation and Cultural Resources Element would be modified to eliminate the current unqualified prohibition on direct county involvement in such programs so as to allow such involvement, at the Board’s discretion, in connection with approved specific plans.

The Specific Plan proposes the following objectives:

- To protect the highest quality natural features and resources of the site and provide transitional buffers sensitive to the character of adjacent lands uses.

- To promote compact mixed-use development that strives to provide a balance of uses, diverse housing and transportation choices and contributes to a jobs to housing balance within the region.

- To establish a pedestrian friendly community and access to a regional system of trails that link neighborhoods together.

- To develop a series of neighborhood areas with their own unique site identity with urban centers and community serving facilities (schools, parks and public amenities).

To achieve Specific Plan objectives, project applicants propose to undertake the following more specific actions:
Land Use:

- Conform to General Plan and Exhibit 1 policies which designate this region for urban development.

- Provide a well designed, balanced community with identifiable neighborhoods in close proximity to jobs and services.

- Provide a balanced mix of land uses that will allow a self-sufficient community, thereby reducing demands on regional roadways and services.

- Provide for a full range of housing densities affordable to all income levels.

- Provide higher density housing within clusters at the town center, village centers, commercial nodes and concentrated along major transportation corridors.

- To the extent that sound walls are used to screen residential areas from the noise generated along major streets in the projects, such walls are to be screened by landscape and/or setback techniques intended to soften the visual effect of the wall.

- Provide a comprehensively planned project that is sensitive to environmental issues including wetlands, flood protection and tree preservation.

- Provide required schools and parks sized to meet the needs of residents in the Specific Plan area and located as neighborhood focal elements.

Environmental Resources:

- Use greenways to help manage stormwater runoff.

- Incorporate significant on-site wetlands and existing oak groves into greenway and open space systems.

- Provide off-site mitigation to permanently protect preserves of natural resources, open space and agricultural land, distanced from the effects of urban development.

Circulation:

- Provide a network of streets with a clear system of hierarchy that interconnects the communities and contributes to their character.

- Establish a circulation system that meets local and regional transportation needs and accommodates a variety of transportation modes including off-street trail systems.

- Provide a continuous system of trails to link neighborhoods together and provide safe routes to schools, parks and community serving areas.
• Expand capacity on the Baseline Road east-west arterial to serve local and regional traffic needs, initially to four lanes and ultimately to six lanes.

• Improve the following intersections in Sutter County:
  - Riego Road and East Natomas Road,
  - Riego Road and Pleasant Grove Road,
  - Baseline Road and Pleasant Grove Road, and
  - Baseline Road and Locust Road.

• Expand capacity of Watt Avenue initially to four lanes and ultimately to six lanes from Baseline Road to approximately 1000 feet south of the Placer County line.

• Construct Dyer Lane as a four-lane roadway.

• Construct 16th Street as a four-lane roadway.

• Modify signals at Watt Avenue/Baseline Road and Fiddyment Road/Baseline Road.

• Construct new signals on Baseline Road at Brewer Road/Dyer Lane (west), Palladay Road, 16th Street, 14th Street, 12th Street, Dyer Lane (east) and Park Street.

• Construct new traffic signals on Watt Avenue at A Street, East Town Center Drive, Oak Street and Dyer Lane.

• Construct new traffic signals on Dyer Lane at A Street (east and west), Town Center Drive (east and west), 18th Street, Palladay Road, 16th Street, Tanwood Avenue and 11th Street.

• Construct new traffic signals on A Street at Palladay Road, 16th Street, 14th Street and 12th Street.

Infrastructure:

• Provide a comprehensively planned infrastructure system (e.g., water treatment and distribution systems, sewer treatment and collection systems, electrical distribution systems, fire suppressions facilities, general government facilities) to serve the needs of future residents and allow existing residents to tie into upgraded facilities.

• Provide adequate infrastructure improvements without adversely affecting existing levels of service.

• Conserve energy and water.
Flood Control:

- Construct incremental flood detention facilities along open space corridors as development occurs to fully mitigate on-site impacts and not worsen existing off-site conditions.
- Provide joint-use of parks with detention basins where appropriate and feasible.

Open Space and Recreation:

- Provide landscaped open space buffers and/or landscape corridors along major arterials.
- Provide a variety of active and passive parkland for local and regional public enjoyment and preserve significant natural resources.
- Provide entry statements to define and distinguish this new community.
- Provide open space linkages to the bicycle, pedestrian and equestrian facilities provided within the Dry Creek regional corridor.
- Provide natural open space along existing drainage corridors and easements, with off-street biking/hiking linkages to schools, parks, shopping and public places.

Community Design:

- Maintain vegetated corridors along circulation routes to preserve the scenic quality of the landscape.
- Design residential development to front upon streets where outdoor noise levels do not exceed 60Ldn/CNEL, as well as upon pedestrian streets, parks and/or open space, as much as possible.
- Provide landscaping as a transition between developed areas and open space and to screen mechanical equipment, accessory roads and parking.
- Anchor neighborhoods with community serving facilities, including schools, parks and quasi-public uses.

Implementation:

- Establish financial mechanisms to ensure that the full range of services needed to serve the Specific Plan area are funded by the community without cost to the balance of the County.
- Phase development and infrastructure to respond to market demand while requiring new development to provide the infrastructure and public facilities necessary to serve the developing area.
• Provide revenue for the maintenance of public open space areas and park facilities, infrastructure and public services.

3.4 PROJECT CHARACTERISTICS

The proposed Specific Plan states that it includes the following features:

• Conformance with the Placer County General Plan and Exhibit 1 (amendment to the Dry Creek/West Placer Community Plan), which designated this area for urban development, specified the amount and mix of land uses, listed design standards and directed the preparation of the Specific Plan document. Conformity with the General Plan is one of the issues addressed in this Revised Draft EIR.

• A maximum of 13,721 dwelling units within the area to be urbanized under the Specific Plan with a full range of residential densities and housing types, including a program designed to meet the County’s affordable housing requirements. Conformity with the County Housing Element is one of the issues addressed in this Revised Draft EIR.

• Approximately 979± acres of existing rural residential development (including the Riego area) which is proposed to be designated as the “Special Planning Area” (SPA). No changes in land use designations are proposed within the SPA designation.

• The reservation of a total of 411 dwelling units for the SPA and construction of core backbone infrastructure to accommodate these dwelling units. Included are 150 existing dwelling units and 261 future dwelling units. Because current zoning will be retained within the SPA, it is estimated that 63 additional dwelling units could be constructed without a change in the current zoning.

• The dedication of over 5% of the project area to job generating land uses which will generate approximately 7,594 jobs, equating to approximately 0.54 jobs for every home in the Specific Plan area. Jobs/housing balance is one of the issues addressed in this Revised Draft EIR.

• A program providing for the development of roadways on a one-mile, half-mile and quarter-mile grid to interconnect and integrate the community, the expansion of Baseline Road and opportunities for alternatives to the automobile. Transportation and circulation issues are addressed in this Revised Draft EIR.

• A network of open space corridors that will provide off-street trail connections, buffer land uses, convey drainage and preserve or allow the re-creation of wetlands. Entry statements, landscaping along streets, and an extensive trail and greenway system interconnected to neighborhoods, parks, open space recreation and activity centers characterize the open space in the community. A 200-foot landscape buffer at the southern edge of the project area, reduced to 50 feet adjacent to Gibson Ranch Park, provides bikeway and equestrian trails linkages into Gibson Ranch Park. This Revised Draft EIR addresses the issues of open space, recreation, biological resources/wetlands, and aesthetics (landscaping).
• The collocation of park and school facilities at the focal point of each neighborhood, and separated from arterial roadways, provides a neighborhood refuge and opportunities for joint-use, and within walking distance away from arterial roadways. One high school, two middle schools and six elementary school sites are dispersed throughout the Specific Plan area. This Revised Draft EIR addresses the issues of land use, parks and schools.

• A comprehensively planned “core backbone” infrastructure system (sewer, water, drainage, etc.) to meet the needs of future residents and allow existing residents the opportunity to tie into upgraded facilities. Sewer, water and drainage infrastructure issues are addressed in this Revised Draft EIR.

• Phasing standards and guidelines to direct and manage growth during buildout of the project.

• A Financing Plan showing how the development will provide for maintenance of facilities and delivery of services to the Specific Plan area.

• Designation of a 190± acre pedestrian-oriented Town Center located near the center of the Specific Plan area, centered on Town Center Drive at 16th Street, which incorporates:
  ▪ Connections to a greenway trail system, located on the northern edge of the Town Center.
  ▪ A village green and community gathering area to accommodate civic uses such as a library facility, recreation center and government offices.
  ▪ A main street area in the center to provide pedestrian-oriented retail and area for an outdoor marketplace.

• A large “regional-draw” commercial power center located on the southwest corner of Watt Avenue and Baseline Road and office and industrial uses located along Baseline Road to maximize their visibility and to buffer residential development to the south from traffic noise. Open space corridors have also been used along Baseline Road to provide a buffer to residential development. Land use compatibility issues are addressed in this Revised Draft EIR.

• Neighborhood commercial centers dispersed throughout the Specific Plan area at key intersections, each surrounded by higher intensity land uses to encourage pedestrian use. Land use compatibility issues are addressed in this Revised Draft EIR.

• A variety of housing densities and land use buffers intended to protect existing rural residential development in the west part of the Specific Plan area (the Riego area) and south of the Sacramento/Placer county line. Land use density issues are addressed in this Revised Draft EIR.

Table 3.4-1 provides a summary of proposed land uses by type, including the number of acres devoted to each use and the number of jobs to be generated by land use type.
## Table 3.4-1
### Land Use Summary

<table>
<thead>
<tr>
<th>Land Uses</th>
<th>Density/ Intensity Standards</th>
<th>Area Size (Acres)</th>
<th>Amount</th>
<th>% of Total Project Area</th>
<th>Job Generation Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDR – Low-Density Residential</td>
<td>2-6</td>
<td>3.5</td>
<td>991.00</td>
<td>3,455</td>
<td>18.95%</td>
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<td>MDR – Medium-Density Residential</td>
<td>4-8</td>
<td>5.24</td>
<td>1,196.00</td>
<td>6,266</td>
<td>22.87%</td>
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<tr>
<td>HDR – High-Density Residential</td>
<td>7-21</td>
<td>15</td>
<td>190.00</td>
<td>2,844</td>
<td>3.63%</td>
</tr>
<tr>
<td>CMU - Commercial Mixed-Use Residential (70% of total area)¹</td>
<td>14-22</td>
<td>18</td>
<td>46.90</td>
<td>844</td>
<td>0.90%</td>
</tr>
<tr>
<td><strong>Subtotal Residential</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>46.35%</td>
</tr>
<tr>
<td><strong>Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM - Commercial Retail</td>
<td>.20-.30</td>
<td>0.25</td>
<td>34.00</td>
<td>370,260</td>
<td>0.65% 500 741</td>
</tr>
<tr>
<td>O – Office</td>
<td>.25-.45</td>
<td>0.30</td>
<td>34.50</td>
<td>450,846</td>
<td>0.66% 400 1,127</td>
</tr>
<tr>
<td>BP - Business Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail (10% of total area)</td>
<td>.20-.45</td>
<td>0.25</td>
<td>9.85</td>
<td>107,267</td>
<td>1.88% 500 215</td>
</tr>
<tr>
<td>Office (90% of total area)</td>
<td>.20-.45</td>
<td>0.25</td>
<td>88.65</td>
<td>965,399</td>
<td>1.59% 750 1,287</td>
</tr>
<tr>
<td>PC – Power Center (100% Retail)</td>
<td>.20-.35</td>
<td>0.25</td>
<td>60.00</td>
<td>653,400</td>
<td>1.15% 500 1,307</td>
</tr>
<tr>
<td>TC – Town Center Commercial³</td>
<td>.35-2.0</td>
<td>0.45</td>
<td>33.50</td>
<td>656,667</td>
<td>0.64% 500 1,051</td>
</tr>
<tr>
<td>Retail (80% of total area)</td>
<td>.35-2.0</td>
<td>0.45</td>
<td>26.80</td>
<td>525,334</td>
<td>0.63% 333 592</td>
</tr>
<tr>
<td>Office (20% of total area)</td>
<td>.35-2.0</td>
<td>0.45</td>
<td>6.70</td>
<td>131,333</td>
<td>0.58% 333 394</td>
</tr>
<tr>
<td>CMU - Commercial Mixed-Use Commercial (30% of total area)²</td>
<td>.35-1.0</td>
<td>0.45</td>
<td>20.10</td>
<td>394,000</td>
<td>0.38% 500 394</td>
</tr>
<tr>
<td>Retail (15% of total area)</td>
<td>.35-1.0</td>
<td>0.45</td>
<td>10.05</td>
<td>197,000</td>
<td>0.30% 333 592</td>
</tr>
<tr>
<td>Office (15% total area)</td>
<td>.35-1.0</td>
<td>0.45</td>
<td>10.05</td>
<td>197,000</td>
<td>0.30% 333 592</td>
</tr>
<tr>
<td><strong>Subtotal Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.35% 7,108</td>
</tr>
<tr>
<td><strong>Public/Quasi-Public</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Facilities and Services⁴</td>
<td>.35-1.0</td>
<td>0.45</td>
<td>92.00</td>
<td>312</td>
<td>1.79%</td>
</tr>
<tr>
<td><strong>Schools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parks (Neigh. Parks, Comm. Parks, Mini Parks &amp; Rec. Center)</td>
<td>217.00</td>
<td></td>
<td>217.00</td>
<td>4.14%</td>
<td></td>
</tr>
<tr>
<td>Open Space</td>
<td>714.00</td>
<td></td>
<td>714.00</td>
<td>13.63%</td>
<td></td>
</tr>
<tr>
<td><strong>Major Roads</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thoroughfares, Arterials, Collector Roadways</td>
<td>330.00</td>
<td></td>
<td>330.00</td>
<td>6.22%</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Public/Quasi-Public</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29.44%</td>
</tr>
<tr>
<td><strong>Total Area (excluding SPA)</strong></td>
<td>4,251.00</td>
<td></td>
<td>4,251.00</td>
<td>13,721</td>
<td>81.13%</td>
</tr>
<tr>
<td>Land Uses</td>
<td>Density/ Intensity Standards</td>
<td>Area Size (Acres)</td>
<td>Amount</td>
<td>% of Total Project Area</td>
<td>Job Generation Standards</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------</td>
<td>-------------------</td>
<td>--------</td>
<td>-------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>SPA - Special Planning Area</td>
<td>FAR Range</td>
<td>Calculated Density Du/Ac</td>
<td>Acres</td>
<td>Units</td>
<td>Total Building Area Sq. Ft.</td>
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<tr>
<td>Residential</td>
<td>Varies</td>
<td>0.28</td>
<td>979.00</td>
<td>411</td>
<td>18.72%</td>
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<tr>
<td>Project Area Totals</td>
<td></td>
<td></td>
<td>5,230.00</td>
<td>14,132</td>
<td>3,597,838</td>
</tr>
</tbody>
</table>

Notes:
1. Assumes 70% of CMU Total acres in housing
2. Assumes 30% of CMU Total acres for retail uses
3. Assumes 80% of total Town Center Commercial area is retail uses and 20% is office uses above ground floor
5. 92 acres of religious sites may provide an additional 312 residential units (at LDR densities)
   Three (3.0) acres of religious facilities are within power line easements and do not count as density transfer of housing units


The proposed Specific Plan consists of nine sections: Introduction; Vision; Land Use; Environmental Resources; Transportation and Circulation; Community Design; Parks and Open Space; Public Utilities and Services; and Implementation. Brief descriptions of each element are presented below. The Specific Plan document also includes the following appendices:

Appendix A Land Use and Development Standards
Appendix B Recommended Plant List
Appendix C Traffic Intersection Geometrics

### 3.4.1 SPECIFIC PLAN DISCUSSION

The County anticipates that, in response to issues that arise and are resolved during the CEQA review process, changes to the Specific Plan may be made, and accordingly, the finally adopted version may differ from the current version. Such changes, it is anticipated, will tend to mitigate or ameliorate environmental impacts, and this should not result in new significant effects or a substantial increase in the severity of significant impacts identified in this Revised Draft EIR.

The Land Use chapter of the Specific Plan sets forth the overall framework for the development and conservation of the Specific Plan area. The chapter establishes the overall goals, policies and development standards applicable to the planned land use activities. In addition, the chapter includes a land use analysis, a Land Use Diagram (see Figure 3-12 of this Revised Draft EIR) and accompanying land ownership table, and descriptions for the land use designations for each category shown on the diagram. This chapter establishes the land use intensity and basic zoning pattern for the Specific Plan area. Twelve land use designations are proposed for the Specific Plan area. The proposed Specific Plan provides for residential development (low-density, medium-density, high-density and commercial/mixed-use-density), commercial development, business park, power center, office uses and commercial/mixed-uses, open space, parks,
public/quasi-public uses, schools, and a “Special Planning Area” (SPA) designation for approximately 979± acres at the western end of the Specific Plan area, which includes existing rural residential development agricultural activities, and related uses. Relevant portions of the Land Use chapter are addressed in detail in Sections 4.1 and 4.11 of this Revised Draft EIR.

**LAND USE ANALYSIS**

The Land Use analysis is contained in Section 4.1 of this Revised Draft EIR. Section 4.1 summarizes estimated population and job growth and seeks to provide a full range of housing opportunities for all income levels. According to this chapter, at full buildout, the Specific Plan area will provide approximately 7,594 jobs, or approximately 0.54 jobs per household. Provisions for affordable housing are included in this chapter. Affordable housing sites are proposed to be available with initial project development. The Land Use Diagram disperses high-density residential sites, and allows for the dispersal of affordable housing within high-density and commercial/mixed-use-density residential areas but does not exclude other residential sites for affordable housing. The Land Use analysis is addressed in detail Section 4.10 of this Revised Draft EIR.

**TRANSPORTATION AND CIRCULATION**

The Transportation and Circulation chapter is designed to provide for a full range of transportation modes, allowing for the safe and efficient movement of people and goods throughout the Specific Plan area. The circulation network is designed to accommodate the expected Specific Plan area traffic and to provide logical connections and extensions of pedestrian, bikeway and transit facilities. This chapter describes the proposed circulation system within and surrounding the Specific Plan area, including the hierarchy of proposed roadways, future signalization, project trip generation, and distribution and assessment of the Levels of Service (LOS) on the future street system. The proposed circulation system is presented in a Circulation Diagram (see Figure 3-13). The Specific Plan area is proposed to be served by a network of public streets organized in a hierarchy of functional classifications. The Specific Plan includes a system and facilities to promote public transportation use including one transit center, bus turnouts and incentives to use public transit. A lane for a future streetcar route is reserved along Town Center Drive. The Specific Plan also states that a Transportation System Management (TSM) plan will be prepared and adopted for the Specific Plan area for each group of projects at the time of building permit issuance. A TSM plan for the Specific Plan area may include ridesharing/carpooling/vanpooling, preferred parking for carpooling, preferred transit access, transit use incentives, and telecommuting/satellite work centers. The Specific Plan also proposes to provide a system of on-street bikeways, off-street bicycle/pedestrian trails, equestrian linkages, and street side pedestrian walkways. The Circulation chapter is addressed in detail in Section 4.7 of this Revised Draft EIR.

**COMMUNITY DESIGN**

According to the Specific Plan, “The Community Design Chapter sets the policies, development standards and design guidelines that ensure the creation of a safe, high quality and livable environment for the existing and new residents of Placer Vineyards.” The chapter defines key
elements introduced and illustrated in the Specific Plan and outlines criteria needed for implementation. Design guidelines and standards provide the criteria for specific site development for land uses within the Specific Plan area in place of the Placer County Zoning Ordinance.

The chapter specifies criteria governing architectural treatment, lighting, hardscape and landscape elements and the site relationship of buildings and landscaping to public and quasi-public spaces. Guidance is provided for the following elements found within the Specific Plan area:

- Landscape Design
- Streetscapes
- Edges and Buffers
- Community Gateways
- Signage Systems
- Lighting
- Town Center
- Village Center
- Commercial Centers
- Neighborhoods

All of these features, guidelines and standards are addressed in detail in Section 4.2 of this Revised Draft EIR.

The Town Center, located at the “heart” of the Specific Plan area at 16th Street and Town Center Drive (see Figure 3-12), is one of the key design elements. It is intended to provide a “traditional downtown” with a community center, civic uses, corporate offices, retail and service commercial uses and pedestrian-friendly streetscapes. A narrower street grid and block pattern will provide a continuous urban, pedestrian environment. The main north to south and east to west street connections will provide opportunities for outdoor events such as street fairs and farmers markets. The Village Green, a 3½-acre park, is located adjacent to several community oriented buildings intended to provide a civic and cultural focal point for the Specific Plan area.

ENVIRONMENTAL RESOURCES

The Environmental Resources chapter identifies environmentally sensitive resources within the Specific Plan area and outlines policies to guide the conservation, protection or mitigation in nine key resource areas: wetland resources, oak and riparian woodlands, special-status species, soils, water quality and conservation, vector control and mosquito abatement, soils, energy conservation, air quality and noise. The chapter identifies the environmental factors that were taken into consideration during formulation of the Land Use Plan to minimize impacts and maximize the potential to protect, enhance or mitigate existing sensitive features within the Specific Plan area. The proposed wetland mitigation plan consists of wetland avoidance and preservation, wetland mitigation and compensation, and wetland maintenance and monitoring. The chapter states that new development will fully mitigate wetland loss through a combination of avoidance, minimization, and compensation including the use of a mitigation banking
program. The proposed land use plan designates numerous open space corridors located along natural drainage corridors that contain wetlands. The land use plan has also considered the avoidance of impacts to sensitive species by preserving habitat areas where feasible. The chapter states that the land use design of the Specific Plan area designates open space, park or public school land uses in areas containing large stands of valley oaks, hedgerows of oak trees and riparian woodlands along Dry Creek. Specific tree preservation requirements and guidelines to be implemented in conjunction with the development of lands containing oak or riparian woodlands are included in the Specific Plan.

The Specific Plan also establishes guidelines for management of urban runoff and the control of erosion and sedimentation through the design of drainage systems and land use regulations. The chapter states that the Specific Plan minimizes potential water quality impacts by preserving drainageways in existing locations and establishing detention basins to contain and filter storm water runoff. The chapter also addresses groundwater recharge. According to the chapter, the Specific Plan land use pattern will encourage efficient energy use due to the provision of an extensive non-motorized transportation system and the close proximity of residents to jobs and services. The chapter also states that the Specific Plan provides a land use pattern which balances housing with nonresidential development to reduce impacts on air quality due to vehicle trips. This chapter also briefly addresses vector control/mosquito abatement and noise. The Environmental Resources chapter of the Specific Plan is addressed in detail in Chapters 4.3, 4.4, 4.8, 4.9, and 4.12 of this Revised Draft EIR.

**PUBLIC UTILITIES AND SERVICES**

The Public Utilities and Services chapter provides an overview of the existing system and identifies the “core backbone” infrastructure necessary to serve the Specific Plan area. The Specific Plan area does not currently have the urban services or facilities that are required for development to occur. Specific facilities and services that will be required by the development include roadways, sewer, water, storm drainage, parks and recreation (discussed in a separate chapter), solid waste disposal, library, utilities (electricity, natural gas, telephone and cable television service), parks, fire protection, law enforcement, schools and general County services. The main trunk lines of the Placer Vineyards Specific Plan infrastructure system (sewer, water and storm drainage) will be sized to serve the anticipated 411 units in the SPA. Property owners who choose to develop in the SPA under the pool of 198 units allowed under this Specific Plan will be required to connect to the Placer Vineyards Specific Plan infrastructure system, and pay any associated costs related to extending that infrastructure to the property, including connection fees and any applicable fees. Developers of land within the 4,251-acre area proposed for urban development that abuts the eastern boundary of the SPA will be required by the Specific Plan to stub water and sewer mains of a size adequate to serve the SPA to its western project boundary. In addition, they will be required to provide any necessary easements to accommodate this infrastructure.

The Public Utilities and Services chapter is addressed in detail in Sections 4.3 and 4.11 of this Revised Draft EIR. General descriptions of how the applicant proposes to provide public facilities and services are provided below.
Sanitary Sewer Facilities

The Specific Plan area is proposed to receive wastewater treatment from the Dry Creek Wastewater Treatment Plant (DCWWTP), which is owned and operated by the City of Roseville on behalf of the Joint Powers Authority (JPA) (known as the South Placer Wastewater Authority) consisting of Placer County, the City of Roseville and South Placer Municipal Utility District. Sewage flows from the Specific Plan area would be conveyed to the DCWWTP for treatment. Off-site trunk sewage facilities of sufficient size (12 - 20 inch diameter pipelines) would be constructed to convey sewage flows (see Figures 3-6 and 3-7). The local collection system would be owned and operated by a new County Service Area, or a new zone of benefit under existing County Service Area #28, to be formed by Placer County and Specific Plan area developers. The County would own and operate all sewerage facilities within the Specific Plan area, and all off-site infrastructure in the unincorporated area of Placer County.

The DCWWTP is presently being analyzed by the South Placer Wastewater Authority to determine current and possible future capacity. Based on preliminary results of this analysis, sufficient capacity to serve the Placer Vineyards Specific Plan area exists at DCWWTP. According to the Placer Vineyards Specific Plan Sewer Master Plan, the on-site conveyance to deliver wastewater to the DCWWTP from the western 4,340 acres (Shed A) will include construction of a gravity system delivering wastewater to the western end of the Specific Plan area, a lift station with adequate emergency storage, and a force main to pump wastewater easterly to the DCWWTP (see Figure 3-17A).

As an option, sewer service to the western 4,340 acres could be provided through a gravity flow system by the Sacramento Regional County Sanitation District (SRCSD), which owns and operates a regional interceptor sewer system and the regional wastewater treatment plant in Freeport, Sacramento County. The Specific Plan area is currently not within the SRCSD service area. Under this option, sewer service to the easternmost 890+ acres of the Specific Plan area (Shed B) would still be provided by the DCWWTP because the area is already included in the 1996 Roseville Regional Wastewater Treatment Service Area Sewer Master Plan (see Figure 3-17B).

Sewer service by the SRCSD for the western 4,340+ acres of the Specific Plan area requires construction of the Lower Northwest Interceptor from the SRCSD treatment plant in Freeport through West Sacramento and North Natomas to a point in Elkhorn Boulevard near Rio Linda Boulevard. Construction of the interceptor pipeline began in 2003 and will be completed to North Natomas by 2006 and to Elkhorn Boulevard (Upper Northwest Interceptor) by 2008. A trunk line would need to be constructed from the western portion of the Specific Plan area to the Elkhorn Boulevard connection point. All sewer system components in Sacramento County would be owned and maintained by SRCSD.

Conveyance facilities to the DCWWTP for the easterly 890+ acres of the Specific Plan area were constructed in part with the first phase of the Dry Creek/Western Placer Community Facilities District #1 (CFD) project. A pump station and force main 1,400 feet east of Walerga Road and north of PFE Road have been designed to accept flows from a portion of the Specific Plan area for conveyance to the DCWWTP. A force main (12 to 16 inches in diameter) would be
constructed from the existing lift station west to a proposed lift station (identified as Lift Station #2 in the Dry Creek/West Placer CFD #1 Public Facilities Master Plan) where gravity flows would be received from Shed B. An existing gravity sewer pipeline in Walerga Road was designed to provide capacity to serve approximately 315 of the Shed B dwelling units that are adjacent to Walerga Road.

**Water Supply and Distribution Facilities**

The Specific Plan area is within the service area of the Placer County Water Agency (PCWA). The Specific Plan area is proposed to receive water service from various sources on an initial and long-term basis.

PCWA has determined that it has sufficient water rights to meet the projected demand of projects likely to develop in western Placer County through 2030, including the proposed Specific Plan (see Appendix M, PCWA Water Supply Assessment, of this Revised Draft EIR). PCWA contracts with PG&E for water from the Yuba and Bear rivers to serve its Zones 1 and 3 areas, has water rights through its Middle Fork Project (MFP), and also has a contract with the U.S. Bureau of Reclamation (USBR) for Central Valley Project (CVP) water. However, PCWA currently has only minimal peak season treated surface water delivery infrastructure capable of serving the southwestern portion of Placer County, where the Specific Plan area is located. Development of new infrastructure to use these water supplies will be necessary. The long-term surface water supply is proposed to be drawn from the Sacramento River at a new multi-party pump station, treatment plant, and transmission pipeline.

Because significant capital costs and long lead times for permit processing and construction are required to implement a long-term surface water supply from the Sacramento River, an initial surface water supply from the American River is also proposed for the first phases of development. The pipelines necessary to transport the water from these sources are described in Section 3.2. For analytical purposes, this initial surface water supply is assumed to be a maximum of 6,000 AFA.

As noted above, an initial surface water supply is proposed to serve the Specific Plan area until the Sacramento River supply can be implemented. It consists of water from PCWA’s unused American River water supply, diverted at PCWA’s permanent American River Pump Station, conveyed and treated at the existing Foothill Water Treatment Plant, and delivered through PCWA’s existing transmission pipeline system to the vicinity of Industrial Avenue. A booster pump and storage tank currently under construction will allow PCWA to introduce its water into the City of Roseville pipeline system. Under an existing agreement with the City of Roseville, PCWA can convey 10 MGD through the City’s pipeline system to a location near Baseline Road and Fiddyment Road. Extension of a proposed 24 inch diameter pipeline westerly in Baseline Road could deliver an initial surface water supply to the Specific Plan area (see Figure 3-5).

A secondary initial surface water supply could be made available if the Sacramento River project has not begun delivery of water when the initial supply, as described above, has been fully used. It consists of use of a portion of the 29,000-acre-feet of PCWA Middle Fork American River water currently contracted to Sacramento Suburban Water District (SSWD) (formerly Northridge
Water District). The supply will be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Specific Plan area via a new pipeline extending from the Cooperative Transmission Pipeline that currently ends in Antelope Road near Walerga Road. This pipeline will be extended westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Alternatively, this supply could be conveyed in a proposed 16 inch diameter pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area (see Figure 3-5).

A multi-party agreement between the developers, PCWA, Placer County, San Juan Water District, Sacramento Suburban Water District, and possibly California American Water Company (formerly Citizens Utilities Company of California) would be needed to provide treatment and conveyance capacity for San Juan Water District’s water treatment plant and the San Juan/Sacramento Suburban cooperative transmission pipeline to be shared with the Specific Plan area. The secondary supply could be sufficient to meet the needs of the Specific Plan area until such time as the Sacramento River diversion is in place. California American Water Company would be the retail water provider for this secondary supply. PCWA would provide the water supply in a manner consistent with the provisions of its purveyor-specific agreement with the Sacramento Area Water Forum.

In the long-term, it is recognized that a water supply of approximately 11,500 AFA will be required to meet the buildout needs of the Specific Plan area. This supply, as currently proposed, would be furnished by PCWA and would consist of CVP contract water diverted from the Sacramento River. The 11,500 AFA supply is part of PCWA’s pending amendatory CVP contract with USBR for 35,000 AFA (with authorization expected for diversion off of the Sacramento River).

In addition to the surface water supplies described above, PCWA is proposing that a backup groundwater component be developed in conjunction with the Specific Plan (PCWA Water Supply Assessment, Revised Draft EIR Appendix M). It is anticipated that sufficient groundwater would be supplied to the Specific Plan area to provide a redundant water source equal to at least 25% of the required water supply on a maximum daily demand basis. This contingency is based on the USBR’s ability to exercise a maximum dry year reduction in Sacramento River CVP water supply of 25%. The groundwater supply component could require the development and operation of groundwater supply wells within the Specific Plan area. If it becomes necessary to construct wells within the Specific Plan area, they would be placed adjacent to other public utility structures, such as the proposed potable water supply storage tanks shown on Figure 3-14.

Either PCWA or California American Water Company would serve as the retail purveyor, and would operate all distribution and storage facilities within the Specific Plan area, and would retail water to customers within the Specific Plan area. The on-site system would be made up of a transmission main located in Baseline Road which would provide water to the entire Specific Plan area. A grid of 12-inch and 16-inch mains located alongside the arterial and collector road system would be connected to the transmission main in Baseline Road and distribute water to developments within the Specific Plan area. A total of fifteen million gallons of storage is
proposed to be provided by five water storage reservoirs and booster pump station sites, located throughout the Specific Plan area (see Figure 3-14). It is anticipated that water storage facilities would be composed of above ground concrete or steel tanks with a capacity of approximately three million gallons of storage at each location. The tanks would be circular and will either be 130 feet in diameter and 30 feet in height, or 150 feet in diameter and 24 feet in height.

It is also proposed to provide recycled water to the project site for use in parks, schools, publicly landscaped areas, and the landscaping associated with commercial, business professional, light industrial and multi-family uses. The City of Roseville would operate the recycled water system. If the SRCSD service option is adopted for the western 4,340 acres, recycled water would only be available to the portion of the Specific Plan area within the current DCWWTP service area (eastern 890 acres).

The use of recycled water offsets potable water demand and is an important component of the overall water supply strategy. The annual average recycled water demand for the Specific Plan area has been estimated to be 1.39 million gallons per day (MGD) by the project’s engineer (MacKay & Somps, corres., March 2005) with peak day demand approaching 3.00 MGD.

The amount of water available to the Specific Plan area would be dependent on the amount of effluent delivered. Although wastewater effluent would be delivered to the DCWWTP, a recycled water supply to all of the Specific Plan area, as shown in Figure 3-18, would also be dependent on delivery of recycled water from the PGWWTP, due to a need to “balance” recycled water use in the regional system. Figure 3-19 shows the current service area for the DCWWTP and the core backbone infrastructure necessary to supply only the current service area with recycled water.

Storage and pumping facilities would be required within the Specific Plan area, along with a backbone of dedicated recycled water lines within street rights-of-way ranging in size from 6 to 24 inches in diameter. A proposed 3 million gallon recycled water storage tank is to be located near the intersection of 16th Street and Dyer Lane. The tank will be similar to those for potable water supply and will be circular and either 130 feet in diameter and 30 feet in height, or 150 feet in diameter and 24 feet in height.

**Drainage and Flood Control**

The Specific Plan area is within three major drainage sheds: Curry Creek, Dry Creek, and the Upper Natomas East Main Drainage Canal (NEMDC), now known as Steelhead Creek. According to the Specific Plan and the *Master Project Drainage Study*, the drainage system has been designed to accommodate peak flow rates resulting from additional impervious surfaces and proposed drainage modifications. Development of the project would require additional attenuation at several locations, including within the existing floodplain and flood control channels upstream of proposed culvert facilities. Detention and water quality treatment basins would be provided to include best management practices to meet water quality maintenance objectives. Additionally, flood control facilities would preserve areas where sensitive resources exist, such as wetlands or critical habitat. The *Master Project Drainage Study* includes
provisions to maintain the hydrology of sensitive areas by preserving the mean annual and peak flow rates through them.

Flood control channels within the Specific Plan area would consist of newly constructed channel systems and parallel flood control channels where natural areas would be maintained. Using detention basins for the developed condition, stormwater runoff from the Specific Plan area would be reduced consistent with the requirements of the Placer County Flood Control and Water Conservation District (Flood Control District).

In addition to providing detention storage to mitigate the increased rate of runoff, an additional storage component has been added in the detention areas to provide retention of flow volumes for a period of time to allow downstream volumes to drain from the shed. A combination of detention/retention basins would be used in each drainage shed except Dry Creek to mitigate the impact of the project stormwater runoff. The Specific Plan includes open space corridors to convey stormwater flows, and all development is planned to occur outside of these corridors to provide 100-year protection to all residences.

Proposed major drainage improvements are presented in the Master Project Drainage Study. The Master Project Drainage Study is available for review at the address appearing in Section 2.9 of this Revised Draft EIR.

**Solid Waste Disposal Service**

The Specific Plan proposes that Auburn-Placer Disposal Service (APDS) provide solid waste disposal services to the Specific Plan area. It is estimated that six collection trucks and approximately 12,088 refuse containers would be needed to serve the Specific Plan area, which would be funded by user fees. Solid waste from the Specific Plan area is currently transported to the Western Placer Waste Management Authority’s Materials Recovery Facility (MRF) located at the intersection of Athens Road and Fiddyment Road for sorting. Unrecyclable solid waste is then disposed of at the adjacent Western Regional Landfill, which is expected to serve the needs of Placer County through 2036, and is proposed to serve the Specific Plan area.

**Electrical Service**

The Specific Plan area is located within the service areas of both the Sacramento Municipal Utility District (SMUD) and Pacific Gas & Electric Company (PG&E) (see Figure 3-10). Both SMUD and PG&E own existing facilities within their respective service areas that can be extended to serve initial phases of development. Deregulation has eliminated franchise area boundaries, and both SMUD and PG&E have expressed interest in providing service to new development in the Specific Plan area. At such time as development exceeds existing load capacity, new 12KV or 21KV lines would be extended from existing, expanded or new substations, including a new substation to be constructed within the Specific Plan area. SMUD and PG&E would provide off-site and on-site facilities consistent with the overall Specific Plan phasing. Initial development within the Specific Plan area may proceed without major off-site electrical facility improvements.
Natural Gas Service

The Specific Plan proposes to have natural gas service provided by PG&E. Service would be obtained by constructing off-site gas transmission facilities to serve the Specific Plan area. Extension of two-inch and six-inch gas mains to individual project sites would be required. A twelve-inch high pressure transmission main is located east of the intersection of Cook Riolo Road and Baseline Road, approximately two miles east of the Specific Plan area. Future extensions off this main would require the construction of a pressure regulation station at the point of connection. Initial service to 3,000+ EDUs would be provided by extending a six-inch distribution main along Baseline Road and a four-inch transmission main along PFE Road. This would require construction of a pressure regulation station at the point of connection. A smaller main would then be extended to the Specific Plan area. Initial calculations indicate that a minimum six-inch transmission main must be constructed along Baseline Road to function as a backbone main to serve the entire Specific Plan area at buildout conditions. Smaller four-inch distribution mains would then be stubbed off the backbone main and looped through the internal street system. Gas regulation stations would be required along the backbone main.

Telephone/Communications

The Specific Plan area is currently served by SureWest Communications and SBC. Deregulation has eliminated franchise area boundaries, and both companies have expressed interest in providing service to new developments within the Specific Plan area. Both companies own and maintain aerial poleline facilities within the Specific Plan area. None of the existing facilities has available reserve capacity, and lines need to be replaced and undergrounded. The Specific Plan reports that both companies plan to extend fiber optic cables into the Specific Plan area as development occurs.

Cable Television Service

Cable TV service would be provided to the Specific Plan area by Comcast or another cable provider. New cable would be extended westward from the Roseville city limits along Baseline Road. The cable would be placed in the joint trench alongside other dry utilities. The Specific Plan proposes that cable TV be phased with the construction of major roads. All cable facilities would be installed underground.

Fire Protection

The Specific Plan indicates that fire protection would be provided by the Placer County Fire Department (PCFD), with the exception of the westerly portion of the Specific Plan area, which is currently served by the Sacramento Metropolitan Fire District. A total of two PCFD stations and an administrative center are assumed to be necessary to serve the Specific Plan area. The fire administrative center is proposed to be co-located with other County administrative offices within the Town Center south of Baseline Road and east of 16th Street. The first fire station is anticipated to be constructed with the initial phase of development. The second fire station is anticipated to be needed to serve the buildout of the Specific Plan area.
Law Enforcement

The unincorporated area of Placer County receives general law enforcement services from the Placer County Sheriff’s Department and traffic enforcement by the California Highway Patrol. The nearest substation is located in Loomis at the intersection of Horseshoe Bar Road and Interstate 80. The Sheriff’s Department also staffs the Correctional Facility and provides court security. A Sheriff’s substation is proposed to be co-located with other County administrative offices within the Town Center south of Baseline Road and east of 16th Street.

Library Facilities

Library facilities for the Specific Plan area are currently administered by the Auburn-Placer County Library Department, with a bookmobile visiting the area approximately twice a month. The closest existing library facility is the City of Roseville main library located at 225 Taylor Street, approximately 3.5 miles east of Walerga Road. Based on recommended service standards included in the Specific Plan, a new community library approximately 13,905 square feet in size would be needed to adequately serve residents of the Specific Plan area at buildout. At buildout, a community library is proposed to be located in or near the Town Center.

General County Services and Facilities

General County services and facilities provided to residents of Placer County include County administration, the court system, health and welfare services, clerk/recorder, elections, assessor, tax collector, public works and engineering, planning, and building inspection. The County has adopted a County Capital Facilities Fee to mitigate the impacts of new development on County facilities. According to the Specific Plan, collection of this fee would provide funding for an expansion of the County’s finance and administration facilities, justice system, correctional facilities, health and human services facilities, and public works facilities. However, it can only be used for capital projects and not operational costs.

In order to adequately serve the Specific Plan area with general services, several satellite County facilities would need to be located within the Specific Plan area. In addition to the Sheriff, fire and library facilities described above, an administration services office building and a corporation/maintenance yard would be necessary. The administration services offices are anticipated to be located within the Town Center. A community building, with associated recreation services, is also anticipated to be located in the Town Center. The corporation yard would be located on property designated “CY” with adequate separation from adjacent residential property. A small parks equipment and maintenance facility would be located in each of the two proposed community parks.

Schools

The Specific Plan area is within three school districts: Center Unified School District in the eastern portion, and the Elverta Joint Elementary School District and Grant Joint Union High School District in the western portion. The Specific Plan proposes to shift the boundary line between the districts to provide what is characterized as a more logical boundary between
neighborhoods, prevent adjacent neighbors from attending different schools, and equitably divide the land area and projected number of units between the districts. The boundary line is proposed to be shifted to align with the centerline of 16th Street up to the intersection with Dyer Lane, then turn west and follow the centerline of West Dyer Lane to where it connects with Brewer Road. The proposed Specific Plan provides for six elementary schools, two middle schools and one high school within the Specific Plan area. According to the Plan, schools have been sized and located according to Center Unified School District and State standards, and are proposed to be located within the residential communities so that no home is farther than a mile from a school. Schools are located near open space corridors to allow for off-street pedestrian and bicycle access, and parks are proposed to be located in conjunction with most schools to allow for joint-use. According to the Specific Plan, schools would be funded in the manner typical to development, with a portion of funds provided by the State and a portion provided by development fees, determined on a square footage basis, the Specific Plan states that fees would be structured to allow for acquisition and construction.

Parks and Open Space

The Specific Plan provides for a full range of recreational opportunities including active and passive parks, natural open space and parkway corridors. The parks, open space and recreation program is structured to provide a distribution of facilities to meet the needs of future residents of the Specific Plan area. The Public Utilities and Services chapter includes a Parks and Open Space Diagram that illustrates the program of recreational opportunities provided by the Specific Plan. The Specific Plan provides for a total of 220+ acres of community and neighborhood park facilities and “mini” parks. In addition, the Specific Plan designates approximately seven hundred acres for open space areas to be improved with trails and landscaping to qualify as “greenways” under the Placer County General Plan. The Specific Plan incorporates three east-west open space connectors located approximately at the north, central and south of the plan. Open space corridors and easements within the Specific Plan area provide trails, storm water conveyance and flood detention, opportunities for wetland mitigation and buffers between land uses. Designated open space is proposed to be accessible to the public, and a network of trails will provide access for pedestrians, bicyclists and equestrians. This community-wide trail system will also include an east-west link from the SPA to Dry Creek along the Sacramento County line. In addition, significant landscape corridors would provide along all arterial roadways with separated meandering walkways. At key entry points into the Specific Plan area, these corridors would be expanded to allow more extensive landscaping, theme signage and other features. Parks, Open Space and Recreation are addressed in detail in Sections 4.1 and 4.11 of this Revised Draft EIR.

3.4.2 IMPLEMENTATION

This chapter outlines the methods by which the Specific Plan would be implemented. The administration section identifies the procedural steps in implementing the Specific Plan, and discusses the subsequent approvals and review process necessary to allow construction of individual subdivisions. Financing describes the basic financing strategies to allow development to proceed in a fiscally responsible manner, and analyzes and compares project costs. According to the Specific Plan, this section is intended to ensure that, over time, implementation would be
comprehensive, coordinated and responsive to changing circumstances, and that infrastructure and community facilities are constructed in a timely manner. The chapter also contains a discussion of density transfers for designated religious sites.

3.5 PROJECT BUILDOUT AND SEQUENCING

According to the Specific Plan, due to the size of the Specific Plan area, project buildout might evolve in a variety of ways depending on several factors. These factors include shifts in market demand for various housing types and non-residential uses, changing long-term development goals and financial capabilities of various ownership groups, and the need to provide infrastructure for the Specific Plan area.

Although 261 additional dwelling units have been reserved for the SPA, only an estimated 63 additional dwelling units could be constructed under current zoning, which is to be retained under the Specific Plan. Dwelling units that exceed the current zoning density allocation would require a zone change and additional project-level environmental review pursuant to CEQA. Although the documentation contained in this Revised Draft EIR would be useful to those seeking residential entitlements within the SPA in excess of current zoning, project-level CEQA analysis would be required for any such proposals, as this Revised Draft EIR addresses impacts due to potential development within the SPA at only a program-level of analysis (see Section 2.5).

For planning purposes, an initial development scenario has been described that is projected to be substantially constructed by 2015. This scenario is not a required sequencing of activity and there is no formal project phasing plan. This initial development scenario is shown in Figure 3-15 with gray shading and includes the Town Center and a variety of residential and non-residential uses. Table 3.5-1 provides an approximation of the projected residential and commercial buildout in the development scenario shown on Figure 3-15, (Initial Development Areas).

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<th>Table 3.5-1</th>
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Table 3.5-1
Initial Development Scenario, Projected Buildout

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<th>Land Uses</th>
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<td></td>
<td>1,207.3</td>
<td>7,224</td>
<td>1,120,437</td>
<td>100%</td>
<td>2,066</td>
<td></td>
</tr>
</tbody>
</table>

Source MacKay & Somps, Quad Knopf, 2005, 2006

According to the Specific Plan, the goal is to facilitate orderly development while providing opportunities for individual properties to develop independently and simultaneously. The rate and pattern of development would ultimately depend on factors such as shifts in market demand, changing long-term development goals, and the need to provide infrastructure. Buildout of the initial development scenario is not required prior to commencement of the balance of the project. Alternatives to this scenario are permitted, subject to satisfaction of the performance standards provided in the Specific Plan.

Initial development would be accompanied by a significant amount of infrastructure (core backbone infrastructure) to be installed prior to the issuance of any building permits. Included is the construction of major roadways as well as construction of water supply, sewer, and recycled water facilities as shown in Figures 3-14, 3-16, 3-17A, and 3-17B. In addition, recycled water lines would be constructed, as shown in Figures 3-18 or 3-19, but are dependent on the amount of recycled water available to the project.

The Placer Vineyards Specific Plan Public Facilities Financing Plan, Base Case Scenario, (EPS, 2006) provides guidance on the sequencing and timing of infrastructure and ensures that the required infrastructure and facilities would be constructed in a timely manner to serve the development as it occurs. It is the County's intention to release the Public Facilities Financing Plan during the public review period for this Revised Draft EIR, so that the public and affected agencies will have the ability to review the document in the context of the Revised Draft EIR. This document is available for review at the location identified in Section 2.9 of this Revised Draft EIR.
3.6 **PROJECT APPROVALS**

In addition to the list of entitlements, approvals and/or permits identified in Section 3.1 that must be obtained from Placer County, the following approvals, consultations, and/or permits may be required from other agencies, as shown in Table 3.6-1.

<table>
<thead>
<tr>
<th>Approval and/or Permit</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reorganization (Annexation/Detachments) for service area boundary adjustments, and/or service contracts</td>
<td>Placer County LAFCo, PCWA</td>
</tr>
<tr>
<td>School district boundary changes</td>
<td>Grant Joint High School District, Center Unified School District, Elverta Joint School District, Placer County Board of Education</td>
</tr>
<tr>
<td>National Pollutant Discharge Elimination System Storm Water Discharge Permit</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>Section 401 of the Clean Water Act</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>Section 404 of the Clean Water Act</td>
<td>U.S. Army Corps of Engineers</td>
</tr>
<tr>
<td>Streambed Alteration Agreement</td>
<td>California Department of Fish and Game</td>
</tr>
<tr>
<td>Endangered Species Acts</td>
<td>California Department of Fish and Game, U.S. Fish and Wildlife Service</td>
</tr>
<tr>
<td>Improvement Plans, Encroachment Permits, Right of Way Acquisition</td>
<td>Placer County Air Pollution Control District, Placer County Water Agency, California Department of Forestry and Fire Protection, Dry Creek Fire Department, California American Water Company, Sacramento Suburban Water District, San Juan Water District, Sacramento Regional County Sanitation District, City of Roseville, Sacramento County, Sutter County, Roseville Public Cemetery District</td>
</tr>
<tr>
<td>Wastewater Treatment, Initial and Long-Term</td>
<td>South Placer Wastewater Authority, Sacramento Regional County Sanitation District, City of Roseville, U.S. Fish and Wildlife Service, County of Placer, South Placer Municipal Utility District, Regional Water Quality Control Board</td>
</tr>
<tr>
<td>Agricultural Water Supply, per Development Standard 8, Exhibit 1 of the Dry Creek/West Placer Community Plan</td>
<td>City of Lincoln</td>
</tr>
<tr>
<td>Recycled Water Provider Agreement</td>
<td>City of Roseville</td>
</tr>
</tbody>
</table>

In addition to permits that must be obtained by the Specific Plan developer(s) in order to obtain the initial and long-term surface water supply for the Specific Plan area, PCWA must secure various permits. If the secondary initial surface water supply is diverted from Folsom Reservoir, a Warren Act contract would be required because non-CVP water supply (PCWA Middle Fork Project water rights) would need to be facilitated through federal (CVP) facilities. For the long-
term 11,500 AFA water supply diverted from the Sacramento River, ultimately (and not as part of the Specific Plan approval) PCWA must obtain a series of permits for the construction activities related to the Sacramento River water supply (e.g., pump station, new water treatment plant, and pipeline). The multi-party agreement between PCWA, the San Juan Water District, the Sacramento Suburban Water District (SSWD), and the California American Water Company described earlier under “Water Supply and Distribution Facilities” in Section 3.4.1 for a secondary surface water supply may also be executed.
CHAPTER FOUR

Setting, Impacts & Mitigation Measures
4.1 LAND USE AND PLANNING POLICIES
4.1  LAND USE AND PLANNING POLICIES

4.1.1  INTRODUCTION

This section describes the existing and proposed land uses, agricultural resources, and relevant land use policies for the Specific Plan and the Specific Plan area. Pursuant to Section 15125(d) of the CEQA Guidelines, this section also provides a discussion of general plan consistency and describes the relationship between the proposed Specific Plan and general plans for Placer County and surrounding jurisdictions. The impact assessment focuses on changes in land use, land use compatibility, impacts on agricultural lands, and general plan consistency, to the extent that potential general plan conflicts may lead to physical impacts on the environment.

4.1.2  ENVIRONMENTAL SETTING

The Specific Plan area is located in western Placer County, bounded on the north by Baseline Road, on the south by the Sacramento/Placer County line, on the west by the Sutter/Placer County line and Pleasant Grove Road, and on the east by Dry Creek and Walerga Road (see Figures 3-1, 3-2, 3-3 and 3-4 in this Revised Draft EIR). The Specific Plan area contains approximately 5,230± gross acres, with an east-west length of approximately six miles.

EXISTING LAND USE

Existing land uses for the Specific Plan area and surrounding area are shown in Figure 4.1-1. Also refer to Figure 3-4 in Chapter Three of this Revised Draft EIR for an aerial view of the Specific Plan area and surrounding area.

PROJECT SITE

The predominant land use within the Specific Plan area is agriculture, consisting mostly of undeveloped grazing land. There are approximately 150 residences within the Specific Plan area. Although there are a few residences scattered throughout the agricultural properties, rural residential development occurs primarily in the northwest and southwest corners of the Specific Plan area. A number of home occupation/ancillary uses are located throughout the rural residential areas. A mini-storage facility is located on the east side of Pleasant Grove Road, at the southwest corner of the Specific Plan area (reflected as Industrial in Figure 4.1-1). There are a few commercial uses northwest of the Specific Plan area, which include a convenience store located on the southeast corner of Baseline Road and Pleasant Grove Road, and service commercial type uses (trucking operation and boat/RV storage). An abandoned portion of the Union Pacific Railroad traverses the westernmost portion of the Specific Plan area.

Table 4.1-1 provides approximate acreages for the various land use types (based on the categories reflected in Figure 4.1-1) within the Specific Plan area.
### Table 4.1-1
**Summary of Existing Land Use Within the Specific Plan Area**

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Acreage (Gross)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>7.52</td>
</tr>
<tr>
<td>Industrial</td>
<td>11.46</td>
</tr>
<tr>
<td>Low-Density Residential</td>
<td>0</td>
</tr>
<tr>
<td>Rural Residential</td>
<td>748.71</td>
</tr>
<tr>
<td>Agricultural – Non-irrigated</td>
<td>3,378.10*</td>
</tr>
<tr>
<td>Agricultural – Irrigated</td>
<td>956.38</td>
</tr>
<tr>
<td>Open Space/Parks</td>
<td>113.08</td>
</tr>
<tr>
<td>Public/Schools</td>
<td>0</td>
</tr>
<tr>
<td>Water</td>
<td>14.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,230</strong></td>
</tr>
</tbody>
</table>

Source: Quad Knopf, Inc.

*Note: Approximately 491 acres of the non-irrigated category were actively used for agriculture. The balance was fallow grassland, leaving approximately 1,448 acres in agricultural use.

The Specific Plan area is crossed by electrical transmission and distribution lines. These existing lines are part of Western Area Power Administration (WAPA), Pacific Gas & Electric (PG&E) and Sacramento Municipal Utility District (SMUD) systems. Electric substations located near the Specific Plan area include Black Eagle-Crystal Ridge east of Watt Avenue and south of PFE Road, and the PG&E Pleasant Grove substation northeast of the Specific Plan area. Refer to Figure 3-10 in Chapter Three of this Revised Draft EIR for electric transmission lines and substations. A potential substation site has been identified in the Specific Plan area near the intersection of a PG&E tower line easement and a SMUD tower line easement east of Palladay Road (see Figure 3-10 in Chapter Three of this Revised Draft EIR). Refer to Section 4.11.9 in this Revised Draft EIR for further details about transmission lines crossing the Specific Plan area.

**SURROUNDING AREA**

Existing land uses for the surrounding area are also reflected in Figure 4.1-1 (also reference Figure 3-4 in Chapter Three of this Revised Draft EIR for an aerial view of the surrounding area). The predominant land use on the north side of Baseline Road is agriculture (undeveloped grazing) with scattered residences. A pallet manufacturing operation is located to the northwest. Properties to the west, located in Sutter County, are characterized predominantly as rural residential. Properties to the south, located in Sacramento County, can be characterized (moving west to east) as rural residential, agriculture (undeveloped grazing), open space (Gibson Ranch Park), and low-density residential (community of Antelope). Properties to the southeast located within Placer County are residential and agricultural, both undeveloped grazing and irrigated cropland (field crops and orchard). Public/quasi-public uses located south of the Specific Plan area include two schools, a cemetery, and a church. Properties to the east of the Specific Plan area are currently undergoing construction of low-density residential housing.
SURROUNDING DEVELOPMENT PROJECTS

A number of development projects have been proposed or approved surrounding the Specific Plan area as shown in Figure 4.1-2.

Projects Within An Approved Community or Specific Plan

Lincoln Crossing is located in the City of Lincoln. This residential development project is situated on 1,070 acres and at buildout, will consist of approximately 2,958 dwelling units. Southeast of the proposed Lincoln Crossing development is the proposed Lincoln 270 project, located on approximately 280 acres. If the project is approved as proposed, this area at buildout will consist of approximately 48 acres of business park uses, 58 acres of general commercial, 38 acres of light industrial, and 32 acres will be a proposed medical campus.

A proposed development project known as Riolo Vineyards is located southeast of the Placer Vineyards Specific Plan area on the south side of Dry Creek. Riolo Vineyards consists of approximately 319 acres. If the project is approved as proposed, this area at buildout will consist of approximately 805 dwelling units at a range of densities, along with neighborhood parks, public facilities and open space. Southeast from the proposed Riolo Vineyards area is the Morgan Place development, situated on approximately 12 acres and proposed to have approximately 91 dwelling units.

To the east of Riolo Vineyards is the proposed 79-lot single-family residential subdivision on 28.6+ acres, known as Silver Creek. Silver Creek is proposed to have lots ranging in size from 10,000 square feet to 14,937 square feet. The project is located north of and adjacent to PFE Road, immediately east of and adjacent to Walerga Road in the unincorporated area of Placer County. The Dry Creek Community Park adjoins the site’s northerly boundary.

Within the city limits of Roseville is the approved West Roseville Specific Plan area. The West Roseville Specific Plan area includes approximately 3,150 acres. At buildout, the West Roseville Specific Plan area will contain approximately 8,500 dwelling units, 200 acres of commercial/office development, and 980 acres of public facilities including open space. Adjacent to this plan area are two areas planned for future annexation to the City of Roseville that will likely be developed. The West Roseville Specific Plan area is now under construction.

Projects Designated for Development by a City or County General Plan Designation or by Mutual Agreement

Situated to the northeast of the Placer Vineyards Specific Plan area is the proposed Sierra Vista Specific Plan area, located on approximately 1,900 acres. The City of Roseville is currently processing this application. Although in the initial planning stages, if the project is approved as proposed, at buildout it would consist of approximately 10,000 dwelling units, along with approximately 77 acres of commercial and 57 acres for office development (3 million square feet of floor area).
North of the West Roseville Specific Plan area is the proposed Creekview Specific Plan area consisting of approximately 570 acres. If the project is approved as proposed, this area at buildout will consist of approximately 2,160 dwelling units, 38 acres of industrial land use, a proposed school situated on 14 acres, and a community clubhouse on 3 acres. The project is in the initial planning stages and is being processed by the City of Roseville.

Projects Currently in the Process of Obtaining a General Plan Amendment

The proposed Regional University and Community Specific Plan is located on 1,136 acres directly north of the proposed Curry Creek Community Plan area (see below). If the project is approved as proposed, this area at buildout will encompass a 600-acre four-year private university campus, approximately 4,223 dwelling units and 73 acres of retail space.

Just northeast of the proposed Creekview Specific Plan area is the Placer Ranch Specific Plan development area, consisting of approximately 2,213 acres. If this project were to be approved as proposed, the area at buildout would consist of approximately 6,793 residential dwelling units, 527 acres of business park and light industrial uses, 150 acres of office professional uses, 99 acres for commercial uses, 275 acres for parks, landscape corridors and open space, two new elementary schools and a new middle school. The developer has also added mixed-use town centers to the project plan in order to make the design friendlier to pedestrians. In addition, the proposed project includes a 300-acre branch campus of California State University Sacramento, with an estimated total enrollment of 25,000 students. An EIR is currently being prepared for this project.

Directly south of the Placer Vineyards Specific Plan area is the proposed Elverta Specific Plan area located in Sacramento County. If this project is approved as proposed, this area at buildout will contain approximately 4,950 dwelling units, 15 acres for commercial development, 20 acres for elementary school uses, 4 acres for office/professional uses, and 73 acres for community centers/neighborhood parks. A Draft EIR has been completed and the project was endorsed by the Sacramento County Policy Planning Commission in February 2006.

Projects Currently in Discussions with Cities and/or the County

The proposed Curry Creek Community Plan area is located directly north of Baseline Road between South Brewer Road and Watt Avenue on approximately 5,200 acres. At buildout, this area is currently anticipated to contain 16,200 dwelling units as well as 2,025,000 and 2,124,000 square feet of retail and office space, respectively.

Other Potential Projects

The 10,500-acre South Sutter County Industrial/Commercial Reserve is located west of these proposed developments, in the southeastern corner of Sutter County adjacent to the northwestern corner of the Specific Plan area. The area contains approximately 7,500 acres that are being actively pursued for urban development. The area is currently zoned by Sutter County for industrial use; however, “Measure M”, approved by voters in November of 2004, confirmed that a majority of residents are in favor of mixed-use development of the area, including at least
3,600 acres for business/industrial uses, 1,000 acres of community facilities such as schools, parks, and retail, and a maximum of 2,900 acres of residential development, with a maximum of 17,500 dwelling units. Development of this area would require the preparation of a Specific Plan and environmental review.

CURRENT GENERAL PLAN AND ZONING DESIGNATIONS

The Specific Plan area is currently designated “Urban” on the Generalized Land Use Diagram within the Placer County General Plan, and “West Placer Specific Plan” in the Dry Creek/West Placer Community Plan as shown in Figure 4.1-3. As part of the countywide General Plan update, the Placer County Board of Supervisors adopted Resolution 94-238 on August 16, 1994 designating the Specific Plan area as “West Placer Specific Plan” and adding to the Dry Creek/West Placer Community Plan a list of development standards to be incorporated into the future West Placer Specific Plan. This section of the Community Plan is referred to as “Exhibit 1.” Exhibit 1 is included as Appendix D of this Revised Draft EIR. The County has determined that Exhibit 1 supersedes the other goals and policies of the Dry Creek/West Placer Community Plan for the area identified as “West Placer Specific Plan” (the Placer Vineyards Specific Plan area). Therefore, the textual policies in this Community Plan, which contemplate low-density rural residential style development, do not apply to Placer Vineyards.

Existing zoning for the Specific Plan area is reflected in Figure 4.1-4. As shown on the zoning map, the predominant classification is F (Farm) with combining designations. The rural residential areas located in the northwest and southwest portions of the Specific Plan area are zoned RA (Residential-Agriculture) with a 10-acre minimum parcel size. The convenience store located at the northwest corner of the Specific Plan area is zoned C1 (Neighborhood Commercial) and the mini-storage facility located at the southwest corner of the Specific Plan area is zoned IN (Industrial). The DR (Combining Development Reserve) designation has been applied over the entire Specific Plan area. The area along the north side of Dry Creek has been zoned O (Open Space) to correspond with the Greenbelt and Open Space land use designation.

OFF-SITE INFRASTRUCTURE

Water Transmission Lines

As shown in Figure 3-5 in Chapter Three of this Revised Draft EIR, an initial surface water supply pipeline with a 24-inch diameter extends from the Specific Plan area easterly along Baseline Road to connect to the City of Roseville pipeline at Fiddyment Road, through which Placer County Water Agency (PCWA) wheels treated water from its existing Foothill Treatment Plant system. Current land uses along this section of Baseline Road are agricultural and low-density residential, and current zoning classifications are generally low-density residential. Land to the south is part of the Dry Creek/West Placer Community Plan area and land to the north is part of the Roseville Memorandum of Understanding (MOU) Plan area, which are both planned for future development.

Also as shown in Figure 3-5 in Chapter Three of this Revised Draft EIR, the long-term surface water supply pipeline corridor generally follows the alignment of Baseline/Riego Road, south
along Pleasant Grove Road and then westerly along Elverta Road to the Sacramento River. Current land uses along these sections of Baseline/Riego Road and Pleasant Grove Road include agriculture, rural residential, and a small amount of commercial and industrial uses. Current zoning classifications are generally agricultural and agricultural residential. Current land uses along Elverta Road and west to the Sacramento River are primarily agricultural with some rural residential. The area is generally zoned for large-scale agriculture and is not currently part of a future development plan.

A secondary initial surface water supply could also be made available by PCWA if the Sacramento River diversion has not begun delivery of water before additional supplies are required. In this case, as shown in Figure 3-5 in Chapter Three of this Revised Draft EIR, a new pipeline extending from the San Juan/Sacramento Suburban cooperative transmission pipeline that currently terminates in Antelope Road near Walerga Road would be constructed westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Current land uses along this section of Antelope Road and Watt Avenue are primarily low-density residential, including a school and a small amount of commercial. The area is zoned consistent with current land use and is generally built out.

Also as shown in Figure 3-5 in Chapter Three of this Revised Draft EIR, the secondary surface water supply could also be conveyed in a pipeline with a 16-inch diameter constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area. Current land uses along this section of PFE Road are agriculture, rural residential, and some low-density residential to the south. This area is generally zoned for agricultural use and planned development and is part of the Dry Creek/West Placer Community Plan, which is planned for future residential development.

It is also proposed to provide recycled water to the project site from the Dry Creek Wastewater Treatment Plant (DCWWTP) and ultimately from the Pleasant Grove Wastewater Treatment Plant (PGWWTP). Initially, a connection would be made to an existing 24-inch gravity recycled water line constructed as part of the Dry Creek West Placer Community Facilities District #1. The pipeline currently terminates south of Dry Creek on the east side of Walerga Road. The line would be extended in a northerly direction along Walerga Road to Baseline Road where it would turn west to the project site (see Figure 3-18 in Chapter Three of this Revised Draft EIR). In the future, as the Roseville MOU area develops, a line would be extended west along Phillip Road from the PGWWTP and then in a southward direction generally along the alignment of Watt Avenue to Baseline Road and would supplement and/or replace the DCWWTP supply (see Figure 3-18 in Chapter Three of this Revised Draft EIR). Although wastewater from the Specific Plan area is proposed to be treated at the DCWWTP, it would be necessary to also use recycled water from the PGWWTP at buildout in order to “balance” the system. Current land uses in the areas traversed by the proposed pipeline from DCWWTP are generally agricultural, open space, and low-density residential in nature, and current zoning classifications are generally low-density residential. The affected area is part of the Dry Creek/West Placer Community Plan. A pipeline extending from the PGWWTP would largely cross open space and agriculturally used land within the areas proposed for future development under the West Roseville and Sierra Vista specific plan areas.
Sewer Trunk Lines

The preferred option (DCWWTP Option) for sewer service is to connect the entire Specific Plan area to the DCWWTP. If the DCWWTP is used by the entire Specific Plan area, the sewer connection corridors shown in Figure 3-6 in Chapter Three of this Revised Draft EIR would be used for conveyance of wastewater to the plant. One corridor would extend from the Specific Plan area southerly along the alignment of Watt Avenue, then easterly along the alignment of PFE Road and northerly to the plant by way of one of two proposed alignments. The primary alignment would proceed northerly to the plant on the easterly segment of Hilltop Circle. An alternative to use of Hilltop Circle would be to run the line in a northern direction just east of the City of Roseville Corporation Yard. Current land uses along Watt Avenue, PFE Road and Hilltop Circle include agriculture, undeveloped land, rural residential and a small amount of low-density residential, commercial, industrial and public uses with zoning classifications that generally reflect these uses as well as “Planned Development.” This area is part of the Dry Creek/West Placer Community Plan that is planned for future residential development. An alternative to the above alignment would leave PFE Road at Cook Riolo Road turning easterly to the DCWWTP just north of Dry Creek. Current land uses along this section of Cook Riolo Road are undeveloped lands and some rural residential, while current zoning is generally low-density residential with some open space along Dry Creek. From Cook Riolo Road the utility easement would extend easterly along what is currently an unpaved road through undeveloped land that runs adjacent to Dry Creek.

As an option, sewer service could be provided to the westernmost 4,340 acres of the Specific Plan area (the easternmost 890 acres are already in the DCWWTP service area) by the Sacramento Regional County Sanitation District (SRCSD) (SRCSD Option). In this event, the utility corridor for connection of the Specific Plan area to SRCSD would extend from the Specific Plan area southerly following the alignment of Sorrento Road to the SRCSD Upper Northwest Interceptor at a point in Elkhorn Boulevard (see Figure 3-6, Alternative A, in Chapter Three of this Revised Draft EIR). Current land uses along this section of Sorrento Road include rural residential, agriculture and undeveloped land. This area is zoned for agricultural uses and is not currently part of a future development plan. An alternative corridor has also been identified for the proposed connection to SRCSD. This alternative corridor would extend south from the Specific Plan area following the alignment of Elwyn Avenue, west along Elverta Road and finally south along the alignment of West 6th Street to the SRCSD Upper Northwest Interceptor at a point in Elkhorn Boulevard (Figure 3-6, Alternative B, in Chapter Three of this Revised Draft EIR). Current land uses along these sections of Elwyn Avenue, Elverta Road and the alignment of West 6th Street include agriculture, undeveloped land and rural residential. This area is primarily zoned for agriculture, rural residential and industrial/manufacturing and is not currently part of a future development plan.

Also as shown in Figure 3-6 in Chapter Three of this Revised Draft EIR, under either sewer connection option, the easternmost 890 acres of the Specific Plan area would receive service by using a utility corridor to connect to the DCWWTP that extends from the Specific Plan area southerly across Dry Creek, then along the south side of Dry Creek to an existing sewer force main east of Walerga Road. Because this corridor does not follow existing public right-of-ways, it would be necessary to acquire a right-of-way as a condition of other future project
entitlements, or through use of eminent domain. Existing land uses along this alignment are primarily agricultural and undeveloped lands south of Dry Creek, with Dry Creek located north of the alignment. This area is generally zoned for agricultural use and open space, and is located within the Dry Creek/West Placer Community Plan area.

The applicants have stated that jack and bore construction techniques would be used wherever the proposed utility lines cross Dry Creek, in order to avoid creek disturbance.

**Wastewater Treatment Facilities**

Improvements would be required at the DCWWTP to accommodate additional flows generated by Placer Vineyards and are currently under study by the South Placer Wastewater Authority (SPWA). Although undefined at this time, all such improvements would occur on the current plant site within the existing developed footprint. The 2020 Master Plan for the Sacramento Regional Wastewater Treatment Plant identified the Specific Plan area as a “Potential Future Annexation” area to be served by the facility. However, capacity assumptions for the treatment plant were based on population-based wastewater flow projections for the current service area and the projected annexation of the City of West Sacramento. Impacts related to the potential expansion of the two plants are discussed programmatically herein and in Section 4.11.6 of this Revised Draft EIR. Water quality impacts related to increased effluent discharge are discussed in Section 4.3.4 and aquatic resources are discussed in Section 4.4 of this Revised Draft EIR.

**Agricultural Water Supply**

In order to comply with Development Standard 8 (Agricultural Water Supply) of Exhibit 1 of the Dry Creek/West Placer Community Plan, the Placer Vineyards Specific Plan proponents intend to pay a fee to the County or PCWA, which, at present, is intended to be used to facilitate the construction of additional recycled water storage and conveyance facilities that would supplement current agricultural water deliveries in western Placer County. In order to arrive at an estimated fee, a project has been conceptualized for construction at the City of Lincoln Wastewater Treatment and Reclamation Facility (WWTRF) for which the City of Lincoln would be the lead agency under CEQA. Because the proposal to satisfy Standard 8 is the payment of a fee, rather than the construction of these particular facilities, this Revised Draft EIR does not treat the facilities as an integral part of the “project.” Thus, this Revised Draft EIR is not intended to be a substitute for a formal environmental document to be prepared by the City of Lincoln. (See Kaufman & Broad-South Bay, Inc. v. Morgan Hill Unified School District [1992] 9 Cal.App.4th 464, 471-476 (formation of a financing mechanism generating funds available for a number of possible purposes is not a project subject to CEQA); Citizens to Enforce CEQA v. City of Rohnert Park (August 2005) 131 Cal.App.4th 1594, 1599-1601 (same); CEQA Guidelines, Section 15378, subd. (b)(4) (CEQA does not apply to “[t]he creation of government funding mechanisms or other government fiscal activities which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment”).)

The recycled water storage facility would be located on the east side of Fiddyment Road as shown in Figure 3-9 in Chapter Three of this Revised Draft EIR. The project would include the
conversion of an existing stormwater retention basin to accommodate recycled water from the existing treatment facility. To accomplish this, the inlet and outlet structures would be modified and an expanded or new pumping station to lift the stored recycled water into the delivery system would be needed. A pipeline connecting the new facility with the current recycled water basin would also be needed. Recycled water would be discharged to Auburn Ravine utilizing the existing WWTRF discharge point. Recycled water would then be conveyed downstream where it would be withdrawn at existing and future PCWA diversion structures and used for irrigation of agricultural cropland.

Construction of the recycled water storage and conveyance facilities described above is contingent on the relocation of the existing stormwater retention basin. This proposal, known as the Lakeview Farms Project, is currently under separate consideration by the City of Lincoln.

All improvements to the City of Lincoln WWTRF would be placed on the existing treatment facility sites.

**ROADWAY IMPROVEMENTS**

To implement the project it would be necessary to widen Watt Avenue between Baseline Road and Pepperidge Drive in Sacramento County, as shown in Figure 3-8 in Chapter Three of this Revised Draft EIR. The current Sacramento County Transportation Plan Map and Circulation Element of the *Sacramento County General Plan* (adopted December 15, 2003) designates this section of Watt Avenue as a “Thoroughfare,” defined as consisting of six lanes with a right-of-way of 108 feet. Current land uses along this section of Watt Avenue are primarily agricultural and rural residential with a small amount of public and low-density residential to the south of the Specific Plan area. As shown in Figure 3-8 in Chapter Three of this Revised Draft EIR, the widening of Watt Avenue would require the acquisition of one or more existing houses near PFE Road, as well as a small portion of the McClellan High School campus, and the frontage along a small cemetery.

Baseline Road would also be widened adjacent to the Specific Plan area and between the Specific Plan area and Fiddyment/Walerga Roads. Land to the north of Baseline Road and outside of the Specific Plan area may need to be acquired. Current land uses north of Baseline Road are primarily agricultural with a small amount of rural residential, industrial and commercial. This area north of Baseline Road is part of the Sierra Vista Specific Plan area, the Curry Creek Community Plan area, and Sutter County, all of which are being planned for future development.

Additionally, five intersections would be improved along Baseline/Riego Road (the extension of Baseline Road in Sutter County). Baseline/Riego Road intersections to be improved include both legs of Pleasant Grove Road, East Natomas Road, Locust Road and West Dyer/Brewer Road. Improvements would consist of installation of traffic signals, left turn pockets, and widening of approaches. Current land uses surrounding these intersections are primarily agricultural with a small amount of rural residential, commercial, and industrial. Three of these intersections are located entirely within Sutter County, a portion of which is planned for development.
PROPOSED GENERAL PLAN AMENDMENT

An amendment to the Placer County General Plan related to land use buffers is proposed as part of Specific Plan consideration. Specifically, the General Plan would be amended to allow buffer zone standards that are different than those established by the General Plan to be established as a part of Specific Plan approval. To implement this approach an addition to the 2nd paragraph on page 21 of the General Plan is proposed as follows (language to be added is shown with underline):

LAND USE BUFFER ZONE STANDARDS: This General Plan requires the use of buffer zones in several types of development. While the exact dimensions of the buffer zones and specific uses allowed in buffer zones will be determined through the County's specific plan, land use permit, and/or subdivision review process, buffer zones must conform to the following standards (as illustrated conceptually in Figures I-2 through I-6); provided, however, different buffer zone standards may be established within a Specific Plan as part of the Specific Plan approval.

AGRICULTURAL RESOURCES

Soil categories, as classified by the Natural Resources Conservation Service (NRCS) for the Specific Plan area, are shown in Figure 4.1-5. Soils are categorized by the NRCS for their potential use as agricultural land. The California Department of Conservation (DOC), Farmland Mapping and Monitoring Program uses the NRCS categories to prepare “Important Farmland Maps.” This ongoing program uses soil and land use data to prepare and update maps designating Important Farmlands and to monitor conversion of agricultural land within the state. The general distribution of Important Farmlands and other agricultural lands within the Specific Plan area is shown in Figure 4.1-6.

There are four categories of Important Farmlands identified within the Specific Plan area. DOC defines these four categories as follows:

- **Prime Farmland** is land that has the best combination of physical and chemical characteristics for the production of crops. These lands generally consist of Class I and II soils. Prime Farmland has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops within the last three years. None of the farmland categories include publicly-owned lands for which there is an adopted policy preventing agricultural use.

- **Farmland of Statewide Importance** is land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops within the last three years prior to the mapping date.
• **Unique Farmland** is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but is currently used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops include oranges, olives, avocados, rice, grapes, and cut flowers.

• **Farmland of Local Importance** is either currently producing crops, or has the capability of production. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. This land may be important to the local economy due to its productivity.

Two soil units mapped in the Specific Plan area by the NRCS have been designated as Prime Farmland, and two NRCS mapping units have been designated as Farmland of Statewide Importance. The two identified Prime Farmland soil units are listed as the Ramona sandy loam, 0% to 2% slopes (mapping unit 174) and the Xerofluvents, occasionally flooded (mapping unit 193). The two identified Farmland of Statewide Importance soil units are listed as the Cometa-Ramona sandy loams, 1% to 5% slopes (mapping unit 142) and the Xerofluvents, hardpan substratum (mapping unit 195). The Prime Farmland soils are generally located in the eastern portion of the Specific Plan area, as are the majority of the Farmland of Statewide Importance soils. A few smaller areas of Farmland of Statewide Importance soils are located in the western portion of the Specific Plan area. The soil mapping units are shown in Figure 4.1-5.

Table 4.1-2 reflects all farmland acreages within the Specific Plan area.

<table>
<thead>
<tr>
<th>Farmland Designation (FMMP)</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>L – Farmland of Local Importance</td>
<td>3,401</td>
</tr>
<tr>
<td>P – Prime Farmland</td>
<td>58</td>
</tr>
<tr>
<td>S – Farmland of Statewide Importance</td>
<td>256</td>
</tr>
<tr>
<td>U – Unique Farmland</td>
<td>651</td>
</tr>
<tr>
<td>G – Grazing</td>
<td>85</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,451</td>
</tr>
</tbody>
</table>

Source: Department of Conservation, Farmland Mapping and Monitoring Program, 2005

The California Land Conservation Act, also known as the Williamson Act, was enacted by the State Legislature in 1965 to encourage the preservation of agricultural lands. The program established under this act permits property tax adjustments for those landowners who contract with a City or County to keep their lands in agricultural production for a minimum of ten years. Every year, the contract automatically renews for a ten-year period in perpetuity, unless a Notice of Non-Renewal is filed. Once a Notice of Non-Renewal is filed, the contract will expire at the end of the current ten-year period. Contracted lands are assessed based on their agricultural value, rather than their potential market value with nonagricultural uses.

The first agricultural preserve was formed by the Placer County Board of Supervisors in 1967. The program has been effective at maintaining productive agricultural lands and open space in
the western county area by maintaining properties in larger parcel sizes and limiting the introduction of incompatible uses in agriculturally productive areas.

Between 1969 and 1977, approximately 1,200 acres within the Specific Plan area were placed under contract. However, Notices of Non-Renewal were filed for all 1,200 acres. The contracts have now expired. One contracted preserve, approximately 206 acres in size, currently exists adjacent to the Specific Plan area between Brewer Road and Country Acres Road, north of Baseline Road. Two parcels of land (APN's 017-140-011 and 017-140-010) are included. A Notice of Non-Renewal had not been filed as of December 31, 2005 (pers.comm., Sarah Wadman, Placer County Assessor’s office, Jan. 2006). The Preserve is adjacent to eight existing rural residences fronting Baseline Road.

Placer County has developed a conservation program to implement the goals, policies and programs of the 1994 Placer County General Plan. The purpose of the program, entitled the Placer Legacy Open Space and Agricultural Conservation Program (Placer Legacy Program), is to protect and conserve open space and agricultural lands in the county. The program is considered to be a “proactive” approach to protecting open space and natural resources in perpetuity. The Placer Legacy Program will supplement existing open space and conservation programs. In the case of agricultural lands, this program supports the dedication or purchase of agricultural easements.

**PROPOSED LAND USE**

Proposed land uses for the Specific Plan area are reflected in Figure 3-12 in Chapter Three of this Revised Draft EIR. Twenty-four land use designations are proposed for the Specific Plan area, including residential (low-, medium-, and high-density), commercial, commercial/mixed-use, power center, business park, office, schools, public/quasi-public uses, open space, parks/recreation centers and a “Special Planning Area” (SPA) designation for the western end of the Specific Plan area.

The Land Use chapter of the Specific Plan establishes the intensity and basic zoning pattern for the Specific Plan area. With the adoption of the Specific Plan, the zone districts would be altered to include a reference to the Specific Plan. Existing agricultural uses would be allowed to continue under the previous zone district; the Specific Plan designation would signify that the Specific Plan defines the land use intensity that each parcel is allowed.

A description of each land use designation is provided below. The Specific Plan land use designations are proposed to be implemented by the Development Standards and Design Guidelines included in the Specific Plan. The Development Standards and Design Guidelines are discussed in detail in Section 4.2 of this Revised Draft EIR. Table 4.1-3 provides a matrix of the land use designations and comparable County zoning designations. Table 4.1-4 provides acreages for proposed land use designations.
### Table 4.1-3
Specific Plan Designations and Comparable Zoning Designations

<table>
<thead>
<tr>
<th>Land Use Symbol</th>
<th>Description</th>
<th>Comparable County Zoning Designations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA</td>
<td>Special Planning Area</td>
<td>RA, F, IN, C1</td>
</tr>
<tr>
<td>LDR</td>
<td>Low-Density Residential</td>
<td>RA, RS</td>
</tr>
<tr>
<td>MDR</td>
<td>Medium-Density Residential</td>
<td>RS</td>
</tr>
<tr>
<td>HDR</td>
<td>High-Density Residential</td>
<td>RM, RS</td>
</tr>
<tr>
<td>CMU</td>
<td>Commercial Mixed-Use</td>
<td>OP, CPD</td>
</tr>
<tr>
<td>COM &amp; TCC</td>
<td>Commercial &amp; Town Center Commercial</td>
<td>C1, C2, OP</td>
</tr>
<tr>
<td>BP &amp; PC</td>
<td>Business Park &amp; Power Center</td>
<td>BP, CPD, OP</td>
</tr>
<tr>
<td>O</td>
<td>Office</td>
<td>C1, C2, C3, CPD, OP, RES, AP, BP, IN, INP</td>
</tr>
<tr>
<td>PUB (C, CY, F Gov, L, Po, REL, SS, T)</td>
<td>Public Use</td>
<td></td>
</tr>
<tr>
<td>ES, MS, HS</td>
<td>Schools</td>
<td>RS, RM, RA, RF, C1, C2, C3, CPD, MT, OP, RES, BP, F</td>
</tr>
<tr>
<td>OS</td>
<td>Open Space</td>
<td>O</td>
</tr>
<tr>
<td>P</td>
<td>Parks</td>
<td>RS, RM RA, RF, C1, C2, C3, CPD, HS, MT, OP, RES, AP, BP, IN, F, FOR, O</td>
</tr>
</tbody>
</table>


### Table 4.1-4
Summary of Proposed Land Uses

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA – Special Planning Area</td>
<td>979.0</td>
</tr>
<tr>
<td>LDR – Low-Density Residential</td>
<td>991.0</td>
</tr>
<tr>
<td>MDR – Medium-Density Residential</td>
<td>1,196.0</td>
</tr>
<tr>
<td>HDR – High-Density Residential</td>
<td>190.0</td>
</tr>
<tr>
<td>CMU – Commercial Mixed-Use</td>
<td>67.0</td>
</tr>
<tr>
<td>COM – Commercial</td>
<td>34.0</td>
</tr>
<tr>
<td>BP – Business Park</td>
<td>98.5</td>
</tr>
<tr>
<td>PC – Power Center</td>
<td>60.0</td>
</tr>
<tr>
<td>TC – Town Center Commercial</td>
<td>33.5</td>
</tr>
<tr>
<td>O – Office</td>
<td>34.5</td>
</tr>
<tr>
<td>PUB – Public Use</td>
<td>53.5</td>
</tr>
<tr>
<td>ES, MS, HS – Schools</td>
<td>140.0</td>
</tr>
<tr>
<td>REL – Religious Facilities</td>
<td>92.0</td>
</tr>
<tr>
<td>OS – Open Space</td>
<td>714.0</td>
</tr>
<tr>
<td>P – Parks</td>
<td>217.0</td>
</tr>
<tr>
<td>Major Roads</td>
<td>330.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,230.0</strong></td>
</tr>
</tbody>
</table>

PROPOSED LAND USE DESIGNATIONS

Residential:

- **Low-Density Residential (LDR):** The Low Density Residential areas are intended for single family detached, half-plex units and similar and compatible use. It also allows special housing types for elderly, active adult and community living. The Low Density Residential neighborhoods also permit public and quasi-public uses such as, schools, parks and recreation facilities with appropriate buffers and access to major local roadways and collector streets. Agricultural use of the land may continue as an interim use until development pursuant to this Specific Plan.

  The Land Use Diagram designates 991 acres of Low Density Residential housing units. This designation allows a density range of 2 to 6 dwelling units per acres.

- **Medium-Density Residential (MDR):** The Medium Density Residential (MDR) areas are intended for a range of housing types, such as standard lot and small lot single family detached homes, half-plex units and similar and compatible uses.

  The Land Use Diagram provides 1,196 acres of Medium Density Residential. This designation allows a density range of 4 to 8 dwelling units per acre.

- **High-Density Residential (HDR):** The High Density Residential (HDR) areas are intended for a range of housing types, such as cluster housing or motor courts, townhouses, condominiums, attached and a variety of detached multi-family units (apartments) and similar, compatible uses.

  The Land Use Diagram indicates 190 acres of high density residential uses. This designation allows a density range of 7 to 21 dwelling units per acre. A use permit is not required for units in this category if they are consistent with the requirements of this Specific Plan. However, site/design review is required in order to determine design consistency.

Commercial:

- **Commercial (COM):** The Commercial (COM) land use designation allows for a variety of retail uses and services. These include small convenience stores and centers, neighborhood-serving shopping centers, and community scale retail centers. Typical commercial land uses include neighborhood grocery stores, drug stores, and retail stores providing household goods and services for the surrounding residential neighborhoods. The commercial designation would also allow for banks, financial institution offices, reality and insurance offices; medical offices and professional offices; and gas stations and auto repair uses (limited in extent and located where compatible with adjoining land uses and subject to approval of a Minor Use Permit). The commercial designation also allows for public and quasi-public uses, parks, libraries and museums, public utility and safety facilities, and other similar compatible uses. The Floor Area Ratios (FAR) applicable to the Commercial
The Commercial/Mixed-Use (C/MU) designation is intended to encourage a variety of projects with a mix of uses, including high-density residential, retail and office uses within one development. The C/MU designation also allows for mixed-use neighborhood nodes of office and commercial uses on smaller sites integrated into the surrounding residential neighborhoods. Mixed-use types may include both vertical mixed-use- ground floor commercial uses with residential or office above, or horizontal mixed-use-commercial and residential development located on the same site. Typically found on the corners of collector and arterial streets, the C/MU designation allows flexibility for future market conditions and provides for local neighborhood services. The C/MU district also envisions uses such as live-work residential loft spaces with living units integrated into office spaces, commercial store fronts and artist studios. C/MU areas also allow religious facilities.

The C/MU designation allows for a residential density range of **15 to 35 dwelling units per acre**. For the purposes of distributing development intensities the Specific Plan assumes that approximately 70% of the development area will be developed with residential uses. The Floor Area Ratios (FAR) applicable to the Commercial/ Mixed Use land use designation range from a minimum of 0.35 to a maximum of 2.0. The remaining 30% of the development area is assumed to develop with commercial uses evenly split between retail and office uses at FAR’s of 0.25.

**Business Park (BP):** The purpose of the Business Park (BP) land use designation is to provide for a wide range of large-scale office, commercial and light industrial land uses on large parcels. This will provide employment and regional uses that help foster a balance of jobs and housing and meet the economic goals of the Placer County General Plan. The BP land use designation also allows for flexibility to meet the changing market conditions over time.

The BP designation allows for a mix of office park uses (light industrial, “high-tech” manufacturing and assembly, distribution, warehousing, research and development; medical and dental facilities); and supporting retail commercial uses (business services, and office support services). The BP designation allows for public and quasi-public uses such as commercial recreation uses, religious facilities, and private school and university facilities.

The BP designation allows for office and retail development within a Floor Area Ratio (FAR) range from a minimum of 0.20 to a maximum of 0.45. For the purpose of distributing development intensities the Specific Plan assumes that **the BP development area will develop at an FAR of 0.25**.

**Town Center Commercial (TCC):** The purpose of the Town Center is to create a pedestrian-oriented, easily accessible mixed-use retail core in the heart of the Placer Vineyards community. The Town Center is intended to be a highly visible, higher intensity, active, social and cultural gathering place. The Town Center would also support a mix of uses with office or residential uses located above ground floor retail shops. Ground-floor retail uses
with mid-rise buildings placed at the back of sidewalks, would open onto wide pedestrian sidewalks, allowing for outdoor dining and retail displays.

Uses encouraged in the Town Center include all types of office uses (banks, and medical offices), variety of retail stores and services (furniture stores, clothing and household goods, music stores and video outlets, hotels, motels, restaurants, bars), a variety of entertainment uses (movie theaters, night clubs), and public and quasi-public uses (community recreation center, library, fire station, sheriff substation and religious facility), along with public parks, amphitheater and plazas.

The Town Center may also include local-serving retail uses (a grocery store and/or drug store and other local services). The Town Center is to be designed to encourage outdoor eating and dining along the sidewalks with public and quasi-public uses integrated into the organization of the Town Center layout.

The Floor Area Ratios (FARs) applicable to the Town Center Commercial designation range from a minimum of 0.35 to a maximum of 2.0. For the purposes of distributing development intensities the land plan assumes that approximately 80% of this area will be developed with retail uses at an FAR of 0.45. The remaining 20% is anticipated to develop with office uses with the same FAR of 0.45.

- **Office (O):** The Office land use category (O) is intended for professional and administrative office uses including finance, insurance and banking offices, research and development, light manufacturing uses, medical and dental facilities, and related incidental office supporting commercial uses, such as copy centers, cafes, communication retail sales and services, and office supplies. The FAR applicable to the Office land use designation range from a minimum of 0.25 to a maximum of 0.45. The intensity utilized for the purpose of distributing Office intensity to individual properties of record is 0.30.

- **Power Center (PC):** The Power Center (PC) land use is envisioned for large scale retail stores providing goods and services for the regional market. Stores could include home improvement and large scale gardening centers, large scale discount centers for home appliances, furniture, computers, household goods and groceries, auto sales and services, auto service stations, tire stores and large scale clothing outlets. Power Center uses could also include restaurants and drinking establishments, and fast food (drive-thru) food outlets. The Power Center designation also allows for the location of public and quasi-public uses such as commercial recreation uses, religious facilities, and private schools and university facilities. The FAR applicable to the PC land use designation range from a minimum of 0.20 to a maximum of 0.35. The intensity utilized for the purpose of distributing commercial intensity to individual properties of record is 0.25.

**Parks, Recreation and Open Space:**

The park system proposed for Placer Vineyards incorporates over 930 acres of parks and open space to be used for active and passive recreation. Two large community-sized parks are located at the west and east sides of the Specific Plan area. Eight joint-use neighborhood parks, 43
neighborhood parks, and several small image parks are dispersed throughout the Specific Plan area. Mini parks, large enough for tot lots, are also encouraged to be developed in the Specific Plan, though not indicated in the land use plan diagram.

Pedestrian and bicycle paths and routes are integrated into the community-wide open space and street system. Trails, paths and sidewalks connect major elements of the community. A continuous series of east-west and north-south roadways, greenways and trails run parallel to each other connecting the neighborhoods, schools, parks and recreation facilities, and the community centers of activity.

- **Open Space (OS):** The OS land use designation is intended to protect the natural areas, creeks, wetlands, and specific tree groves within the Specific Plan area. Open spaces will include flood control and drainage channels, properties within power line easements and special setback areas, such as setbacks along the Placer County line. Open Space areas may have compatible uses, including trails, landscape nurseries and storage, and other active and passive recreational uses and their associated parking lots.

A total of 714 acres (approximately 14% of the Specific Plan area) is designated Open Space. This category includes only natural and/or passive open space, and does not include parks.

- **Oak Groves:** Concentrations of significant oak trees on the site are preserved in two large oak grove open space areas. They provide open space amenities to the community and provide passive recreational opportunities, such as picnic areas, quiet seating areas and trail loops.

- **Parks (P):** A variety of park types and sizes are planned for Placer Vineyards. Each park is planned and designed with a range of park facilities depending on the character of the park. The park types and characteristics are described below.
  - **Mini Parks (Pocket Parks):** Mini parks can be as small as one-quarter to one-half acre in size, but are more typically 1- to 2-acre sites that provide green space and passive recreational opportunities for a specific neighborhood. Uses and activities may include tot lots/playgrounds, half-court basketball, open turf areas, picnic areas with barbecues, seating areas, a shade structure or adequate shading provided by trees, and security lighting. Mini parks are not shown in the Land Use Diagram, but are encouraged to be built within large residential developments.

  - **Image Parks, Entry and Landscape Features:** Several image parks and landscape entry features can be found in the community. These are small, landscaped, themed signature features that serve as gateways into the residential neighborhoods. Some parks may be large enough to accommodate benches and play areas.

  - **Town Center Green:** A three acre community green is centrally located in the Town Center. The Town Center green is intended to serve as a civic, cultural and community focal point. It will include play area, picnic areas, an outdoor amphitheater for performances, open areas for farmer’s markets or other informal uses and a landmark feature as a park focal point. It will be specially designed to complement the design themes within the Town Center.
- **Neighborhood Parks:** Neighborhood parks are typically 2-15 acres in size. The eight joint-use parks are also included in this category. The facilities planned for these joint-use parks should take into consideration the nature of proposed school facilities in order to maximize the recreation value of both. These parks should also be designed to operate independent of the school facilities, if necessary.

- **Community Parks:** Two large community parks, above 30 acres, are located in the Specific Plan area. The East Community Park is located next to Watt Avenue and Dyer Lane, adjacent to the Dry Creek Parkway. The West Community Park is located just northwest of the powerline easement corridor and is bound on its eastern boundary by Dyer Lane (west). Community parks will include active recreation uses, including ball fields, passive recreation uses, such as trails and picnic areas and other support facilities such as, parking and staging areas for bicyclists and runners. Additionally, these parks may be used for meetings, neighborhood activities, special interest group, and youth and adult sports leagues. Each community park will contain a small shop and yard for park maintenance.

- **Private Parks:** Private parks and a recreation center are provided within the active adult community on the eastern portions of the Plan Area. Private parks shall count toward satisfying the park dedication requirements for the project, subject to the conditions for private parks found in Section 16.08.100-I, Private Facilities Credit, in the County Zoning Ordinance.

- **Recreation Center (RC) (Only In Town Center):** The Placer Vineyards Specific Plan envisions the development of a large community-wide recreation facility, designated RC on the Land Use Diagram, to add to the vitality and community life of the Town Center. The Recreation Center is planned as a large indoor and outdoor recreation facility with indoor meeting rooms, fitness rooms and equipment and associated offices. Outdoor facilities may include tot-lots, plaza, outdoor gazebo and gathering areas, such as a small outdoor amphitheater. The Recreation Center also allows meetings, community or cultural events and social gatherings.

**Public and Quasi/Public Uses:**

The Specific Plan provides for a range of public and quasi-public uses strategically located throughout the Specific Plan area. These uses include the following:

- **Religious Site (REL):** Religious sites are designated for houses of worship, defined as religious organization facilities operated for worship or promotion of religious activities, including churches, synagogues, temples, etc. and also includes religious accessory uses on the same site, including, but not limited to, living quarters for staff, child day care facilities where authorized by the same type of land use permit required for the house of worship itself. Other establishments maintained by the religious organizations, such as, full-time educational institutions and other potentially related operations (such as a recreation camp) are classified according to their respective activities. Pursuant to proposed Specific Plan Policy 3.13,
residential or other underlying uses may be permitted for religious sites, should religious site not be forthcoming. Refer to the table of allowed uses for the underlying land use designation.

- **Fire (F):** Two fire stations are located in the Specific Plan area. One serves the eastern portion of the Specific Plan area, located adjacent to the intersection of Watt Avenue and Town Center Drive. The other is located west, off of Palladay Road and Tanwood Avenue.

- **Government (GOV):** A government office facility will be located in the Town Center, housing administrative offices. A small sheriff’s substation is collocated with the government offices in the Town Center to provide policing and local public safety services.

- **Library (L):** A library facility is centrally located in the Town Center and provides literary, educational and informational resources to the community.

- **Corporation Yard (CY):** A 15± acre, shared corporation yard is located within and adjacent to the power line easement south of West Town Center Drive to accommodate the following facility needs of the County:
  - Sheriff’s Department vehicle and equipment storage area
  - Fire Department training and storage facility
  - Special districts office and shop area
  - Facility Services maintenance yard
  - Planning Department landscaping area
  - Fleet/Transit maintenance vehicle storage area, yard and fueling facility
  - Shared office space for Transit, Fleet Services and Roads
  - Roads Division storage and employee parking areas

- **Utility Substation (SS):** The SS designation allows electrical substations, pumping stations, pressure regulation stations or similar facility required to serve the Specific Plan area.

- **Transit Station (T):** A multi-modal transit station/terminal is provided in the Specific Plan area with access off Watt Avenue. It will serve to distribute information on local transit options and serve as a passenger terminal and transfer station for public mass transit systems including future, potential Bus Rapid Transit (BRT) services along Watt Avenue.

- **Cemetery (C):** Cemetery property designates land subdivided into cemetery lots offering burial plots or above ground interment. It may also include animal cemeteries and full service funeral parlors.

**Schools:**

Seven elementary schools, two middle schools and one high school are designated by the ES, MS and HS symbols on the Land Use Diagram. The Land Use Diagram designates 140± acres for schools.
School sites are situated adjacent to park sites and open spaces to allow joint use of facilities, trail access, and efficient use of the land. School/park sites have been placed at the center of each neighborhood to provide a focus for neighborhood interaction and to allow children to walk to school. School sites have been located based on the estimated number of students in each surrounding neighborhood and may need to be revised slightly based on actual buildout densities. Schools are sized for “stand alone” facilities, which may develop independently of parks.

- **Elementary Schools (ES):** Elementary schools serve grades kindergarten through fifth or sixth grade (depending on the school district). Elementary school sites are ten acres in size with an adjacent six-acre neighborhood park. Elementary Schools are located within residential neighborhoods within easy walking distance (one-half mile radius) and within auto access from local residential roads and collector streets.

- **Middle Schools (MS):** Middle school sites are planned to be 20 acres and will serve grades six through seventh or eighth (depending on school district). Both middle schools are located within residential neighborhoods on main collector streets.

- **High School (HS):** The High School site near the corner of Town Center Drive and Dyer Lane is 40 acres. It serves grades nine through twelve. It is sited on collector streets, in proximity to the surrounding residential community, near local commercial services and near a Community Park and open space.

**Special Planning Area (SPA):**

The SPA designation is located on approximately 979 acres in the far western portion of the Specific Plan area (most of which is known as the Riego area). This area, while included in the Specific Plan, is not planned for urbanization under the proposed Specific Plan. The Riego area consists mostly of rural residential/agricultural parcels ranging in size from 1 to 96 acres. Approximately 200, or 87%, of the 230 existing parcels are 5 acres or less in size, with the majority being less than 2 acres and primarily located in the Riego township. The remaining 30 parcels range in size from 5 to 96 acres and are generally located in the vicinity of Newton Street, south of Browning Street and Colburn Street. While some owners have expressed interest in building new homes or subdividing their land, others have expressed a desire to maintain large parcels and a rural lifestyle. Accordingly, the proposed Specific Plan designates this area as a SPA and reserves a total of 411 residential dwelling units for the eventual buildout of this area. The 411 units include existing dwellings (150 in number), leaving 261 new units that could be constructed within the SPA. As explained in Sections 2.5 and 3.1 of this Revised Draft EIR, however, only 63 new dwelling units can be built under current zoning, so that zoning changes, as well as one or more project-level environmental documents, would be necessary before the remaining 198 units of the 411 units currently “allocated” to the SPA can actually be developed.

The Specific Plan sizes infrastructure (sewer, water and storm drainage) to accommodate the potential buildout of the SPA, including the allocation and construction of an additional 261 new dwelling units. These units count towards the total 14,132 dwelling units permitted in the overall Specific Plan area pursuant to the *Placer County General Plan*, as set forth in Exhibit 1 of the
Dry Creek/West Placer Community Plan (see Section 4.1.4 below in the discussion of Dry Creek/West Placer Community Plan).

PROPOSED LAND USE-RELATED GOALS AND POLICIES

The following goals and policies related to land use are contained in the proposed Specific Plan.

Goals:

Goal 3.1 Develop an urban pattern that is consistent with the goals and objectives of the Placer County General Plan and the SACOG Blueprint vision of growth in the region.

Goal 3.2 Develop Placer Vineyards in a pattern that respects the surrounding urban development patterns and transportation and circulation systems, but also sets a high-quality development standard for the area.

Goal 3.3 Organize land use types and patterns that are sensitive to the existing topographic features and other physical constraints of the site.

Goal 3.4 Minimize conflicts between urban development and existing and interim agricultural activities.

Goal 3.7 Provide an adequate supply of residential land in a range of densities and housing types. Provide affordable-housing opportunities distributed throughout the community.

Goal 3.8 Create a mixed-use Town Center, located centrally in the community, to serve as a gathering place that provides a range of public and private activities for residents, local workers and visitors.

Goal 3.9 Create two distinct Village Centers, geographically, dispersed at the west and east end of the community with a diverse mix of land use activities that serve the surrounding populations.

Goal 3.10 Provide a range of commercial uses along Baseline Road that includes a Power Center to serve as major centers of employment and retail shopping for the region while providing for the County’s economic and fiscal soundness.

Goal 3.11 Further the County’s goals for growth management, economic development, and community character by designating land uses that facilitate and encourage the creation of high-quality employment centers along Baseline Road.

Goal 3.12 Help to achieve a balance of jobs and housing within the region that minimizes environmental impacts by reducing vehicle miles traveled by commuters and air pollution released from automobiles.
Goal 3.16 Encourage the establishment of religious sites to serve the diverse cultural and religious needs of the community.

Goal 3.17 The site design and land use patterns of Placer Vineyards are organized to provide an appropriate level of compatibility to adjoining land uses and reduce potential conflicts.

Goal 4.11 Minimize impact on important farmland through the dedication of other open space land.

Policies: (Note, all figure, table and appendix references that follow in this policy review refer to the Specific Plan text and not the Revised Draft EIR).

Policy 3.1 Urban/Rural Transitions. The Placer Vineyards Plan Area shall be buffered from existing rural and agricultural development as long as this use persists. Buffers may include road right of way, landscaped setbacks and open space.

Policy 3.2 Existing Agricultural Uses. Placer County will review and analyze development proposals for potential conflicts between aerial spraying associated with agricultural activities and proposed land uses.

Policy 3.3 Sequencing of Development. The construction of a core infrastructure system will permit development to proceed, as the availability of services and infrastructure allow.

Policy 3.6 Mix of Densities and Variety. Subject to the applicable density range, a variety of housing types and densities will be provided.

Policy 3.7 Secondary Dwelling Units. Secondary units shall be consistent with Placer County Zoning Ordinance standards. Units constructed with the initial development projects shall be included in the calculation of density for that project.

Policy 3.8 Active Adult Community. The eastern portion of the Plan Area (designated under property 1A on the ownership land use map) shall be reserved as a residential community for active adults (55+ years and older).

Policy 3.9 Commercial Services. A hierarchy of regional and local commercial areas shall provide a range of products and services to the Plan Area.

1. The regional commercial centers are highly visible shopping areas and offices concentrated on high traffic intersections along Baseline Road. The Power Center provides for large scale volume purchases not generally available in smaller shopping centers. Together, these centers will serve the needs of the larger region and will not compete directly with the retail
and services provided in the Placer Vineyards Town Center, village centers and convenience centers.

2. The Town Center shall be located in the geographic center of the community, along 16th St., just south of Baseline Road. The Town Center is an easily accessible, pedestrian friendly, mixed-use center with specialty retail shops and restaurants located on the ground floor for outside dining potential. Housing and offices may locate on the floors above. The Town Center is also a community focal point, providing public and civic services, such as library, church and post office as well as recreational opportunities, such as parks, open markets, recreation centers and theaters.

3. Two Village Centers serve the east and west communities of the Plan Area. Like the Town Center they are easily accessible to the community but are smaller mixed-use centers, providing retail and more localized community shopping and services. The East Village Center will provide for Bus Rapid Transit access, a transit terminal, fire station and ground floor commercial uses, surrounded by high-density housing. The West Village Center provides commercial uses in close proximity to the high school, a community park and residential neighborhoods.

4. Neighborhood centers provide convenience-type retail uses within local residential neighborhoods and are dispersed throughout the community within the Commercial/Mixed Use (C/MU) land use categories.

Policy 3.10 Employment. Higher intensity employment uses shall be concentrated along Baseline Road and secondarily in the Town Center and along Watt Avenue.

Policy 3.12 Religions Facilities Location. The Land Use Diagram indicates, at a minimum, the number of religious sites within the Plan Area. Additional religious and institutional uses may be provided elsewhere in the Plan Area subject to County review and approval.

Policy 3.13 Transfer of Religious Facilities Development Rights. Designated religious sites are overlay zones with underlying residential and non-residential land uses, selected to be compatible with surrounding land uses. Underlying land uses are indicated in parenthesis following the Religious Site (REL) site designation in the Land Use Diagram (Figure 3.1). All religious sites when developed with houses of worship, as defined by the Placer County Zoning Ordinance, shall be granted residential density bonus units that may be transferred elsewhere within the residential areas of their property. The number of units allowed for transfer is proportional to the area of the religious site, calculated at a Low Density Residential (LDR) density. The calculated density and maximum total number of bonus units reserve for transfer of religious sites for each property of record is indicated in Table 3.3. The same standards apply to religious sites with a non-residential land use, such as Business Park (BP) or C/MU. These sites shall also
be allowed to transfer the reserved religious site area, calculated at a LDR-density, within the residential land use areas of their property, when the religious site develops. (See Section 9.2.7, “Transfer of Density,” in Chapter IX, “Implementation,” for more detail on the density transfer program for Placer Vineyards.)

Policy 3.14 Land Use Designations. The new land use designations in the Specific Plan shall take precedent over existing comparable zoning designations. (Permitted uses for each land use designation are included as a part of Appendix A in the Specific Plan).

Policy 3.15 Land Use Designations to the Plan. The development program (number of residential units in the Plan Area, permissible intensity of commercial development, and allocation of public uses for each parcel) is specified in the Land Use Diagram (Figure 3.1) and the Land Use Ownership Summary (Table 3-3). The development program also allocates a specific allowable number of residential units and indicates the commercial development potential for each property of record in the Plan Area, as described in the following sections. Any subsequent development plan that exceeds the intensities assigned by the plan may be subject to the subsequent environmental review process. See Section 9.2.4, “Subsequent Entitlement Process,” in Chapter IX, “Implementation.”

The assigned residential intensities and total commercial acreages are listed in Table 3-3 and will also be identified in the Development Agreement for Placer Vineyards. Commercial intensities, defined by the floor area ratios, are provided under the commercial land use designation headings that follow and in Appendix A, “Land Use and Development Standards.” Likewise, allowable residential densities are identified under the residential land use designation headings that follow and are further defined and identified in the development standards in Appendix A of the Specific Plan.

Policy 3.16 Allowable Land Uses. Permitted land uses and development standards for each land use designation are included as Appendix A of this Specific Plan. Appendix A shall identify the uses allowed by right, uses allowed by administrative review permit, uses allowed by conditional use permit, and prohibited uses. The purpose of the permit requirement is to allow the County to evaluate the proposed uses; to determine whether problems may occur; to ensure compatibility of adjoining uses; to provide the public the opportunity to review projects and identify issues and concerns in a public hearing; to work with the applicants to adjust the project through conditions of approval; and to solve identified problems or to disapprove a project if problems cannot be adequately resolved.

Policy 3.17 Nuisance Uses. Land uses that involve outdoor manufacturing or uses that may emit any appreciable amount of visible gases, particulates, steam, heat, odor, vibration, glare, dust, or excessive noise from the exterior of a building are not allowed in the Plan Area.
Policy 3.18 Specialty Grocery Stores. The Town Center will have the exclusive rights for specialty grocers less than 25,000 square feet in size. Examples of specialty grocers are Trader Joe’s, Whole Foods Market, or other similar type store concepts with a square footage of less than 25,000 square feet. Other special neighborhood-serving grocery stores, delis, and specialty-food stores should be located in small mixed-use and neighborhood retail shopping centers rather than in the retail center locations along Baseline Road.

Policy 3.19 Grocery Stores. The Town Center will have the exclusive right within the Plan Area to open a traditional grocery store, such as a Safeway, Albertson’s, Raley’s, or similar type store concept for a period of time as specified in the development agreement. Non-traditional grocery stores, such as a Wal-mart, Food 4 Less, or similar type store, will be restricted. If Placer County or the City of Roseville circulates the draft EIR for public review and comment on the Curry Creek Project, Regional University Project, or the City of Roseville Memorandum of Understanding (MOU) area, and any of these projects includes a traditional grocery store component, then this right of exclusivity for traditional grocery stores shall become null and void, and any commercial owner in the Plan Area will be allowed to open a traditional grocery store without the restrictions described above.

Policy 3.20 Movie Theater and Other Entertainment Uses. The Town Center shall have exclusive right to a movie theater use within the Specific Plan Area. To encourage pedestrian activity and provide attractions that support local shops and restaurants in the Town Center, movie theaters and other entertainment uses, including dance clubs, live music, theaters, and art galleries shall be located primarily in the Town Center.

Policy 3.21 Parking in Commercial/Mixed Use Sites. For mixed-use projects, parking may be shared between uses. To facilitate shared parking, a parking analysis shall be prepared that lists project-specific assumptions for the mix of uses, outlines peak parking periods for each use type, and demonstrates that adequate parking will be provided. To relax the individual parking requirements listed above, the County Planning Director shall determine that, based on the findings in the shared parking analysis, the entire project will not result in a parking shortfall.

Policy 3.22 Land Use for Unused School Sites. If the school district decides that a school site shown in the land use diagram is not needed, residential development will be permitted at the residential density of the prevalent land use adjacent to the designated school site. The total number of residential units allocated to the underlying property will not be increased by the readjustment of land use. In this situation, the adjacent neighborhood park site shall remain as indicated on the land use diagram, providing a central focus for the neighborhood.
Policy 3.23 Special Planning Area. This Specific Plan does not revise or designate zoning for the SPA properties. The corresponding existing zoning for these SPA properties will apply. Individual property owner’s may build at the existing zoning density. Property owners may also request a separate development proposal to the County to utilize units under the Placer Vineyards Specific Plan. Chapter IX of the Specific Plan describes the procedure for the future processing of discretionary land use entitlement requests for parcels within the SPA.

Policy 3.27 Distribution. Affordable housing units shall be focused on High Density Residential (HDR) and Commercial/Mixed Use (CMU) parcels. However, affordable housing may also be provided in other residential land use areas. Refer to the Development Agreement for the allocation of affordable-housing units.

Policy 3.29 Compatibility to Adjoining Large-Lot Rural and Agricultural Uses. The design and land use pattern of Placer Vineyards shall be organized to provide an appropriate level of compatibility to adjoining rural residential and agricultural uses.

1. Land use intensities and densities in Placer Vineyards should be stepped down approaching or adjoining rural residential and agricultural uses to create a more compatible transition between uses.

2. Open space buffers shall be provided along the entire edge of the Special Planning Area. Refer to Section 7.3, “Open Space,” in Chapter VII, “Parks and Open Space,” for the design of open space landscape buffer areas adjacent to the SPA (see Figure 7.11 for required open space buffer setbacks and locations).

3. To buffer land in agricultural preserve located north of Baseline Road, a minimum 200-foot building setback shall be maintained from the north right-of-way line of Baseline Road for all non-open space and non-infrastructure-related land uses located south of Baseline Road. The 200-foot setback from the north right-of-way line shall only apply to those parcels that are located south of an agricultural preserve that remains under contract at the time building permits are issued for affected parcels within the Specific Plan area.

4. Site design of residential neighborhoods shall employ a number of techniques as a buffer to adjoining uses, including larger lots, larger front or rear yard setbacks, loop roads, cul-de-sacs, single-loaded streets, and open space and landscaped setback buffers. Refer to Section 6.4.1, “General Lot Design,” in Chapter VI, “Community Design,” for residential lot design guidelines.
5. Local streets in new residential neighborhoods should avoid connections to existing local rural lanes and streets to avoid traffic and parking in adjoining agricultural areas.

Policy 3.30 Compatibility of Residential Uses Adjacent to Commercial and Employment Uses. The design and land use pattern of Placer Vineyards shall be organized to provide an appropriate level of compatibility between residential neighborhoods and adjoining commercial and higher intensity office uses.

1. Residential densities in Placer Vineyards should create a transition between commercial and office uses and adjoining low-density residential neighborhoods. Transitional uses may include higher density residential uses, public and quasi-public uses, open spaces, and parks.

2. Local streets should avoid direct connections between large commercial centers and surrounding residential areas that would allow commercial traffic to pass through the residential neighborhoods and affect local streets with commercial parking.

3. Open space setbacks, parks, and surface drainage swales are appropriate buffers between residential uses and adjoining higher intensity commercial and office uses.

4. Site design of residential neighborhoods can employ a number of techniques as a buffer to adjoining uses, as indicated in Figure 6.19 in Chapter VI, “Community Design.” Such techniques include larger setbacks, loop roads, cul-de-sacs, frontage roads, and open space and landscaped setback buffers.

Policy 4.34 Require the preservation of other open space/agricultural lands elsewhere in Placer County at a ratio of 1 acre of land for each acre of land affected with in the Plan Area.

Policy 4.35 No additional agricultural land dedications shall be required beyond the 1:1 open space dedication required under Policy 4.34 so long as the open space lands acquired are lands of similarly capable soils, designated for Agricultural/Open Space use in the County General Plan.

4.1.3 SACRAMENTO AREA COUNCIL OF GOVERNMENTS PREFERRED BLUEPRINT PLAN

The Sacramento Area Council of Governments (SACOG) Board of Directors adopted the Preferred Blueprint Scenario (Blueprint Plan) in December of 2004. The Blueprint Plan is a regional vision to accommodate the longer-term growth needs of the region, including Placer County. The Blueprint Plan proposes a concentrated, compact development pattern in the region with a balance of employment, residential, shopping and recreational uses linked to transportation system improvements. The vision is intended to guide land use and transportation
choices over the next 50 years as the region’s population grows from its current population of 2 million to include more than 3.8 million people. Figure 4.1-7 illustrates the general development footprint envisioned under the Blueprint Plan with the Specific Plan area shown.

**BLUEPRINT GROWTH PRINCIPLES**

The Blueprint Plan is structured around seven growth principles. It should be noted that the Blueprint Concept Map developed by SACOG as part of the Blueprint Plan is intended to be interpreted and used as a concept-level illustration of the growth principles. It is not intended to be interpreted and used in a literal, parcel-level manner. The growth principles are:

1. **Transportation choices.** Developments should be designed to encourage people to sometimes walk, ride bicycles, ride the bus, ride light rail, take the train, or carpool as a way to reduce the number and length of auto trips.

2. **Mixed-use development.** Building homes and shops, entertainment, office and even light industrial uses near each other can create active, vital neighborhoods and also help reduce the number and length of auto trips.

3. **Compact development.** Creating environments that are more compactly built and use space in an efficient but aesthetic manner can encourage more walking, biking, and public transit use, and shorten auto trips.

4. **Housing choice and diversity.** Providing a variety of places where people can live – apartments, condominiums, townhouses, and single-family detached homes on varying lot sizes – creates opportunities for the variety of people who need them: singles, seniors, and people with special needs.

5. **Use of existing assets.** In urbanized areas, development on infill or vacant lands, intensification of the use of underused parcels or redevelopment can make better use of existing public infrastructure.

6. **Quality design.** The design details of any land use development – such as the relationship to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design, and the design of the public right-of-way – are all factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services.

7. **Natural resources conservation.** This principle encourages the incorporation of public use open space (such as parks, town squares, trails, and greenbelts) within development projects, over and above state requirements; along with wildlife and plant habitat preservation, agricultural preservation and promotion of environment-friendly practices such as energy efficient design, water conservation, and stormwater management, and shade trees to reduce the ground temperatures in the summer.
PROJECTIONS BEHIND PREFERRED BLUEPRINT PLAN

According to a report produced by the Center for Continuing Study of the California Economy, the Sacramento region is poised for significant growth over the coming 50 years. The number of jobs is projected to more than double to 1.9 million, creating demand for an additional 800,000 housing units. Based on this information, SACOG has concluded that unless action is taken, the region will consume an additional 400,000 acres by 2050 if current development patterns continue. As a result, congestion within the region's transportation network will increase. By taking a comprehensive planning or "smart growth" approach, SACOG – the designated Metropolitan Planning Organization for the Sacramento region – hopes to avoid many of the problems associated with low-density development.

RELATIONSHIP TO LOCAL PLANNING

In terms of local land use planning, the Blueprint Plan has not been adopted by Placer County, and it is not legally binding on the County. However, the Blueprint Plan does play an advisory role and is intended to guide the region's land use and transportation planning. As the federally-designated transportation planning agency for the area, SACOG develops and updates a long-range transportation plan for the Sacramento region. The Metropolitan Transportation Plan (MTP) covers Sacramento, Yolo, Sutter, Yuba, Placer and El Dorado counties, excluding the Tahoe Basin. The current interim MTP was adopted on July 21, 2005. Work is now underway on the next comprehensive update, MTP 2030, which SACOG anticipates it will adopt in 2007.

Each time SACOG adopts an MTP, it must first adopt a 25-year growth forecast for the region, and a land use allocation that specifies its best estimate of the most likely places where that growth will occur (i.e., how much and what type of growth will occur in each city and county over the next 25 years.) These same choices must support the next comprehensive MTP update; however, in order to consider changes to future land use patterns that may occur as the result of the Blueprint Map and Growth Principles, a more detailed and explicit process is necessary. This more detailed process is intended to demonstrate that changes to local land use patterns could achieve significant benefits to the region’s transportation systems and air quality. In order to take credit for transportation and air quality benefits, SACOG must provide evidence that the land use patterns are more likely to occur than a continuation of the past land use patterns.

To help create a 2030 land use map and allocation for the next comprehensive MTP update, SACOG has recommended that each local government develop an individualized strategy for determining how, or if, it will pursue actions, over time, that help to achieve the planning principles in the Blueprint Plan as planning and growth decisions are made. In keeping with SACOG recommendations, the Specific Plan applicants have prepared a Blueprint Alternative for the Specific Plan, which is analyzed at a project level in Chapter Six of this Revised Draft EIR.
4.1.4  REGULATORY SETTING

State law requires that all land use actions be consistent with locally adopted general plans. Land use actions include the adoption of specific plans, approval of rezoning applications, subdivision maps, and other discretionary actions such as conditional use permits.

There are two types of documents comprising the Placer County General Plan: the countywide General Plan and a set of more detailed community plans covering specific areas of the unincorporated county. The community plan document covering the Specific Plan area is Exhibit 1 of the Dry Creek/West Placer Community Plan (though, as explained in Section 4.1.2, the textual policies of the Dry Creek/West Placer Community Plan do not apply to the Placer Vineyards Specific Plan).

The countywide General Plan provides an overall framework for development of the unincorporated area of the county and protection of its natural and cultural resources. The goals and policies contained in the countywide General Plan are applicable throughout the county, with the exception of the incorporated areas. The community plans provide a more detailed focus on specific geographic areas. 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.

The Policy Document of the countywide General Plan provides a uniform set of land use designations that are consistent in both the countywide General Plan and the community plans. There is, however, no overlap between land use diagrams. A community plan land use diagram is the only applicable land use diagram for that particular community plan area.

Relevant policies from the Roseville 2020 General Plan, the Sutter County General Plan, and the Sacramento County General Plan are also provided; however, the proposed Specific Plan is not subject to, nor required to be consistent with, the general plans of neighboring jurisdictions. However, certain off-site infrastructure could be subject to the planning requirements of the jurisdiction in which the infrastructure is located. Pursuant to a Settlement Agreement and Release between the City of Roseville and the County of Placer (as discussed below), the City of Roseville was regularly consulted during the preparation of the Placer Vineyards Specific Plan and Revised Draft EIR.

PLACER COUNTY GENERAL PLAN

The Placer County General Plan was adopted in August, 1994. Relevant goals and policies pertaining to land use and preservation of agricultural land are listed below.

Goal 1.A: To promote the wise, efficient, and environmentally-sensitive use of Placer County lands to meet the present and future needs of Placer County residents and businesses.

Policies:

1.A.1: The County will promote the efficient use of land and natural resources.
1.A.3: The County shall distinguish among urban, suburban, and rural areas to identify where development will be accommodated and where public infrastructure and services will be provided. This pattern shall promote the maintenance of separate and distinct communities.

1.A.4: The County shall promote patterns of development that facilitate the efficient and timely provision of urban infrastructure and services.

Goal 1B: To provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County.

Policies:

1.B.1: The County shall promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes.

1.B.2: The County shall encourage the concentration of multi-family housing in and near downtowns, village centers, major commercial areas, and neighborhood commercial centers.

1.B.3: The County shall encourage the planning and design of new residential subdivisions to emulate the best characteristics (e.g., form, scale, and general character) of existing, nearby neighborhoods.

1.B.5: The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.

1.B.6: The County shall require new subdivided lots to be adequate in size and appropriate in shape for the range of primary and accessory uses designated for the area.

1.B.7: The County shall require multi-family developments to include private, contiguous, open space for each dwelling.

1.B.9: The County shall discourage the development of isolated, remote, and/or walled residential projects that do not contribute to the sense of community desired for the area.

1.B.10: The County shall require that all residential development provide private and/or public open spaces in order to insure that each parcel contributes to the adequate provision of light, air and open space.
Goal 1.D: To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality.

Policies:

1.D.1: The County shall require that new commercial development be designed to encourage and facilitate pedestrian circulation within and between commercial sites and nearby residential areas rather than being designed primarily to serve vehicular circulation.

1.D.2: The County shall require new commercial development to be designed to minimize the visual impact of parking areas on public roadways.

1.D.3: The County shall require that new, urban, community commercial centers be located adjacent to major activity nodes and major transportation corridors. Community commercial centers should provide goods and services that residents have historically had to travel outside of the area to obtain.

1.D.4: The County shall require that significant new office developments locate near major transportation corridors and concentrations of residential uses. New office development may serve as buffers between residential uses and higher-intensity commercial uses.

1.D.5: The County shall encourage existing and new downtowns/village centers to provide a variety of goods and services, both public and private.

1.D.6: The County shall promote use of first floor space in new buildings in downtowns/village centers for retail, food service, financial institutions, and other high-volume commercial uses.

1.D.7: The County shall encourage new downtowns/village centers and new commercial projects and areas to be designed to maintain a continuous retail façade on all street frontages, except for public plazas and pedestrian passages between the front and rear of buildings.

1.D.8: The County shall require minimal, or in some cases no, building setbacks for commercial and office uses in new downtowns/village centers.

1.D.9: The County shall encourage parking in downtown/village centers to be consolidated in well-designed and landscaped lots or in well-located parking structures.

1.D.11: The County shall require that existing and new downtown/village centers and development within them be designed to integrate open spaces into the urban fabric where possible, especially taking advantage of any natural amenities such as creeks, hillsides, and scenic views.
Goal 1.E: To designate adequate land for and promote development of industrial uses to meet the present and future needs of Placer County residents for jobs and maintain economic vitality.

Policies:

1.E.1: The County shall only approve new industrial development that has the following characteristics:

a. Adequate infrastructure and services;
b. Convenient connections to the regional transportation network, including connections to existing transit and other non-automobile transportation;
c. Sufficient buffering from residential areas to avoid impacts associated with noise, odors and the potential release of hazardous materials;
d. Minimal significant adverse environmental impacts; and
e. Minimal adverse effects on scenic routes, recreation areas, and public vistas.

1.E.2: The County shall designate specific areas suitable for industrial development and reserve such lands in a range of parcel sizes to accommodate a variety of industrial uses.

Goal 1.G: To designate for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.

Policies:

1.G.2: The County shall strive to have new recreation areas located and designed to encourage and accommodate non-automobile access.

1.G.3: The County shall continue to require the development of new recreational facilities as new residential development occurs.

Goal 1.H: To designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Placer County’s agricultural economy.

Policies:

1.H.1: The County shall maintain agriculturally-designated areas for agricultural uses and direct urban uses to designated urban growth areas and/or cities.

1.H.2: The County shall seek to ensure that new development and public works projects do not encourage expansion of urban uses into designated agricultural areas.

1.H.4: The County shall allow the conversion of existing agricultural land to urban uses only within community plan areas and within city spheres of influence where designated for urban development on the General Plan Land Use Diagram.
1.H.5: The County shall require development within or adjacent to designated agricultural areas to incorporate design, construction, and maintenance techniques that protect agriculture and minimize conflicts with adjacent agricultural uses.

1.H.6: The County shall require new non-agricultural development immediately adjacent to agricultural lands to be designed to provide a buffer in the form of a setback of sufficient distance to avoid land use conflicts between the agricultural uses and the non-agricultural uses. Such setback or buffer areas shall be established by recorded easement or other instrument, subject to the approval of County Counsel. A method and mechanism (e.g., a homeowners association or easement dedication to a non-profit organization or public entity) for guaranteeing the maintenance of this land in a safe and orderly manner shall be also established at the time of development approval.

Goal 7.B: To minimize existing and future conflicts between agricultural and non-agricultural uses in agriculturally-designated areas.

Policies:

7.B.1: The County shall identify and maintain clear boundaries between urban/suburban and agricultural areas and require land use buffers between such uses where feasible. These buffers shall occur on the parcel for which the development permit is sought and shall favor protection of the maximum amount of farmland.

7.B.3: The County shall consider fencing subdivided lands adjoining agricultural uses as a potential mitigation measure to reduce conflicts between residential and agricultural uses. Factors to be considered in implementing such a measure include:

a. The type of agricultural operation (i.e., livestock, orchard, timber, row crops);
b. The size of the lots to be created;
c. The presence or lack of fences in the area;
d. Existing natural barriers that prevent trespass; and
e. Passage of wildlife.

7.B.4: The County shall continue to enforce the provisions of its Right-of-Farm Ordinance and of the existing state nuisance law.

7.B.5: The County shall encourage educational programs to inform Placer County residents of the importance of protecting farmland.

In addition to the goals and policies outlined above, the General Plan requires the use of buffer zones in several types of developments. Land use buffer zones are to be reserved in perpetuity through land use acquisition, purchase of development rights, conservation easements, deed restrictions, or similar mechanisms, with adjacent proposed development projects providing the necessary funding. The exact dimensions of the buffer zones and specific uses allowed in buffer
zones are determined through the specific plan, land use permit, and/or subdivision review process. However, buffer zones must conform to the following standards:

- **Agriculture/Timberland Buffers:** Required to separate urban uses (particularly residential) from lands designated Agriculture or Timberland on the Land Use Diagram, where noise from machinery, dust, the use of fertilizers and chemical sprays, and other related agricultural/timber harvesting activities would create problems for nearby residential and other sensitive land uses. These buffers also serve to minimize disturbance of agricultural operations from nearby urban or suburban uses, including trespassing by nearby residents and domestic animals.

- **Buffer Dimensions:** Timber harvesting and agricultural practices associated with crop production can contribute to land use conflicts when development occurs adjacent to agricultural and timberland areas. Since production practices vary considerably by crop type, buffer distances may vary accordingly. The separations shown in the following table are required between areas designated Agriculture or Timberland and residential uses, commercial/office uses, business park uses, and some types of recreational uses; no buffers are required for other uses. The buffer widths are expressed as ranges because of the possible influence of site or project-specific characteristics.

<table>
<thead>
<tr>
<th>Minimum Agriculture/Timberland Buffer Zone Width</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural/Timberland Use</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Field crops</td>
</tr>
<tr>
<td>Irrigated orchards</td>
</tr>
<tr>
<td>Irrigated vegetables, rice</td>
</tr>
<tr>
<td>Rangeland/pasture</td>
</tr>
<tr>
<td>Timberland</td>
</tr>
<tr>
<td>Vineyard</td>
</tr>
</tbody>
</table>

¹Residential structures prohibited; non-habitable accessory structures permitted.  
²Required buffer dependent on-site or project-specific characteristics as determined through County’s specific plan, land use permit, and/or subdivision review process.

- **Uses Allowed In Buffer:** Low-density residential uses on parcels of 1 to 20 acres or open space uses are permitted within the buffer, although the placement of residential structures is subject to the minimum “residential exclusion areas” shown in the table above. Non-habitable accessory structures and uses may be located in the exclusion area, and may include barns, stables, garages, and corrals.

- **Industrial/Residential Buffers:** Required to separate residential land uses from areas designated Business Park/Industrial where noise from vehicles and equipment, the use of hazardous materials in manufacturing processes, truck traffic, and otherwise heavy traffic volumes would be incompatible with nearby residential uses.

- **Buffer Dimensions:** Generally, industrial/residential buffers shall be a minimum width of three hundred feet, but may be reduced to not less than one hundred feet where the buffer
includes such features as screening walls, landscaped berms, and/or dense landscaping, with guarantees of proper, ongoing landscaping maintenance.

- **Uses Allowed In Buffer:** Commercial and office uses; open space and recreation uses such as greenbelts, parks, and playfields.

**DRY CREEK/WEST PLACER COMMUNITY PLAN**

The Dry Creek/West Placer Community Plan was adopted by the Board of Supervisors on May 14, 1990, for an approximate 9,200-acre area in the southwest corner of the County. The Community Plan area was bounded by Baseline Road on the north, Sutter County to the west, Sacramento County to the south, and the City of Roseville to the east.

On August 16, 1994, the Community Plan was amended as part of the General Plan update to include the West Placer Specific Plan area. This amendment, referred to as “Exhibit 1,” includes standards for development for the area generally described as west of Watt Avenue and south of Baseline Road. The County has determined that Exhibit 1 supersedes the goals and policies of the Community Plan with regard to the West Placer Specific Plan (Placer Vineyards Specific Plan) area. At the time of adoption, the Specific Plan area was envisioned as a mixed-used community including residential, retail, commercial, and business/professional uses, as well as public facilities such as parks, schools, and open space. As set forth in Exhibit 1, the development and design standards applicable to the Specific Plan area are outlined below.

1. Residential uses: A maximum of 14,132 dwelling units, although this number may not be realized due to site constraints, inclusion of buffers, and other factors that may limit developable land.

2. Commercial and industrial uses: The following acreage shall serve as approximations of an acceptable mix of non-residential uses: a maximum of 80 acres of commercial, 160 acres of office and professional development, and up to 300 acres of professional/light industrial development.

3. Open space: Open space shall be provided for drainage ways, floodplains, recreation areas, parks, undeveloped buffers, trail corridors, and natural areas.

4. Required buffers: Proposed development within the West Placer Specific Plan area shall incorporate the following land use buffers, according to the standards of buffer zones contained in the Placer County General Plan, Part I (page 19).

   a. Agricultural/Timberland
   b. Industrial/Residential
   c. Sensitive habitat

In addition, the project shall include elements in its design, which provide buffers between urban areas within the boundaries of the Specific Plan area and rural residential development in Sacramento County.
5. Transit: A public transit system shall consist initially of an express bus system and dedication of right-of-way corridor for possible future light rail transit with a feeder bus network.

6. Urban design: Development within the West Placer Specific Plan area shall be planned and designed to comply with the following standards:

   a. Urban form. The specific plan and project plans for development shall provide for up to two mixed, pedestrian-oriented village or towns and a single, larger town center. Village areas should be surrounded by buffer lands, low-density single-family, and/or regional employment and commercial. Mixed-use (commercial, professional office, and high-density residential) nodes, commercial centers, and regional employment areas are to be established at sufficient densities to support express bus transit service between adjoining villages and nearby urban centers (e.g., other new growth areas or incorporated cities). Each village should contain all public facilities and services necessary for its development.

   b. Town center. The specific plan area should contain one large town center that will operate as the institutional and social focal point of the community. The town center is to contain, at a minimum: a community meeting facility; formal outdoor gathering areas (e.g., amphitheaters); and the main offices and facilities for law enforcement, fire, library, and other public services. Public, quasi-public, and institutional facilities should be centrally located in the town center.

   c. Village core areas. Mixed-use commercial core areas should be developed to provide service and neighborhood commercial needs, professional services, public, quasi-public, and institutional facilities, and high-density residential uses. Village core areas shall contain transit services to connect to nearby village areas, commercial centers, and regional employment areas, and to destinations beyond the boundaries of the specific plan area.

   d. Public gathering areas. Commercial areas within town centers and village core areas shall be enhanced by incorporating outdoor public gathering areas into their design. Such areas are intended to facilitate social interaction by area residences and employees.

   e. Community open space areas. Each village area should contain a village green to be located adjacent to, or integrated into, the village core area. Community parks should be located adjacent to major open space and roadway corridors (see items i. and j. below). Community parks may serve as buffer areas between conflicting land uses (see the standards for Land Use Buffer Zones in the Placer County General Plan in Part 1, page 19), within or adjacent to the specific plan area. All developed and undeveloped park areas should be linked by a system of greenways and parkways containing pedestrian and bicycle paths separated from vehicular traffic.
f. Pedestrian-oriented design. Town center, village core, and regional employment areas shall be planned and designed to be pedestrian, bicycle, and transit accessible. Design elements that accommodate pedestrian and cyclists should take precedent over elements that primarily accommodate automobiles.

g. Commercial areas:

(1) New commercial buildings shall be designed to provide maximum pedestrian accessibility. Primary ground floor commercial building entrances should orient to plazas, parks, or pedestrian-oriented streets rather than interior blocks or parking lots. Anchor retail buildings may have their entries from off-street parking lots; however, on-street entries are strongly encouraged.

(2) Street-level windows and numerous building entries are encouraged in town centers and village core areas. Arcades, porches, bays, and balconies are encouraged.

(3) If a wall of a primary commercial establishment does not have an entry on a pedestrian route, it shall include windows, display areas, and/or be lined with retail shops to provide visual interest to pedestrians.

(4) Entries into small shops and offices shall orient directly onto a pedestrian-oriented street. Buildings with multiple retail tenants should have numerous entries onto the street. Small, single-entry malls should be avoided. Off-street parking should be located to the rear of buildings with walkways leading to the street and entry.

(5) Commercial development shall be designed to provide varied and interesting building facades to provide pedestrian orientation. Building designs should provide as much variety as possible without creating a chaotic image. Facades should vary from one building to the next, rather than create an overly unified frontage. Covered walkways should be provided whenever possible.

h. Residential areas. Residential areas shall consist of the following three types:

(1) Village Residential. These areas shall be located within walking distance of a village commercial core area. The housing should consist of high-density single-family (with or without carriage or secondary dwelling units) and multi-family units.

(2) Single-family Residential. These areas should surround village residential areas at densities consistent with suburban residential development (e.g., four to seven dwellings per acre). Subdivision design should provide
opportunities for pedestrian and bicycle access to village core areas. Physical separation of single-family residential areas by such means as sound walls, berms, and major roads should be discouraged. Single-family residential areas should be incorporated into their village so village residential and single-family residential areas function as a single unit and are not separated by physical or design characteristics.

(3) Rural Residential. These areas should be located in buffer zones within the specific plan boundaries. Rural land uses shall only be considered in areas where residential land use is consistent with the standards in Part I for buffers (page 19). Rural residential densities of 0.2 dwellings per acre or more shall be allowed only when public sewer and water facilities are provided.

i. Open space corridors. Existing and proposed linear open space corridors should be developed as a pedestrian, equestrian, and/or bicycle trail system. Existing corridors include, but are not limited to, stream and riparian areas (e.g., the Dry Creek corridor), power line easements, abandoned rail rights-of-way, existing public trails, and existing public roads and bridges that may be ultimately abandoned. The Dry Creek corridor shall be designed to provide bicycle/equestrian/pedestrian connections to similar facilities in Sacramento County near Gibson Ranch Park.

j. Roadway corridors. Collector and arterial roads shall be designed as landscaped corridors, including separated bicycle and pedestrian facilities within landscaped or native open space corridors and landscaped berms and medians.

7. Phasing of Development: Phasing shall maintain a balanced mix of land uses throughout development of the Specific Plan area and shall address necessary infrastructure and other relevant issues. Development in the West Placer Specific Plan area shall be required to proceed in a logical fashion.

8. Agricultural water supply: Development within the Specific Plan area should assist in the provision of affordable agricultural water to surrounding agricultural lands. Sources of such agricultural water include reclaimed and retained water and newly developed surface water sources.

9. Noise: Development within the Specific Plan area shall be designed to avoid aircraft noise impacts on noise sensitive uses, resulting from operations at McClellan Air Force Base. No residential land uses shall be permitted in areas which exceed noise levels indicated in Table 9-3, page 122 of the Placer County General Plan.

WEST ROSEVILLE SPECIFIC PLAN

The Roseville 2020 General Plan (adopted February 4, 2004) discusses planning efforts for the West Roseville Specific Plan (WRSP), which is located north of the eastern portion of the project...
site. The WRSP was configured to include a 267-acre open space buffer along the western edge to provide a transition between urban uses in Roseville to existing uses in unincorporated Placer County. The WRSP land use plan includes a blend of residential, service, employment, open space and public uses. The WRSP area will house approximately 20,810 residents and 3,726 employees and contains approximately 3,150 acres. At buildout, the WRSP area will contain approximately 8,500 dwelling units, 200 acres of commercial/office development, and 980 acres of public facilities including open space.

The WRSP is west of Fiddyment Road, where the City established by City Council action (May, 2001) a set of 13 “Guiding Principles” to act as performance measures for any potential development proposals in that area (including projects in the WRSP). The Guiding Principles are not intended to be inclusive of all City development requirements, but rather supplement those requirements by identifying or emphasizing concepts particularly important or unique to potential new development areas. These Guiding Principles are listed as follows:

- Fiscal Health
  1. Any development proposal west of Roseville shall, on a stand-alone basis, have an overall neutral or positive fiscal impact on the City’s General Fund services.

- A Well Planned Community

- A Strong Community Identity and Sense of Place
  2. Any development proposal west of Roseville shall include logical growth/plan boundaries and an east to west growth pattern.
  3. Any development proposal west of Roseville shall not conflict with the Pleasant Grove Wastewater Treatment Plant and future Power Generation Facility.
  4. Any development proposal west of Roseville shall maintain the integrity of existing neighborhoods and create a sense of place in new neighborhoods.

- Community Infrastructure that is Complete and Up-To-Date

- A Healthy, Safe and Secure Community

- The Highest Quality Community Services and Organizations
  5. Any development proposal west of Roseville shall include a plan to ensure full funding and maintenance of improvements and services at no cost to existing residents (including increased utility rates). A proposal shall not burden/increase the cost, or diminish the supply and reliability of services.
  6. Any development proposal west of Roseville shall aid in regional traffic solutions and in right of way preservation.
7. Any development proposal west of Roseville shall secure and provide a new source and supply of surface water and should include reduced water demand through the use of recycled water and other offsets.

8. Any development proposal west of Roseville shall consider development potential within the entire MOU Transition Area in the design and sizing of infrastructure improvements.

9. Any development proposal west of Roseville shall aid in resolution of regional storm water retention.

10. Any development proposal west of Roseville shall incorporate mechanisms to ensure new schools are available to serve the residents and shall not impact existing schools.

- Outstanding Recreational Opportunities

11. Any development proposal west of Roseville shall include a significant interconnected public open space component/conservation plan in coordination with the City of Roseville/USFWS Memorandum of Understanding.

- An Active, Educated and Involved Citizenry

12. Any development proposal west of Roseville shall include a public participation component to keep the public informed and solicit feedback throughout the specific plan process.

- A High Quality of Life

13. Any development proposal west of Roseville shall provide a “public benefit” to the City and residents.

In 1995, the County and City of Roseville entered into a Settlement Agreement and Release as a result of the City's lawsuit challenging the adequacy of the environmental impact report for the Placer County General Plan Update. The Settlement Agreement provides for a consultative process between the County and City for future projects in western Placer County, including the approval of a specific plan for the West Placer Specific Plan Area (now the Placer Vineyards Specific Plan area). The consultation process includes discussions regarding the type of CEQA documents to be prepared, the models, assumptions, methodologies and projections to be used in analyzing traffic, service and other impacts on the City, the alternatives to be considered and potential mitigation measures. This process has been followed during the preparation of this EIR and is reflected in the analysis is contained in each of the EIR’s topical discussions.

SUTTER COUNTY GENERAL PLAN

The Sutter County General Plan designates most of the area adjacent to the Specific Plan area as Industrial-Commercial (I-C) Reserve. In November of 2004, Sutter County residents approved
“Measure M” for a ‘new town’ project in a 10,500-acre area within the IC area. “Measure M” confirmed that a majority of residents are in favor of mixed-use development of the area including at least 3,600 acres for business/industrial uses, 1,000 acres of community facilities such as schools, parks, and retail, and a maximum of 2,900 acres of residential development, with a maximum of 17,500 dwelling units

**SACRAMENTO COUNTY GENERAL PLAN**

The unincorporated area of Sacramento County south of the Specific Plan area falls within the Rio Linda/Elverta Community area. A community plan for this area was adopted by the Board of Supervisors in June 1998. The land use designations for the area immediately south of the Placer/Sacramento County line are Agricultural-Residential 2 and Agricultural-Residential 10. Both designations have an Agricultural-Residential Preservation Area (ARPA) overlay attached. Community Plan Policy LU-30 reads as follows:

> An Agricultural-Residential Preservation Area (ARPA) overlay land use category shall be placed on all land designated in an agricultural-residential land use category on the Land Use Diagram. The purpose of this overlay category is to highlight the importance of protecting agricultural-residential land from urban encroachment in Rio Linda and Elverta, to demonstrate a commitment to maintaining an agricultural-residential lifestyle, and to establish a basis for applying an Agricultural-Residential Preservation Area (ARPA) overlay zone, should such a zoning category be created and incorporated into the Zoning Code in the future.

A proposed specific plan is under consideration by Sacramento County for the Elverta area. The Elverta Specific Plan encompasses 1,734± acres. If this project is approved as proposed, this area at buildout will contain approximately 4,950 dwelling units, 15 acres for commercial development, 20 acres for elementary school uses, 4 acres for office/professional uses, and 73 acres for community centers/neighborhood parks. The portion of the Placer Vineyards Specific Plan area immediately adjacent to the county line is designated Agricultural Residential one to five acres. This plan was conceptually approved by the Sacramento Policy Planning Commission in January 2004.

**PLACER LEGACY PROGRAM**

The Placer County Board of Supervisors has established the Placer Legacy Open Space and Agricultural Conservation Program, commonly referred to as the Placer Legacy Program. The goals and objectives of the Placer Legacy Program were adopted in April 1998. The purpose of this program is to protect and conserve open space and agricultural lands in Placer County. The program was developed to implement the goals, policies and programs of the 1994 Placer County General Plan. In addition to implementing the General Plan, this program supplements existing open space and conservation programs. The County Parks department continues to develop park and recreation facilities for county residents. The County still requires mitigation for impacts to open space and natural resources in approvals of individual development projects. The Placer Legacy Program complements existing programs and has the potential to supplement
existing efforts to make them more successful. The program further enables the County to achieve compliance with federal and State laws pertaining to endangered species, natural community conservation planning, wetlands and streams.

The Placer Legacy Program provides conservation objectives for the Agricultural Valley portion of the county, which includes the Specific Plan area. It is acknowledged that growth pressures abound in this area due to the proximity of urban development adjacent to farmlands, and also due to major infrastructure improvements adjacent to or within this area. Land speculation is particularly intense in the Pleasant Grove watershed west of Roseville. Proximity to urban infrastructure and the proposed Placer Parkway extension are serving as potential magnets for new development.

One of the Placer Legacy Program opportunities that has been identified is acquisition of easements. According to the Placer Legacy Program document, this is an area in which Placer Legacy can have a significant impact on the future landscape via the acquisition and/or donation of conservation easements and fee title. Because of the importance of agriculture in this area, multiple-use easements allowing farmers to keep much or most of their land in some type of agricultural production are the most suitable. Outright fee title purchase is more appropriate for non-farmed properties with high-value, relatively undisturbed natural communities. This applies primarily to areas immediately adjacent to cities, which are compatible with agricultural uses but currently have more passive management.

One strategy identified that may be pursued in this area is to purchase for-sale agricultural land, encumber it with a conservation easement, and sell it to a farmer at a reduced cost. Such an effort may assist in maintaining a viable agricultural sector in Placer County, as it provides opportunities for younger generations to enter into agriculture at a cost that is more consistent with farming revenues. The Placer Legacy Program is currently designed to apply to persons who voluntarily choose to place conservation easements on their property or sell it for conservation purposes (“willing sellers”).

Placer County, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service entered into a Natural Community Conservation Planning (NCCP) Agreement on September 10, 2001. The agreement concerns the development of joint conservation plans under the California Natural Community Conservation Planning Act (NCCPA) and the federal Endangered Species Act (FESA) for the Placer Legacy Program.

Based on input and analysis for the Scientific Working Group, the Citizens Advisory Committee and the public, the County identified guidelines for preparation of joint natural community conservation plans/habitat conservation plans. These guidelines have been incorporated into the Placer Legacy Program’s implementation documents, the Placer Legacy Program Summary Report (June 2000), and the Placer Legacy Program Implementation Report (June 2000). These guidelines may be modified during development of the NCCP/HCPs to fulfill the requirements of State and federal law.

The parties listed above and other public agencies have entered into the “Framework Agreement regarding the Planning, Development and Implementation of the Placer Legacy Program”, which
established a framework for cooperation and collaboration among State and federal agencies and local governments in the development and implementation of the Placer Legacy Program. It describes opportunities for partnership and collaboration among the County, cities in Placer County, the PCWA, and State and federal regulatory and land management agencies in the development of the Placer Legacy Program.

The parties agreed that projects, actions, and activities proposed or implemented within areas covered by the Agreement during preparation of the corresponding NCCP/HCP should not compromise its successful development or implementation. The parties further agreed that interim projects should not be delayed solely due to preparation of the NCCP/HCP. The agreement established interim project review guidelines. The proposed Placer Vineyards Specific Plan is subject to the guidelines included in the Agreement, which are summarized below:

7.1 Permitting by the Wildlife Agencies. The Wildlife Agencies will issue or deny permits or approvals for and complete regulatory reviews of Interim Projects in accordance with CESA and FESA and other applicable State or Federal law. Consistent with their respective legal authorities, the Wildlife Agencies may request or require project design features or mitigation measures that complement a proposed NCCP/HCP. But the Wildlife Agencies will not delay or suspend issuance of a permit or approval for an interim project due solely to the preparation of the NCCP/HCP.

7.2 Identification of areas with high, long-term conservation value. The Wildlife Agencies may provide maps, as data and time allow, that identify areas with high long-term conservation value that are potentially crucial elements of a regional preserve system designed to adequately conserve habitat for Target Species and proposed Covered Species. The purpose of the maps would be to assist the County in making land use decisions that do not compromise the successful development or implementation of the NCCP/HCPs. The County will specifically identify for the Wildlife Agencies the Interim Projects within the areas identified as having high long-term conservation value on the Wildlife Agencies’ maps.

7.3 Discretionary approvals by the County. The County will approve or disapprove Interim Projects in accordance with the County’s established standards and processes. However, to ensure that Interim Projects will not compromise the successful development or implementation of the NCCP/HCP, and to facilitate CESA and FESA compliance for Interim Projects that require it, the County agrees to confer with the Wildlife Agencies about certain projects that will require a discretionary approval from the County or will be carried out by the County.

7.4 Informal conference. The Parties agree to meet and confer at the request of any Party to discuss any Interim Project that has been identified by the County in accordance with this Section 7.4. The Parties will meet and confer at least once a month for this purpose, unless otherwise agreed by the Wildlife Agencies and the County. The purpose of the conference will be to evaluate whether an Interim Project identified by the County, together with any proposed mitigation measures, would compromise the successful
development or implementation of the NCCP/HCP being prepared for the Planning Subarea in which the project would occur and, if so, what feasible actions would make the project compatible with the successful development and implementation of the NCCP/HCP. This Section 7.4 does not restrict the County’s discretionary authority with regard to Interim Projects; nor does it give the Wildlife Agencies the authority to approve or disapprove Interim Projects. The Parties recognize that the Wildlife Agencies will retain their authority and responsibility for implementation and enforcement of CESA, FESA and other State and Federal wildlife protection laws. However, by agreeing to confer about Interim Projects when they are initially proposed, the Parties intend to create an opportunity to address the projects’ potential impacts to species listed in Exhibit 2 or natural communities identified in Section 6.3.4 expeditiously and in coordination with the County’s project review process.

4.1.5 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the County has devised three criteria for judging potentially significant impacts that are related to land use and planning. Placer County has determined that two of the three are relevant to the proposed Specific Plan:

- The project would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

- The project would conflict with any applicable habitat conservation plan or natural community conservation plan.

Because the policy language found in a County’s general plan is susceptible to varying interpretations, it is often difficult to determine, in an EIR, whether a proposed project is consistent or inconsistent with such policies. Case law interpreting the Planning and Zoning Law (Gov. Code, Section 65000 et seq.) makes it clear (i) that the meaning of such policies is to be determined by the Board of Supervisors, as opposed to County staff, EIR consultants, applicants, or members of the public, and (ii) that the Board of Supervisors’ interpretations of such policies will prevail if they are “reasonable,” even though other reasonable interpretations are also possible. (See No Oil, Inc. v. City of Los Angeles [1987] 196 Cal.App.3d 223, 245-246, 249.) Courts have also recognized that, because general plans often contain numerous policies emphasizing differing legislative goals, a development project may be “consistent” with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some such policies. (Sequoyah Hills Homeowners Association v. City of Oakland (1993) 23 Cal.App.4th 704, 719.) Furthermore, courts strive to “reconcile” or “harmonize” seemingly disparate general plan policies. (No Oil, supra, 196 Cal.App.3d at p. 244.)
In light of these considerations, the discussions of General Plan (and Exhibit 1 of the Community Plan) consistency in this chapter – and indeed throughout this Revised Draft EIR – represent the best attempt of its authors to advise the Board of Supervisors of their opinions as to whether the proposed project is consistent with identified goals and policies of the General Plan and Exhibit 1 of the Community Plan. The public should recognize that the opinions expressed below are in no way binding on the Board of Supervisors, and may be contrary to the position ultimately adopted by the Board of Supervisors in the exercise of its discretion.

With regard to agricultural resources, the County has drawn from Appendix G the following three criteria which Placer County uses to judge potentially significant impacts:

- The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

- The project would conflict with existing zoning for agricultural use or a Williamson Act contract.

- The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

In addition to the above, the following criteria will be used to judge the significance of impacts:

- The project would result in the development of incompatible uses and/or the creation of land use conflicts.

- The Placer County Agricultural Commissioner, Planning Department, and the UC Cooperative Extension have concluded that loss of Farmland of Local Importance (which has impacts on the local economy, wildlife habitat, and visual open space) represents a potentially significant impact.

4.1-1 There could be conflicts with applicable land use plans, policies and regulations and the proposed Specific Plan.

Exhibit 1 of the Dry Creek/West Placer Community Plan provides standards for development of the Specific Plan area. Maximums are established for the number of dwelling units as well as for commercial and industrial acreage. The standards emphasize the need to establish buffers between the Specific Plan area and other uses, and between uses within the Specific Plan area. The policies regarding buffers in Exhibit 1 refer to the operative provisions of the Placer County General Plan, which provide quantitative standards for buffer dimensions and other features, as described in Section 4.1.3 above. These standards are set forth as ranges.

The Community Plan standards provide for up to two mixed pedestrian-oriented villages or towns along with a larger town center. The larger town center is to operate as an institutional and social focal point and should be centrally located. Villages should contain a mixed-use core area to provide for services and neighborhood needs and shall contain transit services to nearby
village areas, commercial centers and regional employment centers. Designs for commercial areas are to incorporate outdoor public gathering areas. Village areas are to contain a village green along with community parks adjacent to major open space and roadway corridors. All park areas are to be linked by a system of greenways or parkways. Design elements within the Specific Plan that focus on bicyclists and pedestrians should take precedence over elements that primarily accommodate automobiles. Pedestrian-friendly environments should be strengthened by commercial area design standards that emphasize pedestrian accessibility and interest, and de-emphasize the automobile.

Three types of residential uses are prescribed, which include Village Residential (high-density single-family and multi-family), Single-Family Residential (four to seven dwelling units per acre) and Rural Residential. Existing corridors, including Dry Creek, the utility line corridors and the abandoned rail right-of-way are to be developed as open space corridors for use by pedestrians, equestrians and bicyclists. The Dry Creek corridor should connect with Gibson Ranch Park in Sacramento County. Collector and arterial streets are to be designed as landscaped corridors with separate bicycle and pedestrian facilities.

When comparing the Specific Plan to the above requirements, several observations have been made regarding consistency with applicable land use plans, policies and regulations:

- The maximum number of dwelling units permitted by Exhibit 1 within the Specific Plan area is 14,132, although it is acknowledged that this density may not be achieved due to development constraints. An acceptable mix of non-residential uses includes a maximum of 80 acres for commercial, 160 acres of office and professional development, and to up to 300 acres of professional/light industrial development for a total of up to 540 acres of employment-generating uses. The Specific Plan proposes a total of 14,132 dwelling units, which is consistent with Exhibit 1. The Specific Plan proposes development of 67.5 acres of commercial, 67 acres of commercial mixed-use, 160.5 acres of business park/power center, and 34.5 acres of office, for a total of 329.5 acres of employment-generating uses. It is assumed that there will be overlap with the commercial, business park/power center, office uses and the mixed-use commercial. The above described allocations do not appear to pose a land use-related physical impact on the environment.

- Exhibit 1 of the Community Plan provides that the phasing of the Specific Plan shall maintain a balanced mix of land uses throughout the development of the Specific Plan area. Although the proposed Specific Plan does not propose a phasing plan, Figure 3-15 in Chapter Three of this Revised Draft EIR conceptually shows 2015 land absorption assumptions (initial phase of development) that have been used during preparation of this Revised Draft EIR. The land absorption assumptions appear to generally attain the balanced mix of the land uses goal through inclusion of the Town Center. However, the absorption assumptions may not fully reflect the various policies and guidelines pertaining to the village concept. The initial development appears to be linear in nature, being spread out along major internal roadways. The above described concerns regarding development form do not, however, appear to constitute a land use-related physical impact on the environment.
- A 200-foot open space corridor is shown along the southern border of the Specific Plan area buffering low-density development from the Elverta Specific Plan area per Exhibit 1 of the Community Plan, and open space corridors are also shown along the southeastern border of the Specific Plan area buffering the low- and medium-density residential development from Dry Creek. Additionally, various other open space corridors are described as buffers separating uses within the Specific Plan area. Although the Specific Plan describes various buffering concepts (see Section 4.2 of this Revised Draft EIR for a more in depth presentation of these concepts), it may not achieve the level of buffering envisioned by Exhibit 1 of the Community Plan, which emphasizes the need to establish buffers between the Specific Plan area and other uses, and between uses within the Specific Plan area. For example, only a 50-foot buffer is provided in the vicinity of Gibson Ranch Park in Sacramento County and the Specific Plan area. However, precise buffer requirements for facilities such as Gibson Ranch Park are not spelled out in the General Plan or Community Plan.

Site-specific buffering is also not shown on the Specific Plan Land Use Diagram separating the SPA from more intensive land uses; however, a Specific Plan policy (Policy 7.16) provides for a minimum 50-foot separation between Specific Plan-proposed uses and the SPA. In addition, design techniques are recommended to allow for a compatible transition zone at the SPA edge. In addition, Business Park areas may not be adequately buffered from all residential areas, and the 200-foot to 300-foot buffer separations described in the Placer County General Plan may not be achieved. Policy decisions that will ultimately be made by the Board of Supervisors will determine the final interpretation of such matters.

Curry Creek has transitioned from an intermittent to a perennial stream, probably due to an increase in urban runoff. The Placer County Zoning Ordinance requires a 100-foot centerline setback for all structures adjacent to a perennial stream. In addition, Figure 1-5 of the General Plan also describes a 100-foot setback from the centerline of perennial streams. The Specific Plan was reviewed to determine if this structural setback was achievable and was found to comply.

- Exhibit 1 of the Community Plan requires dedication of right-of-way for possible future light rail with a feeder bus network. The Specific Plan does not reflect a dedicated right-of-way for light rail purposes. However, the Specific Plan reserves a right-of-way along Watt Avenue for Bus Rapid Transit, which could be converted to or used for light rail. In addition, the Specific Plan shows a lane reserved for street cars along Town Center Drive between the west and east Village centers. Impacts regarding transit are addressed in Section 4.7 of this Revised Draft EIR.

In the interest of fairness, County staff notes that, as to some of the issues discussed above, the project applicants maintain that their proposed Specific Plan, as submitted, does not raise any potential General Plan inconsistencies, as identified above. For example, with respect to the question of whether, within the Specific Plan area, there must be physical buffers between urban or suburban uses and the rural residential uses remaining in the SPA area, the applicants note that buffer language contained in pertinent General Plan Policies (1.H.5, 1.H.6, 7.B.1, 7.B.2 and urban design item h(3)) refer to buffers between agricultural uses (not rural residential uses) and...
conflicting uses. Policy h(3) requires only that “rural residential buffers should be located within the specific plan boundaries.” These policies, the applicants observe, do not appear to require a buffer between rural residential properties and other more intensive land uses within the Specific Plan area.

In any event, although proposed buffers may not be fully consistent with the goals, policies, standards and guidelines of the Placer County General Plan, Exhibit 1 of the Dry Creek/West Placer Community Plan and related documents for land use and development, these potential inconsistencies should be viewed as policy matters to be determined by the Board of Supervisors. This impact is therefore less than significant. Specific physical environmental effects related to buffers, and the proposed amendment to the County General Plan, are discussed below and in other sections of this Revised Draft EIR. Moreover, even if the Board of Supervisors determined that the proposed buffers did not fully comply with existing General Plan policies, the Board could nevertheless approve the applicant’s proposed buffers by adopting the proposed amendments to General Plan policies 1.H.5 and 1.H.6, as well as amendments to narrative languages on page 21 of the General Plan (see Section 3.1 in Chapter Three of this Revised Draft EIR).

Mitigation Measure

No mitigation measures are required.

4.1-2 There could be potential conflicts with a habitat conservation plan or natural community conservation plan.

Placer County, the California Department of Fish and Game (CDFG), the U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA) entered into a NCCP Agreement on September 10, 2001. The agreement concerns the development of joint conservation plans under the California NCCPA and the FESA for the Placer Legacy Program. Refer to the Regulatory Setting discussion in this section for a description of the Agreement and Placer Legacy Program. The parties agreed that projects, actions, and activities proposed or implemented within areas covered by the Agreement during preparation of the corresponding NCCP/HCP should not compromise its successful development or implementation. The parties further agreed that interim projects should not be delayed solely due to preparation of the NCCP/HCP. The agreement established interim project review guidelines, and the proposed Specific Plan is subject to the guidelines included in the Agreement. The Specific Plan area has not been identified as an area for protection under the Placer Legacy Program. For a discussion of the Placer County Conservation Plan (now in preparation), and land proposed for protection by the Specific Plan applicants, see Section 4.4 of this Revised Draft EIR. This impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.
Agricultural land, including “Important Farmland” would be converted to non-agricultural uses.

The Specific Plan area includes approximately 4,451 acres of agricultural land; however, approximately 225 acres of this land are within the area designated as SPA. Agricultural land within the SPA will not be directly affected by the proposed project, and will remain in its current zoning categories (Residential-Agricultural and Farm) minimum. Of the remaining 4,225 acres of agricultural land, 4,140 acres are classified as “Important Farmland” by the DOC and local policy. Table 4.1-5 provides acreages by farmland designation for the portion of the Specific Plan area to be developed.

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<th>Farmland Designation</th>
<th>Acreage</th>
<th>Percentage of Development Area</th>
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<td>99.4</td>
</tr>
</tbody>
</table>

Source: Department of Conservation, Farmland Mapping and Monitoring Program, 2005

Once developed, these lands would no longer be available for agricultural uses. Even land within the Specific Plan area that is preserved as open space would be unlikely to be farmed, because it would be comprised primarily of natural areas and drainages surrounded by urban development. Therefore, development of the Specific Plan area at buildout would result in the loss of approximately 4,225 acres of agricultural land, and all active agricultural production within the Specific Plan area. The loss of agricultural land, including “Important Farmland,” and agricultural activity is considered a significant impact.

The Placer County General Plan discourages the expansion of urban uses into agricultural areas (Policy 1.H.2), but does allow such conversion if within community plan areas (Policy 1.H.4). Because the Specific Plan area is within the adopted Dry Creek/West Placer Community Plan area, and because Exhibit I to the 1994 Placer County General Plan expressly contemplated significant urban development in the area, development of the Specific Plan area is consistent with the General Plan.

Mitigation Measure

Implementation of the following mitigation measure will substantially lessen the significant impact relating to the loss of agricultural land, including “Important Farmland”, but will not mitigate the impact to a less than significant level. Therefore, the impact will remain significant and unavoidable:
4.1-3 Implement Mitigation Measure 4.4-1a as it pertains to open space. In determining whether lands to be preserved under Mitigation Measure 4.4-1a adequately compensate for the loss of agricultural land due to development of the Specific Plan, the Planning Director shall consult with the Agricultural Commissioner prior to approval of any Open Space Mitigation and Management Plan prepared pursuant to Mitigation Measure 4.4-1a. For purposes of calculating the amount of agricultural land to be preserved off-site, no credit shall be given for on-site open space that is to be preserved under the Specific Plan. However, in reviewing Open Space Mitigation and Management Plans pursuant to Mitigation Measure 4.4-1a, and specifically in determining whether “substantial portion[s]” of the mitigation lands are in agricultural production or have the potential for agricultural production, the County may determine that Open Space and Mitigation Management Plans with very substantial percentages of agricultural acreage can also provide compensation for on-site open space acres that are not suitable for agriculture.

Owners of approximately 4,251 acres are participating in development activities within the Specific Plan area (calculations herein exclude the SPA where no conversion of agricultural land is proposed). Although approximately 714 acres of natural open space will occur on-site, the agricultural value of these open space areas will be negligible due to their fragmented nature and primary value for other forms of open space.

As set forth in Section 4.4 of this Revised Draft EIR, the County and the applicants have developed a strategy to mitigate the loss of open space, agricultural land and biological resources resulting from the development of the Specific Plan. Under Mitigation Measure 4.4-1a, a substantial amount of open space must be preserved elsewhere, preferably within Placer County, to offset the loss of open space due to Specific Plan area development. The mitigation acreage is likely to be located primarily or entirely within western Placer County, where the vast majority of undeveloped areas are currently devoted to agricultural activities of some sort.

As shown in Figure 4.4-7 in Section 4.4 of this Revised Draft EIR, Placer Vineyards property owners have begun to acquire lands to satisfy mitigation requirements likely to arise under this Revised Draft EIR and an approved Specific Plan. Those lands are spread over the western Placer County area. Figure 4.1-8 shows the proposed acquisition areas and the Important Farmlands within them. Table 4.1-6 reflects acreages of Farmlands identified within the proposed acquisition areas.

<table>
<thead>
<tr>
<th>Farmland Designation (FMMP)</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>L – Farmland of Local Importance</td>
<td>1,505</td>
</tr>
<tr>
<td>P – Prime Farmland</td>
<td>594</td>
</tr>
<tr>
<td>S – Farmland of Statewide Importance</td>
<td>6</td>
</tr>
<tr>
<td>U – Unique Farmland</td>
<td>1,128</td>
</tr>
<tr>
<td>G – Grazing</td>
<td>102</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,335</td>
</tr>
</tbody>
</table>

Source: Department of Conservation, Farmland Mapping and Monitoring Program, 2006
The acreage identified in Table 4.1-6 would partially compensate for agricultural land loss, but additional preserves will be required. It is expected that loss of open space will be fully compensated for under the requirements of Mitigation Measure 4.4-1a and applicant proposals, and, at a minimum, 4,250 acres of open space containing agricultural land will be acquired and preserved. While the preserved land would be protected from future development, there will still be a net loss in land available for agriculture and a net loss of Farmland. In addition, preservation could occur in areas that do not have soil characteristics similar to those of the Specific Plan area. Therefore, while this mitigation would substantially lessen the significant impact relating to the loss of agricultural land, including “Important Farmland,” it would not fully offset that loss.

4.1-4 Conflict with a Williamson Act contract could occur.

There are no parcels within the Specific Plan area that are currently under Williamson Act contract. Approximately 90 acres were subject to a Williamson Act contract that expired in January 2005. One contracted Preserve, approximately 206 acres in size, exists on the north side of Baseline Road adjacent to several rural residences. Although currently designated for agricultural use by the General Plan, a portion of the Preserve is within the proposed Curry Creek Community Plan area, and much of the southern perimeter of the Preserve is already bordered by existing residences. Development of the Specific Plan area will not alter this circumstance. Further, a major thoroughfare approximately 100 feet in width (Baseline Road) will separate future development from the Preserve area. Proposed development along the south side of Baseline Road within the Specific Plan area will be non-residential in nature, consisting predominantly of Business Park and Commercial forms of development. The nearest residentially designated land to the Preserve within the Specific Plan area would be approximately 700 feet away.

The Placer County General Plan provides for agricultural buffers, as described in Section 4.1.4 above. Because the affected Preserve area may be used for rice production, the buffer should be 200 to 800 feet (and may be established anywhere within this range by a Specific Plan), and must include a 400-foot residential exclusion area. As described above, the nearest residential use to the Preserve would be approximately 700 feet away.

In order to comply with the above buffer requirements, buildings adjacent to the Agricultural Preserve along Baseline Road (also see Impact 4.1-7 discussion) should be set back at least 200 feet from edge of the affected Agricultural Preserve.

The Specific Plan proposes Policy 3.29, paragraph 3, that would require a 200-foot setback from the northern edge of the Baseline Road of right-of-way for all non-open space and non-infrastructure-related land uses located on the south side of Baseline Road along the portion of Baseline Road adjacent to any lands in Agricultural Preserve. Because the Specific Plan contains policy language addressing the potential concern, this is a less than significant impact.

Mitigation Measure

No mitigation measures are required.
4.1-5  Incompatible uses and/or creation of land use conflicts could occur within the Specific Plan area.

As discussed in Section 2.5 in Chapter Two of this Revised Draft EIR, the Specific Plan provides for a streamlined approval process for projects pursuant to Government Code Section 65457, Public Resources Code Section 21083.3 and CEQA Guidelines Section 15182 and 15183. Under these codes, projects may not be subject to further environmental review if County staff determines that the project is consistent with the Specific Plan and that this Revised Draft EIR addressed site-specific issues at a reasonable level of detail for the particular site at issue. This project streamlining also depends on how well the project has complied with mitigation requirements formulated and adopted in connection with Specific Plan approval. To assist with these determinations, the County has established a “subsequent conformity review process,” as described in Section 2.7 of Chapter Two in this Revised Draft EIR.

If the criteria are met most subsequent projects will typically be subject only to approval of tentative and final subdivision maps, improvement plans, and design review by the County, prior to issuance of building permits. As described in the Placer County Zoning Ordinance, through the Design Review process, applications are approved, conditionally approved, or denied, based on consistency with the design standards and guidelines established for each district and the Specific Plan area in general.

The Specific Plan provides for a mixed-use environment, which could lead to land use incompatibilities. Certain public and quasi-public land uses such as fire stations and the County corporation yard could also contribute to land use incompatibilities, particularly with regard to noise, light and glare. However, the Specific Plan contains a variety of techniques designed to ensure compatibility of uses and contains goals, policies and guidelines for this specific purpose such as: Goal 3.17 (Compatibility of adjoining land uses), Policy 3.29, (Compatibility of adjoining large lot rural and agricultural uses), Policy 3.30 (Compatibility of residential uses adjacent to commercial and employment uses), and the Design Guidelines included in Chapter VI of the Specific Plan. In addition, all proposed commercial and employment uses will be subject to Design Review, which will permit the County to review proposed uses for compatibility with adjacent existing and proposed land uses and impose compatibility requirements. Other sections of this Revised Draft EIR also contain discussions and proposed mitigation for potential incompatibilities. These include Mitigation Measure 4.2-6a related to alteration of views, Mitigation Measure 4.9-3 concerning control of stationary noise sources, and Mitigation Measure 4.9-4 designed to reduce traffic noise incompatibilities. Potential incompatibilities with the existing power line easements and substation within the Specific Plan area are also discussed under Impact 4.1-6 and agricultural conflicts are discussed under Impact 4.1-7. Light and glare from the County corporation yard and noise impacts related to the corporation yard and fire stations are discussed in Sections 4.2 and 4.9 of this Revised Draft EIR.

The concept of a mixed-use development is consistent with the goals and policies of the County’s General Plan. Based on Specific Plan content, the use of Design Review, and topic-specific mitigation contained in this Revised Draft EIR, the potential that incompatibility with surrounding development, or land use conflicts would result is a less than significant impact.
Mitigation Measures

No mitigation measures are required.

4.1-6 Land use conflicts could occur within the Specific Plan area due to the existing power line easements and proposed substation.

The Specific Plan area is crossed by electric transmission and distribution lines. These existing lines are part of WAPA, PG&E, and SMUD systems. The three power line easement corridors are primarily designated as open space under the proposed Specific Plan, which restricts intensive forms of development immediately adjacent to or under the power lines. Other related types of development proposed under the power lines includes a cemetery, religious site, and County corporation yard. The power line easements contain three 115kV transmission lines and seven 230kV transmission lines. In addition, a new 230/21Kv distribution substation is proposed for an approximately six-acre site located at the intersection of Palladay Road and A Street, contiguous to and west of the existing PG&E electric transmission line. Figure 3-10 in Chapter Three of this Revised Draft EIR illustrates the location of these existing power lines, the proposed open space corridors, and the proposed substation.

The transmission lines and a substation would emit electric magnetic fields (EMFs), which have been implicated in increased cancer risks in some studies (see Section 4.12 of this Revised Draft EIR for more detail). The substation, however, is substantially surrounded by non-residential land uses (see Figure 3-12 in Chapter Three of this Revised Draft EIR). In consultation with the California State Department of Health Services (DHS) and electric power companies, the California Department of Education has established the following standards for locating public schools near high-voltage power transmission lines:

1. A minimum of 100 feet from the boundary of a 50-133kV line easement
2. A minimum of 150 feet from the boundary of a 220-230kV line easement
3. A minimum of 350 feet from the boundary of a 500-550kV line easement

The ranges of voltage strength contained in these standards represent transmission lines used by utility companies in January 1993. According to utility companies, distribution line strength below 50kV is not standardized. The minimum distances contained in these standards are not based on specific biological evidence; rather, they are based on the fact that the strength of EMFs decreases to approximately background levels at these distances.

According to the Land Use Plan contained in the Specific Plan, the property lines of proposed school sites will be more than 200 feet from the existing 230kV lines in the Specific Plan area. No proposed school sites are in the vicinity of the existing 115kV lines in the western portion of the Specific Plan area.

Currently, there are no standards for locating residential uses near high-voltage power transmission line easements. However, the Land Use Plan does provide a buffer of at least 80 feet between residential property lines and the 230kV power line easement that runs east-west.
through the Specific Plan area, and a buffer of at least 35 feet between residential property lines and the 115kV and 230kV power line easements that run north-south.

Exhibit 1 of the Dry Creek/West Placer Community Plan suggests that the existing power line easements should be maintained as open space corridors and should be developed as pedestrian, equestrian, and/or bicycle trail systems. The Specific Plan proposes to use the power line easement that runs diagonally through the western portion of the Specific Plan area as well as the two power line easements that run in a north-south direction across the western portion of the Specific Plan area generally in this manner; however, a corporation yard, cemetery and religious site are also shown within the corridors, as shown in Figure 3-12 in Chapter Three of this Revised Draft EIR. Policy decisions that will ultimately be made by the Board of Supervisors will determine the final interpretation of the Specific Plan’s consistency with the Community Plan.

Although no standards exist for separation of residential uses from power lines and substations, it is prudent to apply the standard utilized for schools to such circumstances, due to the extended exposure residents would experience. This is a potentially significant impact.

Mitigation Measure

Through use of setbacks, this impact can be mitigated to a less than significant level with the following mitigation measure:

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

4.1-7 Land use conflicts could occur within and adjacent to the Specific Plan area between current agricultural uses and proposed development.

Because development will occur over a number of years, it is anticipated that some owners of land within the Specific Plan area will choose to retain their land in agriculture for a period of time while neighboring parcels may choose to develop. In addition, properties surrounding the Specific Plan area (including the SPA) could remain in agriculture for some period of time. This has the potential to place incompatible land uses in proximity to one another.

Although the Placer County General Plan contains standards for buffers between agriculture and other uses, the buffers are designed to be retained in perpetuity, depending on their width and size, and would not be workable where landowners have approved entitlements that could be exercised at any time, such as properties within the portion of the Specific Plan area proposed for urban development. General Plan Goal 7.B provides that it is the goal of the County: “To minimize existing and future conflicts between agricultural and non-agricultural uses in agriculturally-designated areas.” (emphasis added) Following Goal 7.B are several policies including 7.B.4 which supports the County’s Right to Farm Ordinance and State nuisance laws.
Agricultural buffers are also defined under the General Plan as those necessary to “…separate urban uses (particularly residential) from lands designated Agriculture…”

Properties north of Baseline Road are currently designated for Agriculture and properties within the SPA will remain in an Agriculture designation. Most of the affected area north of Baseline Road is within proposed urban development areas, including the Curry Creek Community Plan area and Sierra Vista Specific Plan area (and separated from the Specific Plan area by a major thoroughfare: Baseline Road). Most of the affected area north of Baseline Road is also used for grazing and is not actively cultivated. For grazing or pasture land, the General Plan establishes a 50 to 200-foot buffer. The setback provided by the future Baseline Road right-of-way (approximately 100 feet) will satisfy this buffer requirement. South of the Specific Plan area is the Proposed Elverta Specific Plan area and other proposed development projects within the Dry Creek/West Placer Community Plan area. West of the Specific Plan area are properties designated for development by Sutter County (see Figure 4.1-2).

In the case of lands designated for development, and where entitlements have already been issued, or are being actively pursued, the use of agricultural buffers would not appear to be warranted. This condition appears to apply to virtually all of the surrounding properties, with exception of the SPA, an area north of the existing community of Riego (Figure 4.1-2) and another area north of Baseline Road in Agricultural Preserve (see Impact discussion 4.1-4). The area north of the Riego area would be buffered by the SPA and is unaffected by Specific Plan development; however, the Agricultural Preserve area along Baseline Road and the southern and eastern perimeter of the SPA would potentially be affected, and should be subject to General Plan established agricultural buffers. The proposed Specific Plan contains policies, (Policy 3.1), Urban/Rural Transitions, (Policy 3.2) Aerial Spraying Conflicts, and (Policy 7.17) designed to buffer agricultural lands and the SPA from incompatible uses. Specific Plan policy (Policy 7.17) provides for a minimum 50-foot separation between Specific Plan proposed uses and the SPA, and provides for stepped down densities approaching or adjoining agricultural uses (see Figure 4.2-6 for buffer examples).

The majority of the SPA adjacent to the Specific Plan area is used as pasture. The General Plan requires a 50-foot residential exclusion area and a 50- to 200-foot buffer for other uses under such circumstances (the appropriate distance may be established anywhere within this range by a specific plan). All proposed uses adjacent to the SPA are residential or open space in nature.

The area within the proposed Elverta Specific Plan area that is adjacent to the Placer County line is proposed for an Agricultural Residential designation with a 1- to 5-acre minimum parcel size. In recognition of this, the Specific Plan includes a 200-foot wide open space buffer adjacent to the Elverta Specific Plan area. East of the Elverta Specific Plan area the open space buffer narrows to 50 feet and is generally adjacent to Gibson Ranch Park. There is, however, an area of existing private open space between the Placer Vineyards Specific Plan and Gibson Ranch Park that is approximately 200 feet wide at its western extremity and tapering to a point as it approaches Dry Creek at the east end of the parcel. The parcel does not appear to be used agriculturally and, therefore, the narrower buffer does not present an agricultural land use conflict issue. For a discussion of potential conflict between the Specific Plan and Gibson Ranch Park, see Impact discussion 4.1-1.
In summary, within areas designated for urban development, the County’s Right to Farm Ordinance is still available to protect those continuing in agriculture and the State’s nuisance laws are also still available to protect homeowners and the County. For the SPA, where agriculture will continue, Specific Plan policies have been proposed that meet the standards prescribed by the General Plan. Other buffer areas have also been proposed with Sacramento County. For properties in Agricultural Preserve north of Baseline Road, adoption of Specific Plan Policy 3.29 will mitigate any potential impacts to a less than significant level (see Impact discussion 4.1-4). Further, in the event the Board of Supervisors adopts the proposed amendments to General Plan policies 1.H.5 and 1.H.6, as well as amendments to narrative language on page 21 of the General Plan (See Section 3.1 in Chapter Three of this Revised Draft EIR), as a matter of policy, the potential conflict may no longer exist. However the Specific Plan applicants have demonstrated their willingness to comply with current policy through inclusion of Specific Plan Policy 3.29.

Mitigation Measure

No mitigation measures are required.

4.1-8 There could be potential conflicts with the principles contained in the SACOG Preferred Blueprint Plan, which could lead to physical impacts on the environment.

The SACOG Preferred Blueprint Plan is not legally binding on Placer County land use decisions. Even so, however, the Blueprint Plan embodies the closest thing to a regional consensus about how local land use agencies in the greater Sacramento region can best deal with growth management issues over the next several decades, and for this reason the County may exercise its discretion under CEQA to consider whether conflicts between the proposed project and the development principles of the Blueprint Plan could lead to potentially significant environmental effects. (See CEQA Guidelines, Section 15125, subd. (d) (“[t]he EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans”).) A detailed comparison of the environmental impacts of both the proposed project and the Blueprint Alternative is provided in Chapter Six of this Revised Draft EIR.

SACOG’s seven growth principles are intended to reduce the number and length of automobile trips and conserve natural resources. In the context of developing the Specific Plan project as proposed rather than under the Blueprint Alternative, the following potential impacts are considered:

- increased congestion on regional roadways as a result of less concentrated development in the Sacramento region compared with the Blueprint Alternative, which would theoretically draw development away from areas that are currently in open space
- increased air pollution as a result of a larger number of vehicle miles traveled by residents living within the project area
• increased air pollution as a result of the larger number of vehicle miles traveled because of the less concentrated development in the Sacramento region (greater distances to regional employment centers) compared with more compact regional development under the Blueprint Alternative

• less efficient use of natural resources, such as land, water and energy, associated with the greater number of large-lot, detached single-family homes.

• greater potential to impact sensitive species, wetlands, agricultural lands, and cultural and historic resources when less compact development forms are used to accommodate predicted population growth.

Development under the Blueprint Alternative is demonstrably more compact than under the proposed project. In residential-only land use designations, the Blueprint Alternative increases the overall density by 60% – from 5.4 dwelling units per acre to 8.6 dwelling units per acre. Commercial intensity increases are similar – with the exception of the Town Center commercial designation. The Blueprint Alternative also includes more mixed-use commercial, which means more dwelling units in proximity to commercial services and jobs, and a potential reduction in vehicle miles traveled as well as vehicle emissions.

The overall impact on vehicle trips also depends on overall commuting patterns in and out of the Specific Plan area. Under the Blueprint Alternative, the jobs-to-housing ratio actually drops from .69 to .45, which would appear to increase the number of residents traveling to jobs in other areas. The overall effect depends on the location of those jobs. If these commuters work in close-in job centers, such as McClellan Business Center and Roseville light industrial and office parks, then the effect of a low internal jobs-to-housing ratio will be minimized in favor of a more positive regional outcome. A full analysis and comparison of vehicle miles traveled is presented in the Section 4.7 of this Revised Draft EIR.

Another Blueprint growth principle designed to reduce vehicle trips and emissions is transit-oriented development. The Blueprint Plan concentrates high-density development along the BRT Line on Watt Avenue and other major thoroughfares that could potentially support bus and/or rail lines. It should be noted that the proposed project already clusters high-density development near potential transit corridors. However, the Blueprint Plan would increase the density in transit-oriented developments, intensifying the effect. Moreover, the increased density around transit corridors would make more frequent stops by buses and trains more economical, further encouraging ridership.

In terms of conservation of natural resources, the denser development of the Blueprint Plan will likely reduce per capita water consumption due to a decrease in irrigated landscaping associated with large residential lots. However, overall water consumption may go up since the decreased per capita water consumption may not entirely offset the increased water consumption from a 53% increase in total dwelling units. The PCWA has conducted a Water Supply Assessment, which is discussed in Appendix M and Section 4.11 in this Revised Draft EIR.
The Blueprint Plan also offers the potential to preserve habitat and avoid sensitive resources in other parts of the Sacramento region by providing an increased supply of housing that will otherwise over time, be built instead in areas that are currently in agriculture/open space. However, development under a Blueprint Alternative does not currently provide a mechanism for ensuring that this open space is not otherwise lost, with the exception of any purchases or easements that are secured as mitigation for loss of habitat or other resources as a direct result of the project.

In summary, failure to implement a land use plan that is consistent with the Blueprint Plan may result in potentially significant land use related impacts, as the County considers the Blueprint Plan to be an “applicable land use plan . . . adopted for the purpose of avoiding or mitigating an environmental effect” (see CEQA Guidelines, Appendix G, Sample Questions, Section IX). However, because of the large number of variables that Placer County does not control, (e.g., land use decisions on pending planning projects in surrounding jurisdictions such as Roseville, Lincoln, Rocklin, and Sutter and Sacramento Counties), Placer County cannot ensure through adoption of a SACOG Blueprint-compatible plan that the enumerated beneficial regional consequences would materialize. There is currently no feasible mitigation for this institutional impediment and the impact remains potentially significant.

Mitigation Measures

No mitigation measures are available (other than approval of the Blueprint Alternative, should the Board of Supervisors consider it desirable and feasible from a policy perspective).

4.1-9 Amendment of the County General Plan to allow project-specific buffers to be established with adoption of a Specific Plan could result in adverse environmental effects.

The current General Plan provides that buffers will be determined through the “…County’s specific plan, land use permit, and/or subdivision review process…,” but also establishes minimum standards that are reflected in Table 1-4, and Figures 1-2 through 1-6 of the Placer County General Plan. Through practice, it has been found that the minimum standards are not always compatible or workable in each situation. In addition, minimum standards tend to become maximum standards at the point of implementation. It is, therefore, proposed to amend the General Plan to permit the County to establish buffers that are specific and unique to the project under consideration. This exception would only apply when a specific plan is proposed, and subsequently adopted by the Board of Supervisors. Because adoption of a specific plan is a discretionary action requiring a full CEQA-related environmental review, any specific buffer proposals would be assessed for their environmental effects at the point a specific plan application is submitted. Because the proposed change would only become operative in association with a subsequent discretionary action this is a less than significant impact.

Mitigation Measures

No mitigation measures required.
**Off-site Infrastructure**

4.1-10  **There could be loss of farmland due to installation of utilities in off-site utility corridors.**

Some mapping units present in off-site utility corridors are classified as Prime Farmland or Farmland of Statewide Importance. Where construction will occur within existing roadways, no impact will occur. Where utility lines are placed on agricultural land, the area of surface disturbance or loss of agricultural use will be temporary during construction. Upon installation of lines, the surface use will be returned with the exception of minor points of access and pump stations. Potential impacts associated with utility line construction are considered *less than significant*.

**Mitigation Measures**

No mitigation measures are required.

4.1-11  **Land use conflicts could be created by expansion of existing wastewater treatment plants.**

It is anticipated that plant expansions could occur at either the DCWWTP and/or the SRWTP. This could result in a minor increase in plant footprint and activity within the existing facility sites. However, both facilities have been long established at their current locations for a significant period of time. DCWWTP is predominantly surrounded by open space and commercial/industrial activity, although there are scattered rural residences north and east of the plant. The most significant land use in proximity to the DCWWTP is the City of Roseville Corporation Yard.

The SRWTP treatment facilities currently occupy approximately 900 acres near the center of the 3,500-acre site. Permanent bufferlands surround the existing treatment facilities and planned expansion areas of the SRWTP site to reduce the potential for noise and odor complaints and to protect against urban encroachment. SRCSD has established a 1,000- to 3,000-foot-wide residential incompatibility zone within the northern, eastern, and southeastern boundaries of the SRWTP property. The SRWTP bufferlands are undeveloped and consist primarily of cultivated and undisturbed grassland. Future uses of this land are limited by SRCSD to natural habitat improvements, agricultural production, and other uses that enhance the land’s buffering function.

Mitigation measures are already provided in this Revised Draft EIR to address construction noise and air quality effects (see Mitigation Measures 4.8-1, 4.8-2, 4.8-5, and 4.9-3). The minor increases in footprint and activity at these existing facilities would have little, if any, affect related to land use conflict. This is a *less than significant* impact.

**Mitigation Measure**

No mitigation measures required.

4.1-12  **Acquisition of existing off-site structures and alteration of existing off-site land uses would occur due to the widening of Baseline/Riego Road and Watt Avenue.**
The Specific Plan proposes to widen Baseline Road between Walerga/Fiddyment Road on the east and the Sutter County line on the west. Watt Avenue would be widened from Baseline Road on the north to approximately one thousand feet south of the Sacramento County line. The roadway constructed would be consistent with the Sacramento County General Plan, which provides that Watt Avenue is generally a 6-lane “thoroughfare.” In addition, five intersections would be improved along Baseline/Riego Road. Right-of-ways for road widenings are typically acquired equally on both sides of the existing roadway; however, in the case of Baseline Road, widening along the project’s frontage will initially occur primarily on the south side in order to minimize off-site encroachments. Land to the north of Baseline Road is not within the Specific Plan area and contains some existing structures, including residences that would be avoided under the proposed roadway alignment. Improvement of the five intersections along Baseline/Riego Road will not affect any existing residences or structures. Properties along the west and east sides of Watt Avenue, within and south of the Specific Plan area, also contain existing structures, including residences. The widening of Watt Avenue has the potential to result in the removal of existing structures, including at least one residence, and the alteration of other land uses, including the frontage of a cemetery, which could contain burial sites (see Impact 4.6-6 and Mitigation Measure 4.6-6 in Section 4.6 of this Revised Draft EIR).

Any displacement of persons as result of the roadway widening would be subject to the requirements of the California Relocation Statute (Government Code Section 7260 et seq.) as well as the federal Uniform Relocation Assistance Act and Real Property Acquisition Policies Act of 1970. Under these statutes, whenever a program or project to be undertaken by a public entity will result in the displacement of any person, the displaced person is entitled to payment for actual moving and related expenses. In addition, owners of property are entitled to compensation at fair market value for any real property acquired or diminished in value. Although compensation will be provided, this impact of project implementation is significant and unavoidable.

Mitigation Measures

No mitigation measures are available.

4.1-I3 Potential impacts may occur as a result of compliance with Standard 8 (Agricultural Water Supply) of Exhibit 1 of the Dry Creek/West Placer Community Plan.

As described earlier, Standard 8 of Exhibit 1 of the Dry Creek/West Placer Community Plan states that “[d]evelopment within the Specific Plan area should assist in the provision of affordable agricultural water to surrounding agricultural lands. Sources of such agricultural water include reclaimed and retained water and newly developed surface water sources.” Based on extensive conversations with representatives from PCWA and others, the Specific Plan proponents propose to satisfy Standard 8 by paying a fee to the County or PCWA, which would expend the funds obtained in a manner that will facilitate the provision of affordable water to agricultural users within western Placer County. At present, PCWA and the City of Lincoln are considering the construction of additional recycled wastewater storage and conveyance facilities that will supplement current agricultural water deliveries in western Placer County. In order to
arrive at an estimated fee sufficient to meet the policy objective of Standard 8, a project has been conceptualized for construction at the City of Lincoln Wastewater Treatment and Reclamation Facility (WWTRF). The project would include the conversion of an existing stormwater retention basin and related infrastructure modifications to accommodate recycled water from the existing treatment facility. Recycled water would be discharged to Auburn Ravine Creek using the existing WWTRF discharge point. Recycled water would then be conveyed downstream where it would be withdrawn at existing and future PCWA diversion structures and used for irrigation of agricultural cropland.

Any alterations or new construction required to facilitate the additional storage and discharge to Auburn Ravine Creek would occur entirely within the current WWTRF site, which was previously approved for such uses by the City of Lincoln using the Environmental Impact Report, City of Lincoln Wastewater Treatment and Reclamation Facility, which was certified by the City of Lincoln City Council on March 9, 1999. Any construction outside the WWTRF site may require additional environmental review.

Impacts related to the recycled water project would be primarily beneficial; however, any construction outside the previously assessed WWTRF site could include previously unreported impacts to biological resources, wetlands and riparian areas, as well as unsurveyed cultural resources.

Noise and air quality impacts may also occur as a result of construction activity; however, such impacts would be temporary in nature and would occur in rural agricultural areas away from concentrations of people. Water quality impacts during construction and as a result of recycled water discharge to Auburn Ravine Creek could be a concern; however, any future construction would be subject to applicable provisions of Sections 401 and 404 of the federal Clean Water Act, and California Fish and Game Code Section 1600 et seq. Any water discharged to Auburn Ravine Creek must comply with Title 22 of the California Code of Regulations and with Waste Discharge Requirements established by the Regional Water Quality Control Board for the WWTRF.

The City of Lincoln WWTRF EIR has been incorporated by reference into this discussion (see Section 3.2 in Chapter Three of this Revised Draft EIR), including all mitigation measures set forth in the Final EIR. Impacts related to the addition of the proposed recycled water facilities are, however, potentially significant.

Mitigation Measures

Impacts related to provision of any additional recycled water storage and conveyance facilities, including the above described project or a similar project, funded through fees intended to satisfy Standard 8 can be substantially lessened through adoption of the following mitigation measures. Although the City of Lincoln can and should adopt these mitigation measures, Placer County cannot compel the City of Lincoln to do so, therefore, the potential impacts related to provision of additional recycled water storage and conveyance facilities remain significant and unavoidable.
4.1-13a Comply with all applicable mitigation measures set forth in the Environmental Impact Report, City of Lincoln Wastewater Treatment and Reclamation Facility, certified by the City of Lincoln City Council on March 9, 1999 during construction and operation of the recycled water facility.

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

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

CUMULATIVE IMPACTS AND MITIGATION MEASURES

With the exception of loss of open space and agricultural land, other identified land use impacts pertaining to various forms of land use compatibility (both internal and external) and compliance with adopted and proposed plans are unique to the Specific Plan area and do not pose an identifiable cumulative impact to which the project’s contribution would be cumulatively considerable. For an in depth discussion of the regional consequences of conflicts with the Blueprint Plan, see Chapter Six of this Revised Draft EIR.

4.1-14 The Specific Plan will contribute to the loss of agricultural and open space land throughout Placer County, the region and the state.

The undeveloped portion of western Placer County is largely comprised of “Important Farmland,” as defined by the State of California Department of Conservation. Most of this land is designated Farmland of Local Importance or Grazing. The majority of active agricultural acreage is used for grazing, but crops are cultivated in the area, including rice and orchards. Development in the cities of Lincoln, Roseville and Rocklin, as well as the unincorporated area of Placer County, has converted grazing and other agricultural lands to urban uses. Thousands of additional acres are approved or proposed for development as shown in Figure 4.1-2, including the Elverta Specific Plan, South Sutter County Industrial/Commercial Reserve, Curry Creek Community Plan, the Regional University and Community Plan, West Roseville Specific Plan, Placer Ranch Specific Plan, Lincoln Crossing, Sierra Vista Specific Plan, Creekview Specific Plan, Riolo Vineyards, Silver Creek, Lincoln 270, and Morgan Place. Most of the land converted by these projects would be of lower-quality soils used primarily for grazing. Farmland
is also being converted to urban uses in more distant locales throughout the Central Valley. Although the conversion of individual parcels of grazing land would not have a substantial effect on agricultural productivity, the cumulative loss of thousands of acres of grazing and more productive cultivated land is considered significant.

Similar to loss of agricultural land, valuable open space containing a variety of diminishing habitats and aesthetic values (see Sections 4.2 and 4.3 of this Revised Draft EIR) will also be lost. The incremental impact of the Specific Plan on the cumulative loss of agricultural and open space land in Placer County, the region and the state by converting over 3,500 acres of agricultural and open space lands to urban uses is considered a *cumulatively considerable significant impact*.

**Mitigation Measure**

Implementation of the following mitigation measure will substantially lessen the severity of the cumulative loss of agricultural land and open space, but will not mitigate the significant effect to a less than significant level. Therefore, the impact will remain *significant and unavoidable*, and the project’s incremental contribution to this impact will be *cumulatively considerable and significant*:

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

This mitigation measure will reduce the magnitude of the Specific Plan contribution to the cumulative loss of agricultural land and open space by requiring the off-site preservation of a like amount of open space, most of which is likely to be agricultural land. While the preserved land would not be developed, there will still be a net loss in land available for agriculture and open space as a result of development of the Specific Plan area. In addition, preservation could occur in areas that do not have soil characteristics similar to those of the Specific Plan area. Therefore, this mitigation will reduce, but will not fully offset, the project’s incremental contribution to the significant cumulative loss of agricultural land. Also see discussion under Mitigation Measure 4.1-3.
ENDNOTES


Placer County. 1998. Placer County Open Space and Agricultural Conservation Program.


4.2 Visual Quality and Aesthetics
4.2 VISUAL QUALITY AND AESTHETICS

4.2.1 INTRODUCTION

This section of this Revised Draft EIR provides a description of the existing visual characteristics and character of the Specific Plan area and surrounding area. Relevant goals and policies from the Placer County General Plan, Dry Creek/West Placer Community Plan, Placer County Design Guidelines Manual and Placer County Landscape Design Guidelines Manual are described and compared to the design guidelines contained in the Specific Plan. Photographs (updated during the summer of 2005), are used to illustrate existing conditions and appear in Photoplates 4.2-1 through 4.2-16. Figure 4.2-1 shows the location at which each of these photographs was taken within the Specific Plan area.

The purpose of this analysis is to determine the extent to which the Specific Plan will cause visual and aesthetic impacts. Mitigation measures are then identified that may be used to minimize identified impacts. General topics addressed include the conversion of the Specific Plan area from rural to urban and suburban development patterns, increases in night lighting and light and glare as a result of development in and around the Specific Plan area, and compatibility of the Specific Plan with County programs that promote a high quality visual and aesthetic environment.

4.2.2 ENVIRONMENTAL SETTING

REGIONAL AND LOCAL SETTING

The Specific Plan area is located in western Placer County within the Sacramento Valley, and borders Sacramento County on the south and Sutter County on the west. Areas to the north and west of the Specific Plan area are generally characterized by open land containing grazing, field crops and other agricultural uses. The land adjacent to the Specific Plan area on the west is within the South Sutter County Commercial/Industrial Reserve, of which a portion is currently planned for development. To the east is the City of Roseville, land undergoing conversion to urban uses, and scattered rural residential uses. To the south is the Sacramento urbanized area; however, considerable open land remains, including Sacramento County’s Gibson Ranch Park and open space areas along the Dry Creek Corridor. Southeast of the Specific Plan area in Sacramento County is the unincorporated community of Antelope, which includes a mix of single-family and multiple-family residential, retail commercial and industrial uses. West of Watt Avenue, the Specific Plan area is bordered by the unincorporated community of Elverta, which contains primarily rural residential uses similar in character to those located within portions of the Specific Plan area. A significant amount of open land remains in the Elverta area, a portion of which is included within the proposed Elverta Specific Plan, which would permit densities ranging from rural residential at its northern extremity adjacent to the Specific Plan area to urban densities to the south along Elverta Road.
SITE CHARACTERISTICS

The Specific Plan area is generally flat and is primarily comprised of open land containing a mixture of grazing land and other agricultural uses (see Photoplates 4.2-1, 4.2-2, 4.2-3, 4.2-4, 4.2-11 and 4.2-12). Approximately 150 rural residences are located within the Specific Plan area, mostly in the northwest corner in the area known as Riego (see Photoplates 4.2-13, 4.2-14, 4.2-15 and 4.2-16). Dry Creek, abutting the southeastern boundary of the Specific Plan area, contains an extensive riparian forest (see Photoplates 4.2-2 #5 and 4.2-6 #16). Other water courses in the Specific Plan area are seasonal and generally have few trees. Dyer Lane west of Watt Avenue is bordered on both sides by Valley oaks, remnants of a much greater riparian forest that existed prior to the clearance of trees for firewood and agriculture (see Photoplates 4.2-4 #12 and 4.2-5 #14). To the north of Dyer Lane near its western end is another remnant stand of oaks (see Photoplate 4.2-5 #13).

The Specific Plan area is traversed by three major utility line corridors (see Photoplates 4.2-7 #21, 4.2-8 #22, and 4.2-10 #29 and #30). The most westerly corridor runs in a north-south direction west of Locust Road. It contains two lines of lattice towers, some in excess of 150 feet in height. A second corridor diagonally bisects the Specific Plan area, entering near its midpoint on Baseline Road and exiting near the Specific Plan area’s southwestern corner, where it enters Sacramento County. This corridor contains three lines of towers similar in height to the first set. A third corridor runs in a generally north-south direction near the center of the Specific Plan area east of Palladay Road and contains a single row of towers similar to the others described above (see Figure 3-10 in Chapter Three of this Revised Draft EIR).

The off-site utility corridors associated with the Specific Plan would traverse open space areas, including Dry Creek, agricultural areas, and areas adjacent to and within existing roadways such as Watt Avenue, Elverta Road, Pleasant Grove Road and PFE Road.

PROJECT VIEWSHED

Because the Specific Plan area and surrounding area contain little elevated terrain, views from off-site as well as views from on-site are limited. The Specific Plan area is located adjacent to Baseline Road and Walerga Road, and is bisected by Watt Avenue, all of which carry considerable amounts of traffic. The views from Baseline Road are typical of most roadways and properties in western Placer County and surrounding rural areas. A perception of generally featureless open space predominates, with an occasional view of a distant tree or group of trees (see Photoplates 4.2-1, 4.2-2 and 4.2-3). As the western portion of the Specific Plan area is approached from Baseline Road, a number of rural residences and outbuildings become the dominant view (see Photoplate 4.2-15 #45). Watt Avenue crosses Dry Creek at the Specific Plan area’s southern perimeter, passing through an area of roadside blue oak and willows (see Photoplate 4.2-6 #16). The view from Walerga Road also includes the crossing of Dry Creek, which provides topographic relief and a close-up view of the riparian oak woodland (see Photoplate 4.2-2 #5). During the wetter portion of the year, temporary ponding of water may be visible from the roadways.
Besides the existing open space, the most significant feature within the on-site as well as the off-site viewshed is the presence of the utility line lattice towers described above. The three corridors tend to be very visible during daylight hours. A second vertical element that is quite visible from the eastern portion of the Specific Plan area is the SureWest Communications Company telecommunications lattice tower located east of the Specific Plan area south of Baseline Road (see Photoplate 4.2-2 #4). The tower is approximately three hundred feet in height and is visible for several miles.

Nighttime views (light sources) include a red blinking light and steady red light on the communications tower described above, and more distant lighted towers to the southwest of the Specific Plan area in Sacramento County. Other distant sources of light include homes and street lighting in the residential areas east of Fiddyment Road and along the northern end of Walerga Road in the City of Roseville and the Antelope area of Sacramento County. Views to the north and west from the Specific Plan area are generally dark, with the exception of traffic on Baseline Road. The nighttime view of the site is generally dark, with the exception of lights from occasional residences.

**PROPOSED GUIDELINES, GOAL AND POLICIES RELATED TO VISUAL QUALITY AND AESTHETIC RESOURCES**

The Community Design chapter of the Specific Plan contains policies, development standards and design guidelines intended to ensure a cohesive and unique character for Placer Vineyards while allowing flexibility for individual property owners to develop their own unique brand of product types and distinct neighborhoods. These standards and guidelines specify criteria governing architectural treatment, lighting, hardscape and landscape elements, and the site relationship of buildings and landscaping to public and quasi-public spaces. Note: all references to figures and appendices are to the Specific Plan unless otherwise noted. The following Specific Plan elements are addressed:

6.2 General Community-wide Design Elements
   6.2.1 Landscape Design
   6.2.2 Streetscapes
   6.2.3 Community Gateways
   6.2.4 Signage Systems
   6.2.5 Lighting

6.3 Centers of Activity
   6.3.1 Design of Activity Centers
   6.3.2 Town Center
   6.3.3 Village Centers
   6.3.4 Commercial Centers
   6.3.5 Baseline Road Regional Commercial Corridor
   6.3.6 Neighborhood Commercial Centers
6.4 Residential Neighborhoods
   6.4.1 General Lot Design Standards
   6.4.2 Residential Design
   6.4.3 Walls, Fences and Screening

The Design Standards in this chapter will be used to assist Planning staff, the Planning Commission, and Board of Supervisors in evaluating the merit of development proposals. Based on the experience gained during the initial development period, specific guidelines or standards in this chapter may be revised to clarify direction, to better meet specific site conditions or to simplify the review and implementation process by the County.

Should individual projects differ in some respects but are substantially consistent with the intent of these standards, minor deviations may be allowed in certain circumstances. These determinations will be made at the discretion of the Planning Director and the Planning Commission. For design items that are specified in exhibits, text, and/or adopted goals and policies of the Placer Vineyards Specific Plan, modifications may require an amendment of the Specific Plan.

The Planning Commission may accept different but substantially consistent design if it is of equal quality to and satisfies the intent of the original design guidelines. Minor changes to an approved project that are consistent with original approvals, may be approved by the Planning Director.

6.2 General Community-wide Design Elements

The General Community-Wide Design Elements outline the general policies applicable to the subsequent sections of this chapter.

Landscape Design

The designed landscape creates the framework for common elements that knit the community together. These elements bring cohesiveness to the community, engage the natural vegetation and topography of the site into the design of the community, provide community identity, enhance the livability and aesthetics of the community and blend together various site and land use adjacencies.

Goal 6.1 Provide a consistent and visually cohesive landscape throughout the Plan Area.

Goal 6.2 Define and maintain a landscape and architectural style for the Specific Plan Area.

Goal 6.3 Provide for views from the road to community features such as creeks, wetlands, major tree groves, and other open space on the site.

Goal 6.4 Put in place a designed landscape that utilizes a plant palette that is visually attractive, varied and either uses recycled or reclaimed water or minimizes water use.
Policy 6.1 Landscape Design and Landscape Master Plan. In order to ensure the implementation of a cohesive image for the community, a detailed Landscape Master Plan shall be developed and approved by the County, before the approval of tentative maps. This Master Plan shall address the design of streetscapes, entries and other image features. The Landscape Master Plan and the Park and Recreation Master Plan (see Chapter 7, “Parks and Open Space”) shall complement each other and together shall define the public landscape areas of the community. The Landscape Master Plan shall be guided by the following features:

1. The landscape design treatment for Placer Vineyards shall consider the context, historical land use and ecology of the region. Design elements consistent with the historic rural image of the area including use of stone, wood, timber arbors and trellises, and rural fencing types are encouraged.

2. Use landscape materials, trees, shrubs, and ground cover that are native to the area, have low water use and fit into the local environmental conditions. Refer to Appendix B for a Recommended Plant List.

3. Use colorful ornamental landscaping as accents at entryways, as special park and open space areas, and as image elements in the overall landscape.

Policy 6.2 View Protection.

1. Landscape elements shall be designed to create vistas and frame views of important community features, such as natural site features, significant buildings, or landmarks.

2. Single-loaded streets shall be incorporated into project design when adjacent to parks, drainages, and other open spaces.

3. Whenever possible, landscape berming and/ or setbacks shall be incorporated into subdivision designs to mitigate for noise.

Policy 6.3 Natural Resource Preservation. Where possible, open space areas shall interconnect with the oak woodlands, grasslands, wetlands and other natural resources in the Plan Area.

Policy 6.4 Recommended Plant Palette. The list of plants recommended for use in Placer Vineyards is seen in EIR Table 4.2-1 below. This list should be used when designing open space, landscape buffer corridors, streetscapes, gateways and parks. Plants similar to those listed in the table may also be used.
<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Distribution Percentage/Comments</th>
</tr>
</thead>
<tbody>
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<td><strong>OPEN SPACE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Upland-Savanna</strong></td>
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<td></td>
</tr>
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<td><strong>Trees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aesculus californica</td>
<td>California Buckeye</td>
<td>15%</td>
</tr>
<tr>
<td>Quercus douglasii</td>
<td>Blue Oak</td>
<td>15%</td>
</tr>
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<td>Quercus lobata</td>
<td>Valley Oak</td>
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</tr>
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<td>Interior Live Oak</td>
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<td>Umbellularia California</td>
<td>California Laurel</td>
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<tr>
<td><strong>Shrubs</strong></td>
<td></td>
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</tr>
<tr>
<td>Arctostaphylos sp.</td>
<td>Manzanita</td>
<td>15%</td>
</tr>
<tr>
<td>Artemisia californica</td>
<td>California Sagebrush</td>
<td>10%</td>
</tr>
<tr>
<td>Ceanothus gloriosus</td>
<td>Point Reyes Creeper</td>
<td>30%</td>
</tr>
<tr>
<td>Ceanothus sp.</td>
<td>California Lilac</td>
<td>10%</td>
</tr>
<tr>
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<td>Toyon</td>
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</tr>
<tr>
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<td>Hollyleaf Redberry</td>
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</tr>
<tr>
<td><strong>Groundcover</strong></td>
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<tr>
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<tr>
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<td>Meadow Barley</td>
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<td><strong>Riparian-Woodland (2- to 5-year event creek flow)</strong></td>
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<tr>
<td><strong>Trees</strong></td>
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<tr>
<td>Quercus lobata</td>
<td>Valley Oak</td>
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</tr>
<tr>
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<td>Goodding’s Willow</td>
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</tr>
<tr>
<td>Salix hindsiana</td>
<td>Sandbar Willow</td>
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</tr>
<tr>
<td>Salix lasiandra</td>
<td>Red Willow</td>
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<td></td>
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<td>100%</td>
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<tr>
<td><strong>Shrubs</strong></td>
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<td></td>
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<tr>
<td>Ceanothus gloriosus</td>
<td>Point Reyes Creeper</td>
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</tr>
<tr>
<td>Cephalanthus occidentalis</td>
<td>Buttonbush</td>
<td>40%</td>
</tr>
<tr>
<td>Rosa californica</td>
<td>California Wild Rose</td>
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</tr>
<tr>
<td>Rubus ursinus</td>
<td>California Blackberry</td>
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<td><strong>Vines</strong></td>
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<td>Common Name</td>
<td>Distribution Percentage/Comments</td>
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<tr>
<td><strong>Groundcover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>30%</td>
</tr>
<tr>
<td><em>Carex barbara</em></td>
<td>Barbara Sedge</td>
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</tr>
<tr>
<td><em>Leymus triticoides</em></td>
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<td><em>Nassella pulchra</em></td>
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<tr>
<td><strong>Riparian-Wetland (&lt;2-year event creek flow)</strong></td>
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<td></td>
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<tr>
<td><strong>Trees</strong></td>
<td></td>
<td></td>
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<tr>
<td><em>Alnus rhombifolia</em></td>
<td>White Alder</td>
<td>30%</td>
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<tr>
<td><em>Populus fremontii</em></td>
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<tr>
<td><em>Salix exigua</em></td>
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<tr>
<td><strong>Groundcover</strong></td>
<td></td>
<td></td>
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<td>Horsetail</td>
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<td></td>
<td></td>
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<td><strong>LANDSCAPE BUFFERS</strong></td>
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<tr>
<td><strong>Trees</strong></td>
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<td></td>
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<td><em>Aesculus californica</em></td>
<td>California Buckeye</td>
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<tr>
<td><em>Cedrus deodar</em></td>
<td>Deodar Cedar</td>
<td>10%</td>
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<td><em>Cercis occidentalis</em></td>
<td>Western Redbud</td>
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<td><em>Platanus racemosa</em></td>
<td>Western Sycamore</td>
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<td><em>Quercus douglasi</em></td>
<td>Blue Oak</td>
<td>10%</td>
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<td>100%</td>
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<tr>
<td><strong>Shrubs</strong></td>
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<tr>
<td><em>Arctostaphylos densiflora</em></td>
<td>McMinn's Manzanita</td>
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<td>California Sagebrush</td>
<td>15%</td>
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<td><em>Ceanothus sp.</em></td>
<td>California Lilac</td>
<td>15%</td>
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<td>15%</td>
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<td>Orchid Rockrose</td>
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<td>Sageleaf Rockrose</td>
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<td>Common Flannel Bush</td>
<td>15%</td>
</tr>
<tr>
<td><em>Heteromeles arbutifolia</em></td>
<td>Toyon</td>
<td>15%</td>
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<td>100%</td>
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<tr>
<td>Botanical Name</td>
<td>Common Name</td>
<td>Distribution Percentage/Comments</td>
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<td>---------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td><strong>Groundcover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Arctostaphylos 'Emerald Carpet'</em></td>
<td>Emerald Carpet Manzanita</td>
<td>15%</td>
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<tr>
<td><em>Carpenteria californica</em></td>
<td>Bush Anemone</td>
<td>5%</td>
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<tr>
<td><em>Ceanothus gloriosus</em></td>
<td>Point Reyes Creeper</td>
<td>20%</td>
</tr>
<tr>
<td><em>Iris douglasiana</em></td>
<td>Douglas Iris</td>
<td>5%</td>
</tr>
<tr>
<td><em>Mimulus aurantiacus</em></td>
<td>Monkey Flower</td>
<td>10%</td>
</tr>
<tr>
<td><em>Muhlenbergia rigens</em></td>
<td>Deergrass</td>
<td>25%</td>
</tr>
<tr>
<td><em>Penstemon spp.</em></td>
<td>Penstemon</td>
<td>5%</td>
</tr>
<tr>
<td><em>Vitis californica</em></td>
<td>California Wild Grape</td>
<td>10%</td>
</tr>
<tr>
<td><em>Zauschneria californica</em></td>
<td>California Fuchsia</td>
<td>5%</td>
</tr>
<tr>
<td><strong>STREETSCAPE</strong></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>Trees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Calocedrus decurrens</em></td>
<td>Incense Cedar</td>
<td>Large Screen Evergreen</td>
</tr>
<tr>
<td><em>Cedrus deodar</em></td>
<td>Deodar Cedar</td>
<td>Large Screen Evergreen</td>
</tr>
<tr>
<td><em>Cercis occidentalis</em></td>
<td>Western Redbud</td>
<td>Flowering Accent Deciduous</td>
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<tr>
<td><em>Eucalyptus polyanthemus</em></td>
<td>Silver Dollar Gum</td>
<td>Large Canopy Evergreen</td>
</tr>
<tr>
<td><em>Lithocarpus densiflora</em></td>
<td>Tanbark Oak</td>
<td>Large Canopy Evergreen</td>
</tr>
<tr>
<td><em>Pinus canariensis</em></td>
<td>Canary Island Pine</td>
<td>Large Screen Evergreen</td>
</tr>
<tr>
<td><em>Platanus acerifolia</em></td>
<td>London Plane Tree</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Pyrus calleryana</em></td>
<td>Flowering Pear</td>
<td>Accent Deciduous</td>
</tr>
<tr>
<td><em>Quercus douglasii</em></td>
<td>Blue Oak</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Quercus pilustris</em></td>
<td>Pin Oak</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Quercus rubra</em></td>
<td>Red Oak</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Quercus suber</em></td>
<td>Cork Oak</td>
<td>Large Canopy Evergreen</td>
</tr>
<tr>
<td><em>Tilia cordata</em></td>
<td>Little Leaf Linden</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Zelkova serrata</em></td>
<td>Sawleaf Zelkova</td>
<td>Large Canopy Evergreen</td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Arctostaphylos spp.</em></td>
<td>Manzanita</td>
<td></td>
</tr>
<tr>
<td><em>Artemisia californica</em></td>
<td>California Sagebrush</td>
<td></td>
</tr>
<tr>
<td><em>Ceanothus spp.</em></td>
<td>California Lilac</td>
<td></td>
</tr>
<tr>
<td><em>Cistus spp.</em></td>
<td>Rockrose</td>
<td></td>
</tr>
<tr>
<td><em>Elaeagnus pungens</em></td>
<td>Silverberry</td>
<td></td>
</tr>
<tr>
<td><em>Escallonia 'Fradesii'</em></td>
<td>Escallonia</td>
<td></td>
</tr>
<tr>
<td><em>Fremontodendron californicum</em></td>
<td>Common Flannel Bush</td>
<td></td>
</tr>
<tr>
<td><em>Juniperus spp.</em></td>
<td>Junipers dwarf varieties</td>
<td></td>
</tr>
<tr>
<td><em>Rhaphiolepis indica</em></td>
<td>'Springtime’ or ‘Dancer’ Indian Hawthorn</td>
<td></td>
</tr>
<tr>
<td><em>Ribes aureum</em></td>
<td>Golden Currant</td>
<td></td>
</tr>
<tr>
<td><em>Xylosma congestum</em></td>
<td>Xylosma congestum</td>
<td></td>
</tr>
<tr>
<td><strong>Vines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Clematis armandii</em></td>
<td>Evergreen Clematis</td>
<td>Train to Walls/Fences</td>
</tr>
<tr>
<td><em>Clytostoma callistegioides</em></td>
<td>Violet Trumpet Vine</td>
<td>Train to Walls/Fences</td>
</tr>
</tbody>
</table>
### Table 4.2-1

**Recommended Plant List**

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Distribution Percentage/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Hardenbergia violacea</em></td>
<td>Hardenbergia</td>
<td>Train to Walls/Fences</td>
</tr>
<tr>
<td><em>Lonicer a japonica 'Halliana'</em></td>
<td>Hall's Honeysuckle</td>
<td>Train to Walls/Fences</td>
</tr>
<tr>
<td><em>Vitis californica</em></td>
<td>California Wild Grape</td>
<td>Train to Walls/Fences</td>
</tr>
<tr>
<td><strong>Groundcover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Ceonothus gloriosus</em></td>
<td>Point Reyes Creeper</td>
<td></td>
</tr>
<tr>
<td><em>Festuca arundinacea</em></td>
<td>Tall Fescue</td>
<td>Turf - limited accent areas</td>
</tr>
<tr>
<td><em>Hypericum calycinum</em></td>
<td>St. John's wort</td>
<td></td>
</tr>
<tr>
<td><em>Jasminum</em></td>
<td>Jasmine</td>
<td></td>
</tr>
<tr>
<td><em>Pyracantha spp.</em></td>
<td>Firethorn</td>
<td></td>
</tr>
<tr>
<td><em>Santolina chamaecyparissus</em></td>
<td>Lavender Cotton</td>
<td></td>
</tr>
<tr>
<td><em>Verbena peruviana</em></td>
<td>Verbena</td>
<td></td>
</tr>
<tr>
<td><strong>GATEWAY ENTRIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Acer rubra</em></td>
<td>‘October Glory’ Maple</td>
<td>Accent Deciduous</td>
</tr>
<tr>
<td><em>Betula alba</em></td>
<td>White Birch</td>
<td>Accent Deciduous</td>
</tr>
<tr>
<td><em>Cinnamomum camphora</em></td>
<td>‘Monum’</td>
<td>Camphor Tree</td>
</tr>
<tr>
<td><em>Cornus nuttalii</em></td>
<td>Pacific Dogwood</td>
<td>Accent Deciduous</td>
</tr>
<tr>
<td><em>Fraxinus uhdei</em></td>
<td>Evergreen Ash</td>
<td>Large Canopy Evergreen</td>
</tr>
<tr>
<td><em>Malus floribunda</em></td>
<td>Japanese Crabapple</td>
<td>Orchard Accent Deciduous</td>
</tr>
<tr>
<td><em>Prunus cerasifera</em></td>
<td>Flowering Cherry</td>
<td>Orchard Accent Deciduous</td>
</tr>
<tr>
<td><em>Pyrus calleryana</em></td>
<td>Flowering Pear</td>
<td>Orchard Accent Deciduous</td>
</tr>
<tr>
<td><em>Quercus rubra</em></td>
<td>Red Oak</td>
<td>Large Canopy Deciduous</td>
</tr>
<tr>
<td><em>Rhus lancea</em></td>
<td>African Sumac</td>
<td>Accent Evergreen</td>
</tr>
<tr>
<td><em>Sequoia sempervirens</em></td>
<td>Redwood</td>
<td>Large Screen Evergreen</td>
</tr>
<tr>
<td><em>Zelkova</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Arbutus unedo</em></td>
<td>Strawberry Tree/Shrub</td>
<td></td>
</tr>
<tr>
<td><em>Junipurus spp.</em></td>
<td>Junipers dwarf varieties</td>
<td></td>
</tr>
<tr>
<td><em>Pennisetum setaceum ‘Rubrum’</em></td>
<td>Purple Fountain Grass</td>
<td></td>
</tr>
<tr>
<td><em>Rhaphiolepis indica</em></td>
<td>’Springtime’ or ‘Dancer’ Indian Hawthorn</td>
<td></td>
</tr>
<tr>
<td><strong>Vines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Clematis armandii</em></td>
<td>Evergreen Clematis</td>
<td></td>
</tr>
<tr>
<td><em>Vitis californica</em></td>
<td>California Wild Grape</td>
<td></td>
</tr>
<tr>
<td><strong>Groundcover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Eschscholzia californica</em></td>
<td>California poppy</td>
<td></td>
</tr>
<tr>
<td><em>Festuca arundinacea</em></td>
<td>Tall Fescue</td>
<td>Turf - limited accent areas</td>
</tr>
<tr>
<td><em>Lantana camara</em></td>
<td>Wild Lantana</td>
<td></td>
</tr>
<tr>
<td><em>Lupinus polyphyllus</em></td>
<td>Blue Lupine</td>
<td></td>
</tr>
<tr>
<td><em>Penstemon spp.</em></td>
<td>Penstemon</td>
<td></td>
</tr>
<tr>
<td><em>Portulaca grandiflora</em></td>
<td>Rose Moss</td>
<td></td>
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</tbody>
</table>
Table 4.2-I  
Recommended Plant List

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Distribution Percentage/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salvia greatae</em></td>
<td>Lavender Sage</td>
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</tr>
<tr>
<td><em>Zauschneria californica</em></td>
<td>California Fuchsia</td>
<td></td>
</tr>
</tbody>
</table>

**PARKS**

**Trees**

- *Acer Rubra*  
  ‘October Glory’ Maple  
  Accent Deciduous

- *Calocedrus decurrens*  
  Incense Cedar  
  Large Screen Evergreen

- *Jacaranda mimosifolia*  
  Jacaranda  
  Flowering Accent Deciduous

- *Maytenus boaria*  
  Mayten Tree  
  Accent Evergreen

- *Pistacia chinensis*  
  Chinese Pistache  
  Large Canopy Deciduous

- *Quercus lobata*  
  Valley Oak  
  Large Canopy Deciduous

- *Quercus suber*  
  Cork Oak  
  Large Canopy Evergreen

- *Sequoiadendron gigantum*  
  Giant Sequoia  
  Large Screen Evergreen

- *Tilia cordata*  
  Little Leaf Linden  
  Large Canopy Deciduous

- *Umbellularia californica*  
  California Bay  
  Large Canopy Evergreen

**Shrubs**

- *Arbutus unedo*  
  Strawberry Tree/Shrub

- *Arctostaphylos spp.*  
  Manzanita

- *Ceanothus spp.*  
  California Lilac

- *Cistus spp.*  
  Rockrose

- *Xylosma congestum*  
  Xylosma

**Groundcover**

- *Arctostaphylos densiflora*  
  Vine Hill Manzanita

- *Ceanothus gloriosus*  
  Point Reyes Creeper

- *Dietes vegeta*  
  Fortnight Lily

- *Eschscholzia californica*  
  California Poppy

- *Festuca arundinacea*  
  Tall Fescue  
  Turf Areas

- *Lupinus polyphyllus*  
  Blue Lupine

- *Mahonia repens*  
  Creeping Mahonia

6.2.2 Streetscapes

The streetscape is one of the major visual elements that can help tie the community together in a consistent theme and quality of experience. Streetscape design is concerned with the design of the “public realm” or the area that stretches from the public streets to the building face. Streetscape design includes the selection of landscaping along the street and front yards and includes pedestrian amenities along the public right-of-way such as seating, lighting, and pedestrian furniture. Streetscape design guidelines apply to street corridors and along landscape buffers, medians and gateways.

Trees are a major component of the streetscape design and livability of the Placer Vineyards community. Trees provide an attractive setting for walking and bicycle use; shade the sidewalks, street surface, and adjoining buildings; and improve the air quality and overall environment of
the neighborhood. The streetscape design within Placer Vineyards is intended to provide a unified design and character for the project.

Goal 6.5 Create an attractive and inviting setting for the “public realm” that supports an active and vital mixed-use community. Features will include trees, shrubs, and ground cover plantings, as well as trails, paths, monument signs, and other architectural amenities.

Goal 6.6 Design streetscapes along thoroughfares and arterials with a more spacious character to the public realm, consistent with the size and width of the street corridor, the volume and speed of traffic and the amount and type of pedestrian activity on the street.

Goal 6.7 Create a continuous canopy of tree coverage throughout the Placer Vineyards community that establishes a strong and attractive community identity and provides shade.

Policy 6.5 Landscape Corridors on Major Streets. Street landscape corridors will be developed along thoroughfares and arterials (i.e., Watt Avenue, Dyer Lane and 16th Street; see Figures 6.1 through 6.3) and major collector streets. [See EIR Figures 4.2-2A, 4.2-2B, and 4.2-2C]

1. These parkways are wide and heavily landscaped with double rows of street trees, ground cover, and flowering accent vegetation.

2. Walkways shall be designed as joint-use pedestrian and bicycle paths, meandering through the parkway.

3. The streetscapes shall also provide linkages to neighboring open spaces, parks, schools, and major activity nodes, allowing for pedestrian and bicycle circulation as well as for other passive recreational and educational opportunities.

4. The corridors will have meandering trails separated from the streets. Landscaping will be expanded at entries to the development, and blended in with the adjoining park sites and open space areas.

Policy 6.6 Street Landscape Corridor Design. Street landscape corridors should be designed with different plant palettes to give a unique character to the streets. Refer to Appendix B for a list of recommended streetscape trees, shrubs, vines, and groundcovers; and Figures 6.1 through 6.3 for sample street corridor designs for Baseline Road, Watt Avenue and Dyer Lane.

1. Thoroughfares- Baseline Road, Watt Avenue and Arterial Streets- Dyer Lane and 16th Street. Thoroughfares (see Figures 5.3-A, B) will have a 50-foot landscaped setback buffer and 20-foot median through the entire...
project area. Arterial streets (see Figure 5.3-D and E) will include a 35-foot landscape setback on both sides of the street and a 14-foot planted median. Landscape buffers will include earthen berms and plants, deciduous trees, evergreen trees, and drought tolerant shrubs and groundcovers. Berms and plants, such as 3- to 4-foot tall hedges, should be used to screen parking areas or sound walls.

For thoroughfares and arterial streets, a hedgerow of trees with drought tolerant shrubs and ground covers will be planted in the road medians. Deciduous and evergreen canopy trees will be planted between curbs and sidewalks, with evergreen screen trees placed between sidewalks and residential walls. Landscaping should provide for a consistent use of plant materials for the thoroughfares and each arterial street.

Unless, recycled water is used for irrigation, irrigated turf will be limited to 25% of the total landscape corridor area. Turf areas will be limited to accent areas near intersections, project signage, buildings, and areas between the back of curb and sidewalks.

2. Major Collector Streets- Palladay Road, Tanwood Road, 14th Street. Select collector streets, as shown in Figure 5.3, Section F, will be landscaped with a 20-foot landscape setback area. A single, large deciduous canopy tree or other thematic landscape combination should be established. The same tree will be planted within landscaped areas on both sides of the street at regular intervals for the entire road segment. In addition, other planting will consist of drought tolerant ground covers, vines, and shrubs to screen walls or fences that abut the collector street landscape areas.

3. Minor Collector Streets and Local Streets. Local streets will be landscaped with a single, large deciduous canopy tree planted at regular interval on both sides of the street for the entire length of the road. In addition, other plantings will consist of groundcovers, vines, and shrubs to screen walls that "side-on" to local streets. (see Figure 5.3, Sections G, H, and R1 through R4 for typical street cross sections.)

Policy 6.7 Street Tree Design. Street tree planting throughout Placer Vineyards will vary depending on the type and size of each street and the desired character of the individual neighborhoods.

1. In general, street trees should be planted at regular intervals, reflective of the tree used, to create a shaded canopy along the pedestrian travel way (see Appendix B for a recommended plant palette) [See EIR Table 4.2-1].
2. Street tree selection and plant locations will vary along the major thoroughfares such as Watt Avenue and Dyer Lane to create a naturalistic feel to the street corridors.

3. Street tree plantings can be modified to incorporate existing trees and native oaks where appropriate.

6.2.3 Community Gateways

The gateways into the community help define separate and distinct areas of the project, while providing for a sense of arrival. Placer Vineyards is designed with a series of community and neighborhood entry points. The entryway concept provides a hierarchy of entryway experiences and when coordinated with the street system will help orient visitors and community residents to the site. Entryway designs should complement the overall image and style of Placer Vineyards community, as will be defined in The Landscape Master Plan. Placer Vineyards will incorporate primary entries at major arterials throughout the project and minor entry points at other streets.

Goal 6.8 Create attractive gateway features that help establish a distinct identity for the Placer Vineyards community and its neighborhoods and helps orient visitors to the site.

Goal 6.9 Use a consistent application of elements such as landscaping, signage, fencing, and lighting at key entrances to the community.

Policy 6.8 Entryway Signage. Entryway signage will consist of monument signs set in medians on one or both sides of the street. Entryway signs should be located outside the right-of-way when they are proposed along the sides of streets and may be incorporated into walls or other architectural features to emphasize the transition. The complete signage program design for Placer Vineyards will be developed in more detail at a later date.

Policy 6.9 Minor Entries. Minor entries should be located outside the right-of-way at intersections to the internal street system to identify and mark the transition into residential neighborhoods in Placer Vineyards. The entries are small-scale landscape or architectural features that may include signs or monuments at the street corners. These features can serve as landmarks that give special identity and character to each residential neighborhood or block and may include special lighting, flowering trees or public art.

Policy 6.10 Community Gateway Theme. All entries should include thematic architectural or landscape design elements that incorporate a special landmark feature or public art to identity destinations in the community, representative of the Placer Vineyards character. Public art shall be subject to Design Review approval.

Policy 6.11 Northern Community Gateways. The primary northern entries will be provided on Baseline Road at Dyer Lane, 16th Street, Watt Avenue, and East Dyer Lane.
Minor entries will be located at other additional collector roadways intersecting Baseline Road, as indicated in Figure 6.4.

Policy 6.12 Southern Community Gateways. South of the project site, primary entries will be located along the Sacramento/Placer County Line at 16th Street, Tanwood Avenue, and at Watt Avenue where it intersects with Dry Creek. (see Figure 6.4).

Policy 6.13 Minor Community Gateways. Minor entries, as identified in Figure 6.4 will consist of landscaped setback areas on each side of the road. They will receive similar treatments to major entries but will be smaller in scale.

6.2.4 Signage Systems

Signs and landmark features located throughout the Planning Area will help to establish a coordinated and consistent quality, character and image for Placer Vineyards and aide residents and visitors in navigating through the community.

The intent of creating a system of permanent signs is to convey information regarding the names of streets, neighborhoods, particular locations and community facilities. Permanent signs include community entry signs and features, neighborhood signs and entry landmarks, street signs, directional signs and business identification signs. The complete signage program design for Placer Vineyards is not addressed in this Specific Plan but will be developed for review and approval by Placer County separately in more detail at a later date.


All signage shall be subject to the approval of a sign permit by the Placer County Planning Department and shall conform with the sign standards of the Placer County Zoning Ordinance (see Sections 17.54.170 through 17.54.200) unless this is superseded by the adoption of a separate signage program for Placer Vineyards.

1. In general, all signs shall be utilized for information and identification, not as individual business advertisement.

2. Signs should be made of materials and coatings that are permanent, durable and vandal resistant.

3. Sign walls and monuments shall not exceed 10 feet in height and shall be compatible with the quality, site environment and overall character of Placer Vineyards.

4. Lighting of entry signs shall consist of either indirect lighting with the light source at ground level or internal halo type lighting. In both cases, the lighting source shall not be visible from traveled roadways.
6.2.5 Lighting

Lighting throughout the Plan Area is an integral part of the overall community image and character. In addition to reinforcing the character of the Town Center, Village Centers, parks and the streetscape, lighting helps to increase the safety and security of residents and users. The lighting design for Placer Vineyards is guided by the following goals and policies.

Goal 6.10 Provide sufficient lighting to increase the safety and security of residents and visitors to Placer Vineyards on its streets, parks, and pedestrian pathways. Provide lighting that is attractive and compatible with other design features in the community.

Goal 6.11 Maintain the spirit and intent of the Dark Skies standards (the ability to view the night sky) by protecting against glare and excess lighting, providing safe roadways for motorists, cyclists and pedestrians, and promoting efficient and cost-effective lighting.

Policy 6.15 General Lighting Requirements. Lighting shall be designed and located to meet minimum, necessary ambient light levels for any given location consistent with public safety standards.

1. Lighting should occur at intersections, areas of major pedestrian activity, and building entries, and generally should be minimized elsewhere.

2. Street lighting shall be directed and regularly spaced, and shall project light down to the road surface and away from the building.

3. Decorative pedestrian scaled lighting fixtures shall be used in the Town Center, village centers, commercial centers, parks, and other major pedestrian activity areas.

4. The selection and design of lighting fixtures shall minimize glare and excess spillage onto neighboring properties. All street lights shall utilize cut-off fixtures to minimize visibility from adjacent areas of the community and public use areas.

5. No lighting shall blink, flash, or be of unusually high intensity or brightness.

6. Lighting fixtures should be energy efficient and provide a balance between energy efficiency and pleasing light color and coverage. Avoid low-pressure sodium fixtures. Acceptable light sources include mercury vapor, metal halide, and similar sources.

Policy 6.16 Street Lights. Street lighting on Baseline Road and Watt Avenue shall be simple single-arm cobra-head light fixtures particularly at major intersections. Street lights for collectors and local streets should be decorative fixtures that are
compatible with character of the Placer Vineyards streetscape (see Figure 6.6 for examples of street lights). The selection of street lights for Placer Vineyards will be addressed in the Landscape Master Plan. [See EIR Figure 4.2-3]

1. Color: The color of street light poles and fixtures shall be consistent throughout the community. All specified metals shall utilize anodized coatings, rather than painted colors.

2. Materials: Street light poles shall be either metal or wood fixtures.

3. Town Center: Street lighting in the Town Center shall consist of ornamental street lights flanking the roadways. Street lights shall be located in parallel pairs along the length of the street, spaced to provide illumination levels of 0.5 footcandles, and shall not exceed 14 feet in height.

4. Village Centers: Village Centers shall use a design in the same design family as the ornamental street lights in the Town Center, however, each Village Center shall utilize a light fixture designed to give the center a unique character and identity.

5. Baseline Road and Watt Avenue: Street lights on Baseline Road and Watt Avenue shall be simple, single-arm, cobra-head lights, spaced as required to maintain illumination levels of 1.75 footcandles, and shall not exceed 40 feet in height.

6. Arterial Streets: Street lights on arterial streets shall be selected decorative fixtures, spaced, as required, to maintain illumination levels of 1.0 footcandles on alternating sides of the street, and shall not exceed 25 feet in height.

7. Collector and Local Streets: Street lighting on collector and local streets in residential neighborhoods shall be ornamental or decorative street light fixtures, spaced, as required, to maintain illumination levels of 0.5 footcandles on alternating sides of the street, and shall not exceed 14 feet in height.

8. Neighborhood Entries: Street lights at neighborhood entries shall consist of ornamental or decorative fixtures flanking the roadway, located in pairs, and shall not exceed 14 feet in height.

Policy 6.17 Pedestrian Oriented Lighting. Pedestrian oriented lighting is encouraged within the Town Center, village centers, commercial centers, parks, and major pedestrian activity areas.
1. Pedestrian lighting shall consist of smaller pole fixtures, spaced to maintain illumination levels of 0.5 footcandles, and shall not exceed 14 feet in height.

2. Alternatively, use of bollard lighting fixtures along pedestrian paths of travel is also recommended.

3. With the exception of sports lighting, wood poles are recommended in parks and open spaces and along major pedestrian paths, in keeping with the more rural and rustic theme for Placer Vineyards. Specialized pedestrian lighting should be used to distinguish differences in individual neighborhoods and areas within Placer Vineyards.

4. Pedestrian lighting should be incorporated into the landscape design along major pedestrian paths of travel at appropriate intervals to provide lighted coverage.

5. Bus shelters, telephone kiosks, and other site furnishings should be adequately lighted for security and functionality. Light sources shall be included in the structure of the furnishings.

6. Pedestrian lighting should be durable and easily maintained and of sufficient intensity to provide lighting without spilling over onto road rights-of-ways and adjoining properties, or conflicting with street lighting.

Policy 6.18 Recreation Areas and Athletic Facilities. Lighting for athletic fields and court facilities shall be designed to minimize illumination and spillage onto neighboring uses and residential areas. Athletic facility lighting shall be provided only in the two community park facilities and the Town Center recreation center. Mercury vapor or metal halide lamps, mounted 30 feet to 50 feet high are recommended.

Policy 6.19 Parking Lot Lighting. Parking lot lights shall be no higher than necessary to provide efficient lighting of the parking areas and shall not exceed 25 feet in height for larger parking lots, including the base. Illumination levels shall be maintained at 1.0 footcandles. Spacing between light poles shall be determined by the required level of illumination.

1. The fixture design style and colors shall be compatible with the architectural design of the site.

2. Within the Town Center and village centers, the design and color of parking lot light fixtures, shall be consistent with the design of street lights.

Policy 6.20 Landscape Lighting. Landscape lighting shall be limited to important landscape areas, entryway features, signage, or pedestrian areas.
1. The design of landscape light fixtures shall be hidden from direct view unless designed as an integral part of the area’s design.

2. The light source shall be shielded from direct view at night, with the emphasis on the object or area being lighted. Up-lighting and mood lighting in trees and landscaping can be effective design feature for special entries, signs, water features, and landmarks.

3. Landscape light fixtures shall be durable and easily maintained. For ease of maintenance, landscape light fixture types and lamps shall be consistent with landscape design and street lighting for each neighborhood.

Policy 6.21 Service Areas and Security Lighting. Lighting in services areas shall be designed to avoid spillover onto adjacent properties and activity areas, and shielded from direct view of the light source at night.

1. Building-mounted flood light fixtures should not be used unless the light source is completely shielded from public view.

2. Low-pressure sodium fixtures or other lighting types that contrast excessively with lighting in the surrounding use area lighting should be avoided unless completely shielded from public view. Mercury vapor, metal halide, and similar fixture types are permitted.

Policy 6.22 Building Identification/ Street Number Lighting. Lighting of building identification and street numbers on buildings is encouraged to help locate buildings during evening hours.

1. Lighting of street identification or numbers may be internally lit or back lit, but external spot lighting is preferred.

2. Street number lighting should be subdued and not contrast excessively with the surrounding area lighting.

3. Numbers and lighting should be conveniently placed near the building entry and should be visible from the street and adjoining parking lots.

4. Buildings placed back from and not visible from the street may use freestanding lighted monuments or small pedestrian poles lights with mounted street numbers to identify street addresses of the building from the street.
6.3 Centers of Activity

6.3.1 Design of Activity Centers

Goal 6.12 Design for a variety of activity centers that serve their respective functions and add value to the communities where they exist through the provision of jobs, services and economic activity.

Goal 6.13 Provide a range of housing close to commercial centers.

Goal 6.14 Create attractive and comfortable outdoor pedestrian activity areas adjacent to buildings, entries and along major commercial streets.

Goal 6.15 Design parking areas that are in-scale with and are visually subordinate to the developments they serve.

Goal 6.16 Design buildings whose architectural character contributes to the vitality and attractiveness of the districts, neighborhoods, shopping centers, and workplaces in the community.

Goal 6.17 The heights of buildings shall be related and proportional to the activities and surrounding context in which they are located.

Policy 6.23 Density within Centers of Activity. The Town Center, village centers, and Baseline Road commercial corridor should be established at sufficient densities to support express bus transit from Placer Vineyards and other neighborhood areas in the region.

Policy 6.24 Pedestrian Orientation. Design elements that accommodate pedestrians and cyclists shall be equally treated or take precedence over elements that primarily accommodate automobiles, especially in the Town Center, Village Centers, Neighborhood Centers and access areas leading into parks, schools and other public facilities. Retail centers and commercial areas shall be designed to provide maximum pedestrian accessibility, as described below.

1. Ground-floor commercial buildings shall be oriented to plazas, parks, and pedestrian-oriented streets rather than to interior blocks or parking lots.

2. Street-level windows and numerous building entries, including arcades, porches, bays, balconies, are encouraged.

3. Walls of commercial establishments without an entry or a pedestrian route shall include windows and display areas, or shall be lined with retail shops to provide visual interest to pedestrians.
4. Entries to small shops and offices shall be sited to directly open onto a pedestrian-oriented street. Buildings with multiple retail tenants should have numerous street entries.

5. Parking areas shall be designed with separate vehicular and pedestrian circulation paths and include traffic calming design features. Alternative surface materials are encouraged to differentiate pedestrian circulation paths.

6. Off-street parking should be located at the rear of buildings with separated walkways leading to the street and entryways.

7. Build-to-lines and minimum height limits should be incorporated in the design of the Town Center.

Policy 6.25 Parking Lot Shading. New parking lots serving retail and office developments shall include tree plantings designed to result in 50% shading of parking lot surface areas within 15 years. These shading requirements shall apply to all impervious surfaces on which a vehicle can drive including parking stalls, drives and maneuvering areas within the property. Placer County shall use the City of Sacramento Parking Lot Tree Shading Design and Maintenance Guidelines, June 17, 2003 edition, to implement these requirements.

Policy 6.26 Building Heights. Taller buildings should be located along the major commercial nodes, at the Town Center, on transportation corridors, and within the office and commercial areas along Baseline Road. Lower story buildings and less intense development should be located adjacent to existing neighborhoods in the Special Planning Area to provide appropriate transitions to more intense development at the center and along the major transportation corridors in the Plan Area.

Building Design Guidelines

Development should be designed to provide varied and interesting building facades and provide as much variety as possible without creating a chaotic image. Facades should vary from one building to the next to avoid an overly unified frontage. Continuous covered walkways should be provided whenever possible.

Architectural Details:

Provide architectural detailing that gives buildings human scale, visual interest, and distinctiveness through the following:

1. Use a variety of architectural elements such as arcades, recessed exterior balconies, changes in the façade treatment, window awnings, canopies, and other building elements that create visual interest through light and shadow.
2. Use special architectural features to accentuate building entries.

3. Avoid large blank walls at the building base along pedestrian walkways and entries. The building base should be articulated with changes in materials, color and finishes, window and door patterns, and use of special building entrance features.

4. Coordinate the design of exterior elevations, roofs, and details to create a consistent overall design pattern within a buildings and development site.

5. Articulate wall and window surface places with setbacks, recesses, trim, reveals, or other design detail to add visual interest, scale, and changes in light and shadow to building facades.

6. Screen all utility boxes and rooftop equipment to provide attractive views on the street or from adjacent taller buildings. Avoid use of chain link fences as rooftop screening.

7. Use high-quality finishes and materials that contribute to creating a unified building character and ensure a consistent design quality, particularly on surfaces adjacent to pedestrian spaces.

Build-to-Line:

The build-to-line establishes a minimum percentage of building space (retail uses, public uses, or active spaces) facing the street with a minimum percentage of windows, doorways, and entry spaces facing onto the sidewalk. Activity spaces opening onto the street, enhance the pedestrian character of the street, provide for visual surveillance into the public realm, and increase the safety and security of the area.

The “Town Center” section of this chapter establishes a set of build-to-lines and their requirements for the Town Center. Commercial/ mixed-use developments in the village centers and neighborhood centers should establish build-to-lines.

Materials:

Materials used should reflect the style and overall character of buildings. Permanent, long-lasting, low-maintenance building materials are encouraged. These may include stone, stucco, brick, high-quality wood products, steel panel, or flange steel.

Use of Color:

Colors should be used to bring together materials used in the design of the site and can complement the building architecture. Colors should be used to give distinct character to different buildings and different tenants within large building complexes.
Roofs Forms:

Roof form should be used to identify and articulate different buildings and distinguish different tenants within a larger building complex.

Cornices:

When used, cornices should have contrasting colors and materials to the wall surface areas below them.

Towers:

Tower elements may be incorporated into building designs to create identity when appropriate to the building aesthetic. They can provide a change in scale at the street corners or be sited in between buildings to provide focal points and transitions between spaces or buildings in a multi-tenant complex. Tower elements should be used sparingly and not conflict with the rhythm of vertical elements on the block.

Windows:

The shape, size, and placement of windows are major design elements that help establish the style and character of a building’s design. Windows, located at the ground floor, along major pedestrian commercial streets, should be large display windows that have a transparent quality, connecting the activities within to the pedestrian experience outside. On upper floors, window design elements such as shutters, canopies, recesses, and other elements should be used to add variety to the building design fronting the street.

Canopies, Awnings, and Arcades:

Canopies, awnings, and arcades should be used along pedestrian streets to add an additional layer of variety, depth, and interest to building facades. Canopies, awnings, and arcades help identify and articulate major entries, cast shadows on the building facades, and may be used to carry additional signage.

Signage:

Signs should be designed as an extension of the architecture of a building or site and should complement the building or site materials, colors and rhythm of walls, windows, parapets, and other architectural design features. Signage should provide information and identification of shops and tenants and should not be used as advertisement and are subject to the standards in Section 6.2.4 of this document and the standards and requirements of Section 17.54.170 of the Placer County Zoning Ordinance.

Wall signs located on multi-tenant centers shall be designed to coordinate with each other through the coordination of sign type, size, placement, illumination, color, and/ or font.
Town Center

The Placer Vineyards Town Center is located in the “heart” of the community, just south of Baseline Road from 16th Street east to 14th Street. The Town Center provides a “traditional” small-town core and acts as the community focal point for Placer Vineyards residents. The urban design vision for the Town Center is focused on a traditional grid street pattern, organized around a Town Green. The Town Center is intended to be pedestrian in scale with large tree-shaded streets with retail and civic uses oriented to the street.

Goal 6.18 Create a mixed-use, pedestrian-friendly Town Center that provides a range and mix of uses, including higher density residential mixed-use developments; loft spaces; professional offices; traditional retail stores, neighborhood-serving retail and services; entertainment uses, such as movie theaters and live entertainment venues, restaurants and cafes; and a range of public uses, including a Community/Recreation Center; library; and civic buildings for government offices, community meetings and public gatherings.

Policy 6.27 Town Center Design. The Town Center shall be designed to serve as the public, institutional and social focal point for the community. The Town Center will contain a community center or meeting facility that may include formal outdoor gathering areas, offices, and facilities for law enforcement, fire protection, the library and other public and quasi-public facilities. The Placer Vineyards Town Center shall be designed with a centrally located religious facility (house of worship) that anchors and serves as a visual landmark for the Town Green.

Policy 6.28 Town Center Streetscape. The Town Center is designed as a pedestrian-friendly streetscape environment with buildings located behind wide sidewalks. This streetscape environment allows outdoor eating, display areas, and public art exhibits and features angled street parking for easy access to local shops and stores. Shared parking areas are located within the middle of each block with buildings oriented toward the street and the Town Green.

Town Center Site Design Guidelines

Recognizing that the build-out of the Town Center will occur over a 20- to 30- year time frame, development within the Town Center shall be guided by the following standards.

1. The Town Center green shall be centered on a public “Town Green.” The Town Center green shall be designed as an urban park, intended to function as the formal outdoor, public gathering place for the community. The Town Green shall provide for convenient pedestrian access and circulation from other portions of the Town Center, comfortable seating areas protected from the sun, and other pedestrian amenities, such as large-canopy shade trees, water features, public art, and a small outdoor band shell or amphitheater for public events.
2. The Town Green shall be visible from the surrounding Town Center retail streets. Cafes, coffee shops, restaurants, and other food services are encouraged to be located on the periphery of the Town Green with outdoor eating and dinning areas facing onto the square.

3. The Town Center shall consist of compact districts continued within a regular grid street pattern to create small, walkable blocks in the commercial core. In general, blocks should typically be about 300 feet in length.

4. Buildings in the Town Center shall front onto the public streets and the Town Green. See Figure 6.10 for a conceptual massing diagram.

5. At least 70% of the façade of the first floor of all building in the Town Center shall have transparent glass, windows, entries, doorways or other active spaces fronting onto the public street and sidewalks.

6. A mix of ground-floor and second-story uses is encouraged, particularly adjacent to the Town Green. Second-story uses are encouraged at street intersections and to terminate vistas along the major axis of the town green.

7. Street elevations within the Town Center should reflect varying styles and not be limited to one particular theme or style. The scale and massing of the elevations shall respond to the pedestrian scale, creating visual interest, and variety and avoiding continuous blank walls. Buildings shall be a minimum of 25 feet in height.

8. All sides of buildings visible to the public should be designed as active, interesting facades. Service areas and facades that are not generally visible from the public streets and open spaces may be simpler in design treatment.

9. Commercial streets within the Town Green shall be designed with diagonal parking and corner bulb-outs to increase pedestrian safety and access across streets.

10. 16-foot-wide, comfortable sidewalks shall be designed with appropriate and coordinated pedestrian furniture including seating, trash receptacles, pedestrian lighting, newspaper racks, bicycle parking areas, drinking fountains, signs, and information kiosks and bus shelters.

11. Additional landscape amenities shall be provided as decorative elements such as landscape planters for flowers, specialized ground cover, corner bulb-outs, flower boxes along outdoor eating areas, and hedge plantings used to screen surface parking lots.

12. Pedestrian and bicycle path systems shall be provided within the Town Center for safe pedestrian access, circulation and connections to surrounding residential neighborhoods.

13. In limited areas, parcels may be aggregated to form larger development sites to accommodate a variety of retail and office uses in the Town Center and to better serve the
community shopping needs, such as, a grocery store, hospital site, or department store. Refer to Appendix A, “Land Use and Development Standards,” for commercial site design standards.

14. In the event that a large site aggregation occurs, driveways and pedestrian linkages serving these large parcels shall be located mid-block to better integrate the development into the urban pattern and preserve the street grid.

15. Buildings on larger aggregated sites should be organized to fit into the overall urban character of the Town Center and avoid large parking areas separating the retail use from the Town Center Core.

Town Center Building Design Guidelines

The overall building style of the Town Center should be developed to use traditional materials and building forms to create an architectural character that is unique to Placer Vineyards.

Roofs Forms:

Roof forms should be used to identify and articulate different buildings and distinguish different tenants within a larger building complex. Roof forms in the Town Center may include flat roofs, pitched and hipped roofs and other distinctive roof shapes and forms. Pedestrian areas should be enhanced by shed and gabled roof elements that extend into the pedestrian realm as arcades to provide cover and shade. Dormer elements are encouraged to provide an added layer of detail, shadow, and variety to roof forms. Use of contrived or fake mansard roof elements to screen roof top equipment should be avoided.

Cornices:

Varied cornice elements help to give the Town Center a “built-over-time” appearance.

Canopies, Awnings and Arcades:

Canopies, awnings, and arcades should be used to provide the patrons of the Town Center with protection from the weather during winter rainy months and hot summer months and to identify and articulate the pedestrian way and major entries, or to carry additional signage.

Towers:

Tower elements situated and massed appropriately can enhance the Town Center’s identity and character. Towers can serve as focal points and transitions between spaces. One larger tower should be incorporated in the design of one of the Town Center community buildings to identify it with a landmark, visible from the surrounding community.
Windows:

Window sizes and proportions should be appropriate to the individual building styles and uses. Window forms and shapes may vary from building to building to subtly reflect a “built-over-time” appearance in the Town Center.

Use of Color:

Colors should be consistent within the Town Center District. Colors should be used to bring together materials used throughout the Town Center and can complement the building architecture—stone, concrete, wood, stucco, glass, fabrics, or other materials. Colors should be used to give distinct character to different buildings and different tenants within large building complexes.

Materials:

Materials used should reflect the style and overall character of buildings. The materials used for the Placer Vineyards Town Center should be high quality, long lasting and low maintenance. Use of the following materials is encouraged:

- Stone
- High-quality wood products
- Brick
- Steel
- Smooth stucco finishes
- Glass

Use of the following materials in the Town Center is discouraged:

- Heavy stucco finishes
- Contrived stone veneers (stucco stone)
- Unfinished tilt-up wall panels
- Large unbroken window walls
- Exposed concrete block walls
- Exposed aggregate walls

Signage:

Signs in the Town Center should reflect its overall character and theme and preserve the integrity of the building’s architecture. The form, size and fonts used in the Town Center signage systems should vary from building to building and tenant to tenant to create visual interest and give the effect of a cumulative building process. Pedestrian-scale permanent monument signs are also encouraged at information kiosks to guide the visitor from one point to another throughout the Town Center and the Placer Vineyards Plan Area.
Generally, the main identification signs should be mounted flush to the building façade. Projecting signs extending over pedestrian walkways designed as iconic symbols of the retail use are encouraged. Freestanding monument signs within the Town Center core area are discouraged. Neon signage, if used, should be artistically applied as a contrasting element in the building facade.

Lighting and Pedestrian Furniture:

Pedestrian-scale street lights shall be provided at an appropriate spacing within the Town Center, located at street intersections, parking lot access points, pedestrian alleyways, and walkways. Streetlights should be equipped with standards for hanging decorative banners, flags, and flower baskets.

6.3.3 Village Centers

Two mixed-use village centers are planned for Placer Vineyards. One village center is located on the east side of the Plan Area, along Watt Avenue. The second village center is located on the west side on Dyer Lane. These village centers are pedestrian-oriented, mixed-use activity nodes, providing retail sales and services to the immediate surrounding neighborhoods.

Village centers are intended to provide a unique, small cluster of activities, with offices and residential uses above ground-floor retail uses. Streets and pedestrian and bicycle paths connect to surrounding residential neighborhoods. Buildings are clustered around small neighborhood plazas, greens, or gathering places where local residents can meet for activities and events.

Policy 6.31 Village Center Streetscape. Walkways in the mixed-use village centers should be designed to create a pedestrian-friendly environment and urban in character. They should include the following features:

1. Wide sidewalks designed to support the active pedestrian environment with adequate widths for strollers and wheelchairs to pass one another on the same walkway.

2. Curb ramps and design features to emphasize the pedestrian movement across traffic lanes at key intersections of thoroughfares, arterials, and collector streets.

3. Textured or colored pavement highlighted with clear white striping and bulb-outs or curb extensions at major crossings, used to improve the visibility and safety of pedestrians.

4. Attractive and consistent signage and pedestrian-scale lighting to create a sense of place and identity within Placer Vineyards.

5. Comfortable and coordinated street furniture.
A. General Village Center Design Guidelines

Village Centers should conform to the following design guidelines:

1. Village Centers are encouraged to provide higher intensity housing and commercial uses within a convenient walking distance (5 minute walking distance) of the center. Residential uses should average at least 14 dwelling units/acre.

2. The Village Center should be organized to provide convenient walking connections from the surrounding neighborhoods.

3. The building and site design of the Village Center should create a pleasant and enjoyable place that makes walking attractive and preferable to use of the car. The pedestrian experience should include large-canopy street trees, landscaped spaces, and seating areas.

4. Buildings should be clustered close to street sidewalks and provide multiple windows and entries on the ground floor to enliven places and increase safety and visual control of the street.

5. The street network should be interconnected with the surrounding neighborhood to encourage walking and cycling and distribute traffic to minimize volumes on local streets.

6. Streets with sidewalks and pedestrian paths should provide direct and convenient connections to the Village Center core.

7. Transit stops should be located in the core of the Village Center with shelters, seating and other pedestrian amenities all in close proximity to other Village Center uses.

8. Parking for the village centers should be clustered in smaller parking courts behind buildings, away from the main public view, and should allow for shared use by all Village Center land uses and property owners.

9. For mixed-use projects, parking may be shared between uses, as defined in Policy 3.22.

10. Building design within the Village Center should create one consistent theme or Village Center architectural character through the use of a similar family of building materials, building styles, design elements, and use of color and details.

11. Pedestrian amenities, landscaping, furniture, signs, and lighting should conform to a common landscape design theme to help provide a consistent village image and character. The theme should strive to create a consistent and pedestrian-scale treatment to buildings and the landscape without being overly historical in its approach, or relying on styles that may become outdated in the near future.
12. Use of architectural elements that create a more active street-life and pedestrian scale at the street level are encouraged. Such elements include ground-floor commercial windows; entries; awnings, overhangs, and arcades; outdoor seating and eating areas, and sidewalk seating, street trees for shade; pedestrian-scale lighting; signage; public art; and other streetscape elements.

B. East Village Center

The East Village Center, located at the intersection of Watt Avenue and Town Center Drive, will feature a range of locally serving retail uses and services and include a transit center and fire station. The East Village Center is larger than the West Village Center and is intended to create a higher density, pedestrian- and transit-oriented, mixed-use node of activity.

A range of locally serving retail uses are encouraged in the East Village Center. Such uses include, but are not limited to, neighborhood retail goods and services, restaurants and cafes, grocery stores, drugstores, delis and specialty food stores, hair salons and barber shops, laundry and dry cleaning services, video stores, hardware stores, wine stores, liquor stores, gas stations, bakeries, ice cream shops, shoe stops, appliance stores and repair shops, and other similar neighborhood-serving goods and services. In addition, the East Village Center provides opportunities for a range of small offices and professional services such as dentists and doctors, accounting and real estate offices, public and quasi-public uses, and facilities such as day care, religious facilities, and outdoor plaza, park, and gathering places.

The Transit Center provides a major bus stop and park-and-ride facilities for a bus transfer station and future bus rapid transit (BRT) service planned for Watt Avenue. It also provides connections to a streetcar system with services to the Town Center and to an internal bus system, that will provide links to the neighborhoods, major community facilities, schools, and the Town Center.

Direct pedestrian and bicycle access is provided from surrounding residential neighborhoods and along adjacent open space corridors.

C. West Village Center

The West Village Center, located along Dyer Lane and Town Center Drive, provides a cluster of mixed-use commercial and higher intensity residential uses in the vicinity of surrounding residential neighborhoods and a range of public facilities, the new high school, and local religious facilities. The West Village Center also provides connections to open space corridors and roadways.

A range of locally serving retail uses are encouraged in the West Village Center. Such uses include but are not limited to restaurants and cafes, grocery stores, drug stores, delis and specialty food stores, hair salons and barber shops, laundry and dry cleaning services, video stores, hardware stores, wine stores, liquor stores, gas stations, bakeries, ice cream shops, shoe stops, appliance stores and repair shops, and other neighborhood serving goods and services. In
addition, the West Village Center provides opportunities for a range of small offices and professional services such as dentists and doctors and accounting and real estate offices.

The West Village Center is designed as a pedestrian- and transit oriented (bus stop) mixed-use center with a diverse uses. It is designed with higher density residential uses or offices over ground-floor retail uses, located within a 5-minute walk (roughly one-quarter mile) from the surrounding neighborhoods.

6.3.4 Baseline Road Regional Commercial Corridor

The Baseline Commercial Corridor is intended to provide services and promote a balance of employment in the region, as well as, generate revenue for the County. It includes business parks, offices, regional commercial centers, and a Power Center.

Goal 6.19 Provide attractive commercial development along Baseline Road that provides employment, attracts economic development, and is easily accessible to the community.

Goal 6.20 Allow a mix of uses along Baseline Road to encourage a diverse base of tenants and patrons.

Policy 6.33 Baseline Road Commercial Corridor. The Baseline Road Commercial Corridor offers products, services, and employment catering to the broader Placer Vineyards region. It is guided by the following standards.

1. The Baseline Road commercial corridor is designed to provide easy access and transportation connections to neighborhood areas.

2. Direct access connections shall be avoided from Baseline Road and shall, instead, be provided on A Street (see Chapter V, “Transportation and Circulation,” for roadway design guidelines and access controls for Baseline Road).

Policy 6.34 Commercial Center Design. Commercial buildings located next to Baseline Road and a 50-foot landscape corridor shall provide buffers internally in the Plan Area to the noise and traffic generated on Baseline Road.

Policy 6.35 Location of the Power Center. A Power Center will be strategically located in the Baseline Road Commercial Corridor at the southwest corner of Watt Avenue and Baseline Road to supply large-volume goods and services.

Design Guidelines for Regional Commercial Centers

1. Encourage buildings to be clustered to allow for internal courtyards and landscaping that minimize the views of parking areas and allow separation of parking and vehicular traffic
from the pedestrian experience. Place buildings in close proximity to high-use pedestrian and transit streets to shorten the distance between transit and building entrances.

2. Pedestrian Oriented Design. Design for site accessibility.
   a. Provide wide sidewalks and walkways from parking areas and transit stops.
   b. Provide bicycle facilities, seating and other pedestrian amenities at a convenient location to building destinations.
   c. Use textured, colored pavement and signage to delineate pedestrian areas and bike ways from vehicular areas.
   d. Provide plenty of shade along sidewalks, commercial frontage and access routes through continuous canopies of shade trees, arcades and awnings.

3. Commercial Sidewalks. Design commercial sidewalks at a comfortable width to allow for adequate pedestrian access and visibility between adjoining retail storefronts and outdoor activity.
   a. Design sidewalks with appropriate and coordinated pedestrian furniture including seating, trash receptacles, pedestrian lighting, newspaper racks, bicycle parking areas, drinking fountains, and signs.
   b. Establish a build-to-line but allow variations in the placement of buildings that front directly onto commercial sidewalks. This variation is intended to accommodate building entries or additional café seating, landscape courtyards, and plaza spaces that function as outdoor spaces and encourage pedestrian activity.

4. Give special design treatment to street corners which are the most visible areas of the site and natural focal points. Buildings are encouraged to be placed at street-corner intersections.

5. Organize buildings on larger aggregated sites to avoid large parking areas that separate the pedestrians from their destinations.
   a. On-street parking is encouraged within the parking lots of regional commercial sites or on side streets with no thru-traffic.
   b. Shared parking is encouraged on multitenant sites.
   c. Plant deciduous canopy trees in parking lots and provide shade along sidewalks.

6. Separate access for loading from the primary driveway access. Loading areas and trash containers are encouraged to be located behind buildings, to the sides of buildings, accessed by service alleys, or screened by walls and landscaping.
6.3.5 Neighborhood Commercial Centers

Neighborhood Commercial Centers are intended to provide a range of neighborhood-oriented retail services and products to the residential neighborhoods immediately surrounding them. These centers are sized to allow major tenants, such as supermarkets, drug stores, and hardware stores, as well as convenience service stations, fast-food restaurants, and support office uses including real estate, insurance and dental offices.

Generally sited on the corners of major arterial and collector intersections, neighborhood commercial centers are located near higher density residential uses, public/quasi-public uses, and parks and open space.

More than just convenience retail centers, neighborhood commercial centers provide a local neighborhood focal points of activity for local neighborhoods. Designed to encourage pedestrian access, they serve as local gathering places that enable other forms of neighborhood activity and interaction to occur.

Goal 6.21 Provide local neighborhood services within the community designed to be easily accessible and pedestrian friendly.

Policy 6.36 Neighborhood Commercial Centers. Neighborhood commercial centers are mixed-use core areas that provide local services and retail to serve the surrounding neighborhoods. These centers will provide for neighborhood commercial needs, offering professional services, public/quasi-public facilities, high density residential uses, and easy access to transit services.

Policy 6.37 Pedestrian Access. Neighborhood commercial centers shall be designed to encourage pedestrian access along the face of commercial buildings and along public sidewalks.

1. Covered walkways and awnings should be provided along the fronts of major anchor stores and connect with other multi-tenant retail shops.

2. Bicycle and pedestrian trails should be provided to allow convenient access between neighborhood commercial centers and surrounding residential neighborhoods.

Policy 6.38 Auto Access. Auto access connections should be designed to slow and discourage cut-through traffic with the use of speed bumps, stop signs, or delineated pedestrian crossings and other features.

Policy 6.39 Transit Access. Bus turnouts, shelters, and clear pedestrian paths from the street to the major commercial tenants should be incorporated into the design of neighborhood centers.
Design Guidelines for Neighborhood Commercial Centers

1. Building Siting. Buildings should be oriented towards and located next to pedestrian walkways and street edges. Parking should be placed behind or to the side of buildings to minimize their appearance.

2. Lighting. Pedestrian-scale street lights shall be provided at appropriate spacings at street intersections, within parking lots, and along pedestrian alleyways, and walkways. Street lights should be equipped with standards for hanging decorative banners, flags, and flower baskets. The maximum height for street lighting shall be 14 feet.

3. Parking. For mixed-use sites, parking may be shared between uses as defined in Policy 3.21.

4. Loading. Loading access should be separated from the primary driveway access. Loading areas and trash containers should be located behind buildings, to the sides of buildings, accessed by service alleys, or screened by walls and landscaping.

6.4 Neighborhood Design

Placer Vineyards is organized as an assembly of neighborhoods each designed with distinct site attributes and anchored by community-serving amenities that are connected through a system of roadways and greenways. The following design guidelines are intended to promote quality design and a cohesive residential environment for a wide array of single-family (detached and attached) and multi-family housing types and provide guidance for the siting of home in relationship to the street, to open space, and activity centers. This section should be used in conjunction with the residential and land use development standards in Appendix A of the document.

Goal 6.22 Create distinct districts and neighborhoods that help define a sense of place and character within the larger Placer Vineyards community.

Goal 6.23 Design new development that is attractive and functional and that adds to the creation of a sense of place for the Placer Vineyards community.

Policy 6.40 Residential Neighborhood Site Design. Residential neighborhood site design should provide opportunities for pedestrian and bicycle connections to core areas and other neighborhoods. Residential developments should be compatible with and be incorporated into the broader community and should avoid sound walls, when possible, or layouts and designs that insulate or separate the development.

6.4.1 General Lot Design

Goal 6.24 Promote lot design and development standards that provide for the orderly organization of each development but allow flexibility to accommodate a wide range
of land use types, housing types, styles, and design solutions that respond to the unique site characteristics of Placer Vineyards.

Goal 6.25 Encourage new, creative, and imaginative site design solutions that provide a variety of solutions to land use types throughout Placer Vineyards.

Policy 6.41 Lot and Development Standards. All development in Placer Vineyards shall comply with the residential lot and development standards described in Appendix A, "Land Use and Development Standards."

Design Guidelines for Residential Lotting Adjacent to Major Roadways

Residential lotting adjacent to major roadways should minimize the need for continuous sound walls through the use of a variety of road and lot configurations. Possible alternative lotting and road configurations are provided in EIR Figure 4.2-4.

6.4.2 Residential Design

The Placer Vineyards Plan is based on the concept of interconnected residential, commercial and open space areas. The size and location of collector streets are also based on this concept and should also be carried down to the neighborhood scale. Toward this end result, neighborhood residential policies encourage connections to collector streets between the properties of different parcels. This concept of interconnections is represented in Figures 6.22, 6.23 and 6.24.

Goal 6.26 Develop residential areas as open and linked neighborhoods that encourage alternative modes of transportation—walking, biking, and transit use—with a school or neighborhood park located within easy walking distance of the surrounding community as the focal point.

Goal 6.27 Create an interconnected community that increases the opportunity for pedestrians to make shortcuts during trips by providing points of access from residential neighborhoods, using various edge treatment options.

Policy 6.42 Neighborhood Design. Neighborhood design layouts should be designed consistent with the following standards and guidelines.

1. Roadways should link adjoining neighborhoods as an interconnected network to provide easy access to and between neighborhoods, schools, neighborhood parks, and open spaces, and to create an even distribution of traffic and maximize visibility. Neighborhood layouts should provide multiple access points, thereby maximizing the number of streets that carry traffic into each residential area, and distributing traffic loads.

2. Residential neighborhoods and associated landscape plans should be organized to create a feature or place that makes the neighborhood unique
or distinct. This center may include neighborhood parks, open space and creek corridors, or school sites.

3. These elements should be integral to each neighborhood and should be easily accessible from the surrounding residences.

4. Religious sites should be located on the periphery of residential neighborhoods along community collector streets or arterial roadways.

5. Residential streets should be organized to slow traffic and create a more pedestrian-friendly and safe environment through the selective use of roundabouts, bulb-outs, median planting areas, cul-de-sacs, special paving and architectural features, and other design features to accentuate a particular place.

6. Neighborhoods adjacent to parks, open spaces, and creek corridors should be oriented to visually and physically incorporate the creekside open spaces into the neighborhood with links to neighborhood parks, school sites, and the pedestrian trail system. Neighborhood layouts should ensure that open spaces and creeks are visible and accessible from public areas, streets, and trails. In these situations, single-loaded streets are encouraged. Lot and residential building layouts should face onto open spaces wherever possible to provide visual surveillance and security to open space areas.

7. Residential site designs should ensure outdoor activity areas shall not exceed the County noise standards. Designs shall, however, minimize the need for sound walls adjacent to collector streets within Placer Vineyards by utilizing the planning techniques defined in Policy 6.44 through 6.46 and as illustrated in Figures 6.21, 6.23, 6.24, 6.27 and 6.28.

8. Pedestrian and emergency access should be provided from neighborhoods adjacent to open space and creek corridors.
   a. Access can be provided by local, single-loaded streets parallel to open space and creek corridors.
   b. Access should also be provided from open-ended cul-de-sacs, stub streets, loop streets or pedestrian easements between lots.
   c. Pedestrian access points along open spaces should be no more than 600 feet apart.
   d. Use of narrow pedestrian connections between lots should be minimized and used only where site constraints preclude access directly from abutting streets.
e. Where used, pedestrian access easements should provide functional, safe connections and be a minimum of 20 feet in width. Portions of pedestrian access easements may be wider in portions while still providing visual surveillance from the abutting streets.

f. Housing units adjoining access easements should orient homes toward, and be designed to provide visual surveillance of, the pedestrian path from major living areas of the unit, major entries, and/or windows.

9. All neighborhood site layouts should provide a minimum of two access points on local neighborhood collectors.

10. Neighborhoods should have a mix of one- and two-story homes.

A variety of garage placements and driveway configurations are encouraged in residential neighborhoods to reduce the visual scale and dominance of cars and garages along the street. See Figure 6.25 for examples of garage and driveway configurations.

Design Guidelines for Residential Buildings

Goal 6.28 Provide a diversity of neighborhood streetscapes and architectural designs. Variety in design character helps to reduce the visual repetitiveness of neighborhoods and contributes to a sense of scale that relates to the street and deemphasizes the automobile as the dominant visual component in the physical landscape.

General Building Design Guidelines. Residential building design should provide a mix of facades and floor plans along the same street to avoid repetition or monotony. A variety of design techniques may be used to create variety and visual interest along the street, including the following:

1. A mix of floor plans, elevations, building styles, and setbacks is encouraged to provide variety in the appearance of the street. Variations may include a mix of building styles, small thematic areas within a larger development area that exhibit a common style or identity. Houses of identical elevation should not face one another across the street, nor should they be located next to each other on the same street.

2. Front elevations of residential units should be designed to emphasize entries, porches, and windows into living areas and deemphasize garages.

3. The building facades in each neighborhood should provide for a variety of styles, materials, colors, and details with some elements that create continuity between units.
4. Large wall surface areas on building facades should be varied through the use of offsets, overhangs, recesses, balconies, or other architectural elements to provide visual relief and interest. Design attention should also be given to side and rear building facades visible from arterial streets, parks, or other public use areas.

Design Guidelines and Standards for Entries and Porches

Residential building design should emphasize building entries and porches oriented to the street, providing visual surveillance of the public realm.

1. Entries to residences should be located on the front façade and articulated with special architectural elements such as a deep-set roof overhang, trellis, porch, an offset entry stoop, entry garden/courtyard, or entry portal.

2. All front porches should have a minimum depth of six (6) feet (measured from the house to the center of the support columns), large enough to be functional as outdoor seating areas.

Design Guidelines and Standards for Roofs

Residential neighborhoods and building designs should incorporate a variety of roof forms and treatments to create visual interest. Roof forms, materials and colors are a major visual element in establishing the style, character and appearance of residential neighborhoods. Roofing materials used should reflect the style and overall character of the building and shall be compatible with adjacent neighborhoods. Colors should be used to bring together materials from the site or in the architecture of the building. Use of colors to differentiate between buildings or tenants within larger multi-family complexes or residential developments is encouraged.

Careful consideration and the following standards have been set to avoid the monotonous, repetitive or massive views of roofs from off-site locations.

1. A variety of roof forms should be provided for each floor plan within a neighborhood, compatible with the architectural style of each building.

2. Roof pitches may vary within each neighborhood or project area.

3. Simple roof forms that cover the majority of the main body of the house are preferred. However, roof form should be articulated through the use of gables, hips, dormers, clerestories, offsetting ridgelines, or other architectural features to reduce the appearance of one large unarticulated building mass.

4. Where possible, roof designs should provide large eaves or overhangs to reduce the visual scale of the building, provide shadow lines and shading to windows reducing heat loads to the building interiors.

5. All rooftop equipment should be concealed or integrated into the design of the roof.
6. Mechanical equipment shall be screened from public view.

7. Equipment shall be located within an enclosure or screened to minimize noise and visual blight to surrounding area and or public streets.

8. Roof vents should be grouped and located to the rear of the ridgeline, away from the public streets, public parks and major pedestrian areas to the greatest extent possible.

9. Roof top screening should be designed as an integral part of the building style and roof type.

10. Active and passive solar systems are encouraged to be integrated into rooftops and building orientation.

Design Guidelines for Garages and Driveways

Garages:

The following are guidelines for locating garages:

1. Homes with side-loaded garages may be set forward of the front façade of the living area, provided the garage side on the street is set back consistent with the minimum front setback for that area.

2. Garages served by an alley may be attached.

3. Homes on corner lots should provide driveways from the side street when feasible, as shown in Figure 6.25. Facades of buildings with side-entry garages should be designed with windows, overhangs, arbors, entryways, or other design elements to avoid continuous blank walls on the facades of side facing garages.

4. Single-width garage doors are encouraged especially for two-car garages.

5. Location of detached garages in the rear half of the lot are encouraged.

Design Guidelines for Driveways

Driveways:

The following guidelines are recommended for the design of driveways:

1. Direct driveway access to individual residential units from a four-lane or six-lane arterial street is prohibited.

2. Use of planter strips or special paving is encouraged for driveways.
3. Driveways with parking on the driveway shall conform to the minimum aisle widths and parking stall depths for parking lots.

6.4.3 Walls, Fences and Screening

Walls and fences throughout Placer Vineyards and on property lines provide for privacy security and sound attenuation, and can help to shape individual homes and neighborhoods. Walls and fences influence the character of neighborhoods and they can reduce connectivity by creating physical and visual barriers between neighborhoods.

The policies of the Placer County General Plan encourage the use of setbacks, building orientation, noise barriers and other alternatives as noise mitigation in lieu of sound walls. The design intent of this Specific Plan is to limit the use of sound walls along arterial and collector roads. To mitigate traffic noise and the possible negative visual impacts of continuous sound or privacy walls, a variety of design treatments and land use relationships are recommended. These design treatments include:

- Landscape setbacks
- Land use patterns planned to be compatible to the scale of roadways
- The arrangement of lots and streets, including frontage or loop streets and open ended cul-de-sacs to provide an additional setback or interrupt the continuous wall
- Consistent wall design with interruptions to wall massing for pedestrian openings/connections and wall offsets with optional trellises and privacy gates
- Landscape treatment, such as earth berms, to buffer pedestrian paths and soften or minimize the presence of the wall

Goal 6.29 Design communities to provide increased visual surveillance of all parks, open space, and pedestrian ways.

Goal 6.30 Encourage open communities. Limit the use of sound walls and fences that can separate neighborhoods.

Goal 6.31 Implement measures to reduce traffic noise on-site to acceptable levels along major thoroughfare and arterial routes (Watt Avenue, Baseline Road, Dyer Lane) and the major collector roadways with general outdoor noise levels in excess of 60 dB DNL, where such routes and roadways are adjacent to low- and medium-density residential development.
This section includes a variety of techniques and standards that must be used to satisfy the above goals. These require that sound walls be used only when absolutely necessary to meet General Plan noise level standards and policies.

Policy 6.43 Attenuating Noise at Low- and Medium-Density Residential Areas Along Major Roadways. The following shall establish the primary and secondary means for achieving acceptable sound levels along streets that will carry varying levels of traffic. See Policy 6.48 for a description of the means of implementing these techniques.

1. **Thoroughfares and Arterials.** Watt Avenue and Dyer Lane will carry the highest level of traffic within the community. Residential uses along these streets will be protected from sound levels in excess of the 60 Ldn/ CNEL standard by the use of sound walls and landscape berms. Open ended cul-de-sacs (see Figure 6.21, Plan D) shall be used to minimize the unbroken length of the sound walls. On Dyer Lane west of Palladay Road and on 16th Street, north of Dyer Lane, where traffic volumes will be lower, design features described as appropriate for collector streets shall be implemented, if approved by the County.

2. **Collector Streets.** Many of the collector streets within the community will carry traffic volumes likely to generate noise levels requiring strategic site planning to accommodate noise impacts. Figures 6.23 and 6.24 present examples of designs for neighborhood subdivisions. The designs in these figures are discouraged and encouraged, respectively, when considering the goal of providing residential interconnections on collector and residential streets, where the use of sound walls is discouraged. Appropriate design techniques include open-ended cul-de-sacs (Figure 6.21, Plan D), front-facing development, frontage streets, and loop streets (Figure 6.21 Plans A, B and C). Figure 6.27 shows a typical street design plan designed in accordance with these standards which minimizes the impact of sound walls.

Policy 6.44 Edge Treatments for Use at Low- and Medium-Density Residential Areas. The use of sound walls shall be considered only in conjunction with a minimum of one of the other practical design-related noise mitigation measures described below. Access through sound walls should be provided according to the guidelines listed below so long as it does not introduce noise levels into neighborhoods that exceed County noise ordinance standards. Conceptual designs for a typical residential layout and neighborhood entry along a collector street are shown in Figure 6.27.

1. **Sound Attenuation on Collector Roadways.** The preferred treatment to accommodate noise levels on collector streets will be the use of landscape setbacks and rear-loaded homes fronting onto the street that have rear-yard fences and buildings that act as sound barriers. Refer to Figure 6.28 for recommended sound attenuation design treatments on collector roadways.
The following types of housing can be designed for acceptable noise levels while fronting on these streets: townhomes, mansion homes or multiunit complexes (multiunit buildings that have the appearance of a single home from the street), and small lot motor court and large lot, rear-loaded single-family homes. (Refer also to Appendix A: “Land Use and Development Standards,” for examples of these housing types).

Sound walls on collector streets, should be avoided, however, if they are required as determined by the County, they shall not extend more than 300 feet along these streets without being broken by the use of an open-ended cul-de-sac, a section of fronting streets, or homes facing onto the street (see Figure 6.27).

2. **Sound Walls.** Sound walls that may be required along Watt Avenue and high traffic sections of Dyer Lane, 16th Street and A Street shall generally not exceed 600 feet. The preferred noise attenuation treatment should consist of relatively short lengths of sound wall, interrupted by street intersections, open-ended cul-de-sacs, use of landscaped berms with lower built in wall or fences, pedestrian easements and wall offsets with optional private entry gates to yards (see discussion of these features below). Sound walls shall be designed such that the entire length of a street will have a consistent appearance.

For conditions where a sound wall is required, the height of sound walls shall be no more than six (6) feet measured from the adjoining finished grade of the street side of the wall or fence and no more than eight feet from the finished grade on the residential side of the wall or fence. When changes in elevation occur linearly along the wall or fence, the structure should be stepped in equal vertical increments. No step should exceed eighteen (18) inches in height. The preferred sound wall design shall be split face concrete masonry with frequent pilasters. Trees, shrubs, and vines shall be planted throughout the length of the sound wall.

3. **Frontage and Loop Streets.** Frontage and loop streets allow residential development to face the arterial street without the need for a wall or fence along the street. The right-of-way for the frontage or loop street may be reduced in width and the sidewalk on the opposite side of the residences may be eliminated. See Figure 6.21, Plans A, B and C.

4. **Open Ended Cul-de-Sacs.** Open ended cul-de-sacs that end at collector streets are intended to reduce the length of privacy walls and fences facing onto the arterial streets and provide pedestrian and bicycle access to the roadways. See Figure 6.21, Plan D.

5. **Large Lots.** Large lots with single-family homes or multiple dwellings are typically accessed from intersecting side streets or from the rear with the
primary entries facing the street. Sound or privacy walls and fences in front yards are allowed only as specifically approved by the County.

6. **Landscaped Setbacks and Buffers.** Use of additional landscaped setback buffer areas can be used between residential areas and streets. In this condition, local streets, loop streets, or frontage roads face onto a landscape buffer. Privacy walls or fences are not allowed in front yards of adjacent residential lots. The landscape buffer may incorporate earth berms or mounding, trees, shrubs, and other screening vegetation. Local streets adjacent to the landscaped buffer may be reduced in width and the sidewalk may be eliminated from one side.

7. **Landscape Berms.** Where sound walls are required, berms should be used in conjunction with sound walls, when feasible. Berms shall be designed not to exceed a maximum 3:1 slope.

**Policy 6.45 Edge Treatments at Other Areas Along Major Roadways.**

1. **Compatible Land Uses.** All parks, houses of worship and other noise sensitive uses shall be protected from exposure to noise levels in excess of 60 dB DNL. See noise policies of Chapter IV: Environmental Resources. Commercial, office, public and other non-residential uses are planned along the major arterial thoroughfares, Baseline Road and Watt Avenue. These non-residential uses will not require the use of sound walls along the street. A variety of landscaping, berming, or other screening techniques should be used to screen parking lots from pedestrian sidewalks.

2. **Front-Facing Development.** Buildings facing onto the street is the preferred treatment in the Town Center, high density residential developments throughout the Plan and along other collector streets. Vehicular access is generally from the rear. High-density projects should be designed such that active outdoor spaces are shielded from noise impacts by buildings or parking areas between the street and buildings. All residential uses exposed to a DNL in excess of 60 dB DNL will require sound-rated windows, added wall insulation, and mechanical ventilation capable of achieving the indoor noise requirements of 45 dB DNL. The applicant may be required to prepare a study demonstrating how these standards shall be met.

**Policy 6.46 Edge Treatment at Corner Lots on Neighborhoods Streets.** This side-yard treatment occurs in conjunction with intersecting side streets, open-ended cul-de-sacs, or loop streets. Privacy walls and fences may be used for side yard conditions. To the extent possible, privacy walls and fences on side yards should not overlap the house façade and should not extend into the front yard setback.
Buildings on corners should provide window and entries that orient toward the street corners. This treatment does not apply to rear loaded lot conditions.

Policy 6.47 Single Loaded Streets Fronting Open Spaces and Parks. This condition occurs when local streets, loop streets, or frontage roads are facing onto an open space corridor or park adjacent to the arterial roadway (see Figure 7.10). The additional open space setback provides a buffer between the residential units and the arterial street. Privacy walls or fences are not allowed in the front yards. Low fences or view fences are preferred (see Policies 6.50 and 6.51).

Policy 6.48 Variation in Edge Treatments. Variations in the recommended edge treatments identified above will be allowed as determined by Placer County if one or more of the following conditions apply:

1. The treatment fails to provide adequate noise protection.

2. The proposed development provides an alternative treatment that meets the goal and intent of the edge treatment policies of this Specific Plan.

Policy 6.49 Gates in Sound Walls for Pedestrian Access. Gates in walls and fences are intended to provide direct access from individual residences or public pass-throughs to multiuse paths and sidewalks along arterial and collector streets. The provision of such gates can create pedestrian-scale elements that break the length of the wall and add interest to the streetscape.

1. Where possible, offsets in walls can accommodate private gates that serve two residential lots.

2. Gates may vary in design, but should provide additional architectural detail and articulation to the wall surface such as use of pilasters, special gate designs, trellises, arbors, or other design elements to add variety and interest to the streetscape. Access from the gate to the adjoining sidewalk must be of the same grade and material used in the sidewalk.

Policy 6.50 Lot and Yard Privacy Fences/Walls. Privacy fences and walls also occur along lot lines between individual lots and structures. Generally privacy fences and walls between lots are placed on the lot line and should not be visible from major public streets or public use areas. Privacy fences shall be subject to the following design guidelines.

1. A solid “good neighbor” fence or wall should be used for privacy or security and may occur in either side- or rear-yard conditions.

2. Fencing shall be limited to six (6) feet in height measured from the finished grade on either side of the fence.
3. Design of private fences shall be compatible with the building architecture, and should be consistent within each residential neighborhood or development phase.

4. Fences or walls shall be constructed of durable materials, and shall present a finished appearance from both properties.

5. For corner lots, street side fencing shall not overlap with the front façade of the building. Fences or walls that connect two separate units and are visible from the public streets and public use areas should be of the same materials and color, and should be compatible with the building architecture.

6. The visual prominence of walls and fences should be reduced through the use of landscape screening, trees, vines, shrubs and hedge plants.

7. Front yard fencing shall be limited to 30 inches in height or less and may be located within the front yard setback areas.

8. Front, side and rear yard fences may consist of wood picket fencing, wood rail fencing, decorative iron fencing or split rail fencing in keeping with the historic rural character of Placer Vineyards.

9. Wall or fences along Rural Residential and Agricultural areas adjacent to Placer Vineyards should incorporate fencing designs characteristic of rural, agricultural fencing types to provide a transition into the SPA area. Use of wood rail fences, split rail fences, wire fencing, rock walls, or wrought iron or picket fences is preferred. Where possible, view fences should be used (see Policy 6.56).

Policy 6.51 View Fences. View fences are intended to provide privacy separation yet allow for views into and added visual surveillance of adjoining open space, parks, and public use areas from adjoining private lots and buildings. View fences may consist of wood or steel posts with wood pickets, wood rails, or decorative wrought iron. View fences are subject to the following policies and design guidelines:

1. View fences should be located where residential uses abut open space areas and creek corridors, or adjacent to rural residential and agricultural lots.

2. View fencing is limited to a maximum of six (6) feet in height.

3. Chain link fencing, barbed wire fencing, or razor wire is prohibited on residential properties.
4. View fences may use solid materials (stone, decorative concrete, wood, etc.) for the first 4 feet in height with the use of more opaque or see-through materials to the maximum height of 6 feet. See-through materials may include lattice, wrought iron, pickets, or wire mesh.

Policy 6.52 Security Fences. Security fences are restricted to be used only to enclose large facilities in the Plan Area, such as the power substation and corporate yard. The use of wrought iron is encouraged. Chain link fencing with wood slats may be used for security fencing in these conditions. Use of barbed wire or razor wire at the top of security fencing is not allowed.

7.1 Parks and Open Space Concepts

This section provides an overview of the parks and open space system designed for Placer Vineyards. The intent of this Specific Plan is to ensure the timely implementation of parks and open space facilities concurrent with the development of the Plan Area.

7.2 Parks

The park system proposed for Placer Vineyards will incorporate 217 acres of public and private parks (with 206 acres counted toward satisfying Placer County General Plan park requirements).

Neighborhood parks range from 2 to 15 acres in size, and typically average from 5 to 15 acres in size. They include the eight joint-use neighborhood parks to be built adjacent to proposed school facilities. Facilities will vary based on available acreage.

Policy 7.6 Neighborhood Park Design. Neighborhood parks shall be located and designed according to the following specifications.

1. Designated neighborhood parks within the Plan Area shall be developed in the locations indicated in Figure 7.1, “Parks and Open Space Plan Diagram.” [See EIR Figure 4.2-5]

2. 108 total acres of neighborhood parks are designated in the Specific Plan.

3. A total of 48 acres of neighborhood parks shall be joint-use parks, shared with and located adjacent to schools. These parks shall be a minimum of 6 acres in size.

4. Neighborhood parks shall be sited and designed to maximize their visibility along streets and thereby enhance the public right-of-way and neighborhood character.

5. Parks shall generally have street frontage on all sides, except where they abut open space or public uses. Street frontage may include connector or local streets, as appropriate.
6. Neighborhood parks should be designed with different character or themes, landscape treatment, and uses, as defined in the Parks and Recreation Master Plan, to encourage variety between residential neighborhoods.

7. Parking for neighborhood parks shall be provided on nearby streets, at adjacent schools, or on-site as required by the needs of the park as determined by the County.

8. Joint-use parks shall be designed to operate independently of adjacent school facilities.

Policy 7.9 Park Design. Park site layouts should be designed consistent with the following standards and guidelines.

1. Parks should be sited to provide a public focus and should be located next to collector streets, residential areas, schools, and open space. Community parks should provide site access from local collector streets.

2. A village green or small public plaza should be integrated into the site design of each Town Center and Village Center.

3. Locating parks adjacent to open space is encouraged. Site design of residential neighborhoods should avoid large areas with lots backing onto parks.

4. Parks should be shaped and sized to accommodate park uses and should not be odd or leftover spaces.

5. Parks should be designed to engage the natural vegetation, wetlands, and topography of the site.

6. Parks should be linked by a system of greenways and parkways with paths separated from vehicular traffic.

7. Parks should be centrally located in neighborhoods.

8. Parks should be located adjacent to streets for public access and visibility.

9. Streets that cut through or bisect parks should be avoided.

10. Parking for neighborhood parks should be provided on street or shared with school lots. Parking for community parks should be adequately sized to avoid spillover parking into adjacent residential communities.
11. Refer also to Policy 6.18 for lighting of athletic fields.

7.3 Open Space

The open space system includes drainage ways, floodways, riparian and wildlife corridors, protected woodlands and other sensitive habitat areas, greenways (e.g., trails and landscaping), and utility and power line easements. Open space areas are designed for stormwater conveyance, flood detention, and groundwater recharge with opportunities to preserve and restore wetlands, creeks, and drainage ways.

Open space corridors and easements in the Plan Area provide trails, stormwater conveyance, flood detention, opportunities for wetland mitigation, and buffers and transition areas between different land uses. Open space and landscape buffer areas may also have passive recreation facilities, which may include several community-wide bicycle trail loop systems, interpretive signs for preserved wetlands, bird watching areas, rest stops with benches, overlooks, picnic areas, gathering areas, and gardens.

Open space buffer areas on the periphery of the Plan Area are provided as a landscape transition between the urban character of Placer Vineyards and the adjoining rural residential and agricultural uses in the county. These are landscaped setback areas tied into the open space and trail system. They provide opportunities to connect to the system of trails, stormwater drainage swales, and habitat corridors. Open space buffers are also intended to screen residential neighborhoods from odors and other potential land use incompatibilities created by agricultural activities that may still be occurring in the Special Planning Area (SPA).

Passive park spaces are also provided in two open space areas that contain oak groves. These open space areas are intended to preserve significant clusters of existing oak trees on-site and provide recreational opportunities to the Placer Vineyards community.

A network of trails will provide public access through the open space system, connecting to the communities within and outside of the Plan Area. This communitywide trail system includes a key east-west link from the SPA along the Sacramento/Placer County line to Gibson Ranch Park, and connecting north to the Doyle Ranch subdivision along the Dry Creek corridor.

Goal 7.2 Create an interconnected system of open space that encompasses the preservation and enhancement of natural habitat areas for the use, appreciation, and enjoyment of the community.

Goal 7.3 Locate open space accessible to residents and link these lands to community activity areas and recreation areas.

Goal 7.4 Use landscape buffers to protect the natural environment from the built environment, to separate incompatible land uses, and to provide transitions from higher intensity urban development to more rural developments around the Placer Vineyards Plan Area.
Open Space Buffers

Policy 7.15 Design of Open Space and Buffer Areas. Open space and buffer areas should be designed consistent with the following guidelines:

1. Trails and park amenities should be carefully sited to avoid disturbance of sensitive natural resources on-site. Sensitive preserve areas, wetland areas, or stands of oak trees may be protected using fences to discourage access and help establish plantings.

2. Within open space areas, grading, realignment, and excavation will be required for flood protection, stormwater drainage, or retention ponds.

3. Fences, 4 feet in height and open in character, shall be used to protect sensitive habitat and other preservation areas or to restrict vehicular access at streets.

4. Within open space areas, landscaping will be low-water-use grasses, ground covers, California native trees, and the plants recommended for use in open space areas in Appendix B, “Recommended Plant List.” [See EIR Table 4.2-1]

5. Within buffer areas landscaping will consist of plants, including evergreen and deciduous trees, shrubs, and ground cover.

6. See Figure 7.1 [EIR Figure 4.2-5] for the locations of open space buffers and Figure 7.11 [EIR Figures 4.2-6 and 4.2-7] for their respective cross sections.

Policy 7.16 Buffer Areas Adjacent to the Special Planning Area. Open space buffers shall be provided along the entire edge of the Special Planning Area. Except adjacent to the railroad right-of-way, which will serve as an open space buffer, open space buffers shall be provided as indicated in Figure 7.10 [See EIR Figures 4.2-6 and 4.2-7].

Policy 7.17 Buffers along the County Line. A 200-foot buffer shall be designed along the Sacramento County line from Tanwood Road to Palladay Road. A 50-foot-wide buffer is provided along the Sacramento County border, adjacent to Gibson Ranch Park. [See EIR Figure 4.2-5].

Policy 7.18 Oak Grove Open Space Areas. Concentrations of significant oak trees on the site shall be preserved in two large oak grove open space areas, one located at the northwest corner of Dyer Lane and 12th Street and the other on the east side of the Plan Area along the Dry Creek Corridor. These open spaces shall preserve the existing stands of oak trees and serve as passive open space areas that provide a visual and educational resource to the community. [See EIR Figure 4.2-5].
Policy 7.19  Open Space Character. Open space areas should complement the character of the existing site (which is predominantly Valley oak or savanna). These areas can integrate wildlife habitat enhancement and restoration while providing local residents with opportunities for passive recreation, ecological observation and education, and gardening. A brief description of the open space design concept is provided below with a recommended plant palette provided in Table 6-1. [See EIR Table 4.2-1]

4.2.3 REGULATORY SETTING

STATE AND FEDERAL

There are no State or federal highways in proximity to the Specific Plan area; therefore, no State or federal regulations pertaining to visual quality are applicable. Pertinent local plans and policies are described below.

LOCAL

PLACER COUNTY GENERAL PLAN

Visual and Scenic Resources:

Goal 1.K: To protect the visual and scenic resources of Placer County as important quality-of-life amenities for county residents and a principal asset in the promotion of recreation and tourism.

Policies:

1.K.3: The County shall require that new development in rural areas incorporates landscaping that provides a transition between the vegetation in developed areas and adjacent open space or undeveloped areas.

1.K.4: The County shall require that new development incorporates sound soil conservation practices and minimizes land alterations. Land alterations should comply with the following guidelines:

a. Limit cuts and fills;
b. Limit grading to the smallest practical area of land;
c. Limit land exposure to the shortest practical amount of time;
d. Create grading contours that blend with the natural contours on-site or with contours on property immediately adjacent to the area of development.

1.K.5: The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should
be installed underground and roadways and parking areas should be designed to fit the natural terrain.

According to the *Placer Legacy Atlas of Maps*, Map 23, there are no existing or proposed scenic corridors or routes in proximity to the Specific Plan area; therefore, goals and policies of the *Placer County General Plan* pertaining to scenic routes are not described.

Development Form and Design:

Goal 1.O: To promote and enhance the quality and aesthetics of development in Placer County.

1.O.1: The County shall require all new development to be designed in compliance with applicable provisions of the *Placer County Design Guidelines Manual*.

1.O.2: The County shall require that specific plans include design guidelines for all types of development within the area covered by the plan.

1.O.3: The County shall require that all new development be designed to be compatible with the scale and character of the area. Structures, especially those outside of village, urban and commercial centers, should be designed and located so that:

a. They do not silhouette against the sky above ridgelines or hilltops;
b. Rooflines and vertical architectural features blend with and do not detract from the natural background or ridge outline;
c. They fit the natural terrain; and
d. They utilize building materials, colors, and textures that blend with the natural landscape (e.g., avoid high contrasts).

1.O.4: The County shall require that new rural and suburban development be designed to preserve and maintain the rural character and quality of the county.

1.O.6: Historically or architecturally significant buildings should be preserved and not be substantially changed in exterior appearance in ways that diminish their historical character, unless doing so is necessary to avoid or mitigate hazards, and other means of mitigation are infeasible. Such structures should be preserved and used as focal points of community design.

1.O.7: The County shall require that mixed-use areas include community focal points to serve as gathering and/or destination points. Examples of focal points include civic centers, parks, fountains, monuments, and street vistas. On-site natural features, such as wetlands and streams, can also function as focal points.

1.O.8: The County shall, where appropriate, require new development to provide activity pockets along public sidewalks as pedestrian amenities, including such features as benches, sitting ledges and mini parks.
1.O.9: The County shall discourage the use of outdoor lighting that shines unnecessarily onto adjacent properties or into the night sky.

1.O.10: The County shall require that in downtowns/Village Centers the tallest buildings be clustered in the core area and that building heights transition down to the scale of buildings in the surrounding area.

**DRY CREEK/WEST PLACER COMMUNITY PLAN**

On August 16, 1994, the *Dry Creek/West Placer Community Plan* was amended as part of the countywide General Plan update to include the West Placer Specific Plan area. The amendment, referred to as “Exhibit 1,” includes standards for development for the area generally described as west of Watt Avenue and south of Baseline Road. At the time of adoption of Exhibit 1, the Specific Plan area was envisioned as a mixed-used community including residential, retail, commercial, and business/professional uses, as well as public facilities such as parks, schools, and open space. Development and design standards related to visual quality and aesthetics are outlined below.

3. Open space: Open space shall be provided for drainageways, floodplains, recreation areas, parks, undeveloped buffers, trail corridors, and natural areas.

4. Required buffers: Proposed development within the West Placer Specific Plan area shall incorporate the following land use buffers according to the standards of buffer zones contained in the Placer County General Plan, Part I (page 19).
   
   - Agricultural/Timberland
   - Industrial/Residential
   - Sensitive habitat

   In addition, the project shall include elements in its design which provide buffers between urban areas within the boundaries of the Specific Plan area and rural residential development in Sacramento County.

6. Urban design: Development within the West Placer Specific Plan area shall be planned and designed to comply with the following standards:

   a. Urban form. The specific plan and project plans for development shall provide for up to two mixed, pedestrian-oriented villages or towns and a single, larger Town Center. Village areas should be surrounded by buffer lands, low density single-family, and/or regional employment and commercial. Mixed-use (commercial, professional office, and high density residential) nodes, commercial centers, and regional employment areas are to be established at sufficient densities to support express bus transit service between adjoining villages and nearby urban centers (e.g., other new growth areas or incorporated cities). Each village should contain all public facilities and services necessary for its development.
b. Town Center. The Specific Plan area should contain one large Town Center that will operate as the institutional and social focal point of the community. The Town Center is to contain, at a minimum: a community meeting facility; formal outdoor gathering areas (e.g., amphitheaters); and the main offices and facilities for law enforcement, fire, library, and other public services. Public, quasi-public, and institutional facilities should be centrally located in the Town Center.

c. Village core areas. Mixed-use commercial core areas should be developed to provide service and neighborhood commercial needs, professional services, public, quasi-public, and institutional facilities, and high-density residential uses. Village core areas shall contain transit services to connect to nearby village areas, commercial centers, and regional employment areas, and to destinations beyond the boundaries of the Specific Plan area.

d. Public gathering areas. Commercial areas within Town Centers and village core areas shall be enhanced by incorporating outdoor public gathering areas into their design. Such areas are intended to facilitate social interaction by area residences and employees.

e. Community open space areas. Each village area should contain a village green to be located adjacent to, or integrated into, the village core area. Community parks should be located adjacent to major open space and roadway corridors (see items i. and j. below). Community parks may serve as buffer areas between conflicting land uses (see the standards for Land Use Buffer Zones in the Placer County General Plan in Part I, page 19), within or adjacent to the Specific Plan area. All developed and undeveloped park areas should be linked by a system of greenways and parkways containing pedestrian and bicycle paths separated from vehicular traffic.

f. Pedestrian-oriented design. Town Center, village core, and regional employment areas shall be planned and designed to be pedestrian, bicycle, and transit accessible. Design elements that accommodate pedestrians and cyclists should take precedence over elements that primarily accommodate automobiles.

g. Commercial areas:

(1) New commercial buildings shall be designed to provide maximum pedestrian accessibility. Primary ground floor commercial building entrances should orient to plazas, parks, or pedestrian-oriented streets rather than interior blocks or parking lots. Anchor retail buildings may have their entries from off-street parking lots; however, on-street entries are strongly encouraged.

(2) Street-level windows and numerous building entries are encouraged in Town Centers and village core areas. Arcades, porches, bays, and balconies are encouraged.
(3) If a wall of a primary commercial establishment does not have an entry on a pedestrian route, it shall include windows, display areas, and/or be lined with retail shops to provide visual interest to pedestrians.

(4) Entries into small shops and offices shall orient directly onto a pedestrian-oriented street. Buildings with multiple retail tenants should have numerous entries onto the street. Small, single-entry malls should be avoided. Off-street parking should be located to the rear of buildings with walkways leading to the street and entry.

(5) Commercial development shall be designed to provide varied and interesting building facades to provide pedestrian orientation. Building designs should provide as much variety as possible without creating a chaotic image. Facades should vary from one building to the next, rather than create an overly unified frontage. Covered walkways should be provided whenever possible.

h. Residential areas. Residential areas shall consist of the following three types:

(1) Village Residential. These areas shall be located within walking distance of a village commercial core area. The housing should consist of high-density single-family (with or without carriage or secondary dwelling units) and multi-family units.

(2) Single-family Residential. These areas should surround village residential areas at densities consistent with suburban residential development (e.g., four to seven dwellings per acre). Subdivision designs should provide opportunities for pedestrian and bicycle access to village core areas. Physical separation of single-family residential areas by such means as sound walls, berms, and major roads should be discouraged. Single-family residential areas should be incorporated into their village so village residential and single-family residential areas function as a single unit and are not separated by physical or design characteristics.

(3) Rural Residential. These areas should be located in buffer zones within the specific plan boundaries. Rural land uses shall only be considered in areas where residential land use is consistent with the standards in Part I for buffers (page 19). Rural residential densities of 0.2 dwellings per acre or more shall be allowed only when public sewer and water facilities are provided.

i. Open space corridors. Existing and proposed linear open space corridors should be developed as a pedestrian, equestrian, and/or bicycle trail system. Existing corridors include, but are not limited to, stream and riparian areas (e.g., the Dry Creek corridor), power line easements, abandoned rail rights-of-way, existing public trails, and existing public roads and bridges that may be ultimately abandoned. The Dry Creek corridor shall be designed to provide bicycle/equestrian/pedestrian connections to similar facilities in Sacramento County near Gibson Ranch Park.
j. Roadway corridors. Collector and arterial roads shall be designed as landscaped corridors, including separated bicycle and pedestrian facilities within landscaped or native open space corridors and landscaped berms and medians.

**PLACER COUNTY DESIGN GUIDELINES MANUAL**

Placer County has adopted design guidelines and procedures are established under the County Zoning Ordinance for the performance of design review. The Design Guidelines are applicable to all commercial, multi-family and industrial development located within the -Dc (Design Scenic Corridor), -Ds (Design Sierra), or -Dh (Design Historical) combining districts. None of the three combining districts is proposed for application in this case; however, the Specific Plan provides that the Development Standards and Design Guidelines contained in the Community Design chapter of the Specific Plan are intended to supplement the Placer County Design Guidelines Manual and Placer County Landscape Design Guidelines Manual. This chapter provides that the standards and guidelines contained in the Specific Plan “are a link between the County’s existing regulatory documents and act as an implementation tool that directs development specific to the Placer Vineyards site.” Furthermore, the Specific Plan states that “while the existing Placer County Design Guidelines Manual and Landscape Design Guidelines Manual provide direction on-site specific development of buildings and landscaping on individual parcels, they do not address the overall vision and specific conditions unique to Placer Vineyards.” The Placer County Design Guidelines are, however, intended to be applicable to the Specific Plan area where the Specific Plan Design Guidelines do not specifically supersede the County’s Guidelines.

The County’s Design Guidelines are applicable to all commercial, multi-family and industrial development and contain a number of principles related to height, bulk, color and scale of buildings. Other subjects covered include architectural design, site planning, parking and circulation, and signs. Specific site planning and design criteria are included for commercial, industrial and multi-family development.

**PLACER COUNTY LANDSCAPE DESIGN GUIDELINES MANUAL**

Placer County also maintains Landscape Design Guidelines that are applicable to the design review process. As noted above under the discussion of the Placer County Design Guidelines Manual, the Landscape Design Guidelines are intended to be applicable within the Specific Plan area where the Specific Plan Design Guidelines do not specifically supersede the Landscape Design Guidelines. The Landscape Design Guidelines contain a series of “General Requirements” for landscaping, including the preservation of existing trees and shrubs where feasible; a 15% site coverage landscape requirement; requirements for consistency of landscape design and scale; preference for drought tolerant plant materials; standards for size of planting areas; a requirement for landscaping along property borders; screening to minimize light, noise and physical distractions; use of deciduous trees within the interior of parking lots; screening of parking, loading and other similar areas; and a requirement for comprehensive master landscape plans for major developments. Other guidelines are also described pertaining to size, installation, maintenance and irrigation of plantings.
4.2.4 IMPACTS AND MITIGATION MEASURES

Three general impact areas will be evaluated in the following paragraphs. They are characterized as impacts related to changes in the current landscape, impacts occurring as a result of sources of light and glare, and impacts related to County plans and programs to promote high quality aesthetic and visual environments.

STANDARDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines provides four criteria for judging potentially significant impacts that are related to aesthetics. Placer County has determined that two of the four are relevant to the proposed Specific Plan:

- The project would substantially degrade the existing visual character or quality of the site and its surroundings.
- The project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

A common source of technical information on the effects and mitigation of light and glare is the International Dark Sky Association. Although the Association recognizes the necessity for night lighting to maintain security, safety, utility and an attractive environment, it has identified a number of impacts from poor night lighting, including urban sky glow, glare, light trespass, a trashy appearing environment, and energy waste. The Association recommends use of quality lighting designs, shining lights down, use of timing controls, the use of the correct amount of light, and the use of energy efficient light sources.

In addition to the above, the Placer County General Plan, Dry Creek/West Placer Community Plan, Placer County Design Guidelines Manual and Placer County Landscape Design Guidelines Manual contain goals, policies, standards and guidelines that can be used to judge the significance of impacts. The relevant goals, policies, standards and guidelines have been excerpted from these documents and appear in Section 4.2.3 above.

4.2-1 Urbanization of the Specific Plan area will alter views from surrounding roadways and properties.

Implementation of the Specific Plan will eliminate approximately 3,520 acres (this calculation assumes that the Special Planning Area [SPA] retains its present rural residential/agricultural character) of open space and agricultural views from surrounding roadways and properties, and will replace those views with residential, commercial, business park and light industrial uses. A limited amount of open space (714 acres) would be retained and would be visible from Baseline Road, Watt Avenue and Walerga Road; however, the retained open space would exist in an altered condition within an urban setting. Properties surrounding the Specific Plan area contain few residences; however, as development occurs along the east side of the Specific Plan area at
Doyle Ranch and other locales, a number of residences would experience a change in their individual viewsheds as the Specific Plan builds out.

As noted in the discussion in Section 4.2.2, the Specific Plan area is typical of western Placer County and is not unique in appearance. Similar areas to the east within the City of Roseville and to the south within Sacramento County are undergoing a similar transformation from an open space/agricultural landscape to an urbanized setting.

Because aesthetic considerations are often subjective and difficult to judge, two generally objective criteria are used in this Revised Draft EIR to establish the level of significance of the change. The first addresses the visibility of the landscape being altered and whether it will appear in the foreground, middleground or background of most viewers. Changes in the foreground are most significant, with distance reducing impact. The second criterion concerns visual contrast, which is a measure of the degree of perceptible change. This is often characterized as being a strong, moderate or weak change. Using this approach, a strong change would be immediately apparent and would dominate the landscape, whereas a weak change would be barely noticeable.

A substantial number of viewers will see changes from Baseline Road, Watt Avenue, Walerga Road, and existing and future residences east of the Specific Plan area. With buildout of the Specific Plan area, changes will occur within the immediate foreground of those traveling on Watt Avenue and Baseline Road, and to a lesser degree Walerga Road. The project will also appear in the foreground of residences to the east of the Specific Plan area. For those viewers, the change will be strong because the landscape will be significantly altered from rural open space to an urbanized setting with urban density housing, commercial and industrial structures, walls and signs. Although the urban environment that is ultimately built may be aesthetically pleasing to many, development will, nevertheless, significantly degrade the existing visual character and quality of the Specific Plan area. Based on the standards of significance, this is a significant and unmitigable impact.

Mitigation Measures

No mitigation measures are available.

4.2-2 Urbanization of the Specific Plan area will alter views for those currently residing within the Specific Plan area.

As noted above, implementation of the Specific Plan will eliminate approximately 3,520 acres of open space and agricultural views. This agricultural/open space vista is currently viewed from a number of residences in the Riego area that will remain after Specific Plan implementation. Specific Plan development will replace those views with residential, commercial, business park and light industrial uses.

This change will generally occur in the foreground and middleground of Riego area viewers. For most of these viewers the change will be strong, because the landscape will be significantly altered from rural open space to an urbanized setting with urban density housing, commercial
and industrial structures, walls and signs. Although the urban environment that is ultimately built may be aesthetically pleasing to many, development will, nevertheless, significantly degrade the existing visual character and quality of the Specific Plan area. Based on the standards of significance, this is a significant and unmitigable impact.

Mitigation Measures

No mitigation measures are available.

4.2-3 Views will be altered due to the construction of proposed water storage tanks.

The Specific Plan proposes, as part of the water supply infrastructure, the construction of six water storage tanks. The proposed locations of these tanks are illustrated on Figure 3-14 and 3-18 in Chapter Three of this Revised Draft EIR. As shown on these figures, the storage tanks will be located adjacent to proposed open space, park, or public/quasi-public land use areas, with the exception of the recycled water tank, which is shown in an area designated High Density Residential. It is anticipated that these water storage tanks will be composed of concrete or steel with a capacity of approximately 3 million gallons at each location. The tanks will be circular and will either be 130 feet in diameter and 30 feet in height, or 150 feet in diameter and 24 feet in height. If groundwater wells are developed on-site, it is possible that they could be collocated with one or more of the water storage tanks. However, wells, pumps and water treatment facilities would be subordinate in terms of visual impact, with the viewer’s eye drawn to the larger and taller water storage tank.

Construction of these storage tanks has the potential to result in the alteration of views of the Specific Plan area and from open space areas within the Specific Plan area. However, the water storage tanks will not exceed 30 feet in height and will be in proximity to structures of similar height that will be allowed under the Specific Plan; therefore, the water storage tanks will not appear as prominent features when viewing the area. Additionally, the storage tanks will be constructed as part of an overall conversion of the area from rural open space to urban and suburban uses and will therefore be considered common and appropriate to the region by most viewers. Within the context of the proposed development, alteration of views of the Specific Plan area due to the presence of water storage tanks is less than significant. However, because five of the proposed water storage tanks are placed adjacent to open space areas, they have the potential to degrade the visual appearance of and the views from within, open space areas. Based on the standards of significance, this is a potentially significant impact.

Mitigation Measures

Although potentially significant, the impact related to visual appearance of open space areas could be mitigated to a less than significant level through landscaping of the proposed water storage tanks as described in the following mitigation measure.

4.2-3 Water storage tanks shall be subject to review and approval pursuant to the County’s Design Review process. In concert with Design Review, a landscaping plan that softens the visual appearance of the tanks from open space areas shall be submitted, and shall
4.2-4 New sources of light and glare will be introduced with buildout of the Specific Plan area.

Although approximately 150 rural residences exist in the Specific Plan area, primarily in the northwest corner, the change in landscapes will predominantly be from an open space and agricultural environment to one that is highly urbanized. This will result in the introduction of significant additional sources of light and potential glare. These include automobile headlights, structure lighting, street lights, signs, park and athletic field lighting, and lighting at the proposed County-owned corporation yard. Because much of the Specific Plan area is essentially devoid of light at the present time, this change will be substantial. The Specific Plan contains significant detail concerning project lighting design, including street lighting, pedestrian pathway lighting, recreation areas and athletic facilities lighting, parking lot lighting, landscape lighting, service areas and security lighting, and building identification and street number lighting. Additionally, the Specific Plan contains numerous policies concerning control of light and glare associated with these lighting features in proximity residential and other areas. The Specific Plan also contains a number of design guidelines and standards controlling the use of building materials and painted surfaces, which are intended to control glare from sources such as unpainted metal, or other reflective surfaces.

Illumination of signs is addressed in the Placer County Zoning Ordinance in Section 17.54.170F. Lighting is also addressed in the Placer County Design Guidelines Manual, which provides for the screening of lighting adjacent to residential areas, directing lighting away from roadways, and the minimization of upward lighting. The Placer County General Plan also discourages lighting that shines unnecessarily onto adjacent properties or into the night sky (Policy 1.O.9).

The International Dark Sky Association recognizes the necessity for night lighting to maintain security, safety, utility and an attractive environment and has identified a number of impacts from poor night lighting, including urban sky glow, glare, light trespass, a trashy appearing environment, and energy waste. The Association recommends use of quality lighting designs, shining lights down, use of timing controls, the use of the correct amount of light, and the use of energy efficient light sources.

The lighting standards and guidelines in the proposed Specific Plan have been reviewed against adopted County policy and the standards maintained by the International Dark Sky Association, and have been found to be in substantial conformity. The Specific Plan contains detailed lighting and building material design guidelines, and policies intended to control light, glare and spill over. These guidelines and policies include directing lighting downward, maximum height requirements, and utilization of cut-off fixtures to minimize visibility from adjacent areas. These guidelines and policies comply with established standards and the impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.
Potential visual incompatibilities could occur due to the provision of inadequate separation between Gibson Ranch Park and the SPA.

Although implementation of the Specific Plan will alter the existing visual character and quality of the Specific Plan area, it is arguable whether a change from an open space/agricultural landscape to an urban landscape always results in less aesthetic appeal. As noted previously, in order to ensure that urban or developed landscapes have significant aesthetic appeal, the County has adopted several goals, policies, standards and guidelines to promote high quality design and visual appearance. Key Placer County General Plan statements pertinent to Specific Plan design and visual appearance include policies that require transitional landscaping between developed areas and adjacent open space (Policy 1.K.3), creation of mixed-use areas with community focal points (Policy 1.O.7), creation of activity pockets (Policy 1.O.8), and the clustering of the tallest buildings in core areas with a transitioning down of building height in surrounding areas (Policy 1.O.10).

Exhibit 1 of the Dry Creek/West Placer Community Plan provides more precise standards for development of the Specific Plan area, which amplify and expand upon the goals and policies of the Community Plan. The standards emphasize the need to establish buffers between the Specific Plan area and other uses. The policies regarding buffers in Exhibit 1 refer to the operative provisions of the Placer County General Plan, which provide quantitative standards for buffer dimensions and other features, as described in Section 4.1.3 of this Revised Draft EIR. These standards are set forth as ranges. However, the applicants have proposed that the General Plan be amended to permit deviation from these quantitative standards when adequate buffers are proposed as part of a Specific Plan (see discussion of Land Use Impact 4.1-9).

A 200-foot open space corridor is shown along the southern border of the Specific Plan area buffering low density development from the Elverta Specific Plan area (Specific Plan Policy 7.17), and open space corridors are also shown along the southeastern border of the Specific Plan area buffering the low and medium density residential development from Dry Creek. Additionally, various other open space corridors are described as buffers separating uses within the Specific Plan area. However, only a 50-foot buffer is provided between Gibson Ranch Park in Sacramento County, and generally, only a 50-foot buffer is shown between proposed urban uses and the SPA.

Land Use Impact 4.1-7 discusses Gibson Ranch Park and SPA buffers from a land use compatibility perspective. Of concern here are visual impacts. In the case of Gibson Ranch Park, there is an area of existing private open space between the Placer Vineyards Specific Plan area and Gibson Ranch Park that is approximately 200 feet wide at its western extremity and tapering to a point as it approaches the Dry Creek riparian area at the east end of the parcel. This intervening ownership and existing vegetation visually buffer the Specific Plan area from Gibson Ranch Park. In addition, the Specific Plan makes provisions for added visual separation, as shown on Figure 4.2-6. Similarly with the SPA, the Specific Plan has provided visual separators for the SPA properties (Specific Plan Policy 7.16 and Figures 4.2-6 and 4.2-7). Due to the agricultural/rural residential nature of the SPA, most residences are more than 200 feet from proposed urban development. The proposed separators and landscaping, when combined with
existing vegetation and distances to receivers, make visual impacts related to separators less than significant.

Mitigation Measures

No mitigation measures are required.

OFF-SITE INFRASTRUCTURE

4.2-6 Views could be altered due to off-site utility line and roadway construction.

Off-site roadway widening and construction of several off-site utility lines will be required for Specific Plan implementation. Because utilities will be placed underground, visual impacts will be related to the period of construction and revegetation, with the potential exception of utility line access sites, pump stations and similar facilities where some portion of the facility may remain above ground. Pump stations and similar facilities are also a potential source of light and glare. Roadway widening will occur adjacent to existing roadways and will not introduce a new visual element. Revegetation of construction sites will be particularly important where off-site infrastructure construction would affect the Dry Creek corridor.

Visual impacts during construction are temporary in nature consisting of views of construction equipment, construction materials and earth stockpiling, and are considered less than significant. Visual impacts related to removal of vegetation and permanent above ground structures/lighting are potentially significant.

Mitigation Measures

Potentially significant visual impacts related to removal of vegetation during utility line construction can be partially mitigated through implementation of the various mitigation measures described in Section 4.4 of this Revised Draft EIR. Visual impacts related to vegetation removal and above-ground structures can be more fully mitigated by implementing the mitigation measures below. Placer County can and will require these measures of Specific Plan-related utilities and roadways within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential visual impacts from off-site utility corridors and roadways will have to be considered significant and unavoidable.

4.2-6a All areas containing natural vegetation or landscape material that are disturbed during utility line and roadway construction shall be revegetated upon completion of work utilizing plant materials similar to those disturbed. Revegetated areas shall be actively maintained until fully established, in accordance with the standards and provisions contained in the County’s Landscape Design Guidelines.
4.2-6b All permanent utility line-related structures extending above ground shall be screened where feasible using a combination of berms, mounds, landscape material, decorative fencing/walls, or other screening feature approved by the Placer County Development Review Committee, consistent with the Placer County Design Guidelines and the Placer County Landscape Design Guidelines. In addition, any proposed roadway and utility pump station lighting shall be directed downward using cut-off fixtures to minimize lighting effects on adjacent areas and the night sky.

4.2-7 Views could be altered due to expansion/improvement of off-site wastewater treatment facilities.

The Specific Plan will require expansion of the DCWWTP and, potentially, the SRWTP (see Section 4.1 of this Revised Draft EIR for added description of these facilities). These improvements would be constructed entirely within the existing wastewater treatment plant sites and adjacent to existing wastewater treatment facilities, and will therefore not change or have a significant impact on views of the area. This impact is less than significant.

Mitigation Measures

No mitigation measures are required.

4.2-8 New sources of light and glare may be created due to off-site infrastructure construction.

Light and glare impacts related to off-site infrastructure construction will be temporary in nature. In addition, extended nighttime activity, when light and glare would most likely occur, will be restricted by mitigation measures contained in Section 4.9 of this Revised Draft EIR, which regulate the hours for construction activity. This impact is, therefore, less than significant.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

4.2-9 The Specific Plan would contribute to cumulative alteration of views in rural west Placer County.

The landscape in western Placer and northern Sacramento counties has changed rapidly over the last decade from one of generally rural open space and agriculture to urban. Antelope and the City of Roseville are rapidly building out, contributing to the landscape change. Several land development proposals envisioned by the Placer County and Sacramento County general plans have received their entitlements, or are seeking them, including the Elverta Specific Plan, Morgan Creek, Doyle Ranch, Riolo Vineyards, Silver Creek and Morgan Place. Other areas north of Baseline Road, including the Sierra Vista Specific Plan, Creekview Specific Plan, and Regional University are now proposed for urbanization, and proponents are seeking general plan
amendments. In addition, the City of Roseville has adopted the West Roseville Specific Plan. Although the urban environment that is ultimately built could be aesthetically pleasing to many, these cumulative changes will significantly degrade the existing visual character and quality of the area. Based on the standards of significance, the cumulative impacts of the project and related projects are significant, and the project’s incremental contribution to this impact is itself cumulatively considerable and thus significant. This impact cannot be mitigated to a less than cumulatively considerable level and thus is unavoidable.

Mitigation Measures

No mitigation measures are available.

4.2-10 Cumulative impacts may occur that are related to introduction of new sources of light and glare.

Similar to alteration of views, continued development in western Placer and northern Sacramento counties will lead to an increase of light and glare. Although project-specific impacts can be mitigated through good design, the continued addition of more forms of night lighting will lead to the spread and intensification of the already present “sky glow” that blocks out views of the night sky. Based on the standards of significance, the cumulative impacts of the project and related projects are significant, and the project’s incremental contribution to this impact is itself cumulatively considerable and thus significant. This impact, though substantially lessened through project-specific mitigation, cannot be mitigated to a less than cumulatively considerable level and thus is unavoidable.

Mitigation Measures

No mitigation measures are available.
ENDNOTES


http://www.placer.ca.gov/planning/legacy/legacy-maps.htm (accessed at various times)
4.3 HYDROLOGY, WATER RESOURCES AND WATER QUALITY
4.3 HYDROLOGY, WATER RESOURCES, AND WATER QUALITY

4.3.1 INTRODUCTION

The purpose of the hydrology, water resources and water quality analysis is to assess potential impacts that could occur with regard to these three topics during and after implementation of the Placer Vineyards Specific Plan. Regional hydrological impacts related to surface water supply (e.g., Sacramento River, American River) are also addressed in this section, including the effects of the Specific Plan water supply on hydropower generated by affected reservoirs. The Placer County Water Agency (PCWA) is also proposing that a backup groundwater component be developed in conjunction with the Specific Plan (PCWA Water Supply Assessment, Appendix M of this Revised Draft EIR). This proposal is also assessed in this section.

In order to make the discussion in this section more understandable to the reader, it has been divided into the following subsections:

4.3.2 Hydrology and Flood Control
4.3.3 Water Resources (Water Supply)
4.3.4 Water Quality

Understandably, there is some overlap in the discussion of these subject areas that cannot be completely eliminated. However, to the extent possible, the descriptions of the respective environmental settings, impacts and mitigation measures have been ascribed to the most applicable subsection.

4.3.2 HYDROLOGY AND FLOOD CONTROL

This section describes local and area hydrology and flood control. The section also addresses project impacts on regional flood control as they relate to the proposed initial and long-term water supplies.

ENVIRONMENTAL SETTING

LOCAL AND AREA SETTING

The project applicants have prepared a Master Project Drainage Study (Civil Solutions, January 2006), which is referenced herein, and is available for review at the location shown in Section 2.9 in Chapter Two of this Revised Draft EIR. Impacts related to the proposed Master Project Drainage Study and the proposed on-site drainage system are also addressed in Section 4.11.9 of this Revised Draft EIR. The Master Project Drainage Study was peer reviewed by WRIME, Inc. (WRIME). The WRIME peer review appears as Appendix S and is addressed in Section 4.11.9 of this Revised Draft EIR.

The Specific Plan area is located within the Valley-American Hydrologic Unit, Coon American Area/Lower American Sub-Area, of the Central Valley Hydrologic Region (see Figure 4.3-1).
LOCAL AND AREA WATERSHEDS

The Specific Plan area includes three major watersheds: Dry Creek Drainage Shed, Curry Creek Drainage Shed and the Steelhead Creek (Upper Natomas East Main Drainage Canal [NEMDC]) Drainage Shed. Figure 4.3-2 illustrates the drainage sheds within the Specific Plan area. The Steelhead Creek drainage shed is further divided into seven smaller drainage sheds. Generally the Steelhead Creek sheds drain from east to west to Sutter County and terminate at Steelhead Creek.

The existing drainage courses and tributaries that flow through the site consist of poorly defined grassy swales. Where drainage swales fall toward existing roads, culverts of either elliptical or circular shape are used to convey flows under the roadways, which are generally two-lane roads with poor to good pavement sections. Roadside ditches also convey runoff in various sections of the Specific Plan area.

According to the Master Project Drainage Study, three hydrologic soil types exist within the Specific Plan area. Most of the site (in excess of 90%) is covered by Group “D” soils, while a narrow band along Dry Creek is within a soil type Group “A”. Several small areas within the southeastern portion of the Specific Plan area along and within the vicinity of Watt Avenue and Dyer Lane are within a soils type Group “C” (see Figure 4.3-3). The following paragraphs describe the three hydrologic soil types:

Group A: Consists of soils that have a high infiltration rate when thoroughly wet. These soils have a high rate of water transmission and low runoff potential. They are deep, well drained or excessively drained, and consist chiefly of sand, gravel, or both.

Group C: Consists of soils having a slow infiltration rate when thoroughly wet. These soils have a slow rate of water transmission and high runoff potential. They soil have layers that impede downward movement of water and have a slow infiltration rate.

Group D: Consists of soils having a slow infiltration rate when thoroughly wet. The rate of water transmission is very slow, and runoff potential is very high. This group includes (a) clay soils that have a high shrink-swell potential, (b) soils that have a permanent high water table, (c) soils that have a clay pan or clay layer at or near the surface, and (d) soils that are shallow over nearly impervious material.

The primary land uses in the Specific Plan area are agricultural, grazing, and open space. Some areas of large-lot residential uses are present in the northwestern corner of the Specific Plan area. The relatively flat landscape is marked with plowed fields, with short grasses predominating. The land falls to the west with average slopes of approximately 0.0024 feet per foot, or less than a 1% slope.
Dry Creek Drainage Shed

The Dry Creek Drainage Shed, although the largest regionally, includes only 477 acres along the southeast boundary of the Specific Plan area. This basin is bounded to the east by Walerga Road, to the west by the Southeast Drainage Shed, and the Curry and North Drainage Sheds to the north. Flows from the site are conveyed overland and through many small swales and roadside ditches towards Dry Creek. No culverts currently exist in this shed. The Dry Creek watershed is about 80 square miles in area and includes substantial developed areas upstream. Downstream, Dry Creek flows into northern Sacramento County through the community of Rio Linda until it reaches Steelhead Creek, which drains into the American River.

A low dam constructed of uncemented rock and broken concrete has been placed across Dry Creek within the Federal Emergency Management Agency (FEMA) designated floodway immediately downstream of the Watt Avenue bridge. The dam causes water to pool under and upstream of the bridge. An electric pump and intake structure have been placed on the north bank of the creek, and water is intermittently withdrawn from the creek to irrigate pasture land on the north side of Dyer Lane. Upon conversion of the pasture land to urban use, the current practice of using Dry Creek flows for irrigation would cease within the Specific Plan area.

Curry Creek Drainage Shed

The Curry Creek Drainage Shed has transitioned to a perennial drainage shed during the last several years due to addition of a significant amount of urban runoff upstream of the Specific Plan area. Most of this shed lies downstream of the Specific Plan area, north of Baseline Road and west of Watt Avenue. This shed drains northwesterly into the Pleasant Grove Creek Canal, which flows northward to the Natomas Cross Canal to the Sacramento River. The actual shed within the Specific Plan area is approximately 240 acres in size, with the total shed containing approximately 1,360 acres. Curry Creek flows towards the northeast corner of the Specific Plan area, crosses Baseline Road from the north and runs parallel to the south side for approximately four thousand feet. The creek then crosses Baseline Road, back to the north side and continues to the northwest. At these two crossings of Baseline Road, there is a 6-foot by 12-foot corrugated metal pipe to convey flows through the shed.

Upper Steelhead Creek Drainage Shed

The Upper Steelhead Creek Drainage Shed flows west across the Specific Plan area before leaving the area at Baseline Road and the project’s western boundary, flowing toward Steelhead Creek. This shed is approximately 4,380 acres in area.

Six minor sub-sheds within the Specific Plan area drain west to Steelhead Creek. These sub-sheds are shown in Figure 4.3-2. Three sub-sheds drain into Sacramento County, two drain into Sutter County and one drains north into Placer County.
LOCAL AND AREA FLOODING

Flooding results when water flow cannot be contained within the banks of natural or artificial drainage courses. Flooding can be caused by an excessive storm event, snow melt, blockage of watercourses by human as well as wildlife activity (e.g., beavers), dam failure, or a combination of these or other events. A flood event can cause injury or loss of property such as the flooding of structures, including homes and businesses; uplift vehicles and other objects; damage roadways, bridges, infrastructure, and public services; and cause soil instability, erosion, and land sliding. Pursuant to the National Flood Insurance Program (NFIP), FEMA develops flood risk data for use in insurance rating and floodplain management. Based on this data, FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate areas that are subject to inundation from a 100-year flood event (i.e., a flood that has a 1% chance of occurring in a given year) (FEMA 1988).

The 100-year flood plain has been partially delineated by FEMA, including portions of the Dry Creek Drainage Shed and the Steelhead Creek Drainage Shed. The Steelhead Creek delineations are partial delineations to the extent that they only depict the lower reach of the drainage system, and not the entirety of the defined channels and swales (see Figure 4.3-4).

The internal watersheds, creeks and tributaries (except for those mentioned) have not been delineated by FEMA using FIRM data and limits. In order to identify other floodplains on the project site, the Army Corps of Engineers HEC-RAS software was used to develop floodplain parameters. Floodplain elevations were determined for the 10-year and 100-year events for the pre-project and post-project conditions, and for the post-project mitigated conditions. The Base Flood Elevations are shown in Appendix N.

Steelhead Creek is part of a flood control system that surrounds the Natomas Basin located west of the Specific Plan area in Sutter and Sacramento counties. Steelhead Creek intercepts drainage from the Steelhead Creek Drainage Shed 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, although the Placer Vineyards contribution would be very small.

SURFACE WATER SUPPLY SETTING

This Revised Draft EIR addresses the proposed surface water supplies for the Specific Plan area – both the initial surface water supply from the American River and a long-term supply from the Sacramento River.

An initial surface water supply is proposed to serve the Specific Plan area until a Sacramento River supply can be implemented. The immediate (or initial) surface water supply need was
identified as 6,000 AFA. This amount is anticipated to be needed by the Specific Plan area by the time the long-term surface water supply becomes available (i.e., 6 to 8 years into the future). The proposed initial supply consists of available water from PCWA’s unused American River water supply diverted at PCWA’s new permanent American River Pump Station, conveyed and treated at the existing Foothill Water Treatment Plant, and delivered through PCWA’s existing transmission pipeline system to the vicinity of Industrial Avenue. PCWA diversions from the Middle Fork Project at the American River Pump Station location were previously evaluated in the American River Pump Station Project Final EIS/EIR, American River Basin Cumulative Impact Report, 2001). A booster pump and storage tank currently under construction would allow PCWA to introduce its water into the City of Roseville pipeline system. Under an existing agreement with the City of Roseville, PCWA can convey 10 MGD through the City’s pipeline system to a location near Baseline Road and Fiddyment Road. Extension of this pipeline westerly in Baseline Road could deliver an initial surface water supply to Placer Vineyards (see Figure 3-5 in Chapter Three of this Revised Draft EIR). For a discussion of limitations on use of the City’s pipeline system for conveyance (wheeling) of water, see Section 4.11.7 of this Revised Draft EIR.

A secondary initial surface water supply could be made available if the Sacramento River project has not begun delivery of water when the available initial supply, as described above, has been fully used. It consists of use of a portion of the PCWA Middle Fork American River water currently contracted to Sacramento Suburban Water District (SSWD) (formerly Northridge Water District). The supply would be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Specific Plan area via a new pipeline extending from the Cooperative Transmission Pipeline that currently ends in Antelope Road near Walerga Road. This pipeline would be extended westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Alternatively, this supply could be conveyed in a pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area.

It should be noted that much of the following surface water supply analysis does not apply specifically to the development of the Specific Plan area. At the request of PCWA and in order to ensure a full evaluation of water supply issues and off-site impacts, this Revised Draft EIR addresses the regional and area-wide effects associated with obtaining the water supplies necessary to serve the Specific Plan area.

A water supply of approximately 11,500 AFA will be required long-term to meet the needs of the Specific Plan buildout (see Section 3.4.1 in Chapter Three of this Revised Draft EIR). This 11,500 AFA is a portion of PCWA’s pending amendatory Central Valley Project (CVP) contract with the U.S. Bureau of Reclamation (Reclamation) for 35,000 AFA. This water would be diverted from the Sacramento River, which has an annual runoff of approximately 18 million AFA (PCWA 2001). The entire 35,000 AFA of the PCWA CVP contract water was assumed in the analysis of the project’s incremental contribution to cumulative demand for water (for a further description of the cumulative analysis, see Section 4.3.4). The full CVP contract amount of 35,000 AFA (long-term surface water supply) was evaluated based on the premise that this higher diversion amount provides a conservative representation of potential impacts associated with increased diversions from the Sacramento River to meet the proposed project needs.
Regional Flood Control

The setting descriptions contained in the PCWA American River Pump Station Project EIS/EIR are incorporated by reference in their entirety (PCWA and Reclamation, 2001). The discussions of the various setting components contained in this section are, for the most part, taken directly from that document.

This section describes existing regional off-site flood control facilities and operational practices.

Flood control throughout the region is afforded by a comprehensive system of dams, levees, overflow weirs, drainage pumping plants, and flood control bypass channels provided by the Sacramento River Flood Control Project (SRFCP) and the American River Flood Control Project (ARFCP) (Corps et al. 1996). Folsom Dam and Reservoir provide additional flood protection for the Sacramento area. Each of these is discussed in more detail below.

Flood control is a major function of the CVP. Along with the other CVP reservoirs providing flood control protection, both Shasta and Folsom reservoirs represent important elements of CVP-coordinated operations with respect to flood control. CVP operational priorities do change between seasons and flood control is the top priority from November to April. During this period, reservoir releases are controlled by the need to create and maintain reservoir empty space for flood control storage.

There are numerous agencies that regulate flood control in the Sacramento area. Federally, the U.S. Army Corps of Engineers (Corps) is involved in planning, studying, and constructing regional federally funded flood control projects. FEMA is responsible for administering the NFIP. State agencies responsible for implementing flood control measures include the State Department of Water Resources (DWR) and the State Reclamation Board. The Corps and the State Reclamation Board are the primary agencies responsible for flood control facilities along the Sacramento River, while flood control along the American River is maintained by the State of California.

The Sacramento Area Flood Control Agency (SAFCA) is a county-level joint agency which consists of membership from the City of Sacramento, Sacramento County, Sutter County, Reclamation District 1000, and the American River Flood Control District (ARFCD). The purpose of SAFCA is to coordinate a regional effort necessary to ensure a reasonable level of flood control protection developed in urbanized areas, and to provide assurances and participate in cost sharing for federal flood control projects.

Reclamation District 1000 and ARFCD are responsible for maintenance of levees in the American River Basin within Sacramento County. The ARFCD maintains levees along the American River and those along Steelhead Creek.

In Sacramento County, the Sacramento County Water Resources Division (WRD), under the Sacramento County Department of Water Resources, is responsible for most aspects of drainage infrastructure in the unincorporated area. WRD is involved in flood control and drainage...
investigations, planning, and regulation of drainage infrastructure financing. The Sacramento County Transportation Division assumes responsibility for the maintenance of all County roadways including street drainage, roadside ditches, crosses culverts, and bridges.

Flood control services in Placer County are provided by the Placer County Flood Control and Water Conservation District. The District was established in 1984 by the State Legislature for the contiguous area of Placer County as a distinct special district, apart from County government, to address flood control issues arising from growth. The District develops and implements watershed master plans and hydrologic models, and provides technical support to the County, the cities and developers.

- **Folsom Dam and Reservoir.** Folsom Dam and Reservoir is a unit of the CVP and is the major flood control project in the American River basin. It provides critical flood protection for approximately 350,000 residents and over $30 billion worth of damageable property currently occupying the floodplain in the Sacramento metropolitan area.

Folsom Dam regulates runoff from about 1,875 square miles of drainage area. Folsom Reservoir has a normal full pool storage capacity of 975,000 AF, with a seasonally designated flood control storage space of up to 670,000 AF. Under the existing authorized operating criteria, 400,000 AF of the total storage of 975,000 AF in Folsom Reservoir is allocated to flood control during the flood control season. However, Reclamation and SAFCA are currently operating to a variable flood control space ranging from 400,000 to 670,000 AF based on unused storage space in upstream reservoirs (French Meadows, Union Valley, and Hell Hole). Under this "variable" space flood control operation, Folsom Reservoir's flood control diagram would permit containment of a 100-year flood event. In 1996, Congress directed Reclamation to continue this operation until such time as a comprehensive flood damage reduction plan for the American River watershed has been implemented (Water Resources Development Act 1996).

The Corps is responsible for providing the flood control regulations (operating criteria/flood control diagrams) and has ultimate authority for approval of flood control operations. Reclamation operates Folsom Dam and Reservoir for flood control within the operational parameters set by the Corps. Reclamation and the Corps, however, mutually agree upon the flood control operation principles for Folsom Dam and Reservoir.

- **Sacramento Area Floodplain.** After the 1986 flood, the Corps initiated a comprehensive evaluation of the entire Sacramento River and American River flood control systems. Conclusions from the Corps' evaluation downgraded flood protection for the residents and businesses occupying low-lying areas of the Sacramento area to a 63-year level of flood protection. Flood control facilities for the Sacramento area were once thought to provide flood protection at approximately a 120-year level. As a result of the Corps' findings, FEMA reassessed the 100-year floodplain in the Sacramento area and issued new FIRMs. This placed about 110,000 additional acres in the revised 100-year floodplain. These revised insurance maps became effective in November 1989 (Reclamation and SAFCA 1994b).
In order to address the deficiencies of the flood control systems, the Corps recommended bifurcation of the Sacramento and American river problems, clearing the way for the Sacramento Urban Levee Reconstruction Project to repair structurally deficient levees along the Sacramento River, and the American River Watershed Investigation to evaluate the alternatives available to increase the capacity of the American River flood control system and the levees around Natomas. The State of California, through DWR and the State Reclamation Board, joined these efforts as the non-federal sponsor (Reclamation and SAFCA 1994b).

Local agencies responsible for operating and maintaining the levee system around the Sacramento metropolitan area and for managing land use within the floodplain created SAFCA. SAFCA is an agency composed of several regional agencies that have jurisdiction over flood control facilities. The long-term goal of SAFCA is to provide urbanized portions of Sacramento with as much flood protection as possible in order to reduce the risk of catastrophic damages and loss of life in the event of an uncontrolled flood. In pursuit of this goal, SAFCA has cooperated with the State of California and the Corps in completing the needed repairs to the Sacramento River levees, undertaken levee improvements around North Natomas, and negotiated an interim arrangement with Reclamation in 1994 to re-operate Folsom Dam and Reservoir to provide for at least a 100-year level of flood protection. Thus the improved levee system, in conjunction with interim re-operation of Folsom Dam and Reservoir, was thought to provide the Sacramento metropolitan area with a 100-year level of flood protection (Reclamation and SAFCA, 2001).

- **American River.** Folsom Reservoir is the only reservoir operated for flood control on the American River. Approximately 820,000 AF of storage capacity, however, exist in American River basin reservoirs upstream from Folsom Reservoir. These facilities have at times proved beneficial in attenuating inflow to Folsom Reservoir, although the extent of this beneficial effect is limited by four factors: (1) these reservoirs were constructed and are operated for water supply and hydropower generation (they do not include dedicated space or physical features for flood control); (2) they control only 14% of the drainage area; (3) they are concentrated in the upstream area of the Middle Fork American River; and (4) their benefit is apparent only during the early part of the annual runoff period because, once filled, they are not effective in reducing flood volume and peak flow. Nevertheless, under current operations, the three largest upstream reservoirs (French Meadows, Union Valley and Hell Hole) provide as much as 200,000 AF of usable flood storage capacity.

- **American River Flood Control Project (ARFCP)**

  The ARFCP was constructed by the Corps in 1958 and is operated and maintained by the State of California. The ARFCP consists of a levee extending along the north side of the American River. This levee originates upstream near Carmichael and extends approximately seven miles downstream to a previously existing levee near the Capital City Freeway crossing. Two pumping plants located in low areas landside of the levee discharge storm drainage into the lower American River. The presence of this levee permits Folsom Reservoir to safely operate to its maximum design release of 115,000 cfs (Corps et al. 1996).
PROPOSED HYDROLOGY AND FLOOD CONTROL-RELATED GOALS AND POLICIES

The following goals and policies related to hydrology and flood control are contained in the proposed Specific Plan.

Policy 4.25 Low-Impact Development Design. Site-specific development projects shall incorporate low-impact development design strategies that may include:

1. Minimizing and reducing impervious surfaces of site development, i.e., roadways, sidewalks, driveways, parking areas, and rooftops.

2. Breaking up large areas of impervious surface and directing flows from these areas to stabilized vegetated areas.

3. Conserving natural resources and ecosystems by minimizing the impacts of development on sensitive site features, such as streams, floodplains, wetlands, woodlands, and significant on-site vegetation.


5. Providing runoff storage dispersed uniformly throughout the site through the use of a variety of detention, retention, and runoff techniques that may include:
   a. Bioretention facilities and swales (shallow vegetated depressions engineered to collect, store, and infiltrate runoff)
   b. Filter strips (grass or other close-growing vegetation planted between polluting sources and downstream receiving water bodies)
   c. Dry wells and infiltration trenches (excavated trenches filled with stone to control rooftop runoff and allow slow release back into the soil)

Policy 4.26 Site grading will be undertaken and controlled so that sediment runoff is minimized. In locations approved by the County detention basins may be located in open space areas so as to minimize increases in peak flows from the site. The basins may facilitate groundwater recharge, but to a limited degree because of the predominance of clay soils in the area. To minimize runoff, paved parking areas will be designed to provide the minimum amount of paving area necessary to meet required parking and circulation standards. The following standards apply to site-specific development projects.

Drainage reports will be prepared for site-specific projects and shall comply with the Placer County Stormwater Management Manual, Land Development Manual, and Placer Vineyards Master Project Drainage Report.
Policy 7.15(2) Design of Open Space and Buffer Areas. Within open space areas, grading, realignment, and excavation will be required for flood protection, stormwater drainage, or retention ponds.

Goal 8.6 Use and preserve existing drainage ways as much as possible and design flood control facilities to preserve significant wetlands and avoidance areas where sensitive features exist.

Policy 8.4 Service Standards. All Plan Area improvements shall be designed and constructed in accordance with standards listed in the Placer County Land Development Manual and Storm Water Management Manual.

Policy 8.5 Drainage Standards for Individual Projects. Individual projects shall provide appropriate short- and long-term best management practices and source controls consistent with the land use.

Drainage Design Criteria

- Open space corridors have been created in the Plan Area to convey stormwater flows. All development will occur outside of these corridors so as to provide 100-year flood protection to all residences.

- Piped drainage collection facilities of up to 96 inches in diameter will be used before open channels are chosen to convey urban storm runoff.

- Manage urban runoff through use of stormwater conveyance, detention, and water treatment facilities. Planned channel improvements should include components to mitigate adverse impacts on wetlands.

- When possible, increase the depth of existing drainage courses to accommodate the storm drainage collection.

- Vegetation proposed within the low-flow open channel(s) shall provide treatment of urban stormwater runoff.

REGULATORY SETTING

PLACER COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

The Placer County Flood Control and Water Conservation District was established in 1984 by the State Legislature for the contiguous area of Placer County as a distinct special district, apart from County government. Its purpose is to address flood control issues arising from growth. District boundaries are the same as Placer County boundaries and it is governed by its own Board of Directors. Members include a representative from each of the six incorporated cities in Placer County, two representatives from the Board of Supervisors, and one member-at-large appointed by the Board of Supervisors and representatives of various organizations.
The Flood Control and Water Conservation District endeavors to protect lives and property from the effects of flooding through comprehensive, coordinated flood prevention planning. Standards have been developed to evaluate flood risk and flood control measures such as the requirement for new flood control infrastructure for new development to mitigate resulting impacts.

The District develops and implements watershed master plans and hydrologic models, and provides technical support to the County, the cities and developers. The District has developed a County flood warning system. The District establishes standards for development, performs development review and provides technical assistance to the Office of Emergency Services. However, the District is advisory in nature and has no permitting authority. The Placer County Department of Public Works is the regulatory and permitting agency for flood control issues.

A Stormwater Management Manual is maintained by the District which contains the following relevant regulations:

**Section VI - Drainage Systems, Item 2. Design Storms**

All new development shall be planned and designed so that no damages occur to structures or improvements during the 100-year event and no inundation on private property occurs during the 10-year event.

a. Local Drainage – The 10-year event is the minimum design storm for new developments in all drainages and all dedicated drainage facilities will be sized for this event.

b. The development plan will also identify the effects of the 100 year event and provision will be made in the plan to prevent loss of life and damages to property during a 100-year event.

c. Regional Drainage – Regional drainage facilities are those identified as such in watershed plans, or have drainage areas greater than two hundred acres.

d. Regional drainage systems will be planned and designed for a 100-year event except where the cost of the system is clearly unjustifiable economically. Variances from the design frequency will be approved by the Flood Control District.

e. Designs of major flood control facilities will consider the effects of events which are lesser in magnitude as well as greater than the design event.

**Stormwater Management Manual Table 6-1**

<table>
<thead>
<tr>
<th>Type</th>
<th>Profile</th>
<th>10-Year Storm</th>
<th>25-Year Storm</th>
<th>100-Year Storm</th>
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<tr>
<td>Local</td>
<td>Continuous Grade</td>
<td>Traveled way remains clear and does not convey runoff.</td>
<td>Maximum depth at flow line shall not exceed 6 inches. The center line</td>
<td>Maximum HGL minimum of 1 foot below building pads.</td>
</tr>
<tr>
<td>Type</td>
<td>Profile</td>
<td>10-Year Storm</td>
<td>25-Year Storm</td>
<td>100-Year Storm</td>
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</tr>
<tr>
<td>Sag Points</td>
<td>Traveled way remains clear and does not convey runoff.</td>
<td>Maximum depth at flow line shall not exceed 6 inches. The center line depth shall be zero.</td>
<td>HGL minimum of 1 foot below building pads.</td>
<td></td>
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<tr>
<td>Collector</td>
<td>Continuous Grade</td>
<td>Travel way remains clear and does not convey runoff.</td>
<td>Travel way remains clear and does not convey runoff.</td>
<td>Flow is contained within the right-of-way. The center 12 feet of roadway shall remain clear.</td>
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<tr>
<td>Sag Points</td>
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<td>Travel way remains clear and does not convey runoff.</td>
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</tr>
<tr>
<td>Arterial and Expressway</td>
<td>Continuous Grade</td>
<td>Travel way remains clear and does not convey runoff.</td>
<td>Travel way remains clear and does not convey runoff.</td>
<td>All travel lanes remain clear. Bike lanes may flood. Flow is contained within the right-of-way.</td>
</tr>
<tr>
<td>Sag Points</td>
<td>Travel way remains clear and does not convey runoff.</td>
<td>Travel way remains clear and does not convey runoff.</td>
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</tr>
</tbody>
</table>

**PLACER COUNTY**

The following relevant regulations have been adopted by the Placer County Board of Supervisors to regulate grading and related runoff in Placer County.

**Placer County Code: Grading and Erosion Prevention Ordinance**

*Section 15.48.020 Purpose.*

The ordinance codified in this article is enacted for the purpose of regulating grading on property within the unincorporated area of Placer County to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with hazardous materials, nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the Placer County General Plan, any specific plans adopted thereto and applicable Placer County ordinances including the Zoning Ordinance, Flood Damage Prevention Ordinance, (Article 15.52) Environmental Review Ordinance (Chapter 18 Placer County Code) and applicable chapters of the California Building Code.
Code. In the event of conflict between applicable chapters and this article, the most restrictive shall prevail. (Ord. 5056-B (part), 2000)

Section 15.48.050 Water obstruction.
No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion. This section applies whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits. (Ord. 5056-B (part), 2000)

Section 15.48.090 Levee work.
No person shall excavate or remove any material from or otherwise alter any levee required for river, creek, bay, or local drainage control channel, without prior approval of the local governmental agency responsible for the maintenance of the levee. (Ord. 5056-B (part), 2000)

Section 15.48.570 Drainage--General.
Any drainage structure(s) or device(s) carrying surface water runoff required by this article shall be designed and constructed in accordance with standards herein, the current Placer County Flood Control and Water Conservation District Stormwater Management Manual and criteria authorized by the Director of Public Works. (Ord. 5056-B (part), 2000)

Section 15.48.580 Drainage discharge requirements.
All drainage facilities shall be designed and engineered to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse, or other juncture, and shall be subject to the approval of the Director of Public Works. (Ord. 5056-B (part), 2000)

Section 15.48.590 Drainage--Water accumulation.
All areas shall be graded and drained so that drainage will not cause erosion or endanger the stability of any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

Section 15.48.600 Drainage protection of adjoining property.
When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

Section 15.48.610 Terrace drainage.
Terraces at least 8 feet in width shall be established at not more than 25 feet in height intervals for all cut and fill slopes exceeding 30 feet in height. Where only one terrace is required, it shall be at approximately mid-height. Suitable access shall be provided to permit proper cleaning and maintenance of terraces and terrace drains. Swales or ditches on terraces shall have a minimum depth of one foot, a minimum longitudinal grade of 4%, a maximum longitudinal grade of 12%. Down-drains or drainage outlets shall be provided at approximately 300-foot intervals along the drainage terrace. Down-drains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal. If the drainage...
discharges onto natural ground, adequate erosion protection shall be provided. (Ord. 5056-B (part), 2000)

Section 15.48.630 Erosion and sediment control.
The following shall apply to the control of erosion and sediment from grading operations:

A. Grading plans shall be designed with long-term erosion and sediment control as a primary consideration.

B. Grading operations during the rainy season shall provide erosion and sediment control measures except upon a clear demonstration, to the satisfaction of the Director of Public Works, that at no stage of the work will there be any substantial risk of increased sediment discharge from the site.

C. Should grading be permitted during the rainy season, the smallest practicable area of erodible land shall be exposed at any one time during grading operations and the time of exposure shall be minimized.

D. Natural features, including vegetation, terrain, watercourses and similar resources shall be preserved wherever possible. Limits of grading shall be clearly defined and marked to prevent damage by construction equipment.

E. Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.

F. Adequate provision shall be made for long-term maintenance of permanent erosion and sediment control structures and vegetation.

G. No topsoil shall be removed from the site unless otherwise directed or approved by the director of public works. Topsoil overburden shall be stockpiled and redistributed where appropriate within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.

H. Runoff shall not be discharged from the site in quantities or at velocities substantially above those, which occurred before grading except into drainage facilities, whose design has been specifically approved by the Director of Public Works.

The permittee shall take reasonable precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs. (Ord. 5056-B (part), 2000)

Section 15.48.670 Vehicular ways--Drainage.
Vehicular ways shall be graded and drained in such a manner that will not allow erosion or endanger the stability of any adjacent slope. Surface discharge onto adjoining property shall be controlled in such a manner that it does not cause erosion or endanger existing improvements.
Bridges and culverts installed in watercourses may be reviewed by the Placer County Flood Control and Water Conservation District and must be approved by the Public Works Director, and any other required permitting agency. (Ord. 5056-B (part), 2000)

**Dry Creek Watershed Drainage Improvement Zone**

*Section 15.32.010 Purpose.*

A. New development, and the expansion of existing development, within the watershed of Dry Creek, as shown on Exhibit A attached to the ordinance codified in this article and incorporated herein by reference, imposes a burden on the creeks and drainage infrastructure within the watershed by adding additional impervious surface and accelerating runoff, thereby adding more runoff and increasing discharge rates. This creates a need for new drainage infrastructure and improvements. Such burdens may vary depending upon the type of land use and location within the watershed.

B. Analysis of the land use expected at buildout of the community plans within the Dry Creek watershed makes it possible to estimate the amount of additional runoff generated by different types of land use, to analyze the drainage infrastructure or facilities necessary to mitigate that runoff, and to determine which land uses will require various portions of such infrastructure. It is, therefore, possible to charge a fee, based on land use and location, which equitably distributes the burden of providing drainage infrastructure or facilities within the Dry Creek watershed among those who will create the need for them. It is further the purpose of this article to assist with the implementation of the affected community plans by ensuring that adequate public facilities are financed and provided to serve the community.

C. This article establishes a drainage improvement zone for the Dry Creek watershed area. It requires the payment of specified fees and annual assessments as a condition of new development and the expansion of existing development within the watershed area for the installation and maintenance of roadway drainage and stormwater drainage improvements.

D. The intent of this program is to supplement existing county policies of requiring on-site and off-site drainage improvements, where appropriate, to accommodate increased runoff resulting from new development and the expansion of existing development.

E. The fee requirements and annual assessments established herein shall be applicable to all new development and the expansion of existing development in the unincorporated area of Placer County located within the boundaries of the various tributary areas identified on said Exhibit A. (Prior code Section 4.2000)
Flood Damage Prevention Ordinance

The County’s Flood Damage Prevention Ordinance implements floodplain management in the county. The ordinance limits construction in areas within the 100-year flood zone to prevent damage to structures and to limit the effect of development on flood elevations.

Placer County General Plan Goals and Policies

The Placer County General Plan defines certain policies pertaining to drainage and flood control.

Section 3 – Transportation and Circulation

3.A.3 The County shall require that roadway rights-of-way be wide enough to accommodate the travel lanes needed to carry long-range forecasted traffic volumes (beyond 2010), as well as any planned bikeways and required drainage, utilities, landscaping and suitable separations.

Section 4 – Public Facilities and Services

4.A.1. Where new development requires the construction of new public facilities, the new development shall fund its fair share of the construction. The County shall require dedication of land within newly developing areas for public facilities, where necessary.

4.E.1. The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

4.E.2. The County shall support efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state.

4.E.3. The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.

4.E.4. The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.

4.E.5. The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.

4.E.6. The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.

4.E.8. The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.
4.E.9. The County shall encourage good soil conservation practices in agricultural and urban areas and carefully examine the impact of proposed urban developments with regard to drainage courses.

4.E.11. The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.

4.E.14. The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.

Section 6 – Natural Resources

6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: one hundred feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

a. Reasonable use of the property would otherwise be denied;

b. The location is necessary to avoid or mitigate hazards to the public;

c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

d. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

6.A.2. The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

6.A.3. The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability:
a. Avoid the disturbance of riparian vegetation;
b. Replace riparian vegetation (on-site, in-kind);
c. Restore another section of creek (in-kind); and/or
d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).

6.A.6. The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element.

IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Bases on Appendix G of the CEQA Guidelines, Placer County has determined that a project could have a significant effect on hydrology and flooding if it would:

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

- place within a 100-year flood hazard area structures that would impede or redirect flood flows.

- expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Due to the unique nature of the regional water supply effects related to flood control, the indicators and thresholds presented in Table 4.3-1 are used to judge the significance of impacts.
### Table 4.3-1
Flood Impact Indicators and Significance Thresholds

<table>
<thead>
<tr>
<th>Impact Indicator</th>
<th>Significance Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-of-month reservoir storage for Folsom, Shasta or Trinity.</td>
<td>A substantial change in the ability to maintain the flood control diagrams for either Folsom or Shasta reservoirs under current operation of the facilities, resulting in an increased exposure of persons or property to flood hazards.</td>
</tr>
<tr>
<td>Monthly mean flow for lower American River, upper Sacramento River and lower Sacramento River.</td>
<td>A substantial change in floodplain characteristics.</td>
</tr>
<tr>
<td>Monthly mean flow for lower American River.</td>
<td>A substantial change in hydraulic stress to lower American River levees.</td>
</tr>
</tbody>
</table>

### 4.3.2-1 Urbanization of the Specific Plan Area for residential, commercial and roadway purposes would increase impervious surface area and, therefore, increase runoff volume and peak flows. Increased runoff due to urbanization could contribute to downstream flooding and erosion, including downstream impacts on Sacramento and Sutter Counties.

Although the potential drainage area anticipated to be developed within the Specific Plan area would be small in comparison to the 26,000-square-mile drainage basin, the increase in runoff quantity associated with urbanization and roadway improvements would be substantial in relation to existing runoff volumes. Given the existing potential for flooding, the increase in runoff associated with urbanization could contribute to localized and downstream flooding.

Impervious areas such as roofs, parking lots, and roads would alter runoff patterns and increase stormwater discharge from the area by limiting ground infiltration. Small local drainage systems and existing culverts might not be able to accommodate the increase in runoff due to the development of the overall area. Increased discharges could increase water levels and could promote potential bank erosion within these smaller creeks. Some existing culverts might be incapable of accepting the increased runoff, which could cause potential localized flooding and possibly undermine roads at crossings.

A site-specific model was created for the project as part of the drainage analysis included in the *Master Project Drainage Study*. The model included the Specific Plan area and contributing watersheds and used pre-project, post-project unmitigated, and post-project mitigated conditions for the 2-year, 10-year and 100-year events. Results of the model include required detention basin peak flows and volumes to accommodate runoff at predevelopment levels and mitigate impacts at the project boundary.

It is proposed to collect runoff from the project area within storm drainage systems that would discharge into channels and detention/retention facilities. Trunk storm drainage facilities for the project have been sized using the “Small Watershed Method” identified in the *Placer County Flood Control and Water Conservation District Stormwater Management Manual*. Channels
would consist of newly constructed channel systems and parallel flood control channels where “avoidance” areas are to be maintained in a natural state. Flooding limits would be confined within the channels and existing floodplain areas, generally providing three feet of 100-year event freeboard to adjacent proposed structures. The channels would be excavated below the existing grade and would “daylight” at the downstream end to natural grades at the project boundaries. Low flow channels would be constructed to confine the conveyance of year round “nuisance” waters. Figure 4.3-5 shows the locations of proposed improvements and natural features to remain. The figure also references a number of cross sections that provide a concept of how the channelization and “avoidance” areas would appear within the project open space areas. Three of the cross sections are reprinted herein as Figure 4.3-6.

In order to preserve the integrity of avoidance areas within the Specific Plan area where wetlands and critical habitat are to be preserved, it is necessary that the project not adversely affect mean annual and peak annual events. This means that increases in flow rates for these events should not be allowed within the unaltered swales. Additionally, where seasonal wetlands are identified (see Section 4.4 of this Revised Draft EIR), nuisance waters from non-storm discharges should be diverted to the flood control facilities so as not to affect the seasonal nature of the existing features. Special structures are proposed to divert excess flood waters to the flood control channels, or to divert nuisance waters away from the existing swales.

The Master Project Drainage Study proposes the use of several types of facilities to provide attenuation in reducing peak-flow discharges from the Specific Plan area. The main method of providing detention attenuation will be through the use of existing swales and excavated flood control channel detention facilities upstream of regulating culvert facilities. Other types of attenuation facilities proposed with the project include excavated lake areas, constructed wetlands area and water quality basin and channels.

The volumetric impacts of the project have been computed using the “Rainfall Excess Methodology” for the eight-day 100-year event. An eight-day duration storm was chosen for this analysis because the accumulated runoff volume over long duration storms has affected low lying residents of Sutter County. The “Rainfall Excess” methodology provides a direct computation of the volume of runoff for a given hourly precipitation distribution and comparison to infiltration rates. The detailed analysis is provided in the Master Project Drainage Study. A summary of the proposed mitigation is provided in Table 4.3-2.

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Required 8-day 100-year Volumetric Impact</th>
<th>Proposed Retention Locations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curry Creek</td>
<td>25 AF</td>
<td>CUSB11B Watershed at Inline Detention Weir</td>
</tr>
</tbody>
</table>

*See the Master Project Drainage Study for Proposed Retention locations.  
Source: Master Project Drainage Study, January 2006

The project proposes to mitigate these volumes on-site within the proposed dual purpose detention/retention facilities and channels. At this location, an in-line dual purpose detention/retention weir structure is proposed. A slide gate structure would be added to the weir...
structure such that the required impoundment volume could be retained within the project as needed. The weir structure would be designed such that retention could occur, while maintaining capacity to pass peak flows. However, the normal (non-retention) operation of the control structure would be open, or if applicable, whatever configuration is necessary for detention.

For the Curry Creek watershed, which is tributary to the Pleasant Grove Canal system at the Natomas Cross Canal, previous negotiations by the City of Lincoln and Sutter County have determined that the Verona Gage elevation 37 criteria would be used to trigger impoundment of water. This means that whenever the Verona Gage at the Sacramento River exceeds elevation 37, retention impoundment would occur until such time as the Sacramento River recedes below that elevation.

Analysis of potential impacts to the Dry Creek peak flow rates resulting from the project were previously performed using the following models:

- Base HEC-1 Model provided by Placer County Flood Control and Water Conservation District.

- Corrected Effective HEC-1 Model: The base models are corrected to provide for shed boundary, slope and imperviousness for the areas within the Specific Plan area. This model is the proper basis of comparison.

- Post-Project Model: Includes the post-project development conditions for the project areas.

- Post-Project Mitigated Alternative Model: Includes an alternative for consideration if the project were to provide detention basins on-site. This model shows that there is no benefit to the Dry Creek System Peak Flow Rates if on-site attenuation is provided within the Dry Creek System.

For the 100-year event, the resulting outflows are reported in Table 4.3-3.

<table>
<thead>
<tr>
<th>Model</th>
<th>Peak Flowrate (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCFCWCD (provided base model)</td>
<td>15,595</td>
</tr>
<tr>
<td>Corrected Effective Model</td>
<td>15,598</td>
</tr>
<tr>
<td>Post-Project Unmitigated</td>
<td>15,605</td>
</tr>
<tr>
<td>Post-Project Mitigated</td>
<td>15,618</td>
</tr>
</tbody>
</table>

For the Mitigated Analysis a 60 AF detention basin was used prior to discharge to Dry Creek. The increase in flows for the mitigated analysis compared to the corrected effective model is worse than the increase in flows for the unmitigated model. Since the above analysis was performed, the Sacramento County Department of Water Resources has written that “…the increased water surface elevations due to development in Placer Vineyards is essentially zero” (Booth, November 3, 2004). Therefore, detention is not recommended at Dry Creek for this project. The Sacramento County Department of Water Resources has, however, requested that
the Placer Vineyards Specific Plan project “...pay a fair share volume mitigation fee as listed on the Fee Schedule for Zone 11C, Sheds Flowing to NEMDC Tributaries, updated annually.” Fees currently range from $235.00 per acre to $629.00 per acre, depending on relative contribution to the impact.

A variety of on-site attenuation facilities are proposed to be constructed in the tributaries to Steelhead Creek and are shown on Table HG1 of the Master Project Drainage Study. In order to assess impacts to Steelhead Creek, the hydrology analysis for the Specific Plan area was extended downstream to the Steelhead Creek points of inflow for the pre-project and post-project mitigated conditions. Hydrology was prepared for the 24-hour 100-year and 200-year events. The post-project mitigated hydrology includes the detention facilities proposed for the Specific Plan area, as detailed in the Master Project Drainage Study.

The results of the 100-year comparison analysis indicate that the proposed detention mitigation adequately mitigates the peak discharge rates to less than the pre-project amounts. In the 200-year analysis the pre-project and post-project mitigated analysis are virtually identical. The results of the analysis demonstrate that no adverse impacts would result from the project at Steelhead Creek, however, a negligible impact is reported in the area between the Specific Plan area and Steelhead Creek due to increased volumes being discharged during the timing of peak flow from the Sankey Gap.

According to the Master Project Drainage Study, additional pumping would not reduce this impact, although pumping had been previously recommended (see Appendix S, WRIME Addendum I). After refinement of the hydrology, the Master Project Drainage Study now finds that this impact could be reduced by installing control structures on some of the Steelhead Creek tributary detention structures within the Specific plan area and monitoring the spill at Sankey Gap. Gates could be installed when the Sankey Gap spill occurs, reducing runoff volumes during this period. The Sankey Gap spill is a special event, which is known to occur when flows in the Natomas Cross Canal overtops Sankey Road and spill into the Natomas and Steelhead Creek basins.

Increase in runoff quantity associated with urbanization of the Specific Plan area is considered a potentially significant impact.

Mitigation Measures

The following mitigation measures will reduce the impact of runoff quantity associated with development in the Specific Plan area to a less than significant level:

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

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

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

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

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

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

Urbanization and development of the Specific Plan area could increase runoff to existing and proposed culverts within and downstream of the Specific Plan area. Increased flows conveyed to existing culverts could result in overtopping and flooding due to inadequate capacity for urbanized flow-rates and potential clogging from construction debris, sediment and/or vegetation.

Flooding is not limited to 100-year events alone, and often occurs in areas that restrict, prohibit or obstruct the flow of runoff during lower-frequency rainfalls. Capacity analysis of culverts, roadways, channels and stormwater facilities (both water quality and detention related) is critical to prevent and minimize areas of flooding. During wet-weather conditions, areas used for
emergency access purposes (primary roadways) should be kept free and clear of debris and flooding conditions. Flooding within an area intended for emergency access purposes could result in delayed response to emergencies and limited access. Placer County Flood Control District policy requires the center 12 feet (one lane in each direction) of collector roadways remain unobstructed by runoff during 100-year events and all roadways to remain unobstructed during 10-year events.

Designated drainageways, channels and swales that convey runoff to culverts can also carry debris, sediment and other potential forms of blockage. Overtopping culverts and potentially roadways can similarly place debris within roadways, result in pavement failure and undermine subgrade of pavement.

According to the *Master Project Drainage Study*, culvert sizing for the project is optimized to maximize on-site attenuation, while providing the passage of the 100-year peak flows (for details, see Table IIIB1 of the *Master Project Drainage Study*. However, emergency access limitations, runoff within the travel path of the roadway, and associated potential adverse impacts resulting from flooding and less than adequate culvert capacity is considered to be a *potentially significant impact*.

**Mitigation Measures**

The following mitigation measure will reduce the impact of flooding and culvert capacity that would occur after roadway and storm drain improvements in the Specific Plan area to a *less than significant level*:

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

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

4.3.2-3 Increased runoff due to urbanization and increase in impervious surface area could increase water surface levels within channels, swales and other drainageways. Urbanization and loss of open area could result in increased levels of flooding. Flooding, along with increased velocities, could lead to bank erosion, elevated flood levels and increased runoff.

Existing capacity of the natural drainageways relies upon open undeveloped areas for shallow flooding and runoff storage. Loss of existing storage due to development would result in the need for additional channel capacity. Design considerations for actual urbanization, freeboard, side slopes, vegetation and inflow/outflow facilities will affect overall size of the channels, in addition to periodic crossings at roadways.

A hydraulic evaluation was performed for the 2-, 5-, 10-, 25-, 50-, 100-, 200- and 500-year event. The HEC-RAS summary tables for all events are provided in the Master Project Drainage Study for the pre-project and post-project mitigated events respectively.

The Specific Plan proposes to collect runoff within storm drainage systems that would discharge into channels and retention/detention facilities. These facilities would generally follow or be placed along the natural drainage courses within the Specific Plan area (see Figure 4.3-6). The flooding limits would be confined within the channels, generally providing three feet of 100-year freeboard to adjacent proposed structures. The channels would be excavated below the existing grades, and daylight at the downstream end to natural grades at the project limits. A low flow channel would be constructed throughout to confine the conveyance of year round nuisance waters.

A low dam constructed of uncemented rock and broken concrete has been placed across Dry Creek immediately downstream of the Watt Avenue bridge within the FEMA-designated floodway. The low dam within the channel was constructed to irrigate pasture land that will be converted to other uses upon Specific Plan implementation. With project buildout, the dam, pump, intake structure and pipeline conveying the water will no longer be required. If left in place, the dam would unnecessarily impede flows, causing runoff backwater and clogging. (Also see Impact 4.4-30 and Mitigation Measure 4.4-30.)

Although the Master Project Drainage Study proposes a design solution, flooding and increase of flows within drainageways is considered a potentially significant impact until site-specific project drainage reports are prepared and accepted by the County.
Mitigation Measures

The following mitigation measures will reduce the impact on drainage capacity due to development within the Specific Plan area to a less than significant level:

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

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

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

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

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

4.3.2-3f  The low dam, intake structure, pump and pipeline withdrawing water from Dry Creek shall be removed in its entirety, and the streambed returned to a natural condition, at the time irrigation of existing pasture land located within Property Group #5 of the Specific Plan area ceases. Upon removal of the dam, an effective combination of
erosion and sediment control shall be implemented which may include measures such as covering exposed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding. In addition, best management practices (BMPs) shall be implemented during construction to reduce or eliminate sedimentation and reduce erosion in result of dam removal activities. BMPs may include sediment control practices such as filtration devices and barriers (e.g. fiber rolls, straw bale barriers and gravel inlet filters) and/or settling devices (e.g. sediment traps or basins). BMPs shall be developed in accordance with applicable federal, State and local agencies. Additionally, the dam removal shall be done in accord with all applicable federal, State and local requirements and/or permit conditions existing at the time of removal. Prior to removal of the structure, a drainage report shall be prepared demonstrating that the removal of the structure will not adversely increase flows downstream.

4.3.2-4 Development and urbanization of the Specific Plan area could reduce pervious area, which in turn would limit the percolation process. Groundwater recharge within Specific Plan area could be limited to open spaces and detention facilities provided.

Existing agricultural uses of the property rely on groundwater for irrigation purposes. Groundwater relies on annual rainfall and percolation through pervious soils to recharge the system. The Specific Plan area is dominated (in excess of 90%) by Type D hydrologic soils, which have a slow infiltration rate with high runoff potential. As such, the project does not qualify as an important groundwater recharge area within the meaning of General Plan policy 6.A.10b (protection of important groundwater recharge areas). Some Type A and C soils are located in the southeastern part of the Specific Plan area, particularly along Dry Creek. The most likely area for recharge to occur would be along Dry Creek within the Type A soils area. This area, however, will remain in open space and its recharge potential will be unaffected by the proposed development. In addition, to the extent recharge could occur, regular discharges to stormwater treatment and detention basins will provide for regular flows that will remain in the basin areas and be available for recharge. Based on the low value of the Specific Plan area for recharge (with the exception of the Dry Creek Corridor, which will remain in open space), this impact is less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.2-5 There could be inconsistencies between the proposed Specific Plan and General Plan goals, objectives and policies related to increased runoff, erosion, and drainage infrastructure capacity.

General Plan goals and policies are directed at minimizing impacts associated with increased runoff, erosion, and drainage infrastructure capacity, specific to the protection and utilization of natural drainage patterns. Development associated with the Specific Plan would result in increased surface water runoff, potential erosion and need for drainage infrastructure.
The Placer County General Plan encourages the use of natural stormwater drainage systems to preserve and enhance natural features (Policy 4.E.1) and supports efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state (Policy 4.E.2). The General Plan also states that the County shall ensure that new storm drainage systems are designed in conformance with the Placer County Stormwater Management Manual and the County Land Development Manual (Policy 4.E.4), and provides that the County will strive to improve quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures, including grassy swales, riparian setbacks, and other BMPs (Policy 4.E.10).

The Placer County Storm Water Management Manual policies require natural drainageways to be used for storm runoff whenever possible. As shown in Figure 4.3-5, the current Master Project Drainage Study and Specific Plan make significant efforts to preserve major drainageways in their natural condition, including construction of parallel channels to avoid volumetric and water quality impacts. Placer County General Plan policies “encourage” use of natural drainageways and stormwater drainage systems, but do not mandate their retention. For example, Policy 4.E.2 suggests that natural drainage retention is desirable in some situations, but may not be desirable in all instances. The extent to which the County requires retention of natural drainageways under current General Plan policy is a matter of judgment on the part of decision makers, based on project-specific circumstances. Because General Plan policy language does not mandate retention of natural drainageways, modification of existing drainageways does not constitute a General Plan conflict, and this impact is therefore less than significant.

Additional General Plan goals are designed to reduce impacts to water quality from erosion, construction, and urban pollutants. Urbanization and associated improvements assumed in the Specific Plan would result in increased erosion, short-term construction water quality impacts, and long-term operational water quality impacts. Therefore, inconsistencies with General Plan goals and policies could occur. Impacts of the Specific Plan associated with water quality due to erosion, construction, and urban pollutants are identified in Section 4.3.4, and mitigation measures are proposed that would reduce these impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

OFF-SITE INFRASTRUCTURE

4.3.2-6 Installation of off-site infrastructure could increase runoff volumes.

Installation of utilities to serve the Specific Plan area development is distinct from site urbanization and is not anticipated to result in additional impervious surface area or an increase in runoff. Design and installation of pipelines in off-site utility corridors is anticipated to remove and replace existing surfaces with similar materials. This would include soil and other earthen materials, or replacement of pavement in the case of utility lines within existing roadways. This is a less than significant impact.
Roadway widening, as in the case of Watt Avenue and Baseline Road, planned intersection improvements and additions to wastewater treatment plants would add a minor amount of additional impervious surface. Although potentially significant, increased runoff impacts from these improvements can be mitigated as follows.

Mitigation Measures

Compliance with Mitigation Measures 4.3.2-1a-i will reduce this impact to a less than significant level by requiring practices that will control potential runoff.

4.3.2-7 Off-site utilities and roadways will encroach into areas that are within FEMA-designated 100-year flood zones.

The utility lines and roadway improvements along Watt Avenue will encroach into the FEMA 100-year floodplain of the Dry Creek drainage. In addition, the proposed long-term surface water supply line that will transmit potable water to the Specific Plan area will bisect an existing 100-year floodplain located in southern Sutter County. Considering that off-site utilities will be buried and will be enclosed systems, there will be no impact to the floodplain. The widening of Watt Avenue will add width to an existing roadway and bridge, but will add no new impediments to flood flows. Impacts from off-site utility line and roadway installation are, therefore less than significant.

Mitigation Measures

No mitigation measures are required.

Initial Surface Water Supply

4.3.2-8 There could be a reduction in the ability of facility operators to achieve and maintain reservoir flood control diagrams.

Shasta and Folsom reservoirs are operated to provide flood control protection from November through April as dictated by each of their flood control diagrams. A substantial reduction in the ability of these reservoirs to provide flood control protection (as indicated by reduction in the ability to achieve and maintain the reservoir flood control diagram) would constitute a significant impact. Under the proposed Specific Plan initial water supply, diversions from the American River would increase, thereby increasing demand on system reservoirs and indirectly providing a flood control benefit to the region. Over the 70-year hydrologic period of record, long-term monthly average storage in Folsom, Shasta, and Oroville reservoirs during the flood control period would generally be lower (i.e., 0.1%) or unchanged, relative to the existing condition (Technical Appendices A-98 to A-103, A-110 to A-115). Persons and property within the area protected by these facilities and under the operation of the reservoir flood control diagrams would not experience any significant increase in exposure to flooding hazards, relative to the existing condition. This would be considered a less than significant impact.
Mitigation Measures

No mitigation measures are required.

4.3.2-9  **Floodplain characteristics could be altered due to implementation of the proposed Specific Plan initial surface water supply.**

Altered characteristics within the floodplain could, depending on the magnitude of the change, impart an increased risk of flooding. Urbanization, for example, where widespread impervious surfaces no longer permit natural infiltration or percolation of surface water, can generate widespread ponding and runoff. While storm drainage systems are designed to channel these surface waters away from urban areas, if such systems fail, flood risks are enhanced. Similarly, where any structural change to a natural levee, revetment, dike, or terrace embankment occurs, increased risk of flooding can result. However, although the proposed Specific Plan initial surface water supply proposes structural change, new facilities, and certain direct alterations of the floodplain, urban stormwater drainage is an important feature of the proposed Specific Plan. From a mass balance hydrologic analysis perspective, the proposed Specific Plan initial surface water supply is limited to diversions of water from the American and/or Sacramento River systems.

A comparison of monthly mean flow for the upper Sacramento River, lower Sacramento River and lower American River between the existing condition and the proposed Specific Plan initial water supply was conducted for each month of the flood control season (November through April) to determine the potential for change in floodplain characteristics. The maximum monthly mean flows on the Sacramento River from Keswick Reservoir and at Freeport would remain unchanged during every month of the flood control season, relative to the existing condition (Template Output B-97 and B-98). The maximum monthly mean release from Nimbus Dam on the lower American River would be lower (i.e., up to 0.8 percent) for every month of the flood control season, relative to the existing condition (Template Output B-96). These unchanging or slightly decreased flows under the proposed Specific Plan initial surface water supply would not result in specific changes to the characteristics of the floodplain. Together, this would be considered a *less than significant impact.*

Mitigation Measures

No mitigation measures are required.

4.3.2-10  **There could be an increase in lower American River levee stress.**

Levee stress, a primary causal factor in levee failure, is often promoted by high flows over prolonged periods of time. In addition to the kinetic energy imparted by high flows, which can generate substantial erosive potential along the wetted embankment, high flows can also saturate confining levees. With this saturation, positive pore water pressures can build within older levees. Such pressures in an elevated structure of unconsolidated material (levees) can promote significant structural risks, which can result in failures.
A comparison of Nimbus Dam releases between the existing condition and the proposed Specific Plan initial surface water supply for each month of the flood control season (November through April) was conducted to determine effects on the lower American River flood control structures due solely to elevated flows. The analysis revealed that during the flood control season, 70-year monthly mean Nimbus Dam releases under the proposed Specific Plan initial surface water supply would be lower (i.e., up to 0.8%) in every month of the flood control season, relative to the existing condition (Template Output B-96). For the proposed Specific Plan, these unchanging or slightly decreased flows would not result in a substantial change in hydraulic stress to lower American River levees. Thus, impacts to lower American River levees under the proposed Specific Plan initial surface water supply would be less than significant.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

4.3.2-11 Urbanization within the Specific Plan area and up-gradient of the Specific Plan area could result in a cumulative increase in surface runoff. Increased runoff could exceed design assumptions for proposed culverts, roadways, channels and other conveyance systems and result in overtopping and downstream flooding.

Due to the level of existing and proposed development within the watersheds affected by the Specific Plan (see Section 5.2 in Chapter Five of this Revised Draft EIR), there is a potential for a significant cumulative volumetric impact to occur. Design assumptions for off-site improvements and/or existing conditions affect received flow within the Specific Plan area as well as downstream. Because the drainage system design for the Specific Plan area will limit post-project flows contributed by the project in the Curry Creek and Steelhead Creek (NEMDC) Drainage sheds, consistent with the Placer County Storm Water Management Manual, the project will have a less than cumulatively considerable contribution to flows in these watersheds.

Within the Dry Creek Drainage Shed, detention of flows is not currently recommended. The Dry Creek Drainage Shed, although the largest regionally, includes only 477 acres along the southeast boundary of the Specific Plan area. However, the Dry Creek watershed is about 80 square miles in area and includes substantial developed areas and areas proposed for development upstream. Downstream, Dry Creek flows into northern Sacramento County through the community of Rio Linda until it reaches Steelhead Creek, which drains into the American River. Although the Dry Creek Drainage Shed is a very small part of the project area, when combined with potential up-gradient flow increases, this is a potentially significant cumulative impact to which the project’s contribution would be cumulatively considerable.
Mitigation Measures

The following mitigation measures will reduce this significant-cumulative impact due to the increased flows in Dry Creek, but absent a showing of no adverse impact to downstream properties, it will not reduce it to a less than significant level:

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

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

Cumulative Impacts, Long-Term Surface Water Supply

4.3.2-12 There could be a cumulative effect on reservoir flood control diagrams, altered floodplain characteristics, lower American river levee stress, and river hydraulic processes.

A water supply of 11,500 AFA is a portion of the PCWA’s pending amendatory CVP contract with the Reclamation for 35,000 AFA. This water would be diverted from the Sacramento River, which has an annual runoff of approximately 18 million AF (PCWA 2001). The entire 35,000 AFA of the PCWA CVP contract water was used for the project’s incremental contribution analysis (for a further description of the cumulative analysis, see Section 4.3.4). The full CVP contract amount of 35,000 AFA (long-term surface water supply) was evaluated based on the premise that this higher diversion amount provides a conservative representation of potential impacts associated with increased diversions from the Sacramento River to meet the proposed project needs.

Increased diversions from the CVP system that would occur under the cumulative condition would result in increased reservoir water storage capacity and hence, would provide positive benefits to flood control, relative to the existing condition. Thus, implementation of future actions would result in no significant future impacts to reservoir flood control diagrams, lower American River levee stress, floodplain characteristics, and river hydraulic processes; all key flood control parameters. As there would be no significant impact to flood control under the cumulative condition, relative to the existing condition, the proposed Specific Plan long-term surface water supply would not incrementally contribute to potential future impacts to flood control. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to
the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.3 WATER RESOURCES (WATER SUPPLY)

This section addresses impacts associated with water resources, including groundwater, and local, area, and regional impacts of the proposed Specific Plan initial and long-term surface water supplies. Site-specific impacts associated with water supply conveyance and distribution systems are addressed in more detail in Section 4.11.7 of this Revised Draft EIR. Section 4.11.7 also includes a description of the Water Forum Agreement (WFA) and the relationship between that agreement and the proposed Specific Plan water supply.

Information in this Revised Draft EIR has been excerpted from descriptions contained in the PCWA American River Pump Station Project EIS/EIR (PCWA and Reclamation, 2001) and the American River Basin Cumulative Report prepared by the Reclamation as part of the referenced EIS/EIR (August 2001). The analysis from these documents pertaining to surface water supply is incorporated herein. Copies of the documents can be reviewed at the address appearing in Section 2.9 in Chapter Two of this Revised Draft EIR. Modeling performed for this Revised Draft EIR is described later in this section.

BACKGROUND

SURFACE WATER

PCWA has several sources of surface water supply entitlements available for use in western Placer County. The first is a surface water supply contract with PG&E for 100,400 AFA of Yuba/Bear River water that is delivered through PG&E's Drum Spaulding hydro system. This has been PCWA's primary source of supply for Zone 1 (to which the Specific Plan area would be annexed) since PCWA began retailing water in 1968. Prior to that, PG&E was the retail water purveyor in Zone 1. The term of this contract is to 2013, but PCWA expects the contract to be renewed after the expiration of the present term.

This source of water has a high reliability during normal, single-dry and multiple-dry years. For example, between 1987 and 1992 the state experienced five years of drought, during which many areas in the state had reduced supplies. During that period, PCWA had a full Yuba/Bear River supply each year. 1977 was the only year in which PCWA had to impose drought restrictions on its customers due to reduced PG&E supply. PCWA’s 2005 Urban Water Management Plan was adopted on December 15, 2005 and contains a water shortage contingency analysis that includes a five stage rationing plan that would be invoked during a declared water shortage.

PCWA’s second source of surface water for consumptive use is its Middle Fork Project (MFP) water rights. The MFP reservoirs have 340,000 AF of storage capacity; however, pursuant to
agreements with the United States, PCWA is limited to a maximum consumptive use of 120,000 AFA from this source. PCWA’s MFP water right permits provide that this water supply may be diverted from the American River at either Auburn or Folsom Reservoir. The PCWA has done extensive modeling of the MFP system to determine its reliability during drought events using California's hydrologic record, which dates back to 1921. The conclusion of that analysis is that the MFP can provide 120,000 AFA, even in dry years as severe as the 1976-1977 hydrologic event.

An initial surface water supply is proposed to serve the Specific Plan area until a Sacramento River supply can be implemented. The immediate (or initial) surface water supply need was identified as 6,000 AFA. This amount is anticipated to be needed by the Specific Plan area by the time the long-term surface water supply becomes available (i.e., 6 to 8 years into the future).

The initial surface water supply consists of available water from PCWA’s unused American River water supply to be diverted at PCWA’s new permanent American River Pump Station, conveyed and treated at the existing Foothill Water Treatment Plant, and delivered through PCWA’s existing transmission pipeline system to the vicinity of Industrial. A booster pump and storage tank currently under construction would allow PCWA to introduce its water into the City of Roseville pipeline system. Under an existing agreement with the City of Roseville, PCWA can convey 10 MGD through the City’s pipeline system to a location near Baseline Road and Fiddyment Road. Extension of this pipeline westerly in Baseline Road could deliver water to the Specific Plan area (see Figure 3-5 in Chapter Three of this Revised Draft EIR). For a discussion of limitations on use of the City’s pipeline system for conveyance (wheeling) of water, see Section 4.11-7 of this Revised Draft EIR. Diversions from the MFP at the American River Pump Station location were previously evaluated in the American River Pump Station Project Final EIS/EIR, American River Basin Cumulative Impact Report, 2001.

A secondary initial surface water supply could be made available if the Sacramento River project has not begun delivery of water when the available initial supply, as described above, has been fully used. The secondary initial surface water supply consists of use of a portion (6,000 AFA) of the 29,000 AF of PCWA Middle Fork American River water currently contracted to SSWD. The supply would be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Specific Plan area via a new pipeline extending from the Cooperative Transmission Pipeline that currently ends in Antelope Road near Walerga Road. This pipeline would be extended westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Alternatively, this supply could be conveyed in a pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area.

A multi-party agreement between the developers, PCWA, Placer County, San Juan Water District, SSWD, and California American Water Company (formerly Citizens Utilities Company of California) is needed to provide for treatment and conveyance capacity for San Juan Water District’s water treatment plant (WTP) and the San Juan/Sacramento Suburban cooperative transmission pipeline to be shared with Placer Vineyards. The secondary supply could be sufficient to meet the needs of Placer Vineyards until such time as the Sacramento River diversion is in place. Either PCWA or California American Water Company would provide the
water supply in a manner consistent with the provisions of its purveyor-specific agreement with the Sacramento Area Water Forum.

Under terms of the Water Forum Agreement (WFA), SSWD water is available to be diverted at Folsom Lake for a 10- to 12-year period under certain hydrologic conditions. Restrictions to this diversion occur for the period 2001 through 2010, or 2012 if extended by agreement of all parties signatory to the WFA, when unimpaired inflow into Folsom Lake is less than 950,000 AF. Unimpaired inflow is projected to be in excess of 950,000 AFA in 85% of the years. In 15% of the years, water would not be available. After 2010 (or 2012), diversion of an equal amount of water diverted in the period March through November is anticipated to occur from the Sacramento River (long-term surface water supply).

In those years in which the minimum threshold to divert American River water is not achieved, PCWA will release from an upstream reservoir of their MFP an equivalent volume of water to continue supplying the necessary diversion. Modeling has confirmed these upstream releases can occur in all years without reducing available water below acceptable levels in the reservoirs, due to anticipated replenishment from rainfall in subsequent years.

The purpose of the PCWA contracted water to SSWD is principally for groundwater stabilization in the North Sacramento-Placer County groundwater basin. The contract provides for the availability of 29,000 AFA. Most recently, SSWD has been utilizing approximately 19,000 AFA on an average annual basis completely from groundwater. This means that when American River surface water is available in average and wetter years, it will be diverted, treated and piped into the SSWD’s system and delivered to their customers in lieu of pumping groundwater. This system is called conjunctive because SSWD has complete redundancy to supply their demands with groundwater. However, since the contract and WFA allow SSWD to eliminate groundwater dependence in 65% to 85% of the years into the future, the groundwater levels can be raised in the future as the program is implemented.

It is anticipated that utilization of American River water would occur over a number of years. SSWD has begun to introduce a portion of this contracted surface water to reduce dependence on groundwater. In subsequent years, surface water will be added. Not all the contracted American River surface water will be used in the groundwater replacement program over the early years of implementation. Thus, use of a portion of the anticipated 29,000 AF of surface water will not diminish near-term benefits available to the groundwater basin.

SSWD planned facilities and obtained contracts for 29,000 AFA of surface water. As noted above, this volume exceeds the demand of SSWD (both currently and projected). SSWD anticipated that other water districts would be interested in purchasing this surface water to operate a conjunctive system. Purveyors that were anticipated to use the additional surface water included the Arcade Water District (now part of SSWD) and California American Water Company. However, neither has developed the conveyance facilities to use the water. Thus, SSWD surface water is available for other uses until these districts develop conveyance systems, without reducing benefits to the groundwater basin.
PCWA’s third source of surface water is its federal CVP Municipal and Industrial water supply contract with Reclamation. This contract is for 35,000 AFA. This supply is subject to 25% deficiencies during single-dry and multiple-dry years. This water was originally to be provided to PCWA at Auburn Reservoir but the contract as amended now provides for its diversion at Folsom Dam or other locations mutually agreed on by the parties. The State Board of Reclamation and PCWA are now studying the feasibility of diverting this supply off of the Sacramento River. The Sacramento River has an annual runoff of approximately 18 million AF (PCWA 2001).

According to PCWA’s October 2005 Draft Integrated Water Resources Plan, PCWA plans to supplement its CVP contract supply with groundwater in dry years to improve the reliability to the point where the full contract amount can be relied upon to serve urban development needs.

A water supply of 11,500 AFA will be required to meet the needs of the Specific Plan buildout. This 11,500 AFA is proposed to be a part of the PCWA’s pending amendatory CVP contract with the Reclamation for 35,000 AFA described in the preceding paragraph.

An additional surface supply is also available. Surface water known as Section 215 surface water is surplus flows controlled by Reclamation. In wet years, this water will be available during the temporary utilization of the PCWA contract water. Section 215 water is available on a year-to-year basis under certain hydrologic conditions. The importance of this water to the North Sacramento-Placer County basin is that it complements areas with extensive groundwater infrastructure. When Section 215 surface water becomes available, groundwater pumping can be significantly reduced due to these redundant facilities. When groundwater pumping ceases by meeting demands with Section 215 water, natural or in-lieu recharge occurs. This method is currently implemented in the SSWD. The year-to-year opportunity provides additional benefits to the groundwater basin.

GROUNDWATER

In addition to the surface water supplies described above, PCWA is proposing that a backup groundwater component be developed in conjunction with the Specific Plan (PCWA Water Supply Assessment, Appendix M of this Revised Draft EIR). It is anticipated that sufficient groundwater would be supplied to the Specific Plan area to provide a redundant water source equal to at least 25% of the required water supply on a maximum daily demand basis. This contingency is based on the Reclamation’s ability to exercise a maximum dry year reduction in Sacramento River CVP water supply of 25%. The groundwater supply component could require the development and operation of groundwater supply wells within the Specific Plan area. If it becomes necessary to construct wells within the Specific Plan area, they would be placed adjacent to other public utility structures, such as the proposed potable water supply storage tanks shown on Figure 3-14 in Chapter Three of this Revised Draft EIR.

PCWA Groundwater Planning and Programs

To maximize water resources, PCWA focuses on increasing water use efficiency; integrating the available mix of water sources, including groundwater, surface water, and recycled water; and
upgrading water supply and delivery facilities. PCWA is in the process of completing an *Integrated Water Resources Plan* and a *Groundwater Management Plan*.

On October 6, 1998, PCWA adopted the West Placer *Groundwater Management Plan* as provided for by AB 3030. On September 15, 2002, the Governor signed into law SB 1938 (similar to AB 3030), and PCWA subsequently updated the West Placer *Groundwater Management Plan* on November 6, 2003. The goal of the Plan is to manage the groundwater resources to the benefit of Placer County through a coordinated effort with all stakeholders in the Plan area, and in a fashion consistent with the other groundwater management planning efforts in the region. The primary objective of the Plan is to facilitate studies and actions needed to restore and maintain the quantity and quality of the groundwater in the basin. Additional objectives include:

- Stabilize and/or increase the groundwater level
- Maintain and/or increase the groundwater quality
- Evaluate a conjunctive use program that could provide a water supply in times of drought
- Evaluate a groundwater recharge program using excess surface water and reclaimed wastewater
- Evaluate and if feasible implement a program to use reclaimed wastewater to irrigate crops and/or pasture
- Continue to monitor groundwater levels and quality using all available data sources
- Determine safe yield of basin
- Identify impact of adjacent jurisdictions drawing groundwater from the West Placer Basin.

In 2000, the WFA was signed to attain the Water Forum’s coequal objectives of:

- Providing a reliable and safe water supply to the Sacramento-Placer-El Dorado region, and
- Preserving the environmental values of the lower American River (Water Forum, 2000).

The WFA recommended a sustainable long-term annual groundwater yield for the three subbasins¹ in Sacramento County² to facilitate conjunctive management in the region. Under the WFA, in dry years, surface water diversions from the American River would be reduced and the use of groundwater and other sources increased; in wet years, surface water diversions would be increased and groundwater pumping reduced, to enable recharge and recovery of the groundwater basin. Over the long-term, the groundwater basin is thereby limited to the average yield specified in the WFA. In 2003, as described above, a Regional Water Master Plan (RWMP) was developed by water purveyors in the Placer-Sacramento region to implement the conjunctive use elements of the WFA. PCWA is a signatory to both the WFA and the RWMP.

In 2004, PCWA initiated the preparation of an *Integrated Water Resources Plan* to assess the buildout water demands in western Placer County, including service to several new development projects that are proposed to be included in future general plan updates, and plan the integration

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¹ The WFA recommended long-term average annual groundwater sustainable yield for the North American River subbasin is 131,000 AF.
² While technical studies included Placer County, the WFA did not include a sustainable yield for the Placer County portion of the North American River subbasin.
of a variety of water supply sources, including groundwater, reclaimed water, and additional water conservation measures. The draft report, completed in October, 2005, concludes that there is adequate water supply to meet all of the demands for each of the growth scenarios. Recycled water is needed to help meet normal year demands, and groundwater is needed to help supplement dry year surface water supplies (Brown and Caldwell, 2005).

Due to concerns about groundwater pumping exceeding groundwater recharge within the North American River groundwater subbasin, which underlies the western portion of Placer County, PCWA, Placer County, and the City of Roseville have developed a Groundwater Management Plan, which is currently being updated, that will provide for the conjunctive use of groundwater to supplement surface water primarily in dry years, within the limits of the safe yield of the basin.

An Urban Water Management Plan has been completed in accordance with the Urban Water Management Act (Act). The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections, or supplying more than 3,000 AF of water annually, to adopt and submit a plan every five years to the California Department of Water Resources. PCWA also prepared urban water management plans in 1985, 1992, 1997, and 2000. The 2000 Plan concluded that PCWA has sufficient water supplies in average precipitation years, but that water shortages may occur during single and multiple dry years.

The final Western Placer County Groundwater Storage Study was completed in December, 2005. The purpose of this study is to better understand the consumptive uses of groundwater in western Placer County, to investigate the potential and possible benefits for groundwater recharge projects, and to estimate the sustainable yield for that portion of the North American River subbasin over which western Placer County is located. This study also directly supports PCWA’s West Placer Groundwater Management Plan Update (2003), the joint groundwater management plan update currently being developed in partnership with the City of Roseville, and the West Placer Integrated Water Resources Plan. In particular, this study identifies potential direct and indirect groundwater recharge alternatives, including the use of recycled wastewater for irrigation, and identifies an estimated sustainable yield of the groundwater basin.

ENVIRONMENTAL SETTING

SURFACE WATER

Central Valley and State Water Projects

The setting descriptions contained in the PCWA American River Pump Station Project EIS/EIR are incorporated by reference in their entirety and summarized below (PCWA and Reclamation, 2001). The discussions of the various setting components related to CVP and SWP facilities and watershed water supplies contained in this section are, for the most part, taken directly from that document.

- The Central Valley Project. The CVP provides water to users along the Sacramento and American rivers, within the Delta, and south of the Delta. There are three major types of
CVP contractors: Sacramento River Water Rights Settlement Contractors, San Joaquin River Exchange Contractors, and CVP Water Service Contractors. Their priority rights with respect to water supply curtailments due to insufficient supplies are described below.

Sacramento River Water Rights Settlement Contractors claimed water rights in the Sacramento River Basin prior to the construction of Shasta Dam. Contract provisions allow for reductions of up to 25% of contracted amount during dry conditions, as determined by the Shasta Inflow Index.

CVP Water Service Contractors (agricultural and M&I Water Service Contractors) entered into agreements with Reclamation for delivery of CVP water as a supplemental supply. Water deliveries to agricultural Water Service Contractors can be reduced up to 100% in particularly dry years. Maximum curtailment levels, however, are not specified for most M&I Water Service Contractors. Historically, Reclamation has limited maximum curtailments to the M&I contractors to 25%. Future system demands are assumed to potentially require curtailments of up to 50%. Water availability for delivery to CVP Water Service Contractors during periods of insufficient supply is determined based on a combination of operational objectives, hydrologic conditions, and reservoir storage conditions.

CVP customers receive contractual deliveries both north and south of the Delta. CVP customers north of the Delta can be grouped in the following categories according to contract type: M&I, agricultural, settlement, and refuge. CVP customers south of the Delta can be grouped into M&I, agricultural, exchange, and refuge contract categories.

The CVP is a multipurpose project operated by Reclamation that stores and transfers water from the Sacramento, San Joaquin, and Trinity River basins to the Sacramento and San Joaquin valleys. CVP facilities are shown in Figure 4.3-7.

The CVP was authorized by Congress in 1937 to serve water supply, hydropower generation, flood control, navigation, fish and wildlife, recreation, and water quality control purposes. In 1992, the Central Valley Project Improvement Act (CVPIA) elevated fish and wildlife project purposes to be equal to irrigation, power generation, and municipal and industrial uses. (Section 4.3.3 provides an additional description of the CVPIA. As a result, the CVP is operated as an integrated system intended to meet multiple authorized purposes.

The CVP service area extends about 430 miles through much of California's Central Valley, from Trinity and Shasta reservoirs in the north to Bakersfield in the south. The CVP also includes the San Felipe Unit, which delivers water to the Santa Clara Valley. The CVP contract amounts total 6,751,000 AF and are comprised of 3,140,000 AF for the Sacramento River, 195,000 AF for the American River, and 3,416,000 AF for Delta exports (CVPIA PEIS, 1997). As of 2000, the Sacramento River and Delta export contracts are fully built-out. The American River contracts are only partially built-out, to 65,000 AF.

• **Water Shortage Provisions.** Reclamation includes provisions that specify that a certain amount of CVP water will be made available to the contractor of each CVP contract, only to
the extent that such water is available. While Reclamation uses all reasonable means to guard against shortages, delivery reductions do occur. Unless the overall CVP water supply is constrained by drought or other unavoidable circumstances, Reclamation is contractually committed to providing each contractor with the CVP water supply specified in the individual contracts (Reclamation, 1992). Recognition of the increasing demands on a finite CVP water supply has recently led Reclamation to revise its water delivery allocation guidelines.

**State Water Project**

Thirty agencies throughout California have contracted with the SWP (shown in Figure 4.3-8) for an annual total of 4,200,000 AF of water. Existing SWP facilities can supply less than 2,400,000 AF during drought conditions. Additional facilities, however, are planned to increase the supply. New conveyance facilities have been authorized, but not yet built, to improve transfer of water across the Delta.

The original facilities of the SWP, which were completed in 1973, include 18 reservoirs, 17 pumping plants, 8 hydroelectric power plants, and 550 miles of aqueducts and pipelines. Water from the Feather River watershed and the Delta is captured and conveyed to those areas of need in the San Francisco Bay area, the San Joaquin Valley, and Southern California. Parts of the SWP project have been serving California since 1962.

The North Bay Aqueduct, completed in 1988, supplies water to Napa and Solano counties from the northern Delta. Near Byron in the south Delta, the Harvey O. Banks Delta Pumping Plant lifts water into Bethany Reservoir. From this reservoir, a portion of Delta water is lifted by the South Bay Pumping Plant into the South Bay Aqueduct, which serves Alameda and Santa Clara counties.

Most of the water flows from Bethany Reservoir into the Governor Edmund G. Brown California Aqueduct, which winds along the west side of the San Joaquin Valley to the O'Neill Forebay. From there, part of the water is pumped through the William R. Gianelli Pumping-Generating Plant for storage in San Luis Reservoir until it is needed for later use. The B.F. Sisk San Luis Dam, which impounds 2,040,000 AF of water, is jointly owned; it was built by Reclamation and is operated by DWR. The rest of the water continues south down the valley and is raised another 1,069 feet by four more pumping plants (Dos Amigos, Buena Vista, Wheeler Ridge, and Chrisman) before reaching the foot of the Tehachapi Mountains. The water is then raised 1,926 feet by the Edmonston Pumping Plant into a tunnel that conveys water to Southern California. In the southern San Joaquin Valley, a short Coastal Branch Aqueduct serves agricultural areas west of the California Aqueduct along with Santa Barbara and San Luis Obispo counties.

**Regional and Area Water Supply**

A description of the regional and area water supply setting is presented below to provide a basis for assessing the impacts that the proposed project could have on CVP and SWP water supplies. The regional setting is the geographic area defined by the operations of the CVP and coordinated operations with the SWP that could be affected by the implementation of the proposed water
supply. The area setting includes those specific local area reservoirs and riverine reaches that could be affected by implementation of the proposed water supply.

- **Regional Water Supply.** Rivers, streams, reservoirs, or lakes that could be affected by changes in CVP/SWP operations resulting from implementation of the proposed Specific Plan water supply include:
  - Trinity and Shasta Reservoirs,
  - The upper Sacramento River and lower Sacramento River (that portion of the Sacramento River below the American River), and
  - The Sacramento-San Joaquin River Delta (Delta).

- **Sacramento River Watershed**

  The Sacramento River begins in the northern portion of the state and flows southerly past the city of Sacramento and into the Delta. The drainage area upstream of Sacramento is 23,502 square miles. The average rainfall over the Sacramento River basin is 18 inches, normally occurring from October through May. The flows at the city of Sacramento are greatly affected by the large facilities located in the upper regions of the watershed, particularly Shasta Reservoir; Keswick Reservoir; Whiskeytown Reservoir (which regulates imported water from the Trinity River system); and diversions such as the Corning, Tehama-Colusa, and Glenn-Colusa canals. The historical average annual flow for the Sacramento River at Freeport is 16,677,000 AF. The Feather and American rivers are the two largest contributors to the Sacramento River. Two other inflows that contribute to the Sacramento River are the Cross Canal and the Colusa Basin Drain, which drains the agricultural land in the Glenn-Colusa Irrigation District. The lower Sacramento River begins downstream of its confluence with the lower American River. Sacramento River flows are largely determined by the operation of upstream reservoirs (e.g., Shasta, Trinity, and Keswick) as well as the timing and rates of diversions from the Sacramento River and tributary streams. Upstream reservoirs are operated to fulfill a variety of functions, including flood control, water supply, fisheries and wildlife benefits and hydropower generation, and to meet water quality and flow requirements in the Delta. Diversions from the Sacramento River and tributary streams also influence seasonal flow levels by reducing overall flow volumes in the river. Shasta Reservoir is the largest CVP reservoir, storing up to 4,500,000 AF of water.

  The natural flow pattern of the Sacramento River has been altered by a variety of river flow control facilities. Flows have been reduced during the wetter months by upstream storage and diversions, but are typically higher during the drier months due to the requirements to set flows at levels capable of meeting water quality objectives and water delivery obligations. The flow of the Sacramento River can vary significantly from year to year and within a year. Flow in the Sacramento River is generally controlled by operations of the CVP and SWP; at other times, such as during significant uncontrolled runoff during storms, flows are not controlled.
The overflows that spill over the series of weirs upstream of Wilkins Slough all flow into Butte Sink. These flows are then carried by the Sutter Bypass back into the Sacramento River at Verona. Flood flows can also bypass the Sacramento River at Verona by spilling over the Fremont Weir and into the Yolo Bypass. Overflows occur at this point when the Sacramento River flows exceed 55,000 cfs. Sacramento River overflows also can enter the Yolo Bypass just north of Sacramento by spilling over the Sacramento Weir.

- **The Sacramento-San Joaquin Delta**

The Delta lies at the confluence of the Sacramento and San Joaquin rivers. The Delta boundary extends north along the Sacramento River to just south of the American River, south along the San Joaquin River to just north of the Stanislaus River, east to the city of Stockton, and west to Suisun Bay.

Runoff from a variety of Central Valley streams accounts for approximately 95% of the inflows into the Delta. The Delta receives flows directly from the Sacramento, San Joaquin, Mokelumne, Cosumnes, and Calaveras rivers. These rivers and their tributaries drain more than 40% of the state of California. Inflows to the Delta averaged 27,800,000 AF between 1980 and 1991.

Hydraulic conditions in the Delta are influenced by factors such as inflows from streams, tidal influences from the Pacific Ocean, operation of Delta export facilities, and water diversions in the Delta itself. The Delta is at sea level so the tides significantly influence both the level and direction of flows through its channels. Tidal water level variations vary from one foot on the San Joaquin River near Interstate 5 to more than five feet at the outlet of the Delta, near the city of Pittsburg. The direction of flow at these two points also changes dramatically with the tides. On the San Joaquin River at Venice Island, flows range from 47,000 cfs downstream during low tide to 58,000 cfs upstream during high tide. Near the city of Pittsburg, flows can vary from 340,000 cfs downstream to 330,000 cfs upstream (DWR, 1993).

The tidal currents carry large volumes of seawater back and forth through the San Francisco Bay-Delta Estuary with each tide cycle. The mixing zone of saltwater and freshwater can shift two to six miles depending on the tides, and can reach far into the Delta during periods of low inflow. Thus, the inflow of the tributaries into the Delta is essential in maintaining the water quality in the Delta.

The average Delta outflow to Suisun Bay (for the period 1980-1991) is 21,020,000 AF (DWR, 1993). Delta inflows rely heavily on runoff from Central Valley streams, and thus, depend on the operations of water facilities on these streams. Releases from Shasta, Folsom, New Melones, and Millerton reservoirs of CVP and Lake Oroville of SWP control, to a large extent, how much and when freshwater enters the Delta.

- **Area Water Supply.** Rivers, streams, reservoirs, or lakes whose water supply could be directly or indirectly affected by diversions for the proposed water supply include:
- Folsom Reservoir and Lake Natoma, and
- The lower American River (that portion of the American River below Nimbus Dam).

**American River Watershed**

**Folsom Reservoir and Lake Natoma.** Folsom Reservoir is the principal reservoir on the American River, with a capacity of 977,000 AF. Major tributaries in the upper watershed of the American River include the north, middle, and south forks. The authorizing legislation for the construction of Folsom Dam, PL 81-356, directed Reclamation to operate the dam to control floods, provide for storage and delivery of water, generate power, and provide salinity control in the Delta. As an integrated part of the CVP, Folsom Dam is operated not only for flood control and to meet CVP water delivery obligations, but also to satisfy instream flow needs in the lower American River.

Flood-producing runoff occurs primarily during October through April and is usually most extreme during November through March. Snowmelt runoff usually does not result in flood-producing flows, but it is usually adequate to fill the reservoir’s empty space. Approximately 40% of the American River flow results from snowmelt.

Lake Natoma is downstream of Folsom Dam and forms as a result of Nimbus Dam. This reservoir is operated as a re-regulating reservoir that accommodates the diurnal flow fluctuations caused by the Folsom Power Plant. The capacity of Lake Natoma is 9,000 AF.

The region’s municipal, agricultural, and industrial demands are met by water purveyors in areas above, around, and below Folsom Reservoir. El Dorado Irrigation District, City of Roseville, SSWD, San Juan Water District, California State Prison Sacramento and the City of Folsom are the main purveyors that divert water from Folsom Reservoir.

**Lower American River.** The lower American River begins below Nimbus Dam and flows along the valley floor until it reaches the Sacramento River in the city of Sacramento. The flow regime in the lower American River has been significantly altered since the completion of the Folsom and Nimbus dams.

Rapid flow fluctuations in the lower American River are primarily in response to operations at Folsom Dam, particularly for flood control and to meet State Water Resources Board (SWRCB) water quality standards in the Delta. The close proximity of Folsom Dam and Reservoir to the Delta results in relatively short periods of time for the releases to reach the Delta. Releases from Folsom Reservoir are commonly relied upon to meet Delta standards in lieu of releases from more distant CVP reservoirs. In the past, rapid flow fluctuations were common, however, Reclamation presently attempts to minimize these fluctuations in both magnitude and frequency.

From approximately Nimbus Dam to Goethe Park, the lower American River is primarily unrestricted by levees, but is bordered by some urban development. Natural bluffs and
terraces hydrologically control this area of the lower American River. Downstream and extending to the confluence with the Sacramento River, levee construction and resulting reductions in velocity and meandering have transformed the river channel to a slower moving, deeper reach.

- **Power Generation.** The setting descriptions contained in PCWA’s *American River Pump Station Project EIS/EIR* are incorporated by reference in their entirety (PCWA and Reclamation, 2001). The discussions of the various setting components related to power supply contained in this section are, for the most part, taken directly from that document. This section describes the known power supply resources within the study area, including the regional, area and local Specific Plan area settings.

  - **CVP Hydropower System**

   Hydropower generation at CVP facilities is an important resource for contributing to the reliability of the electrical power system in California. Impacts to CVP hydropower operations can result from increased water diversions that result in both lower reservoir levels and less water flow through power generating turbines. In addition to potential impacts to electric system reliability, loss of hydropower capacity and generation can also result in indirect environmental impacts by necessitating increased power generation using means that have more severe environmentally effects than hydropower.

   The CVP hydropower system consists of 8 power plants and 2 pump-generating plants (see Table 4.3-4). This system is fully integrated into the Northern California Power System and provides a significant portion of the hydropower available for use in northern and central California. The installed power capacity of the system is 2,044,350 kW. By comparison, the combined capacity of the 368 operational hydropower plants in California is 12,866,000 kW, and PG&E is the area's major power supplier with a generating capacity from all sources of over 20,000,000 kW.

<table>
<thead>
<tr>
<th>Table 4.3-4</th>
<th>Power Resources of the Central Valley Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit</strong></td>
<td><strong>Maximum Generating Capacity (kW)</strong></td>
</tr>
<tr>
<td><strong>Sacramento River Service Area</strong></td>
<td></td>
</tr>
<tr>
<td>Carr a</td>
<td>184,000</td>
</tr>
<tr>
<td>Lewiston</td>
<td>350</td>
</tr>
<tr>
<td>Keswick</td>
<td>105,000</td>
</tr>
<tr>
<td>Shasta b</td>
<td>625,000</td>
</tr>
<tr>
<td>Spring Creek</td>
<td>200,000</td>
</tr>
<tr>
<td>Trinity</td>
<td>140,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>1,254,350</strong></td>
</tr>
<tr>
<td><strong>American River Service Area</strong></td>
<td></td>
</tr>
<tr>
<td>Folsom</td>
<td>215,000</td>
</tr>
<tr>
<td>Nimbus</td>
<td>17,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>232,000</strong></td>
</tr>
<tr>
<td><strong>Delta Export and San Joaquin Valley</strong></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.3-4
Power Resources of the Central Valley Project

<table>
<thead>
<tr>
<th>Unit</th>
<th>Maximum Generating Capacity (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Melones</td>
<td>383,000</td>
</tr>
<tr>
<td>O’Neill c</td>
<td>14,000</td>
</tr>
<tr>
<td>San Luis c,d</td>
<td>202,000</td>
</tr>
<tr>
<td>Subtotal</td>
<td>599,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,085,350</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit</th>
<th>Capacity (cfs)</th>
<th>Average Annual Energy Use (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American River Service Area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folsom Pumping Plant</td>
<td>350</td>
<td>1,041,100</td>
</tr>
<tr>
<td><strong>Delta Export and San Joaquin Valley</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contra Costa Canal</td>
<td>410</td>
<td>18,908,000</td>
</tr>
<tr>
<td>Dos Amigos 1</td>
<td>13,200</td>
<td>180,146,000</td>
</tr>
<tr>
<td>O’Neill</td>
<td>4,200</td>
<td>87,185,000</td>
</tr>
<tr>
<td>San Luis 1</td>
<td>11,000</td>
<td>306,225,000</td>
</tr>
<tr>
<td>Tracy</td>
<td>4,600</td>
<td>620,712,000</td>
</tr>
</tbody>
</table>

Once a strong influence on CVP operations, power operations are now secondary to other considerations. In part, this subordination is caused by the increasing importance of environmental needs, but changes in contractual relationships have also reduced the priority of power. Power produced by the CVP hydropower system is used first for meeting project water pumping loads, which is deemed “project use power,” at CVP pumping facilities (see Table 4.3-5). Power surplus to project use is “commercial power” and is marketed by the Western Area Power Administration (WAPA) under long-term firm contracts to municipal and government entities (preference customers) at cost-based rates. In an average year, 4,600 gigawatt hours (GWh) of energy and 1,700,000 kW of capacity are marketed to preference customers at rates that recover full cost of production and repayment obligations of project investment with interest. Energy surplus to CVP project use and preference customer power needs is “banked” under CVP-PG&E Contract 2948A, to be repaid when needed by WAPA and its customers. Contracts for the sale of power resources expired December 31, 2004. WAPA has developed a marketing plan that defines the products to be offered and the eligibility and allocation criteria that would lead to allocations of CVP electric power resources beyond the year 2004.

Table 4.3-5
Major Pumping Plants in the Central Valley Project

<table>
<thead>
<tr>
<th>Unit</th>
<th>Capacity (cfs)</th>
<th>Average Annual Energy Use (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American River Service Area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folsom Pumping Plant</td>
<td>350</td>
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<td>Tracy</td>
<td>4,600</td>
<td>620,712,000</td>
</tr>
</tbody>
</table>

1  Joint State-Federal facility.
2  Federal energy use.
- **Pumping Power, Folsom Dam and Reservoir**

The Folsom Power Plant has three generating units with a total release capacity of approximately 8,600 cfs. By design, the facility is operated as a peaking facility. Peaking plants typically schedule the daily water release volume during the peak electrical demand hours to maximize generation at the time of greatest need. At other hours during the day there may be little or no release (and no generation) from the plant. To avoid fluctuations in flow in the lower American River, Nimbus Dam and Lake Natoma are operated as an integrated regulating facility. While the water surface elevation in Lake Natoma fluctuates daily, releases to the lower American River downstream are kept constant. The Nimbus Power Plant consists of two generating units with a release capacity of approximately 5,100 cfs. Electric generation from this facility is continuous throughout the day.

Pumping power at Folsom Reservoir is associated with electrical capacity and electrical energy. Changes in reservoir water surface elevations may increase both the capacity and energy requirements necessary to pump water at either the Folsom Pumping Plant or the El Dorado Irrigation District (EID) Pumping Plant. Impacts to pumping power include several considerations that are incorporated into the impact evaluation. Folsom Reservoir water surface elevations affect gravity flow to both the North Fork and Natoma pipelines. Where gravity flow is affected, additional pumps would have to be installed to make up for the elevation difference (non-gravity flow conditions). At certain elevations (Folsom Reservoir water surface), there would be a corresponding need for additional electrical energy to compensate for the increased lifts. Energy requirements for this additional lift would be a function of the energy required (kWh) per AF pumping rate and the volume of water pumped over a period of time (month).

**GROUNDWATER**

Groundwater is the water beneath the surface that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs. Drawdown of groundwater and decrease in water tables are the result of water pumped by wells that flow out through springs. Groundwater is recharged by rainwater infiltration that reaches the subsurface saturated zone of the soil. Flow rate and quality of the water depends on factors that include the amount, duration of precipitation, soil type, moisture content and vertical permeability of the unsaturated zone.

Urbanization can affect groundwater recharge through reduction of pervious surface, which in turn limits the percolation process. This, combined with drawdown from pumping for agricultural and urban purposes, can lower groundwater levels.

The Specific Plan area currently contains a number of private groundwater wells serving agricultural uses. Groundwater pumping in this area contributes to the total groundwater use. Upon development of the Specific Plan area, these agricultural operations will no longer need to pump groundwater. See Section 4.5 and Figure 4.5-3 for additional information on existing groundwater wells in the Specific Plan area.
Groundwater Level Trends

The regional groundwater basins and depth to groundwater are shown on Figure 4.3-9. Placer County lies in the North American River subbasin (No. 5-21.64) of the Sacramento Valley groundwater basin. Groundwater levels in the region have been monitored on a regular basis since the late 1920s. Under natural or pre-development conditions, groundwater in the region tended to flow in a general southwest direction, from the foothills toward the center of the Central Valley. From the late 1920s to the early 1940s, water levels fluctuated in response to changing precipitation trends. The basin was frequently full, with water levels rising above the ground to form a seasonal lake in the Natomas area of Sacramento County. As groundwater usage increased, primarily due to agricultural development in south Sutter and west Placer counties from the late 1940s through the 1950s, groundwater levels in the northern part of the basin declined rapidly. As groundwater levels declined, the direction of flow in the groundwater basin changed such that inflow to the basin from the surrounding rivers (induced recharge) was increased. But as the recharge rate increased, so did the groundwater pumping rate resulting from increasing urban development in northern Sacramento County. Groundwater levels continued to decline at a relatively steady rate through the droughts of 1976-77 and 1987-1992. The effect of the 1987-1992 drought on groundwater levels in most of the basin was, however, relatively minor, with 1990 groundwater levels about 5 - 10 feet lower than 1985 conditions. According to semi-annual well data collected by the DWR since the 1940s, the subsurface groundwater level in western Placer County in the area west of Roseville has been relatively stable since the early 1980s following decades of steady decline.

Groundwater Sustainable Yield

Sustainable yield of a groundwater basin is the average annual amount of water that can be pumped from the basin over a long period of time without impairing economic, social, and environmental values. To be sustainable, the long-term groundwater extraction has to be approximately equal to the natural recharge of the basin. The end result is a groundwater basin that shows no continuous decline over the long-term.

The WFA defined long-term average annual groundwater pumping at 1990 levels of development in the North Sacramento Region, which is approximately 130,000 AFA. By policy, the sustainable yield for the Sacramento County portion of the North American River subbasin was therefore established at 130,000 AFA. Noting that, the information provided in the Western Placer County Groundwater Storage Study indicates that the basin is in a state of equilibrium at 2000 levels of groundwater pumping with a sustainable yield for the entire North American River subbasin equal to 400,000 AFA. The recommended sustainable yield for the Placer and Sutter county areas of the subbasin is the 400,000 AFA minus the 130,000 AFA being “used” by the Sacramento Region of the subbasin. The sustainable yield for the Placer and Sutter portion of the subbasin is therefore estimated at 270,000 AFA. The recommended sustainable yield for the Placer County portion of the subbasin is 95,000 AFA.3

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3 The sustainable yield developed in the Western Placer County Groundwater Storage Study is considered a reasonable approximation for high-level, conceptual planning purposes, and should not be used in formal deliberations, negotiations or policy setting.
Groundwater Use

Historical groundwater use in Placer County by individual homes, farms and businesses is estimated to be about 90,000 AFA. However, due to the removal of agricultural land from production, changes in cropping patterns and irrigation techniques, and introduction of surface water supplies to serve urban development, it is currently estimated that groundwater use is in the range of 65,000 to 75,000 AFA in western Placer County (Eiener Maische, PCWA, January 2006). According to the Western Placer County Groundwater Storage Study, groundwater produced in PCWA Zone 5 (western Placer County) was 77,000 AF in 1995. The City of Roseville does not routinely utilize groundwater but instead relies on groundwater as an emergency backup. Roseville is pursuing opportunities to bank and store groundwater for greater operational flexibility in the future. Currently, the City of Lincoln owns and operates four municipal wells to supplement its peak-hour water demands. Lincoln’s groundwater production is approximately 500 AFA. Lincoln plans to increase its groundwater production capacity to 20 MGD at buildout to provide backup and emergency supplies and to meet peak day demands. The other large water providers do not currently use a significant amount of groundwater to meet annual demands.

Groundwater resources currently serve to meet water demand within the Specific Plan area; specifically, agricultural and residential users rely on wells. The total acreage within the Specific Plan area committed to irrigated agricultural uses is approximately 950 acres, and the water demand for these agricultural activities is approximately 2,400 AFA, assuming 2.5 AF per acre. There are approximately 150 dwelling units in the Specific Plan area. A rough estimate of water demand for rural residential uses is 1.5 AFA per unit. Total groundwater usage in the Specific Plan area, therefore, is approximately 2,650 AFA.

While groundwater resources are used for current water supply in the Specific Plan area, that groundwater use will be gradually displaced by surface water as the area builds out.

PCWA does not currently use significant amounts of groundwater to meet its customer’s demands. Groundwater supplies are not needed to meet normal climate year demands. Some integrated use of groundwater is appropriate and necessary, however, to ensure the highest level of reliability, particularly in times of drought and for backup in emergency situations. Specifically, dry year water supplies must include groundwater to meet demands for three out of four growth scenarios analyzed in PCWA’s Integrated Water Resources Plan. In the highest groundwater use scenario (Scenario 2b), a groundwater supply of approximately 15,000 AFA would be necessary to meet dry year supply requirements.

PCWA’s surface water supplies, particularly its 35,000 AFA CVP contract entitlement, will be subject to shortages in future dry years. To make up for such dry year shortfalls and for backup in the event of emergency or planned outages, PCWA plans to develop groundwater resources as
its service area expands west over the groundwater basin and into the area most likely to be served long-term from the Sacramento River using PCWA’s CVP contract supply. But to insure that there is no adverse long-term impact of such dry year groundwater use, there must be groundwater banking in normal and wet years to offset the planned dry year use. That banking, which will be part of an overall “conjunctive use” program optimizing the use of surface water and groundwater supplies, can most efficiently occur through “in-lieu recharge,” which is the reduction of historic groundwater use in normal and wet years allowing the natural recharge flow to accumulate in the aquifer.

The following findings regarding the use of groundwater can be concluded from PCWA’s draft Integrated Water Resources Plan:

• The historic average annual rate of groundwater use within the Placer County portion of the North American River subbasin is estimated to be about 90,000 AFA. (The estimated use will be refined in the development of the final Integrated Water Resources Plan.)

• According to semi-annual well data collected by the Department of Water Resources since the 1940s, the subsurface groundwater level in western Placer County in the area west of Roseville has been relatively stable since the early 1980s following decades of steady decline.

• Based upon this information, it is believed that the current groundwater use and natural recharge rate are in balance, and that current average annual groundwater pumping rates within the basin can be sustained indefinitely without a further decline in the subsurface groundwater level.

• Therefore, as urban development replaces historic groundwater-irrigated agriculture, there is an opportunity to develop groundwater for use in meeting urban domestic and irrigation demands without adversely affecting groundwater levels or long-term groundwater reliability.

PROPOSED WATER SUPPLY-RELATED GOALS AND POLICIES

The following goals and policies related to water supply are contained in the proposed Specific Plan.

Policy 4.32 Use of low-water-consumption plant materials and irrigation systems will be encouraged by Placer County and the following standards will be met and implemented by site-specific development projects.

1. Where available and feasible, recycled water will be used to irrigate all parks, schools, and public rights-of-way. Irrigation equipment shall be compatible with the use of reclaimed water.

2. Low-volume spray irrigation systems shall be utilized for turf and groundcover areas and drip irrigation systems for shrubs and trees.
3. Where recycled water is available, water-intensive landscaping may be used.

4. Landscaping in improved common areas will incorporate drought-resistant varieties where practical and consistent with Placer County design guidelines.

5. Landscaping within medians should be by subsurface drip irrigation systems.

Policy 4.33 Use of currently available water conservation devices will be encouraged by Placer County in all existing development. To accomplish this, Placer County will meter the use of potable water, and new construction must meet the following standards.

1. Water-conserving design and equipment will be required in all new construction.

2. Recycled water will be used for irrigation where feasible.

Policy 7.15(4) Within open space areas, landscaping will be low-water-use grasses, ground covers, California native trees, and the plants recommended for use in open space area in Appendix B, “Recommended Plant List.”

Goal 8.3 Conserve energy and water through the use of recycled water and other designs.

Goal 8.4 Encourage the use of recycled water as one source for the irrigation of site landscaping.

Goal 8.5 Meet the Placer County General Plan requirement to assist in the supply of affordable, agricultural water, including reclaimed water, to surrounding agricultural lands in South Placer County.

Policy 8.3 Agricultural Water Supply. Development within the Specific Plan Area should assist in the provision of agricultural water to surrounding agricultural lands. Sources of such agricultural water include reclaimed and retained water and newly developed surface water sources. Placer Vineyards shall pay agricultural water development fees to the Placer County Water Agency for improvement projects that will increase the storage and supply of recycled water for agricultural customers in southwest Placer County.

REGULATORY SETTING

Various federal, State, and local regulations, policies, and rules govern available water supply based on year-to-year hydrologic conditions.
Within the context of hydrologic operations, numerous laws, directives, opinions, and orders affect or otherwise have influence on the management of the CVP. These include, but are not limited to the following, which were put in place prior to 1991:

<table>
<thead>
<tr>
<th>Act/Provision</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reclamation Act (1902)</td>
<td>Formed legal basis for subsequent authorization of the CVP</td>
</tr>
<tr>
<td>Rivers and Harbors Act (1935), (1937), (1940)</td>
<td>First authorization of CVP for construction and provision that dams and reservoirs used first for river regulation, improvement of navigation, and flood control. Second authorization for irrigation and domestic uses. Third authorization for power.</td>
</tr>
<tr>
<td>Reclamation Project Act (1939)</td>
<td>Provided for the repayment of the construction charges and authorized the sale of CVP water to municipalities and other public corporations and agencies, plant investment, for certain irrigation water deliveries to leased lands.</td>
</tr>
<tr>
<td>Water Service Contracts (1944)</td>
<td>Provided for the delivery of specific quantities of irrigation and municipal and industrial water to contractors.</td>
</tr>
<tr>
<td>Flood Control Act (1944)</td>
<td>Authorized flood control operations for Shasta, Folsom, and New Melones dams.</td>
</tr>
<tr>
<td>Water Rights Settlement Contracts (1950)</td>
<td>Provided diverters holding riparian and senior appropriate rights on the Sacramento and American rivers with CVP water to supplement water that historically would have been diverted from natural flows.</td>
</tr>
<tr>
<td>Trinity River Act (1955)</td>
<td>Provided that the operation of the Trinity River Division be integrated and coordinated with operation of other CVP features to allow for the preservation and propagation of fish and wildlife.</td>
</tr>
<tr>
<td>Fish and Wildlife Coordination Act (1958)</td>
<td>Provided for integration of fish and wildlife conservation programs under federal water resources developments. Authorized the Secretary of the Interior to include facilities to mitigate CVP-induced damages to fish and wildlife resources.</td>
</tr>
<tr>
<td>Reclamation Project Act (1963)</td>
<td>Provided a right of renewal of long-term contracts for municipal and industrial contractors.</td>
</tr>
<tr>
<td>SWRCB Decision 1379 (1971)</td>
<td>Established Delta water quality standards to be met by both the CVP and SWP.</td>
</tr>
<tr>
<td>Endangered Species Act (1973)</td>
<td>Provided protection for animal and plant species that are currently in danger of extinction (endangered) and those that may become so in the foreseeable future (threatened).</td>
</tr>
<tr>
<td>SWRCB Decision 1485 (1978)</td>
<td>Ordered CVP and SWP to guarantee certain conditions for water quality protection for agricultural, municipal and industrial, and fish and wildlife use.</td>
</tr>
</tbody>
</table>
Allocated CVP yield so that releases can be maintained at 340,000 AF in normal water years, 220,000 AF in dry years, and 140,000 AF in critically dry years.

Released a minimum of 340,000 AFA for each dry or wetter water year. During each critically dry water year, 340,000 AF will be released if at all possible.

Prescribed regulations for flood control.

Outlined descriptions and data on flood potential/ratings.

Long-Term Central Valley Project Operations and Criteria and Plan (CVP-OCAP)

In 1991, Reclamation requested formal consultation pursuant to Section 7 of the federal Endangered Species Act (FESA) with both the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA) regarding the effects of long-term CVP operations on the bald eagle in Shasta and Trinity reservoirs and on the winter-run Chinook salmon in the Sacramento River. At the time, the long-term operating criteria and procedures for the Trinity, Shasta, and Delta divisions of the CVP and the Red Bluff Diversion Dam (under the Sacramento River Division) were in question. As a result of this consultation, a development plan was prepared by Reclamation covering the long-term operation of the CVP under a range of potential hydrologic and storage conditions. Following the issuance by NMFS of a Biological Opinion on the 1992 operations on February 14, 1992, this development plan became known as the Long-Term Central Valley Project Operations and Criteria and Plan (CVP-OCAP, October, 1992). For further background on the operations of the CVP, see the Long-Term Central Valley Project Operations and Criteria and Plan. Reclamation, USFWS, and NMFS are currently working to revise and update the CVP-OCAP in light of changed hydrologic conditions that have occurred since the original CVP-OCAP was prepared.

Central Valley Project Improvement Act (CVPIA)

The CVPIA (Public Law 102-575, Title XXXIV, 1992) (CVPIA) reauthorized the CVP for a wider range of beneficial uses and interests than originally mandated. The CVPIA established that fish and wildlife are recognized as project purposes equal to that of irrigation, power generation, and municipal and industrial use. Under the CVPIA, significant quantities (800,000 AFA) of CVP yield are reallocated to meet these new beneficial uses (see CVPIA Section 3406(b)(2)).

- **Section 3406(b)(2) under the CVPIA.** Objectives of the CVPIA include protecting and restoring fisheries and wildlife in the Central Valley, including the allocation of 800,000 AFA to this purpose; addressing impacts of the CVP on fish and wildlife; enhancing the operational flexibility of the CVP; expanding the use of water transfers; improving water...
conservation; and addressing the requirements of fish, wildlife, agricultural, municipal, industrial, and power generation water users. Reclamation prepared a Programmatic EIS for the CVPIA programs.

**Long-Term CVP Contract Renewals**

Currently, Reclamation is reviewing and evaluating each CVP water service contract (M&I and Agricultural) as part of the long-term (25-year) renewal of each contract. Many CVP water service contracts are currently up for renewal or will be in the immediate future. This is a comprehensive effort on the part of Reclamation which is being coordinated with USFWS and NMFS through the latter’s obligations under Section 7 of the FESA. Groupings of contracts and contractors by CVP division are being addressed in the negotiation process for organizational purposes. Separate and distinct NEPA and ESA documentation are being prepared by Reclamation for each CVP contract division.

**Federal/State Coordinated Operations Agreement**

Both the CVP and SWP rely on the Sacramento River and the Delta as common conveyance facilities. Reservoir releases and Delta exports must be coordinated so that both the CVP and SWP are able to retain their portion of the shared water, and also jointly share in the obligations to protect beneficial uses. A Coordinated Operations Agreement (COA) between the CVP and SWP was developed, and became effective in November 1986 as signed by Reclamation and DWR.

The COA defines the rights and responsibilities of the CVP and SWP regarding water needs of the Sacramento River system and Delta, and includes obligations for in-basin uses, accounting, and real-time coordination of water obligations of the two projects. A CVP/SWP apportionment of 75/25 is implemented to meet in-basin needs under balanced Delta conditions, and a 55/45 ratio is in effect for excess flow conditions. The COA contains considerable flexibility in the manner with which Delta conditions in the form of flow standards, water quality standards, and export restrictions are met.

**Power**

The Western Area Power Administration (WAPA) is the marketing agency for power generated at Reclamation facilities in the American River Basin. WAPA, created in 1977 under the Department of Energy (DOE) Organization Act, markets and transmits electric power throughout 15 western states. WAPA's Sierra Nevada Customer Service Region (Sierra Nevada Region) markets approximately 1,480 MW of power from the CVP and other sources.

WAPA's mission is to sell and deliver electricity that is in excess of project use (power required for CVP operations) which, for the Sierra Nevada Region, includes CVP power plants. WAPA's power marketing responsibility includes managing the federal transmission system and, as a federal agency, ensuring that operations of the hydropower facilities are consistent with its regulatory responsibilities. Specifically, WAPA's capacity and energy sales must be in conformance with the laws that govern its sale of electrical power. The hydroelectric generation
facilities of the CVP are operated by Reclamation. Reclamation manages and releases water in accordance with the various acts authorizing specific projects and in accordance with other laws and enabling legislation. Hydropower operations at each facility must comply with minimum and maximum flows and other constraints set by Reclamation, USFWS, or other regulatory agencies, acting in accordance with law or policy.

Existing contracts for the sale of Sierra Nevada Region power resources expired December 31, 2004. WAPA is developing a marketing plan that defines the products to be offered and the eligibility and allocation criteria that would lead to allocations of CVP electric power resources in the future.

As part of the marketing plan, WAPA is considering alternatives that would be structured around operations of the CVP hydroelectric system. The alternatives include:

- A No-Project alternative would involve a continuation of Sierra Nevada Region's present approach to marketing power, meeting 2005 loads that are comparable to 1996 load patterns.

- A peaking alternative would maximize power generation at CVP facilities during peak load periods within operating constraints.

- A baseload alternative would operate CVP hydropower facilities for relatively constant power output within operating constraints.

- A renewables alternative would operate the CVP hydropower facilities to maximize power generation during peak load periods within operating constraints, and power purchases would be set at 250 MW of capacity either from renewable resource generation or to support renewable resource generation.

**STATE**

The SWRCB and nine Regional Water Quality Control Boards (RWQCB) regulate water resources in California. The SWRCB determines rights to surface water use. Specifically, the SWRCB appropriates surface water, oversees disputes over rights to water bodies, establishes surface and groundwater quality standards, and oversees the RWQCBs, which implement water quality standards and regulations.

**LOCAL**

Minimum fishery releases to the lower American River from Nimbus Dam are made in accordance with the SWRCB water rights Decision No. 893 (D-893). The SWRCB increased the D-893 minimum release schedule in their Decision 1400 (D-1400). This decision was applied to the water rights permit for Auburn Dam and does not apply to the operation of Folsom and Nimbus dams at this time. However, Reclamation voluntarily operates Folsom and Nimbus dams to meet a modified D-1400 for minimum fishery flows, and more recently has been striving
to meet the recommended Anadromous Fish Restoration Program (AFRP) flows under the CVPIA for the lower American River.

**Water Forum Agreement**

In early 2000, numerous water interests in the greater Sacramento region ratified a basin-wide agreement, known as the WFA. This long-term agreement was based on two co-equal objectives: providing a reliable and safe water supply for the region’s economic health and planned development to the year 2030; and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. Ratified through a Memorandum of Understanding, the WFA has the commitment of local water purveyors, business and citizen organizations, environmental groups, and local, State, and federal governments. Of the seven elements that make up the WFA, acknowledged increases in future surface water diversions, commitments to reduce diversion impacts in drier years (dry-year cutbacks), water conservation (demand reduction), and the commitment to implement a new improved flow pattern for the lower American River will all have significant influence on water allocation and management of the lower American River (including Folsom Reservoir) in the future. For a more complete description of the WFA, see Section 4.11.7 of this Revised Draft EIR.

**Regional Water Authority**

The Regional Water Authority (RWA) is a joint powers authority that serves and represents the interests of 21 water providers in the greater Sacramento, Placer and El Dorado county region. The RWA’s primary mission is to help its members protect and enhance the reliability, availability, affordability and quality of water resources. The RWA’s *Regional Water Master Plan* efforts have identified updated long-term (2030) water quantity availability and demands.

The RWA has also initiated a program and applied for a grant to implement conjunctive use of surface and groundwater throughout the northern Sacramento County area. Under this program, the RWA members will use surface water supplies in wet years for use in lieu of groundwater extraction. As a consequence of foregoing the extraction of groundwater, the groundwater basin will recharge via natural inflow, thereby elevating groundwater levels in the basin. In essence, the volume of delivered surface water will have been “banked” for future use during dry periods. The banked groundwater would be returned to the system during dry periods by exchange. By extracting the banked groundwater from the basin during dry years, the RWA members would make surface water available in either Folsom Lake or in the lower American River. This exchange of surface water would be made available by the extraction of groundwater by the RWA members in lieu of the diversion of an equal amount of surface water supplies.

A number of advantages accrue with the banking and exchange program. First and foremost is the increase in the elevation of groundwater levels throughout the basin as a consequence of storing groundwater. This will result in decreased pumping costs and increased reliability. Second, the ultimate intent of the banking and exchange program is that the storage space in the basin would be for lease. That is, third parties interested in storing water in the basin would pay for the right to use the basin. The revenue generated would be used to help offset the capital and operating costs of the regional conjunctive use program. Potential partners for the Cooperating
Agencies include Reclamation, the SWP, SAFCA, and environmental interests (e.g., the CALFED Environmental Water Account).

**Placer County General Plan**

The planning goals and policies of the *Placer County General Plan* relating to water supply are listed below.

**Goal 4.C:** To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic supply.

**Policies:**

4.C.1. The County shall require proponents of new development to demonstrate the availability of a long-term, reliable water supply. The County shall require written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy. Where the County will approve groundwater as the domestic water source, test wells, appropriate testing, and/or report(s) from qualified professionals will be required substantiating the long-term availability of suitable groundwater.

4.C.2. The County shall approve new development based on the following guidelines for water supply:

a. Urban and suburban development should rely on public water systems using surface supply.

b. Rural communities should rely on public water systems. In cases where parcels are larger than those defined as suburban and no public water system exists or can be extended to the property, individual wells may be permitted.

c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.

4.C.3. The County shall encourage water purveyors to require that all new water services be metered.

4.C.4. The County shall require that water supplies serving new development meet state water quality standards.

4.C.5. The County shall require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.

4.C.6. The County shall promote efficient water use and reduced water demand by:
a. Requiring water-conserving design and equipment in new construction;
b. Encouraging water-conserving landscaping and other conservation measures;
c. Encouraging retrofitting existing development with water-conserving devices; and
d. Encouraging water-conserving agricultural irrigation practices.

4.C.7. The County shall promote the use of reclaimed wastewater to offset the demand for new water supplies.

4.C.8. When considering formation of new water service agencies, the County shall favor systems owned and operated by a governmental entity over privately- or mutually-owned systems. The County will continue to authorize new privately- or mutually-owned systems only if system revenues and water supplies are adequate to serve existing and projected growth for the life of the system. The County shall ensure this through agreements or other mechanisms setting aside funds for long-term capital improvements and operation and maintenance.

4.C.9. The County shall support opportunities for groundwater users in problem areas to convert to surface water supplies.

4.C.10. The County shall promote the development of surface water supplies for agricultural use in the western part of the county.

4.C.11. The County shall protect the watersheds of all bodies of water associated with the storage and delivery of domestic water by limiting grading, construction of impervious surfaces, application of fertilizers, and development of septic systems within these watersheds.

4.C.13. In implementation of groundwater use policies, the County will recognize the significant differences between groundwater found in bedrock or ‘hard rock’ formations of the foothill/mountain region and those groundwater found in the alluvial aquifers of the valley. The County should make distinctions between these water resources in its actions.

Placer County Water Agency

PCWA’s policies, improvement standards, technical provisions, and standard drawings are applicable to the proposed Specific Plan water supply.

PCWA’s General Design Criteria set forth specific requirements for engineering design of water system improvements that are intended to provide a water system that will dependably and safely convey the required amount of high quality water throughout the distribution system at the least cost.
PCWA’s improvement standards require that the design of all PCWA facilities comply with the following:

1. Laws and standards of the State of California Department of Public Health pertaining to domestic water supply.

2. Title 17, Chapter V, Sections 7583-7622 of the California Administrative Code (pertaining to cross-connections).

3. Applicable ordinances, rules, and regulations of all other local agencies.

According to PCWA, the Placer Vineyards Specific Plan water supply must meet the following criteria:

- Provide reliable water supply
- Must not adversely impact the Western Placer County Groundwater Basin
- Be technically and economically feasible
- Meet the development schedule of the project
- Meet required water quality standards

**IMPACTS AND MITIGATION MEASURES**

**PROJECT CHARACTERISTICS**

The proposed initial surface water supply, as presented in Chapter Three of this Revised Draft EIR, represents an immediate action by the Specific Plan proponents. While it is recognized that actual water demands would follow the buildout schedule for the Specific Plan, some assumption for immediate water needs is necessary for this Revised Draft EIR analysis. The immediate (or initial) surface water supply need was identified as 6,000 AFA. This amount is anticipated to be needed by the Specific Plan area by the time the long-term surface water supply becomes available (i.e., 6 to 8 years into the future).

The proposed 6,000 AFA surface water supply was modeled under current condition hydrology, and the impact evaluations associated with it are a reflection of the potential effects of diverting 6,000 AFA from the American River and Folsom Reservoir. The modeling, however, represents a conservative current condition analysis, since it is acknowledged that the full 6,000 AFA would not be needed immediately.

In the long-term, it is recognized that the full 11,500 AFA water supply would be required to meet the buildout needs of the Specific Plan. This supply, as currently proposed, would be furnished by PCWA, and consists of CVP contract water diverted from the Sacramento River. The modeling analysis simulated diversion of the full 35,000 AFA and documented any impacts related to the full PCWA CVP contract.

The Sacramento River diversion would encompass constructing a joint diversion from the Sacramento River and treatment facilities to serve not only PCWA but also the City of...
Sacramento, SSWD, and the City of Roseville. An EIR/EIS for this project is currently in preparation with the Reclamation acting as lead federal agency under NEPA and PCWA acting as lead agency under CEQA. The diversion facility would consist of expanding the existing Elkhorn Diversion owned by the Natomas Mutual Water Company on the east bank of the Sacramento River, upstream of the mouth of the American River at approximately river mile 73.3, or constructing a new diversion near the existing Elkhorn Diversion. Water treatment, storage, and pumping facilities would connect to the west end of the existing Cooperative Transmission Pipeline/Northridge Transmission Pipeline in Antelope Road to serve SSWD, and an extension of that line would be built north to the service areas of the City of Roseville and PCWA. A separate transmission line would extend south to connect to Sacramento’s existing distribution system. Figure 3-5 in Chapter Three of this Revised Draft EIR describes the general alignment of the portion of the transmission line from the Sacramento River needed to serve the Specific Plan area, including a northern extension along Pleasant Grove Road to the project area.

To meet projected water supply demands, the participating local agencies would reallocate available surface water and groundwater resources between municipal and industrial (M&I) and agricultural uses (PCWA only), and among different wholesale and retail areas. Changes in entitlements implementing a Sacramento River diversion for the local partners would require a change in the point of diversion for PCWA’S CVP contract and for the City of Sacramento’s Sacramento River water right permit, and an exchange agreement between PCWA and Reclamation for Roseville and SSWD diversions under their contract entitlements from PCWA’s MFP.

The additional water supplies considered for each local partner include: (1) Additional water supply of up to 35,000 AF for PCWA’s M&I demand with treatment capacity of 65 MGD; (2) additional water supply of up to 29,000 AF in Water Forum average, drier, and driest years for SSWD’s M&I demand and groundwater stabilization program with a treatment capacity of 15 MGD; (3) additional water supply of up to 7,100 AF for Roseville’s M&I demand with a treatment capacity of 10 MGD; and (4) additional water supply of up to 58,000 AF with a water treatment capacity of 165 MGD for Sacramento’s M&I demand.

If no impacts are identified under this long-term option (i.e., diverting the full 35,000 AFA PCWA CVP contract from the Sacramento River), then it is reasoned that similarly, no impacts could be attributed to the full 11,500 AFA assigned to the proposed Specific Plan (i.e., the 11,500 AFA is part of the 35,000 AFA). The diversion would occur well into the future and, accordingly, was applicable under future condition hydrological conditions. As a result, it was modeled as a future simulation. Since this diversion would occur into the future, when other anticipated diversions and operational practices existent across the CVP/SWP would be in place, it in effect represented a future cumulative analysis, and is evaluated as a cumulative impact.

**IMPACTS ASSESSMENT FRAMEWORK AND HYDROLOGIC MODELING METHODOLOGY**

**Models Used for the Hydrologic Impact Analysis**

Computer simulation models of water systems provide a means for evaluating changes in system characteristics such as reservoir carryover storage, reservoir surface water elevation, reservoir
releases, river flows and power generation potential, as well as the effects of these changes on water-related environmental conditions such as water temperature, visual resources, and recreational opportunities. Changes in water levels or flows and water temperatures influence fishery resources habitat suitability and can affect salmonid survival (as evaluated with Reclamation’s early life-stage Chinook salmon mortality model). The models used to evaluate the various operations represented by the proposed initial surface water supply and long-term surface water supply include the following:

- DWR’s Upper American River Model (UARM);
- Reclamation’s Project Simulation (PROSIM) model of the integrated CVP and SWP;
- Reclamation's American and Sacramento River water temperature models; and
- Reclamation's American and Sacramento River early-lifestage Chinook salmon mortality models.

**PROSIM Model.** PROSIM is Reclamation’s Water Resources Systems model for the CVP/SWP system. PROSIM is a mathematical representation of the CVP/SWP system used to evaluate the system’s response to a given hydrologic input, operational criteria, and/or any proposed action or facility under “what if” scenarios. Since it would not be possible to construct a model that accounts for all the individual interactions of this complex system, PROSIM is necessarily a simplification of the system.

PROSIM is a planning and management model, meaning it operates on a large time step so that many years may be simulated. PROSIM simulates the system on a monthly basis by total monthly volume while actual operations occur on a day-to-day and hour-to-hour basis. This simplification means that PROSIM results should be used only qualitatively as a tool for planning and management purposes. Water resources planning and management models like PROSIM do not predict the future, only the range of conditions that could occur given a set of physical and operational constraints and hydrologic conditions. Specifically, PROSIM simulates the system under 69 years of input hydrology (water years 1922 to 1991).

Each “what if” scenario is an operations study. An operations study is a simulated model study, conducted at an assumed level of development using a system model like PROSIM. These studies show hypothetical operations of the CVP/SWP system under imposed hydrologic conditions, either historical or synthetic; under proposed operation rules and system demands; and under imposed system constraints.

**The Central Valley Project/State Water Project System.** As stated earlier, PROSIM models the CVP/SWP system. Both the CVP and the SWP consist of reservoirs both north and south of the Delta, pumping plants in the Delta, and canals and river channels for conveyance. Water released from the reservoirs north of the Delta travel down the Feather, Sacramento, and American rivers into the Delta. At the Delta, about 25% of the water flows to the ocean to meet water quality and fish and wildlife objectives. The remaining water is exported into canals that flow south, providing irrigation water to farmers, water supply to municipal and industrial users, and wildlife refuges.
The combined storage in the CVP and SWP is about 17.3 MAF. The total annual demand on the system for water supply is up to 13.5 million acre-feet annually (MAFA). Under existing conditions over the 70 years of record in PROSIM, average annual flow in the Sacramento River below Keswick Dam is approximately 6.5 MAFA. Average annual flow in the Feather River below Oroville Dam is approximately 3 MAFA. Average annual flow in the American River below Nimbus Dam is approximately 2.5 MAFA. Average annual Delta inflow from the San Joaquin River is approximately 2.8 MAFA. Average annual Delta inflow from the Sacramento River is approximately 15.5 MAFA. Average annual Delta outflow is approximately 15.4 MAFA while average annual Delta diversion is approximately 5.3 MAFA.

- **The Central Valley Project Water Supply Demands.** The CVP supplies water to more than 250 long-term water contractors, north and south of the Delta. The total annual CVP contractual demand is 9.3 MAF. Of this 9.3 MAF, 4.8 MAF is project water and 4.5 MAF is water right settlement water. About 90% of CVP delivery is for agricultural and municipal & industrial (M&I), the remaining 10% is for wildlife refuges. CVP reservoirs have a total storage of about 12 MAF.

  Water right settlement water is water covered in agreements with holders whose deliveries existed before the project was constructed. Since the reservoirs altered the natural flows in the rivers, contracts were negotiated on quantities of diversions that could be made to the water right holders without any payment to the CVP. CVP water rights settlement contractors on the upper Sacramento River receive about 2.3 MAFA from the Sacramento River. Under these agreements, water rights holders diversions can be reduced by up to 25% during years in which inflow into Shasta reservoir is less than 3.2 MAFA (Shasta critical year). In all other years they receive the full contract amounts.

  Settlement contractors on the San Joaquin River (exchange contractors) receive water at the Mendota Pool via the Delta Mendota Canal. San Joaquin River exchange contractors receive about 840,000 AFA from the Mendota Pool, the terminal reservoir of the Delta Mendota Canal. Like the water rights holders in the Sacramento River, these exchange contractors’ diversions cannot be reduced up to 25% during Shasta critical years.

  The ability of the CVP to deliver full water supply contracts and requests by the contractors in a given year depends on rainfall, snowpack, runoff, carryover storage, pumping capacity from the Delta and environmental and regulatory constraints on the CVP operations in the upstream reservoirs and the Delta. Each year, rainfall and runoff is continuously forecasted during the winter. By March, the CVP makes a final decision as to what percentage of the full water supply requests made by the contractors will be delivered based on these forecasts combined with consideration of carryover storage.

- **The State Water Project Water Supply Demands.** The SWP has only one reservoir north of the Delta; Lake Oroville, which is located on the Feather River. SWP has five other reservoirs, all located south of the Delta. SWP has a combined total of about 5.3 MAF available storage, with Lake Oroville contributing about 3.5 MAF of the total. North of the Delta, the only SWP demands are those of the Feather River Service Area (FRSA). The
FRSA users are entitled to approximately 1.0 MAFA diversion from the Feather River. These deliveries can be reduced due to drought by no more than 50% in any one year and no more than 100% in any series of seven consecutive years. South of the Delta, the SWP currently has 29 long-term contractors, with initial project contracts signed for an eventual entitlement of 4.2 MAFA. Of this annual entitlement, approximately 2.0 MAFA is intended to serve Southern California and approximately 1.2 MAFA is intended to serve the San Joaquin Valley. The remaining approximate 1 MAFA is intended to serve other contractors including the San Francisco Bay and Central Coast regions.

- **Central Valley Project/State Water Project Operations.** PROSIM simulates the CVP/SWP system under a set of given physical, hydrologic, operational, and environmental constraints. During each month, PROSIM determines water supply operations based on priorities. First, under given hydrologic constraints (i.e. inflow, evaporation, depletion, and accretions) the system is operated within physical constraints such as minimum reservoir pool levels, maximum channel capacities, and maximum pumping capacities in the Delta. Next, regulatory and environmental constraints are met such as minimum flows for fisheries or water quality and Delta Coordinated Operations requirements. Meanwhile, operational constraints are met such as meeting reservoir rule curves for flood control or temperature control. Finally, once all other constraints are met, the portion of water supply demand that can be met and delivered for contractors is determined.

PROSIM provides a monthly simulation of the CVP and SWP water and power operations. Output from PROSIM serves as input to the temperature models that simulate monthly Sacramento River and American River water temperatures. Temperature model output serves as input to the early lifestage Chinook salmon mortality models. Additionally, a subroutine of PROSIM allows for computation of anticipated changes in CVP hydropower generation and capacity at the Tracy load center.

- **Reservoir Operations.** Most reservoirs in the CVP/SWP system are multi-purpose reservoirs with many beneficial uses including water supply, flood control protection, hydro-power generation, water quality improvement, recreation, downstream fishery flow protection, downstream navigation control flow protection, and temperature control flow protection. Water supply needs form the operating criteria of the multi-purpose reservoirs. Sufficient water must be provided for existing water rights, instream flow requirements for fish and water quality, downstream water demands, minimum river depths, and temperature requirements. Reservoir operations must balance these demands against other factors such as flood control and fishery temperature flow requirements that affect reservoir and fishery use.

- **Flood Control Operations.** CVP and SWP reservoirs have formal flood control functions prescribed by the Corps. Each reservoir has a different flood control operation prescription. Flood control space need is greatest in midwinter and springtime and least in summer due to precipitation and snowmelt patterns.

- **Temperature Control Operations.** River water temperature is an important criteria for project operations and the protection of fish including salmon and steelhead. In 1990 and
1991 the SWRCB established a daily average temperature requirement of 56°F on the Sacramento River below Keswick Dam from April to September. In 1993, NMFS issued a long-term winter run Chinook salmon biological opinion that required the CVP to maintain a minimum carryover storage of 1.9 MAF in Shasta Lake in all years, except the driest years.

- **Temperature Models.** Reclamation has developed water temperature models for five reservoirs (Trinity, Whiskeytown, Shasta, Oroville, and Folsom) and three river systems (Sacramento, Feather, and American). The models for reservoirs are distinctly different than the models for rivers. The monthly time step and relatively small volumes involved result in the various regulating reservoirs (Lewiston, Keswick, Thermalito, and Natoma) being modeled similar to river reaches rather than as distinct storage reservoirs.

These models estimate mean monthly water temperatures based on flow and storage quantities simulated by PROSIM. They are used to identify changes in water temperature caused by changes in CVP/SWP operations.

- **Reservoir Models.** Reservoir inflow, outflow, and end-of-month storage contents as calculated by PROSIM are input to the reservoir temperature models. Additional input data include meteorological information and monthly temperature targets that are used by the model to select the level from which reservoir releases are drawn. Temperature control devices, such as the outlet control device in Shasta Reservoir, the temperature curtains in Whiskeytown Reservoir, and the penstock shutters in Folsom Reservoir, are incorporated into the simulation. Model output includes water temperature at each level in the reservoir as well as the temperature of the reservoir release. The reservoir release temperature is then used in the downstream river temperature model.

- **River Models.** The river temperature models use the calculated temperatures of reservoir release, much of the same meteorological data used in reservoir models, and PROSIM output on river flows, gains, and diversions. Mean monthly water temperatures are calculated at multiple locations on the Sacramento, Feather, and American rivers.

- **Automated Temperature Selection Procedure.** The Folsom Reservoir and lower American River temperature models are used in an iterative manner referred to as the Automated Temperature Selection Procedure. This procedure operates the reservoir and river models with the objective of achieving monthly target temperatures in the lower American River at Watt Avenue. Targets are achieved through choice of reservoir level from which the release is drawn.

- **Salmon Mortality Models.** Water temperatures calculated for specific reaches of the Sacramento and American rivers are used in Reclamation’s Chinook salmon mortality models to estimate annual percentage mortality of early-lifestage Chinook salmon. On the Sacramento River, a calculation is performed for each of the four Chinook salmon runs: fall, late-fall, winter, and spring. On the American River, estimates are made for the fall-run Chinook salmon. Impacts on salmon and other biological resources, both terrestrial and aquatic, are addressed in Section 4.4 of this Revised Draft EIR.
Model Components and Assumptions

- **Period of Record.** The period of record used in PROSIM hydrologic modeling extends from October 1921 through September 1991 (70 years). The period of record used for water temperature modeling and the associated simulations for early-lifestage Chinook salmon mortality extends from 1922 through 1990 (69 years). This difference is the result of the temperature model operating on a calendar year, rather than on a water year basis. These periods are considered representative of the natural variation in climate and hydrology experienced in the Central Valley during recent times, and include periods of extended drought, high precipitation and runoff, and variations in between.

- **Hydrology/Level of Land Use.** The hydrology used is based on DWR Bulletin 160-98. The existing or current condition uses a year 2000 level of land use estimated as a linear interpolation between 1995 and 2020 land uses. The hydrology used for the future condition (i.e., consistent with 2025 system demands) is compatible with the land use projections of the year 2020.

- **Demands.** Modeled demands for water diversions are based on water entitlement amount (e.g., CVP contract, water rights), historical use, and confirmed against similar assumptions made in recent documents including the CVPIA PEIS, PCWA American River Pump Station Project Final EIS/EIR, American River Basin Cumulative Impact Report, and the WFA Final EIR. The water demand modeled for each water purveyor under existing and future conditions is provided in Appendix E.

Existing condition demands were updated from the assumptions in the CVPIA PEIS and WFA evaluations and represent 2000 demand levels. The 2000 demand level represents the best science available for the analysis tools (i.e., PROSIM) used in this document and is considered by the agencies to represent current conditions. Future condition demands are based on system demands projected for 2025. Demands that change between existing conditions and future conditions include those anticipated for the purveyors in the American River Basin, East Bay Municipal Utility District (EBMUD), Contra Costa Water District (CCWD), and the SWP.

CVP project demands are modeled based on conditions that apply to the four classes of contract type: agricultural, M&I, settlement, and exchange contractors, and CVP wildlife refuges. SWP demands are simulated as defined and referred to by DWR’s Office of Planning.

- **American River Basin.** Water demands estimated for the American River Basin are summarized in Appendix E (Demand Assumption Tables). Included in these tables are diversions from the Sacramento River that serve land in the American River Basin. WFA participants’ agreements to incrementally reduce diversions in drier and driest years are indicated in the tables and included in the modeling (see Appendix E).
• **Facilities and Operations.** Assumptions regarding CVP system facilities and associated operations, including flood control and temperature management, are explained in Appendix E.

**CVP and SWP Allocations and Deficiencies**

Reclamation operates the CVP to balance many competing objectives, including water quality, fish and wildlife protection, irrigation and domestic water supply, hydroelectric power production, and flood control. In some years, the demand for water exceeds available supplies, and Reclamation must adjust CVP allocations of water among the competing uses based upon authorizing legislation, statutes, regulations, and agreements. Similarly, DWR balances the SWP’s many competing objectives in making similar allocation decisions.

One of the critical operating decisions for the CVP and SWP is the annual water supply allocation. When specific water supply indicates an insufficient amount of water supply to meet all demands, allocation deficiencies are imposed upon contractors and customers, depending on the contract type. This is done after all of the environmental regulations are met. The CVP settlement and exchange contractors and the CVP wildlife refuges receive an allocation of either 100% (in normal and wet years) or 75% (in critical years), based on the Shasta Index.

The remaining, and majority, of CVP contractors receive allocations on a sliding scale based on a comparison of forecast demand and supply for the March through September period. As the simulation is run, PROSIM compares water demand and available water supply for the March through September period. If the supply is greater than the demand, a full allocation is made. If the supply is less than the demand, allocations are reduced incrementally in response to the severity of the simulated shortfall. CVP M&I contractors receive allocations ranging from 100% to 50%. CVP agricultural contractors receive allocations ranging from 100% to 0%. Agricultural allocations are reduced first: reductions to the M&I allocations start after the agricultural allocations have been reduced to 75% of the full contract allocation. SWP allocation imposes deficiencies equally to agricultural and M&I water users.

**Regulatory Standards**

Environmental and regulatory constraints on the CVP/SWP system exist throughout the entire system. These constraints include minimum flows throughout the system, Delta inflow and export regulations, water quality standards, and other environmental regulations. Specifics regarding these requirements, including references to the regulatory documentation, are provided in Appendix E. As an overview, Table 4.3-6 summarizes the locations and applicable conditions, which are either incorporated into the modeling or used as objectives in evaluating the modeling results.
<table>
<thead>
<tr>
<th>Location</th>
<th>Regulatory Standard</th>
<th>Modeling Application</th>
</tr>
</thead>
</table>
| Trinity River/Reservoir          | Minimum instream flow requirements  
Minimum end-of-year reservoir storage                                             | Both incorporated into PROSIM            |
| Clear Creek                      | Minimum instream flow requirements below Whiskeytown Reservoir                        | Incorporated into PROSIM                 |
| Upper Sacramento River           | Minimum end-of-year storage in Shasta Reservoir                                       | Objective evaluated in interpretation of PROSIM results |
|                                  | Minimum instream flow requirements below Keswick Dam                                   | Incorporated into PROSIM                 |
|                                  | Navigation flow requirement upstream of City of Sacramento (at Wilkins Slough-navigation control point) | Incorporated into PROSIM                 |
| Feather River                    | Minimum instream flow requirements                                                    | Incorporated into PROSIM                 |
| Upper American River             | Minimum instream flow requirements below the diversion site                           | Incorporated into UARM                   |
| Lower American River             | Minimum instream flow requirements (1) below Nimbus Dam and (2) for the reach from Nimbus Dam to the confluence with the Sacramento River | Incorporated into PROSIM                 |
| Lower Sacramento River           | Minimum instream flow requirements at (1) Freeport and (2) Rio Vista                  | Incorporated into PROSIM                 |
| Mokelumne River                  | Minimum release rates from Camanche Reservoir                                         | Incorporated into SANJASM modeling which serves as input to PROSIM |
| Stanislaus River                 | Minimum instream flows below Goodwin Dam                                               | Incorporated into SANJASM/STANMOD modeling which serves as input to PROSIM |
| Tuolumne River                   | Minimum instream flow requirements at LaGrange Bridge                                  | Incorporated into SANJASM modeling which serves as input to PROSIM |
| San Joaquin River                | Minimum instream flow requirements at Vernalis                                         | Incorporated into SANJASM/STANMOD modeling which serves as input to PROSIM |
| Delta                            | Maximum salinity, minimum dissolved oxygen, minimum outflow, and maximum export        | Incorporated into PROSIM                 |
Minimum Flows. Minimum instream flows on the CVP/SWP system have been developed for a variety of purposes including water quality and temperature control as well as navigation control. The minimum instream flows set for the CVP/SWP system and accounted for in PROSIM modeling are summarized in Table 4.3-7. Many of these minimum flows are set by SWRCB decisions or other regulations meant to protect the Delta environment. These are described below in the Delta Operations section. Others, such as the Trinity River minimum flow, the American River minimum flow below H St, and the Feather River minimum flows, were developed for local fisheries protection.

The Navigation Control Point minimum flow was developed due to physical constraints. Originally, the reach near Wilkins Slough on the Sacramento River was used for commercial commerce, so channel depth and flow was maintained for navigation. Water users along this reach built water pumping facilities based on the maintained channel depth and flow. However, since commercial navigation is no longer a primary use, flows could potentially fall below the previously maintained channel depth and flow. In order to maintain flows sufficient to keep the water users’ water pumping facilities operational, the CVP is required to meet the navigation flow requirement of 5,000 cfs.

<table>
<thead>
<tr>
<th>Table 4.3-7</th>
<th>Minimum Instream Flows at Major Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trinity River below Lewiston Dam</td>
<td>340 thousand AFA</td>
</tr>
<tr>
<td>Sacramento River below Keswick Dam</td>
<td>3,250 to 6,000 cfs, year round</td>
</tr>
<tr>
<td>American River below Nimbus Dam</td>
<td>250 cfs to 3,000 cfs, depending on Folsom Reservoir storage &amp; forecast inflow</td>
</tr>
<tr>
<td>American River below H Street.</td>
<td>500 cfs September to December, 250 cfs January to December, reduced by 25% critical years</td>
</tr>
<tr>
<td>Feather River below Thermalito Afterbay</td>
<td>760 to 1000 cfs, year round</td>
</tr>
<tr>
<td>Feather River below Thermalito Diversion Dam</td>
<td>600 cfs, year round</td>
</tr>
<tr>
<td>Clear Creek below Whiskeytown Dam</td>
<td>50 to 100 cfs, year round</td>
</tr>
<tr>
<td>Stanislaus River below Goodwin Dam</td>
<td>98 to 302 thousand AFA</td>
</tr>
<tr>
<td>Navigation Control Point (NCP) Sacramento River at Wilkins Slough</td>
<td>3,900 to 5,000 cfs, depending on water year type</td>
</tr>
</tbody>
</table>

Delta Operations. Fresh water is supplied to the Delta from the state’s two major basins, the Sacramento and San Joaquin. Most of the flow from the upper regions of the Sacramento River is controlled by the CVP’s Shasta Reservoir. Releases from the SWP-controlled Oroville Reservoir on the Feather River join the Sacramento River 21 river-miles above the city of Sacramento. Waters from SWP and CVP become indistinguishable at the Sacramento-Feather River confluence. Ultimately the water will be augmented by CVP’s Folsom Reservoir and make its way to the Delta down the American River. Releases from upstream CVP and SWP reservoirs comprise the major part of the fresh water flowing into the Delta during the drier months of the year.
The regulatory environment that affects Delta operations also affects the operations of the CVP and SWP. Such regulations include the Coordinated Operation Agreement (COA), FESA, and a variety of Delta Water Quality standards.

- **The Coordinated Operation Agreement.** Water quality has taken on a large role in CVP and SWP operations primarily through the obligations of releasing reservoir water downstream to maintain the fresh and salt-water balance of the Sacramento-San Joaquin Delta. In 1986, Reclamation and DWR signed a Coordinated Operation Agreement (COA) to define the rights and responsibilities of each agency in operating the CVP and SWP facilities in the Sacramento Valley and Delta. Under the COA, storage withdrawals for in-basin use are shared 75% CVP and 25% SWP while unstored flows for storage and export are shared 55% CVP and 45% SWP.

- **Endangered Species Act Constraints.** Environmental needs in the Delta for threatened and endangered species have an impact on export and other operations of the CVP and SWP projects. The ESA has imposed “take limits” at Tracy and Banks Pumping Plants in the Delta. The pumps would be shut down if the take limits exceeded or if there is an abundance of fish present at the pumps. This means deliveries south of the Delta could be affected. However, this is not accounted for in PROSIM, since the day-to-day decision based on take limits cannot be predicted in a monthly time step planning model.

**Delta Water Quality Standards**

Maintenance of the water quality and minimum flow standards in the Bay-Delta region and operation of SWP Banks Pumping Plant and CVP Tracy export facilities are coordinated with upstream reservoir releases. Operational decisions are applied to meet water quality standards and regulate flows through the Delta.

The SWRCB is responsible for the regulation of activities and factors that may affect the quality of waters of the state. The SWRCB under its water quality authority (Water Code Section 13000 et seq.) established a Water Quality Control Plan (WQCP) for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary as order 95-1 WR in May, 1995, as stated in the May, 1995 SWRCB Water Quality Control Plan Report. Water quality standards are set in consultation with several State and federal agencies including the U.S. Environmental Protection Agency (EPA), NOAA, USFWS, CDFG, California Environmental Protection Agency (CAL-EPA) and the California Resource Agency. The progress of Delta water quality standard development is summarized in Table 4.3-8.

<table>
<thead>
<tr>
<th>Timeline of Delta Water Quality Standard Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978        D-1485 issued by SWRCB</td>
</tr>
<tr>
<td>1989        Sacramento River Winter-run Chinook salmon listed on the endangered species list</td>
</tr>
<tr>
<td>1992        Congress enacted the Central Valley Project Improvement Act (CVPIA)</td>
</tr>
<tr>
<td>1993        NOAA issued biological opinion for winter-run Chinook salmon</td>
</tr>
<tr>
<td>1995        1995 water quality control plan issued by SWRCB</td>
</tr>
<tr>
<td>1995        USFWS issued biological opinion for Delta Smelt</td>
</tr>
</tbody>
</table>
Table 4.3-8  
Timeline of Delta Water Quality Standard Development

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>DOI released final Administrative Proposal for CVPIA (b)(2), identifying Delta and upstream actions</td>
</tr>
<tr>
<td>1999</td>
<td>DOI released interpretation of CVPIA (b)(2) implementation</td>
</tr>
<tr>
<td>2000</td>
<td>CALFED ROD released with CVPIA (b)(2) and Environmental Water Account (EWA) operating guidelines</td>
</tr>
</tbody>
</table>

- **State Water Resources Control Board D1485.** The 1978 SWRCB decision D1485 sets water quality standards for M&I, agricultural, and fisheries and wildlife benefits in the Delta and restricts exports in May, June, and July to protect fish. Operationally, D1485 restricts Delta exports at Banks and Tracy pumping plants to 3,000 cfs each in May and June and 4,600 cfs in July. Also, the decision prescribes that the Delta Cross Channel gates are closed whenever the Delta outflow is greater than 12,000 cfs from January to May in order to minimize diversion of young fish into the Central Delta.

- **1995 Water Quality Control Plan (WQCP).** The 1995 WQCP generally sets higher water quality objectives in the Delta for M&I, agricultural and fisheries and wildlife at the same location as those set in D1485. Delta Cross Channel gates are required to be closed February though May. This limits the exports at Banks and Tracy to a percentage of the total Delta inflow (E/I ratio). The allowable export/inflow ratio is 35% during February through June and 65% July through January. Also, the 1995 WQCP sets minimum and pulse flows in the San Joaquin River at Vernalis from February through June and October while imposing more stringent water quality objectives at Vernalis. Finally, the 1995 WQCP requires the CVP and SWP to release more Delta outflow to maintain the 2ppt isohaline (X2 position) at the Sacramento-San Joaquin Rivers confluences, Chipps Island and Roe Island for a certain number of days per month depending on the previous month’s eight-river index.

- **Central Valley Project Improvement Act (CVPIA) (b)(2) and Anadromous Fish Restoration Program (AFRA).** The CVPIA (b)(2) was enacted by Congress in 1992 to dedicate 800,000 AF of CVP yield annually (600,000 AF in Shasta critical years) for fish and wildlife restoration projects in the Central Valley. Under the AFRP, the USFWS developed fishery protective actions in the upstream reservoirs and Delta areas to carry out the 800,000/600,000 AF of water to benefit fish and wildlife.

Upstream AFRP actions include year round minimum instream flows in Clear Creek below Whiskeytown Lake of 100 to 200 cfs, in the Sacramento River below Keswick Dam of 3,250 to 5,500 cfs, in the American River below Nimbus Dam of 250 to 4,500 cfs, and in the Stanislaus River below Goodwin Dam of 98 to 302 cfs.

Delta AFRP actions include the Vernalis Adaptive Management Plan (VAMP) which increases flow at Vernalis from April 15th to May 15th to meet target flow conditions to the Delta, additional X2 protection which increases the X2 position requirements at Chipps Island during March through June, the maintenance of Sacramento River flow at Freeport by increasing flow when striped bass are spawning, the ramping of Delta exports through ramping San Joaquin River flows down, exports up, the maintenance of flows and exports at
Vernalis for a longer period of time when Mossdale and the Delta smelt take limits are reached at the pumps, closure of the Delta Cross Channel gates based on water quality triggers, and regulating July flows and exports based on the X2 position and mean exports in June.

Environmental Water Account

The Environmental Water Account (EWA) is a cooperative management program that provides protection for the fish of the Bay-Delta estuary while not affecting water allocations to CVP/SWP users. The EWA does this by acquiring alternative sources of water supply, EWA assets, which are used to augment streamflows, Delta outflows, and to modify project exports to provide benefits to fish. Reductions in deliveries are compensated for with these EWA assets.

FRAMEWORK FOR IMPACT ANALYSIS

Model Simulations

PROSIM model studies were developed to represent existing and future conditions and to capture the range of potential hydrologic impacts associated with the proposed interim and long-term water supply alternatives. PCWA water supply sources and the source assumed to be used under each of the model simulations (i.e., MFP water right entitlement or CVP water contract allocation) are identified and summarized in Table 4.3-9. The individual simulations are described following the table.

<table>
<thead>
<tr>
<th>Table 4.3-9</th>
<th>PCWA Water Supply Source Assumptions by Model Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Simulation</strong></td>
<td><strong>MFP Water Rights (AFA)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Auburn Dam Site</strong></td>
</tr>
<tr>
<td>Existing/No-Project</td>
<td>8,500</td>
</tr>
<tr>
<td>Proposed Initial Water Supply</td>
<td>8,500</td>
</tr>
<tr>
<td>Sacramento River Diversion&lt;sup&gt;4&lt;/sup&gt;</td>
<td>35,500&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Folsom Reservoir Diversion</td>
<td>35,500&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Future No-Project</td>
<td>35,500&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> – refers to North of the Confluence with the American River
<sup>2</sup> – refers to dry year restrictions agreed to under Water Forum (replacement water linearly increased from FUI of 950 TAF to FUI of 400 TAF)
<sup>3</sup> – through an exchange with a Sacramento River purveyor
<sup>4</sup> – this model simulation is identical to the Cumulative Condition simulation developed by SWRI under the direction of Reclamation for the American River Basin Cumulative Study.

- **Existing/No Project.** This simulation represents the existing hydrologic conditions within the CVP and SWP before implementation of the proposed project, cumulative actions, or future operating conditions. This simulation represents the baseline condition for impact analysis purposes. This simulation reflects PCWA’s current practice of diverting up 8,500 AFA MFP water from the seasonal pump station at the Auburn Dam site. It includes existing
surface water diversion and operation practices and policies (e.g., minimum instream flow requirements, flood control, and Delta water quality standards) of the CVP/SWP. The modeling includes certain assumptions associated with accretions and depletions within the system which incorporates the exercise of water rights by non-CVP/SWP users. The Existing/No Project condition modeling assumptions are consistent with the WFA Final EIR.

• **Proposed Initial Surface Water Supply.** The proposed Specific Plan initial surface water supply is assumed to be 6,000 AFA of PCWA’s MFP water right. This simulation includes PCWA’s current diversion of 8,500 AFA from the American River pump station site near Auburn Dam. Also, as required by CEQA, this simulation imposes the proposed project (initial supply) upon the existing hydrology to evaluate the potential environmental impacts of the project. However, this simulation is considered a conservative representation of the proposed project, because use of the initial water supply would increase over time, and demand for the full amount would not be anticipated until after year 2010.

• **Proposed Long-Term Surface Water Supply/Future Cumulative Condition.** Two scenarios were developed for the future cumulative condition to represent alternatives for the PCWA CVP water contract point of diversion: (1) Sacramento River and (2) Folsom Reservoir. Both simulations represent future cumulative conditions (i.e., include all reasonably foreseeable future actions plus the proposed long-term water supply project) with the primary and critical difference being the water source determined by PCWA’s point of diversion for the CVP contract.

These simulations include all future buildout demands by all purveyors, subject to delivery restrictions defined through known agreements, such as the WFA, as well as any reasonably foreseeable system operational changes or environmental obligations. These assumptions include PCWA’s diversion of up to 35,500 AFA MFP water right entitlements from the American River pump station site near the proposed Auburn Dam. Consistent with the WFA, dry year restrictions defined in the purveyor-specific agreements of the Water Forum Action Plan (Water Forum 2000) are included in the modeling assumptions.

It is assumed that PCWA will use CVP contract water to meet the proposed project’s long-term water supply demand of 11,500 AFA. The future cumulative alternative simulations evaluate the full CVP contract amount of 35,000 AFA based on the premise that this higher diversion amount provides a conservative representation of potential impacts associated with increased diversions from either the Sacramento River or Folsom Reservoir to meet the proposed project needs. As the modeling framework was developed, it was determined that if the modeling results indicated that potentially-significant or significant impacts would occur under the full PCWA CVP water contract amount (long-term water supply), then further evaluation would be performed to look more closely at the proposed Specific Plan long-term water supply project’s 11,500 AFA diversion potential to affect environmental resources.
Sacramento River Diversion

This simulation represents future conditions with the proposed project’s long-term water supply demand of 11,500 AFA being supplied from PCWA’s proposed Sacramento River diversion (north of the confluence with the American River) of 35,000 AFA CVP contract water. This scenario represents the cumulative condition (i.e., includes all reasonably foreseeable future actions plus the proposed project), and is consistent with the WFA and the American River Basin Cumulative Report assessments where it was assumed that PCWA would obtain its 35,000 AFA CVP water contract supply from the Sacramento River. This simulation includes all future buildout demands by all purveyors, subject to delivery restrictions defined through known agreements, such as the Water Forum Agreement, as well as any reasonably foreseeable system operational changes or environmental obligations. Consistent with the Water Forum Agreement, dry year restrictions defined in the purveyor-specific agreements of the Water Forum Action Plan (Water Forum 2000) are included in the modeling assumptions.

Folsom Reservoir Diversion

This simulation represents an alternative future cumulative condition where PCWA would obtain its CVP water contract water supply from Folsom Reservoir, rather than the Sacramento River (see Section 6.3.6 in Chapter Six of this Revised Draft EIR for a complete discussion of this alternative). The proposed project’s long-term water supply demand of 11,500 AFA would be supplied from PCWA’s 35,000 AFA CVP water contract amount.

Future No-Project

This simulation represents future system conditions without PCWA’s CVP contract diversion. This simulation was developed to assess the incremental contribution of the proposed long-term water supply project to any potentially-significant or significant environmental impacts identified under the future cumulative condition. Because the future cumulative project alternative simulations consider the potential effects of the full CVP contract amount, this simulation also provides a means of assessing the incremental contribution associated with diversion of the full CVP contract amount, rather than only the 11,500 AFA long-term water supply. As discussed previously, this is considered a conservative representation of the proposed project’s impacts.

Impact Assessment Comparisons. Several comparisons were made to assess potential impacts of the proposed initial and long-term water supply project elements relative to existing and future conditions. The model simulation comparisons are described below.

Proposed Initial Surface Water Supply Under Existing Conditions

This comparison satisfies CEQA requirements to evaluate, in an existing context, the potential impacts of the proposed initial surface water supply diversion (6,000 AFA MFP water rights entitlement).
- **Sacramento River Diversion Under Existing Conditions**

  This comparison evaluates the potential effects of the proposed long-term water supply project relative to the existing condition. The comparison considers the impact of PCWA’s full CVP contract amount (35,000 AFA) diverted from the Sacramento River, consistent with the *American River Basin Cumulative Report*. As described previously, this comparison is considered to provide a conservative representation of the potential effects of the lesser diversion amount directly attributable to this project (i.e., 11,500 AFA).

- **Folsom Reservoir Diversion Under Existing Conditions**

  This comparison evaluates the alternative point of diversion for PCWA’s CVP water contract. Again, it assumes diversion of the full CVP water contract amount (35,000 AFA) and provides a conservative assessment of the proposed long-term water supply (11,500 AFA) effects that could be anticipated if the supply were to be obtained from Folsom Reservoir.

- **Sacramento River Diversion Under Cumulative Conditions and Folsom Reservoir Diversion versus Future No Project**

  These comparisons satisfy CEQA Guidelines to determine whether a proposed project’s incremental contribution to a cumulative impact is found to be “cumulatively considerable.” CEQA Guidelines Section 15065 (a)(3) defines cumulatively considerable as follows:

  “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

  A comparison is provided for each of the above. Consistent with CEQA Guidelines, this report focuses on potential impacts related to the proposed project, and provides less detail describing those effects that are not significant, or where the proposed project’s contribution to the impact is not found to be cumulatively considerable.

- **Cumulative Future No-Project Conditions**

  The future "no project" condition retains the above-described future demands for purveyors in the American River Basin, but without the PCWA 35,000 AFA of CVP water diverted from the Sacramento River. The proposed Specific Plan long-term water supply will use up to 11,500 AFA of PCWA’s CVP contract water. The Specific Plan long-term water supply is included as a portion of the 35,000 AFA of the PCWA CVP contract water. The incremental analysis, however, was set at the full 35,000 AFA. This was a highly conservative assumption and was implemented to provide an assessment of
the potential incremental contribution of the full 35,000 AFA. For analytical purposes, if no significant incremental contribution was observed for PCWA's full 35,000 AFA, then the Specific Plan long-term water supply increment of 11,500 AFA would also have a less than significant effect.

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines and other adopted policies, Placer County has determined that a project could have a significant effect on water resources/water supply/hydropower if it would:

- Substantially deplete groundwater supplies.
- Be inconsistent with the goals and policies of the adopted Placer County General Plan.
- Be inconsistent with the applicable terms of the Water Forum Agreement.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

The effect of the proposed Specific Plan on the initial water supply is considered significant if it would result in a reduction of delivery allocations to CVP or SWP customers under federal or State contract obligations, relative to the existing conditions.

Specific statutory criteria do not exist for determining impacts related to effects on off-site power supply. Thus, significance standards have been developed specifically for this analysis to address the potential regional and local impacts of implementing the proposed Specific Plan.

Cost-related hydropower impacts on a regional scale could result from changes in hydropower generation or capacity. In this Revised Draft EIR, gross hydropower generation is evaluated, which is the amount of generation before Specific Plan water supply use. Generation from New Melones Dam is included, and the values shown are reduced for transmission loss to represent the energy generation available at the load center near Tracy. The use of dependable hydropower capacity differs from previous environmental documents that used instantaneous hydropower capacity, which corresponds to current reservoir elevation. In response to WAPA’s concerns about the availability of electrical power in California, this Revised Draft EIR evaluates the amount of hydropower capacity available over a specified, extended period of time. This capacity is the monthly generation divided by the hours specified in Table 1 of Contract 2948A between the CVP and PG&E (but not more than the instantaneous capacity). Similar to generation, the capacity is gross (i.e., before Specific Plan use), and includes capacity at New Melones and is adjusted for transmission to reflect capacity at the load center near Tracy.
On a regional scale, a reduction in CVP generation is considered a cost impact because WAPA may no longer have excess energy available for sale, or would be required to purchase additional energy for its customers. A reduction in dependable capacity would produce similar cost impacts. This analysis assumed that such cost impacts would be significant if hydropower generation or dependable capacity were substantially reduced by the implementation of the proposed Specific Plan.

At the local and area level, impacts to hydropower could result from changes in pumping requirements at Folsom or EID pumping plants due to changes in reservoir elevation. A reduction in reservoir elevation would produce a cost impact, because more energy would be required for pumping plants to lift water from Folsom Reservoir for distribution to treatment plants, and subsequently water users.

While hydropower impacts are not expected to have a direct environmental effect, implementation of the proposed Specific Plan water supply could have significant economic consequences by reducing existing energy resources that could require replacement from other energy resources. It is likely that thermal generation resources that do emit air pollutants would supply some portion of the replacement energy. Estimating when, where and how “dirty” the replacement energy might be would be speculative, and is beyond the ability to accurately predict, especially given the interconnection of electric utility generation in the western states.

Initial Surface Water Supply

As described above, the surface initial water supply would be diverted from the American River. The American River has an annual runoff of approximately 2.6 MAF and is a major tributary to the Sacramento River (PCWA 1998). The Sacramento River has an annual runoff of approximately 18 MAF (PCWA 2001). The following impact discussion analyzes the potential effects of the diversion of the proposed Specific Plan initial surface water supply.

4.3.3-1 The initial surface water supply could affect delivery allocations to CVP customers.

The PROSIM model was used to simulate the proposed Specific Plan initial surface water supply. PROSIM is one of the models used by Reclamation for the CVP/SWP system. PROSIM is a mathematical representation of the CVP/SWP system used to evaluate the system’s response to a given set of hydrologic input, operational criteria, and/or any proposed action or facility under “what if” scenarios. PROSIM simulates the CVP/SWP system under a set of given physical, hydrologic, operational, and environmental constraints and produces a 70-year, monthly trace of how the CVP/SWP system would have operated under the modeled assumptions. Details on the PROSIM model are included in Section 4.3.3.

Although deliveries to all CVP contract categories would be less than 100% in some years, there would be no reduction of deliveries, relative to the existing condition, over the 70-year hydrologic simulation period (Technical Appendices A-571 to -578). In addition, there would be no change in the long-term 70-year average monthly percent allocation of deliveries to CVP customers, under the proposed Specific Plan initial water supply, relative to the existing condition (Template Output B-16 to B-39). CVP M&I and agricultural customers north of the
Delta would continue to receive 89% and 73% of their delivery allocations from CVP, respectively, under the proposed Specific Plan initial surface water supply. CVP settlement and refuge customers north of the Delta would continue to receive 98% of their delivery allocations, under the proposed Specific Plan initial water supply, relative to the existing condition. In addition, CVP M&I and agricultural customers south of the Delta would continue to receive 88% and 64% of their delivery allocations, respectively, under the proposed Specific Plan initial water supply. Also, those exchange and refuge customers south of the Delta would continue to receive 98% of their allocated deliveries.

The combined storage in the CVP and SWP is about 17.3 MAF. The purpose of this storage is to capture the surplus flows that are not required for any downstream purpose at the time they occur (typically in the spring and early summer), and store them for use later in the year or in subsequent years when the flows are not sufficient to meet these purposes. The proposed Specific Plan initial surface water supply is a relatively small amount, 0.006 MAF compared to the total annual water supply demand on the system of up to 13.5 MAF, with the CVP contractual demand portion being about 9.3 MAF. The modeling shows some minor changes in reservoir storages due to the increased water supply deliveries that are balanced between various CVP reservoirs. During the following wet season, this reduction in storage is typically made up from increased capture of surplus flood flows allowed by the storage reductions, which results in virtually identical reservoir storages in the late spring/early summer time period each year. This means there is little or no impact to CVP water supply availability at the time the CVP water supply allocations are made, and therefore no impact to CVP water supply delivery.

Since all contractors would receive identical deliveries under the proposed Specific Plan initial surface water supply for all years, there would be a less than significant impact upon CVP water supply deliveries under the proposed Specific Plan initial surface water supply.

Mitigation Measures

No mitigation measures are required.

4.3.3-2 The initial surface water supply could affect delivery allocations to SWP customers.

SWP customers receive contractual deliveries from both the Feather River and Delta. Although deliveries to SWP customers would be at less than 100% in some years, there would be no reduction of deliveries, relative to the existing condition, over the 70-year hydrologic simulation period (Technical Appendix A-579). In addition, there would be no change in the long-term 70-year average monthly percent allocation of deliveries to SWP customers, under the proposed Specific Plan initial water supply, relative to the existing condition (Template Output B-40 to B-42). SWP customers would continue to receive 83% of their delivery allocations from SWP, under the proposed Specific Plan initial surface water supply, relative to the existing condition. All contractors would receive identical deliveries under the proposed Specific Plan initial water supply for all years. Thus, there would be a less than significant impact to any SWP water supply delivery contract under the proposed Specific Plan initial water supply.
### Mitigation Measures

No mitigation measures are required.

#### 4.3.3-3 The initial surface water supply could affect gross hydropower generation.

Under the proposed Specific Plan initial surface water supply, annual gross CVP hydropower generation simulated over the 70-year hydrologic period would be reduced by a total of two gigawatt-hours, relative to the existing condition (Technical Appendix A-517). With a total annual CVP hydropower generation capability of 5,115 gigawatt-hours, the reductions resulting from the proposed Specific Plan initial water supply would constitute a 0.04% reduction in total annual CVP hydropower generation (Template Output B-10). This reduction in CVP hydropower generation capacity could represent a cost impact because WAPA may no longer have excess energy available for sale or would be required to purchase additional energy for its customers. Such a small reduction in CVP hydropower generation capacity, however, would not likely result in direct adverse environmental effects. It is likely that some thermal generation resources that do emit air pollutants may supply some portion of the replacement energy; however, the use of thermal generation resources would be minimal due to the small magnitude of reduction in CVP hydropower generation associated with the proposed Specific Plan initial surface water supply. It would be speculative, moreover, to predict where any such environmental effects (e.g., air pollution) would occur, as it would be speculative to predict what energy sources might be employed to replace lost CVP hydropower generation. The direct environmental impact is therefore considered less than significant.

### Mitigation Measures

No mitigation measures are required.

#### 4.3.3-4 The initial surface water supply could affect gross hydropower capacity.

Table 4.3-10 provides a summary of the difference in capacity between the existing and proposed Specific Plan initial water supply conditions. Presented are the median values of the differences over 70 years and the 90% exceedance value, which indicates that 90% of the time, the difference in CVP gross dependable hydropower capacity between the existing condition and the proposed Specific Plan initial water supply would be smaller or negative (i.e., a benefit). There is no change in the greatest median difference in capacity between simulations for the proposed Specific Plan initial surface water supply relative to the existing condition. The 90% exceedance in capacity between the existing condition and the proposed Specific Plan initial water supply occurs in February, at five MW. This is a 1% reduction of the 1,598 MW of dependable capacity in February under the existing condition. The reductions could represent a cost impact because WAPA may no longer have excess energy available for sale or would be required to purchase additional energy for its customers. Such reductions would not result in specific adverse environmental effects, because the use of thermal generation resources for replacement energy would be minimal due to the small magnitude of reduction in CVP hydropower capacity associated with the proposed Specific Plan initial surface water supply. It would be speculative, moreover, to predict where any such environmental effects (e.g., air pollutants)
pollution) would occur, as it would be speculative to predict what energy sources might be employed to replace lost CVP hydropower generation.

| Table 4.3-10 |
| Difference in CVP Gross Capacity at Tracy Under Existing without and with Project Conditions |
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Median | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90% Exceedance\(^2\) | -1 | -5 | 0 | 0 | 0 | -1 | -1 | -1 | -1 | -1 | -1 |

\(^1\) Values in MW, based on 70 years modeled.
\(^2\) 90% of occurrences would have smaller or no impact.

This direct environmental impact is therefore considered \textit{less than significant}.

\textbf{Mitigation Measures}

No mitigation measures are required.

\textbf{4.3.3-5 The initial surface water supply could affect Folsom pumping energy requirements.}

The proposed Specific Plan initial water supply would result in both increases and decreases in monthly energy requirements for the Folsom Pumping Plant at Folsom Reservoir, relative to the existing condition, depending on the year (Technical Appendix A-518 to A-529). Over the 70-year period of record, an average annual increase in pumping energy requirements of 465 MWh for the proposed Specific Plan initial surface water supply would occur, relative to the existing condition (Template Output B-12). On a monthly average basis, this increase would be 39 MWh relative to the existing condition (Technical Appendix A-518 to A-529). This magnitude of change would likely represent a cost impact because more energy would be required for pumping plants to lift water from Folsom Reservoir for distribution. These changes, however, would not result in specific adverse environmental effects, because the use of thermal generation resources for replacement energy would be minimal due to the small magnitude of change in pumping energy requirements associated with the proposed Specific Plan initial surface water supply. It would be speculative, moreover, to predict where any such environmental effects (e.g., air pollution) would occur, as it would be speculative to predict what energy sources might be employed to replace lost CVP hydropower generation. This direct environmental impact is therefore considered \textit{less than significant}.

\textbf{Mitigation Measures}

No mitigation measures are required.

\textbf{4.3.3-6 The initial surface water supply could affect EID pumping energy requirements.}

The proposed Specific Plan initial surface water supply would result in no change in 70-year monthly average energy requirements for the EID Pumping Plant at Folsom Reservoir, relative to the existing condition (Template Output B-13). Over the 70-year period of record, however, specific months, in specific years, would experience a slight increase in pumping energy requirements, relative to the existing condition. The greatest increase experienced for all months
would be 1 MWh (or 0.5%) relative to the existing condition (Technical Appendices A-530 to A-541). These slight impacts, when they occur, would likely represent a cost impact because more energy would be required for pumping plants to lift water from Folsom Reservoir for distribution. These changes, however, would not result in specific adverse environmental effects, because the use of thermal generation resources for replacement energy would be minimal due to the small magnitude of change in pumping energy requirements associated with the proposed Specific Plan initial surface water supply. It would be speculative, moreover, to predict where any such environmental effects (e.g., air pollution) would occur, as it would be speculative to predict what energy sources might be employed to replace lost CVP hydropower generation. The direct environmental impact is therefore considered less than significant.

Mitigation Measure

No mitigation measures are required.

Groundwater Supply

4.3.3-7 Use of groundwater as a redundant water source in the Specific Plan area would have a direct impact on the North American River groundwater subbasin.

PCWA is proposing that a backup groundwater component be developed in conjunction with the Specific Plan. It is anticipated that sufficient groundwater would be supplied to the Specific Plan area to provide a redundant water source equal to at least 25% of the required water supply on a maximum daily demand basis. This contingency is based on Reclamation’s ability to exercise a maximum dry year reduction in Sacramento River CVP water supply of 25%. Based on a maximum demand of approximately 18,756,342 gpd at Specific Plan area buildout as shown in Table 4.11-10, the necessary redundant water supply from groundwater for any given day would be approximately 4,689,086 gallons. In the highest groundwater use scenario analyzed in the PCWA Integrated Water Resources Plan (Scenario 2b), which includes the Placer Vineyards Specific Plan Blueprint Alternative, a groundwater supply of approximately 15,000 AFA would be necessary to meet dry year supply requirements. However, under the “The Existing General Plans” (Scenario 1), which includes the Specific Plan area, the groundwater requirement would be reduced to approximately 5,000 AFA. Assuming worst case scenario (25% of average demand would be met by groundwater during an entire year), the Specific Plan area would require approximately 2,625 AFA from groundwater.

The Western Placer County Groundwater Storage Study recommended a sustainable yield for the Placer County portion of the North American River subbasin of 95,000 AFA. Historical groundwater use in Placer County by individual homes, farms and businesses is estimated to be about 90,000 AFA. However, due to the removal of agricultural land from production, changes in cropping patterns and irrigation techniques, and introduction of surface water supplies to serve urban development, it is currently estimated that groundwater use is in the range of 65,000 to 75,000 AFA in western Placer County (Maische, January 2006). According to the Western Placer County Groundwater Storage Study, groundwater produced in PCWA Zone 5 (western Placer County) was 77,000 AF in 1995.
While groundwater resources are used for current water supply in the Specific Plan area, that groundwater use will be gradually displaced by surface water as the area builds out. Approximately 2,400 AFA would be required to meet current agricultural needs within the Specific Plan area. This requirement will be eliminated as the area builds out. This will have a positive effect on the regional groundwater basin.

As urban development replaces historic groundwater-irrigated agriculture, there is an opportunity to develop groundwater for use in meeting urban domestic and irrigation demands without adversely affecting groundwater levels or long-term groundwater reliability. A backup groundwater supply to serve the Specific Plan area could be developed and maintained within the established sustainable yield of the groundwater basin with no adverse impact on supply. Therefore, this impact is considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.3-8 Any wells drilled on-site for purposes of a backup groundwater supply will have the potential to affect other wells in the area.

It may be necessary to drill wells on-site to provide the backup groundwater supply required by PCWA to serve development under the Specific Plan. Since agricultural and residential users in the Specific Plan area rely on wells, additional wells drilled on-site could result in localized dynamic drawdown impacts to groundwater levels in the immediate vicinity of the wells (cones of depression), thereby increasing pumping (energy) costs for existing wells and potentially leaving existing wells dry (lowering these wells is expensive). This impact is considered potentially significant.

Mitigation Measures

The following mitigation measures will reduce this impact to a less than significant level by imposing performance standards and applying measures designed to protect area wells. Additional site-specific environmental review may be required prior to the actual physical construction of new wells. Thus, members of the public will have additional opportunities to comment on the exact location and “footprint”-type impacts associated with such construction.

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

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

Any wells drilled on-site for purposes of a backup groundwater supply will have the potential to affect nearby surface water bodies and could affect associated riparian vegetation.

It may be necessary to drill wells on-site to provide the backup groundwater supply required by PCWA to serve development under the Specific Plan. Historically, as groundwater levels in the basin dropped, the rate of induced recharge from surrounding rivers increased. While this induced recharge can be of benefit to the groundwater basin, it can negatively impact surface water levels, thereby reducing surface water supplies and potentially drying out associated riparian vegetation. Because groundwater pumping would be within the safe yield of the groundwater basin, any potential effects would be localized in nature. This localized impact is considered potentially significant.

Mitigation Measure

The following mitigation measure will reduce this impact to a less than significant level:

Prior to installation of any municipal wells for purposes of a backup groundwater supply for development under the Specific Plan, the County, in consultation with PCWA and CDFG, shall determine the appropriate separation distances between wells and nearby surface water bodies. In no case shall these municipal wells be constructed within 800 feet of the Dry Creek riparian corridor, or any other on-site area where established riparian vegetation is observed.

Any wells drilled on-site for purposes of a backup groundwater supply will have the potential to cause noise impacts on nearby sensitive receptors.

It may be necessary to drill wells on-site to provide the backup groundwater supply required by PCWA to serve development under the Specific Plan. Although it is assumed that pumps would
be electrically driven, the pumps associated with these wells, which may be located adjacent to sensitive receptors (e.g., residences, day care facilities, hospitals and schools), could generate noise levels that may be intrusive or even in excess of allowable noise thresholds. This impact is considered potentially significant.

Mitigation Measure

The following mitigation measure will reduce this impact to a less than significant level by requiring compliance with established noise mitigation standards:

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

CUMULATIVE IMPACTS AND MITIGATION MEASURES (SURFACE WATER)

A surface water supply of 11,500 AFA will be required to meet the needs of the Specific Plan buildout. The entire 35,000 AFA of the PCWA CVP contract water was used for the project’s incremental contribution analysis. The full CVP contract amount of 35,000 AFA (long-term water supply) was evaluated based on the premise that this higher diversion amount provides a conservative representation of potential impacts associated with increased diversions from the Sacramento River to meet the proposed project needs.

The following analysis consists of two parts: (1) an analysis to determine the effect of the proposed Specific Plan surface water supply project in combination with all past, present, and reasonably foreseeable future projects (cumulative analysis) (this is the same as the American River Basin Cumulative Report [Cumulative Report] analysis that was prepared by Reclamation in September, 2002 as part of the PCWA Pump Station Project EIS/EIR.); and (2) if a significant cumulative impact was found, an analysis to determine the incremental contribution of the long-term water supply to the cumulative impact. If the modeling results indicated that potentially significant or significant impacts would occur under the full (35,000 AFA) long-term water supply, then further evaluation was performed to evaluate more closely the proposed Specific Plan long-term water supply project’s 11,500 AFA diversion potential to affect environmental resources.

The Cumulative Report evaluated the potential for increased future diversions and CVP operations to affect annual water deliveries to contractors within the SWP and CVP, and non-CVP purveyors that divert water from Folsom Reservoir and the lower American River. Under the cumulative condition assumptions, non-CVP American River water users would receive the same deliveries under both the existing and cumulative conditions. Therefore, no cumulative impact to non-CVP American River water users would result under the cumulative condition. SWP customers receive deliveries from the Feather River and the Delta. The cumulative modeling results indicated that reductions in delivery allocations to Feather River service area customers would not occur, relative to the existing condition. Thus, there would be no future
impacts to SWP customers in the Feather River service area. For CVP settlement and exchange contractors, the cumulative modeling results indicated that there would be no reduction in delivery allocations, relative to the existing condition, and thus, no impact to CVP settlement and exchange contractors. Implementation of the Reclamation actions evaluated in the Cumulative Report, however, would result in potentially-significant or significant-cumulative impacts to SWP Delta service area customers and CVP water service contractors. These impacts are summarized below and described fully in the Cumulative Report.

4.3.3-11 The Specific Plan surface water supply would contribute to a cumulative effect on CVP gross hydropower generation and gross capacity.

Changes in the future operations of CVP facilities would result in an estimated annual reduction in gross annual CVP hydropower generation of 357 GWh, or 7%, relative to the existing condition. For nearly every month of the 840 months modeled under the 70-year period of hydrologic record, the cumulative condition would result in reductions in gross CVP hydropower generation, relative to the existing condition, with maximum reductions of up to 319 GWh in individual months. While such decreases would not be expected to result in significant direct environmental impacts, they would be expected to result in significant economic impacts that would be passed on to CVP customers.

There would be significant reductions in gross CVP capacity under the future cumulative condition, relative to the existing condition. Gross CVP capacity would be reduced in nearly every month of the 840 months included in the analysis, with average monthly reductions ranging from 1% to 10% of existing capacity, and maximum reductions of up to 569 MW, relative to the existing condition. While such decreases in capacity, like hydropower generation, would not result in direct environmental impacts, they would result in direct economic impacts that would be passed on to CVP customers. Any environmental impacts that would result from decreases in capacity could be the product of the need to acquire power from another facility that is less environmentally sound.

Incremental Contribution of the Long-Term Surface Water Supply

The proposed long-term surface water supply would not contribute substantially to either monthly or annual reductions in CVP hydropower generation; the greatest monthly reduction (of the 840 months included in the analysis) would be 63 GWh (Technical Appendix H-505 to H-517). Average CVP hydropower generation would not decrease more than 2 GWh during any given month over the 70-year simulation under the proposed long-term water supply relative to the cumulative condition (Template Output H-10). However, any decrease in generation that could occur in individual months would result in increased costs that would be passed on to CVP customers. Thus, while the proposed long-term water supply would not result in significant reductions in long-term average gross CVP hydropower generation, decreases in individual months could result in significant cost impacts to CVP customers.

The proposed long-term surface water supply would result in a minor contribution to the economic impacts that would occur under the future cumulative condition. The long-term water supply would result in mean monthly increases in capacity of up to 64 MW in August and mean
monthly decreases up to 92 MW in October (5.9% and 6.8%, respectively), relative to the cumulative condition (Technical Appendix G-493 to G-504). Therefore, the proposed long-term water supply would have minor contributions to any decreases in capacity that would occur under the cumulative condition. Though the proposed long-term water supply would still result in direct cost impacts passed on to CVP customers, any impacts would not be of sufficient magnitude to be considered potentially significant. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively-considerable contribution to the impacts that occur under the cumulative condition. Thus, this environmental impact would be considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.3-12 The Specific Plan could contribute to a cumulative effect on Folsom and EID pumping energy requirements.

Increased diversions under the cumulative condition would result in lower water surface elevations in Folsom Reservoir. Consequently, more energy would be required to lift water up to the Folsom and EID pumping plants that divert from Folsom Reservoir. Increases in pumping energy requirements under the cumulative condition also result from the fact that far more water will be delivered by water purveyors through these pumps as compared to the amount delivered under the existing condition. The energy requirement under the cumulative condition would be more than doubled at the Folsom Pumping Plant and six times greater at the EID Pumping Plant (more than 8,000 MWh and 18,000 MWh annual increases, respectively), relative to the existing condition. This significant-cumulative economic impact would be passed on to water users who rely on pumping at Folsom Reservoir, but would not result in direct environmental impacts.

The future average energy requirement, under the proposed Specific Plan long-term surface water supply, would decrease by 15 MWh at the Folsom Pumping Plant and 1 MWh at the EID Pumping Plant, relative to the cumulative condition (Template Output H-12 to H13). This constitutes a long-term average benefit to the energy requirements at these two pumping plants. The water diversion would shift to another location, so the pumping at these two facilities would be reduced. Therefore, the proposed Specific Plan long-term water supply would not contribute to the total increase in pumping requirements that would occur under the cumulative condition. In individual months, however, there would be both increases and decreases in pumping energy requirements, under the cumulative condition. At Folsom Pumping Plant, the largest decrease under the proposed long-term water supply would be 172 MWh during July and the largest increase would be 204 MWh during September (Technical Appendix G-518 to G-529). At EID Pumping Plant, the largest decrease would be 13 MWh during July and the largest increase would be 16 MWh during September (Technical Appendix G-518 to G-541). Such infrequent increases could result in a slight contribution to cost impacts under the cumulative condition, though any effects would not be of sufficient frequency or magnitude to create a significant impact (Technical Appendix G-518 to G-541). These changes would not result in specific adverse environmental effects, because the use of thermal generation resources for replacement energy would be minimal due to the small magnitude of change in pumping energy requirements.
associated with the proposed Specific Plan initial surface water supply. It would be speculative, moreover, to predict where any such environmental effects (e.g., air pollution) would occur, as it would also be speculative to predict what energy sources might be employed to replace lost CVP hydropower generation. Therefore, the environmental impact is considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.3-I3 The Specific Plan long-term surface water supply could contribute to cumulative effects on deliveries to SWP customers.

Under the cumulative condition, reductions in deliveries to SWP customers would range from 5% to 45%, relative to the existing condition, in 45 of the 70 years modeled. Such reductions under the cumulative condition would occur with sufficient frequency and magnitude to constitute potentially significant cumulative impacts to water supply deliveries to SWP customers.

Incremental Contribution of the Long-Term Surface Water Supply

The proposed Specific Plan long-term water supply would not contribute, in either frequency or magnitude, to any anticipated future long-term SWP customer delivery reductions, as shown in Table 4.3-11 (Template Output H-42). In fact, in all 70 years simulated, SWP deliveries would be essentially equivalent under the proposed long-term water supply compared to the cumulative condition (Technical Appendix G-579).

<table>
<thead>
<tr>
<th>Table 4.3-11</th>
<th>Percent Water Supply Allocation to SWP Contractors Under Future No Project and Cumulative Conditions ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cumulative No Project</td>
</tr>
<tr>
<td>Average</td>
<td>74</td>
</tr>
<tr>
<td>Minimum</td>
<td>20</td>
</tr>
<tr>
<td>Maximum</td>
<td>100</td>
</tr>
</tbody>
</table>

¹ Based on the 70 years modeled

The SWP has only one reservoir north of the Delta, Lake Oroville, which is located on the Feather River. SWP has five other reservoirs, all located south of the Delta. The SWP has a combined total of approximately 5.3 MAF of the total. North of the Delta, the only SWP demands are those within the Feather River Service Area (FRSA). FRSA users are entitled to approximately 1.0 MAFA diversion from the Feather River. These deliveries can be reduced due to drought by no more than 50% in any one year, and no more than 100% in any series of seven consecutive years. DWR balances SWP’s many competing objectives in making water supply allocation decisions. When DWR makes water supply allocation decisions, only SWP water demands and system operations are evaluated. Even though the CVP and SWP is an integrated system, the CVP is not evaluated for SWP water supply allocation. The CVP is operated by
Reclamation; therefore, CVP water supply allocation decisions are made by Reclamation and do not include the SWP.

The proposed long-term surface water supply would not contribute, in either frequency or magnitude, to any anticipated future long-term SWP customer delivery reductions, and therefore, would have no cumulatively-considerable contribution to significant-cumulative impacts to deliveries to SWP customers. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it also would have no cumulatively-considerable contribution to the impacts that occur under the cumulative condition. The impact therefore would be considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.3-14 The Specific Plan long-term surface water supply could contribute to a cumulative effect on deliveries to CVP customers.

Under the cumulative condition, CVP water service contractors would experience significant reductions in deliveries, relative to the existing condition. CVP M&I contractors both north and south of the Delta would experience delivery reductions of 5% to 20%, relative to the existing condition, in 24 of the 70 years modeled. CVP agricultural contractors north of the Delta would experience reductions in deliveries of 5% to 25%, relative to the existing condition, in 42 of the 70 years modeled, and agricultural contractors south of the Delta would experience reductions of 5% to 20% in 35 of the 70 years modeled. Reductions to CVP customers both north and south of the Delta would occur with sufficient frequency and magnitude to be considered cumulatively significant impacts.

Incremental Contribution of the Long-Term Surface Water Supply

The proposed long-term water supply would not contribute, in either frequency or magnitude, to any reduction in delivery to any CVP contractor, either north or south of the Delta, as shown in Tables 4.3-12 through 4.3-15 (Template Output H-18, H-21, H-30, and H-33). In fact, in all 70 years simulated, CVP deliveries to M&I and agricultural contractors would be essentially equivalent under the cumulative condition without the project compared, to the proposed long-term water supply (Technical Appendix G-571 to G-572 and G-575 to G-576).

<p>| Table 4.3-12 |
| Percent Water Supply Allocation to CVP M&amp;I Contractors North of Delta Under Future No Project and Cumulative Conditions¹ |</p>
<table>
<thead>
<tr>
<th>Cumulative No Project</th>
<th>Cumulative (with PVSP)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>87</td>
<td>87</td>
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<tr>
<td>Minimum</td>
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<td>50</td>
</tr>
<tr>
<td>Maximum</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

¹Based on the 70 years modeled
The proposed long-term surface water supply would not contribute, in either frequency or magnitude, to any reduction in delivery to any CVP contractor, either north or south of the Delta; therefore, the Specific Plan would not have a cumulatively-considerable contribution to the significant impacts to CVP deliveries that would occur under the cumulative condition. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it would have no cumulatively-considerable contribution to the impacts that occur under the cumulative condition. This impact therefore would be considered *less than significant*.

Mitigation Measures

No mitigation measures are required.

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**Table 4.3-13**
Percent Water Supply Allocation to CVP Agriculture Contractors North of Delta Under Future No Project and Cumulative Conditions

<table>
<thead>
<tr>
<th></th>
<th>Cumulative No Project</th>
<th>Cumulative (with PVSP)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
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<tr>
<td>Minimum</td>
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<tr>
<td>Maximum</td>
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<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Based on the 70 years modeled

**Table 4.3-14**
Percent Water Supply Allocation to CVP M&I Contractors South of Delta Under Future No Project and Cumulative Conditions

<table>
<thead>
<tr>
<th></th>
<th>Cumulative No Project</th>
<th>Cumulative (with PVSP)</th>
<th>Difference</th>
</tr>
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<tbody>
<tr>
<td>Average</td>
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<td>0</td>
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<tr>
<td>Minimum</td>
<td>50</td>
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<td>0</td>
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<tr>
<td>Maximum</td>
<td>100</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Based on the 70 years modeled

**Table 4.3-15**
Percent Water Supply Allocation to CVP Agricultural Contractors South of Delta Under Future No Project and Cumulative Conditions

<table>
<thead>
<tr>
<th></th>
<th>Cumulative No Project</th>
<th>Cumulative (with Project)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>60</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Maximum</td>
<td>100</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Based on the 70 years modeled

CVP Water Service Contractors (agricultural and M&I Water Service Contractors both north and south of the Delta) entered into agreements with Reclamation for delivery of CVP water as a supplemental supply. Water availability for delivery to CVP Water Service Contractors during periods of insufficient supply is determined based on a combination of operational objectives, hydrologic conditions, and reservoir storage conditions. The water availability curtailments and the CVP system operations are further discussed in Impact 4.3.3-2.
4.3.3-15 Use of groundwater as a redundant water source in the Specific Plan area would have a cumulative impact on the North American River groundwater subbasin.

In the highest groundwater use scenario analyzed in the PCWA Integrated Water Resources Plan (Scenario 2b), which assumes cumulative development in PCWA’s service area, including the Placer Vineyards Specific Plan Blueprint Alternative, a groundwater supply of approximately 15,000 AFA would be necessary to meet dry year supply requirements.

Assuming worst case scenario (25% of average demand would be met by groundwater during an entire year), the Specific Plan area would require approximately 2,625 AFA from groundwater.

The Western Placer County Groundwater Storage Study recommended a sustainable yield for the Placer County portion of the North American River subbasin of 95,000 AFA. Historical groundwater use in Placer County by individual homes, farms and businesses is estimated to be about 90,000 AFA. However, due to the removal of agricultural land from production, changes in cropping patterns and irrigation techniques, and introduction of surface water supplies to serve urban development, it is currently estimated that groundwater use is in the range of 65,000 to 75,000 AFA in western Placer County (Maische, January 2006). According to the Western Placer County Groundwater Storage Study, groundwater produced in PCWA Zone 5 (western Placer County) was 77,000 total AF in 1995.

While groundwater resources are used for current water supply in the Specific Plan area, that groundwater use will be gradually displaced by surface water as the area builds out. Approximately 2,400 AFA would be required to meet current agricultural needs within the Specific Plan area. This requirement will be eliminated as the area builds out. This will have a positive effect on the regional groundwater basin.

The PCWA Integrated Water Resources Plan contains several conclusions regarding the cumulative water supply demand that are relevant to the Specific Plan cumulative contribution:

- There is adequate water supply to meet all of the demands for each of the growth scenarios.
- Groundwater supplies are not needed to meet normal climate year demands.
- Dry year water supplies must include groundwater to meet demands for Scenarios 2, 2b and 3.
- Reclaimed water supply is an important supply source, and is required to meet Scenario 2 demands.

Although the Specific Plan area’s incremental contribution to the cumulative condition is less that considerable based on cumulative demand and the safe yield of the groundwater basin (95,000 AFA), this conclusion assumes a significant amount of reclaimed (recycled) water will be available for use (i.e., 12,000 to 15,000 AFA). Impact statement 4.11.8-2 in Section 4.11.8 of this Revised Draft EIR discusses the potential for a significant amount of the wastewater from the Specific Plan area to be treated by the SRCSD, although this is not the preferred option.
this event, recycled water may not be available to the Specific Plan area, which could increase demand for groundwater in a dry year condition (Specific Plan area recycled water demand is estimated to be 1,560 AFA). Because of this uncertainty, this is a potentially significant-cumulative impact to which the project’s contribution could be cumulatively considerable (i.e., significant). It should be noted that if all wastewater is treated at the DCWWTP, which is the preferred option, this potential impact would not occur.

Mitigation Measure

No mitigation measures are available for the SRCSD option. No mitigation measures are necessary for the DCWWTP option.

4.3.4 WATER QUALITY

The project applicants have prepared a Master Project Drainage Study which is referenced herein and is available for review at the address identified in Section 2.9 in Chapter Two of this Revised Draft EIR. Impacts related to the proposed Master Project Drainage Study and the proposed on-site drainage system are also addressed in Section 4.11.8 of this Revised Draft EIR.

Stormwater quality is an important part of current development practices. Local, State and federal agencies are requiring the development of practical mitigation measures in response to the impacts of construction activities and ongoing project operations that discharge sediment and other undesirable elements to existing drainages. Federal and State policies require that stormwater Best Management Practices (BMPs) be included as a part of project development. The goal of BMPs is to reduce sediment and pollutants in stormwater runoff at their origin prior to the runoff discharging into drainage systems. Whereas BMPs traditionally have focused on the post-development process, the goal of Placer County is to integrate BMPs throughout the project development. This approach provides two benefits. First, stormwater management improvements are disbursed throughout the Specific Plan area and provide treatment to runoff before it enters the drainage collection systems. This helps maintain a higher quality of runoff discharge without needing large regional treatment basins. Second, by integrating the stormwater management elements throughout the Specific Plan area, each individual parcel can provide the stormwater management elements that best respond to the particular constraints of the individual site. This will promote the removal of the various constituents on each parcel prior to discharging into the drainage system.

ENVIRONMENTAL SETTING

LOCAL SETTING

Water quality within the Specific Plan area is affected by runoff from undeveloped land, agricultural uses and scattered residential areas. Because of low existing land use intensity, the primary water quality concern is related to organic contamination. Undeveloped land typically produces more suspended solids on a per-acre basis than developed areas, due to urban stabilization of the land by pavement and landscaping (solids in urban runoff, however, are more likely to be higher in mineral and human-made products and may have other contaminants
absorbed into them). For a complete description of the Specific Plan local and area surface hydrological setting, see Section 4.3.2.

**Groundwater Quality**

In 1988, Congress directed the U.S. Geological Survey (USGS) to study and report on the establishment of a national groundwater information clearinghouse that would disseminate information to all levels of government and interested organizations and individuals on groundwater issues, including groundwater and surface water relations. A prototype easy access system was developed that provides USGS users with easier and quicker access to the USGS Water Storage and Retrieval System (WATSTORE) and EPA Storage and Retrieval System (STORET). The Water Data Sources Directory has been modified for use with micro-computers and now includes more than two thousand water-related organizations.

WATSTORE records indicate thirteen groundwater wells within the vicinity of the Specific Plan area. Eight of the groundwater wells record water quality monitoring data summarized in Table 4.3-16. The data retrieved indicates known levels of contamination with respect to groundwater quality. Specifically, fluoride, boron, lead arsenic and cadmium were identified with levels higher than the maximum contaminant levels (MCLs) set forth in Title 22 of the California Code of Regulations for drinking water standards. Beyond regulated contaminants, levels of silica, sodium and calcium were found in the sample data. Groundwater wells, including those wells without water quality data are listed in Table 4.3-17 with location, depth and source.

Sampled data and USGS Site identifiers correlate as shown in Table 4.3-18.

STORET records indicate two groundwater stations within the Specific Plan area. No reported signs of contamination were indicated in the STORET records. Both groundwater stations are indicated along the northern boundary of the Specific Plan area, one near the northwest corner and the second near the center of the Specific Plan area (see Figure 4.5-3 in Section 4.5 of this Revised Draft EIR).

<table>
<thead>
<tr>
<th>Water Parameter</th>
<th>Units</th>
<th>Water Quality Standard</th>
<th>Sample #</th>
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<td>12345678</td>
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</tr>
<tr>
<td>St2</td>
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<table>
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<th>Sample #</th>
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<td>Ph</td>
<td>6.5-8.5</td>
<td>8.2 7.9 7.6 7.7 7.4 8 7.5 7.5 7.7 7.7</td>
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<tr>
<td>Conductivity</td>
<td>us/cm</td>
<td>1600</td>
<td>272 305 464 239 247 303 241 288 307 458</td>
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<tr>
<td>Chloride</td>
<td>mg/L</td>
<td>250</td>
<td>19 22 1.5 20 20 23 26 27 28 33</td>
</tr>
<tr>
<td>Sulfate</td>
<td>mg/L</td>
<td>250</td>
<td>&lt;5 2.5 30 &lt;5 5.1 5.2 4.3</td>
</tr>
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<td>Fluoride</td>
<td>mg/L</td>
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<td>0.2 4.9 0.3 0.1</td>
</tr>
<tr>
<td>Arsenic</td>
<td>mg/L</td>
<td>0.05</td>
<td>0.1 0.42 0.07 0.22</td>
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<tr>
<td>Boron</td>
<td>mg/L</td>
<td>1</td>
<td>1.90 1.00 1.10 2.10 3.90 1.70 1.80</td>
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<tr>
<td>Iron</td>
<td>mg/L</td>
<td>0.3</td>
<td>0.04 1.05 &lt;0.03 0.40</td>
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<tr>
<td>Manganese</td>
<td>mg/L</td>
<td>20</td>
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<td>Aluminum</td>
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<td>&lt;0.1 0.10 0.20</td>
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<td>Nitrate</td>
<td>mg/L</td>
<td>0.45</td>
<td>0.10 0.07 0.06 0.04</td>
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Table 4.3-16
Placer Vineyards Specific Plan Area
Water Quality Results – USGS WATSTORE Database

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<tr>
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<th>Units</th>
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<th>St2</th>
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<tbody>
<tr>
<td>Lead</td>
<td>mg/L</td>
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<td></td>
<td></td>
<td></td>
<td>0.07</td>
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<tr>
<td>Cadmium</td>
<td>mg/L</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>0.02</td>
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</tr>
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1 Water quality standards are based on primary and secondary drinking water standards found in Title 22 of the California Code of Regulations and in the RWQCB’s stormwater pollutant benchmarks. Values are maximum values with the exception of pH, which is a range of acceptable values.

us/cm = microseimens
mg/l = milligrams per liter
mdl = method detection limit
ND = not detected at or above mdl
NA = not applicable – no numerical standard
Source: USGS WATSTORE Database.

Table 4.3-17
Placer Vineyards Specific Plan Area – WATSTORE Groundwater Wells

<table>
<thead>
<tr>
<th>Agency</th>
<th>State Well Number</th>
<th>Sample #</th>
<th>Latitude</th>
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<th>Altitude</th>
<th>Well depth</th>
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<td>38°43'56&quot;</td>
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<tr>
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<td>63</td>
<td>400</td>
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Source: USGS WATSTORE Database.

Table 4.3-18
USGS Site Identifiers

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<td>384454121285701</td>
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### Table 4.3-18
USGS Site Identifiers

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<td>7</td>
</tr>
<tr>
<td>384529121293701</td>
<td>8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>STORET Identifier</th>
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<tr>
<td>10N/05E-04Q01 M</td>
<td>St1</td>
</tr>
<tr>
<td>10N/05E-06M02 M</td>
<td>St2</td>
</tr>
</tbody>
</table>

The groundwater subbasin generally contains high quality water, although iron, manganese, and arsenic are more prevalent on the west side of the basin. Comparison of groundwater quality data with applicable water quality standards and guidelines for drinking and irrigation indicate elevated levels of TDS/specific conductance, chloride, sodium, bicarbonate, boron, fluoride, nitrate, iron manganese, and arsenic may be of concern in some locations within the subbasin (DWR, 1997). There are three sites within the subbasin with significant groundwater contamination issues: the former McClellan AFB (McClellan Park), Union Pacific Roseville Rail Yard, and the Aerojet Superfund Site in Rancho Cordova.

For the McClellan Park (approximately four miles south of the Specific Plan area) groundwater contaminant plume in northern Sacramento County (Figure 4.3-10), the primary contaminants of concern are trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethylene (DCE), and 1,2-dichloroethane (DCA) (URS, 2003). Active cleanup of solvents in soil and groundwater has been continuing since first started in the mid 1980s. The removal and disposal of some contaminated soil and underground tanks, the capping of the northwestern area of the base, and the installation and operation of a groundwater extraction system and 14 soil vapor extraction systems have reduced the potential for exposure to contaminants at the site. Two Records of Decision (RODs) that address volatile organic compounds in groundwater and subsurface soil were planned for 2005. Seven RODs planned for 2005 through 2010 will address surface soils, landfills, structures, and ecological areas of concern. An additional groundwater ROD to address non-VOC contaminants will likely follow a non-VOC groundwater remedial investigation. A final basewide ROD to address any additional types of contamination will be considered at the time of the Ecological Sites ROD in 2010.

**Dry Creek Wastewater Treatment Plant (DCWWTP)**

Based on the results of an analysis prepared by RMC Water and Environment (Appendix R), sufficient capacity to serve the Specific Plan area could be developed at the DCWWTP. In this case, the project would direct all of its wastewater to the DCWWTP. The conveyance to deliver wastewater to the DCWWTP would include construction of a gravity system delivering wastewater to the western end of the Specific Plan area, a lift station, and two 16 - 20 inch diameter force mains to pump wastewater easterly to the DCWWTP.

Merritt Smith Consulting has evaluated future anticipated compliance with water quality regulations in Dry Creek, and to assess the future cumulative impacts to water quality and aquatic biological resources in Dry Creek due to the prospect of treating and discharging greater amounts of wastewater from the DCWWTP (see Appendix Q). The technical memorandum
acknowledges the assessments of future cumulative conditions included in previous EIRs, which address wastewater flows from within the current DCWWTP service area, and determines whether discharge of additional treated flows from proposed projects (including a significant portion of the Specific Plan) that are outside the current service area would result in any new significant-cumulative impacts, not previously identified, or that would be more severe than those previously identified.

The assessment of water quality impacts described in the technical memorandum is intended to contribute to a common basis for the cumulative impacts discussion of the project-specific CEQA documentation being prepared for proposed projects. The areas considered in the assessment include:

- Placer Vineyards,
- Placer County Sewer Maintenance District No. 3,
- Areas in the South Placer Municipal Utility District not currently within the service area boundary (i.e., flows for which discharge impacts have not already been addressed in a CEQA document),
- Placer Ranch,
- Curry Creek Community Plan,
- Regional University,
- Orchard Creek, and
- Sierra Vista and Creekview Specific Plan areas (formerly called West Roseville remainder area).

The cumulative assessment builds upon the cumulative assessments included in the City of Roseville’s 1996 Master Plan EIR and West Roseville Specific Plan EIR. Information used for assessment of DCWWTP water quality impacts in this Revised Draft EIR under IMPACTS AND MITIGATION MEASURES below is excerpted from the technical memorandum.

**SURFACE WATER SUPPLY SETTING**

This Revised Draft EIR addresses the surface water supplies for the Specific Plan; both the initial surface water supply from the American River and a long-term surface water supply from the Sacramento River. Although much of the following water supply analysis may not apply specifically to the development of the Specific Plan area, at the request of PCWA and in order to ensure a full evaluation of water supply issues and off-site impacts, this Revised Draft EIR addresses the regional and area-wide effects associated with obtaining the water supplies necessary to serve the Specific Plan area.

With regard to the initial surface water supply, the environmental settings contained in the PCWA American River Pump Station Project EIS/EIR related to water quality are incorporated by reference in their entirety (PCWA and Reclamation, 2001). The discussions of the various setting components contained in this section are, for the most part, taken directly from that document.
This section describes the existing water quality conditions within the regional and localized study areas, and presents an analysis of potential effects to these resources due to implementation of the proposed Specific Plan and its water supply.

A separate impact analysis was done for the initial surface water supply from the American River system, compared to the existing condition. This Revised Draft EIR modeling assumed that the initial supplies would be immediately required. For analytical purposes, this means that the results of the proposed Specific Plan initial water supply evaluation (using the 6,000 AFA) under existing conditions were conservative (i.e., tended to overemphasize any real present day effects).

A second impact analysis was done for the cumulative effects, as well as the incremental contribution of the proposed Specific Plan long-term water supply of 11,500 AFA required to meet the needs of the Specific Plan buildout (for a further description of the cumulative analysis, see Section 4.3.3). This 11,500 AFA is part of the PCWA’s pending amendatory CVP contract with Reclamation for 35,000 AFA. This water would be diverted from the Sacramento River. The entire 35,000 AFA of the PCWA CVP contract water was used for the project’s incremental contribution analysis.

**Regional Setting**

- **Sacramento River.** The Sacramento River system drains a 26,146-square-mile basin that extends from the Sierra Nevada to the Coast Ranges. The RWQCB has defined the following existing and potential beneficial uses for the Sacramento River (RWQCB, 1994):
  - municipal and domestic water supply;
  - industrial service and industrial process supply;
  - irrigation and stock watering;
  - power generation;
  - groundwater recharge;
  - contact recreation, non-contact recreation, and canoeing/rafting;
  - warm and cold freshwater habitat, warm and cold freshwater migration and spawning habitat, wildlife habitat; and
  - navigation.

Several of these beneficial uses (e.g., municipal, industrial and agricultural supply, recreation, groundwater recharge, and fish and wildlife habitat) depend, in part, on maintaining existing water quality. A discussion of each of these beneficial uses is provided below because of their relevance to the discussion of impacts that follows.

- **Municipal, Industrial, and Agricultural Uses.** Water is diverted from the Sacramento River for use in municipal systems. Industrial uses of water diverted from the river include mining, plant cooling, hydraulic conveyance, gravel washing, fire protection and oil well repressurization. In addition, extensive use is made of Sacramento River waters for agricultural purposes. Agricultural uses include irrigation of crops, orchards, and
pastures; stock watering; support of vegetation for range grazing; and ranching- and farming-support operations.

- **Recreation.** Recreational uses of the Sacramento River include swimming, sport fishing, rafting, boating/canoeing and related activities that involve direct water contact and the possibility of water ingestion. Non-contact recreational uses include picnicking, hiking, camping, hunting, education, and aesthetic enjoyment.

- **Groundwater Recharge.** Sacramento River flows serve to recharge, in part, the groundwater aquifers within the Specific Plan area. Groundwater recharge maintains soil column salt balance, to prevent saltwater intrusion into freshwater aquifers, and provides for future groundwater extraction to support other beneficial uses.

- **Maintenance of Fish and Wildlife Habitat.** The Sacramento River provides important aquatic habitats that support a wide variety of aquatic and terrestrial wildlife populations. These habitats provide migration, spawning, and rearing areas for anadromous and other migratory fish species, as well as numerous resident fishes. In general, the anadromous salmonid species using the river (e.g., steelhead and Chinook salmon) have the most restrictive water quality requirements. The water quality parameter most likely to adversely affect anadromous salmonids annually is water temperature.

- **Existing Water Quality.** Sacramento River water quality monitoring studies indicate that the river's water is generally of high quality (Larry Walker Associates, 1991, 1996; Brown and Caldwell *et al.*, 1995; Larry Walker Associates and Brown and Caldwell, 1995). Sacramento River water quality is primarily affected by land use practices within the watershed and associated urban runoff, stormwater discharges, agricultural runoff, effluent discharge from wastewater treatment plants, and acid mine drainage. The lower Sacramento River receives urban runoff, either directly or indirectly (through tributary inflow), from the cities of Sacramento, Roseville, Folsom, and their surrounding communities (City of Sacramento, 1993). The Natomas East Main Drainage Canal discharges to the Sacramento River immediately upstream of the confluence with the American River. This canal transfers both agricultural discharges and urban runoff into the Sacramento River.

Past monitoring studies have occasionally shown certain priority pollutants (e.g., trace metals, pesticides) to be at concentrations above State water quality objectives in portions of the Sacramento River (City of Sacramento and City of West Sacramento, 1995). Despite the seasonal variability of many constituents, a recent study revealed that monitored water quality parameters in the vicinity of Freeport (immediately upstream of the SWRTP point of discharge) typically met water quality objectives specified in the former Inland Surface Waters Plan (described below), except for some metals (SWRCB, 1994). The principal source of trace metal loading to the Sacramento River is believed to be the Iron Mountain Mine complex, which discharges to the Sacramento River via Spring Creek and Keswick Reservoir. This complex is thought to contribute approximately one-half of the metals loadings attributable to mine drainage.
Ongoing water quality management initiatives (e.g., Sacramento River Coordinated Monitoring Program, Sacramento River Watershed Program, Cal EPA Department of Pesticide Regulation’s Rice Pesticides Program) are helping to reduce the frequency with which water quality objectives are exceeded. In terms of the river’s quality as a raw municipal water source, total dissolved solids (TDS), total organic carbon (TOC), and pathogen levels are of particular concern, but are currently at acceptable regulatory levels. TDS is of concern primarily because of its effects on water treatment costs. TOC is of concern because of its role in the formation of carcinogenic disinfection by-products (e.g., trihalomethanes) during the chlorination process of treatment. Pathogens (e.g., Cryptosporidium and Giardia) also are of concern with regard to their potential to affect human health. Since Sacramento River water is diverted for municipal and industrial uses, and because Sacramento River flows constitute the bulk of freshwater inflows to the Delta where municipal and industrial diversions also occur, additional discussion of these important water quality parameters is provided below.

Salinity, often measured in terms of TDS, is relatively low in the Sacramento River (on the order of hundreds of mg/l, whereas the TDS concentration of seawater is approximately 35,000 mg/l or 35 ppt). However, salinity does vary somewhat seasonally and among years, depending on flow levels (San Francisco Estuary Project [SFEP], 1992). TDS concentrations measured at the West Sacramento Intake on the Sacramento River between April 19, 1994 and May 1, 1996 revealed a mean concentration of 92 mg/l. TDS concentrations measured at Greene’s Landing (located downstream of the SRWTP) averaged 102 mg/l during the period of March 13, 1986 to November 9, 1995 (DWR data as transmitted by R. Woodard, 1996). High TDS concentrations can result in increased municipal water treatment costs. When reaching sufficiently high levels (i.e., many hundreds to thousands of mg/l), productivity of crops and habitat quality for freshwater aquatic life can be reduced (DWR, 1994).

Organic carbon and bromide in waters serving municipal uses are of concern because they can react with disinfectants during the water treatment process to form trihalomethanes (THM), which pose carcinogenic risks to humans. Between December, 1992 and July, 1996, mean TOC concentrations at Freeport were determined to be 2.2 mg/l, with a maximum measured concentration of 6.8 mg/l (Larry Walker Associates, 1996). Dissolved organic carbon (DOC) for Sacramento River at Greene’s Landing for the period 1990 to 1993 ranged from 1.4 to 5.7 mg/l (Brown and Caldwell et al., 1995). The vast majority of the organic carbon in this system tends to be in the dissolved form, and thus, TOC and DOC values are generally similar.

Agricultural drainage of constituents of concern include nutrients, pesticides/herbicides, suspended and dissolved solids and organic carbon (City of Sacramento, 1993). In the 1980s, rice pesticides were responsible for fish kills in agricultural drains and also for taste and odor problems in the water treated at the SRWTP. The major fish kills in the Colusa Basin Drain have since been eliminated as a result of the multi-agency rice pesticide control program (City of Sacramento and City of West Sacramento, 1995).
The concern over *Giardia* and *Cryptosporidium* concentrations in Sacramento River water, as well as other pathogens, has increased in recent years. The most comprehensive study of these pathogens conducted to date was performed by the Metropolitan Water District of Southern California (MWD, 1993), which monitored concentrations of both *Giardia* and *Cryptosporidium* at four geographic locations (Greene’s Landing, Banks Pumping Plant, the Delta Mendota Canal, and the California Aqueduct Checkpoint 29) for one calendar year. Findings from this study showed that quantification of *Giardia* and *Cryptosporidium* is currently subject to poor recovery and reproducibility, resulting in highly variable detection limits for both pathogens. Therefore, the results from this study should be regarded as qualitative and should not be interpreted to represent definitive concentrations of these pathogens in the waterbodies monitored. Nevertheless, spatial differences in the relative abundance of these pathogens in the Sacramento River and Delta, as well as their prevalence relative to other surface waters of the United States, can be approximated from this study. Concentrations of the pathogens *Giardia* and *Cryptosporidium* are measured in cysts (the dormant state) or oocysts (fertilized egg form) per one hundred liters of water.

Results reported by MWD (1993) indicated that *Giardia* and *Cryptosporidium* were detected in 42% and 50%, respectively, of the Greene’s Landing samples. In the positive samples, the mean concentration of *Giardia* cysts was 37 per 100 liters, with a range of 8 to 82 per 100 liters. However, it should be noted that the mean detection limit for *Giardia* was 38 cysts per 100 liters, with a range of 8 to 125 per 100 liters. The mean concentration of *Cryptosporidium* oocysts at this Sacramento River site was 50 per 100 liters, with a range of 5 to 132 per 100 liters, with the mean detection limit for this pathogen reported as 46 oocysts per 100 liters, with a range of 8 to 125 per 100 liters). It should be noted that the above results do not provide information regarding the viability of these organisms or the human risk of infection associated with the observed levels.

- **Sacramento-San Joaquin Delta.** The Delta is a network of interconnected waterways covering approximately 1,500 square miles. Beneficial uses of the Delta are the same as those of the Sacramento River, except that the Delta cannot be used for power generation, rafting, or cold freshwater spawning habitat, due to its physical characteristics.

Water quality in the Delta is heavily influenced by a combination of environmental and institutional variables, including upstream pollutant loading, water diversions within and upstream of the Delta, and agricultural and other land use activities throughout the watershed. Critical Delta water quality parameters (e.g., salinity and/or TDS, TOC, bromide, pathogens, temperature, nutrients, and priority pollutants) can show considerable geographic and seasonal variation. Salinity, bromide concentrations, and temperature are strongly related to changes in Delta inflows (SFEP, 1992).

The extent of saltwater intrusion into the Delta from the Pacific Ocean is largely controlled by freshwater inflow from the Sacramento, San Joaquin, Mokelumne, Calaveras, and Cosumnes rivers. Water development facilities upstream and within the Delta can reduce Delta inflows, resulting in higher salinity levels at specific locations within the Delta than might otherwise occur. Conversely, water development facilities can augment Delta inflows in certain months, resulting in salinity levels lower than would otherwise occur. By
augmenting natural or historic flows via releases from upstream reservoirs, existing water development facilities have eliminated the severe salinity level intrusions that once occurred every summer, which sometimes moved upstream as far as the city of Sacramento on the Sacramento River, and as far as Stockton on the San Joaquin River.

An additional source of salt or TDS to the Delta is upstream agricultural discharges to the Sacramento and San Joaquin rivers, which can sometimes create elevated salinity levels in portions of the south Delta. Runoff and treated wastewater, to a limited degree, also influence Delta TDS levels (Brown and Caldwell et al., 1995). TDS concentrations at the Banks Pumping Plant for the period 1990 to 1993 ranged from 44 to 417 mg/l, with an annual average of approximately 300 mg/l (Brown and Caldwell et al., 1995). Salinity requirements, represented in electrical conductivity (EC) units, for the Delta are defined in Table 4.3-19. These standards are intended to protect various beneficial uses of Delta waters.

Table 4.3-19
Sacramento-San Joaquin Delta Water Quality Control Plan Standards for Delta Inflow and Outflow

<table>
<thead>
<tr>
<th>Location</th>
<th>Parameter</th>
<th>Standard</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Contra Costa Canal at Pumping Plant #1</td>
<td>Chloride (Cl-)</td>
<td>240 days</td>
<td>Maximum mean daily 150 mg/l Cl- for at least the number of days shown during the calendar year</td>
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<tr>
<td>Contra Costa Canal at Pumping Plant #1</td>
<td>Chloride (Cl-)</td>
<td>250 mg/l</td>
<td>Maximum mean daily (mg/l)</td>
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<tr>
<td>Sacramento River at Emmatton</td>
<td>Electrical Conductivity (EC)</td>
<td>0.45 EC</td>
<td>Maximum 14-day running average of mean daily EC (µmhos/cm) Apr 1 through Aug 15</td>
</tr>
<tr>
<td>West Canal at mouth of Clifton Court Forebay and Delta Mendota Canal at Tracy Pumping Plant</td>
<td>Electrical Conductivity (EC)</td>
<td>1.00 EC</td>
<td>Maximum monthly average of mean daily EC (µmhos/cm)</td>
</tr>
<tr>
<td>Sacramento River at Collinsville</td>
<td>Electrical Conductivity (EC)</td>
<td>8.00 EC</td>
<td>Maximum monthly average of both daily high tide EC values (µmhos/cm)</td>
</tr>
<tr>
<td>Sacramento River at Rio Vista</td>
<td>Flow Rate</td>
<td>4,500 cfs</td>
<td>Minimum monthly average flow rate (cfs)</td>
</tr>
<tr>
<td>Delta Outflow</td>
<td>Net Delta Outflow Index</td>
<td>8,000 cfs</td>
<td>Minimum Monthly average (cfs)</td>
</tr>
</tbody>
</table>

1 Number of days per year is dependent on water year type. Wet ♠ 240 days; Above Normal ♠ 190 days; Below Normal ♠ 175 days; Dry ♠ 165 days; Critical ♠ 155 days.
2 EC standard is relaxed before August 15 depending on water year type. Wet ♠ no relaxation; Above Normal ♠ on July 1 relaxed to 0.63; Below Normal ♠ on June 20 relaxed to 1.14; Dry ♠ on June 15 relaxed to 1.67; Critical ♠ on April 1 relaxed to 2.78
3 EC standard varies by month. October ♠ 19.0; November-December ♠ 15.5; January ♠ 12.5; February-March ♠ 8.0; April-May ♠ 11.0
4 Flow rate varies by month and water year type. September ♠ all year types = 3,000 cfs; October ♠ Wet, Above Normal, Below Normal & Dry year types = 4,000 cfs; October ♠ Critical year type = 3,000 cfs; November & December ♠ Wet, Above Normal, Below Normal & Dry year types = 4,500 cfs; November & December ♠ Critical year type = 3,500 cfs
5 Index varies by month and water year type. January ♠ all year types = 4,500 cfs or 6,000 cfs depending on Eight River Index; February through June ♠ all year types = variable between 7,100 cfs and 4,000 cfs depending on Eight River Index; July ♠ Wet & Above Normal year types = 8,000 cfs; July ♠ Below Normal year type = 6,500 cfs; July ♠ Dry year type = 5,000 cfs; July ♠ Critical year type = 4,000 cfs; August ♠ Wet, Above Normal & Below Normal year types = 4,000 cfs; August ♠ Critical year type = 3,000 cfs; September ♠ all year types = 3,000 cfs; October ♠ Wet, Above Normal, Below Normal & Dry year types = 4,000 cfs; October ♠ Critical year type = 3,000 cfs; November & December ♠ Wet, Above Normal, Below Normal & Dry year types = 4,500 cfs; November & December ♠ Critical year type = 3,500 cfs
Delta waters receive organic carbon materials from a variety of sources, including agricultural drainage, surface runoff, algal productivity, in-channel soils, levee materials, riparian vegetation and wastewater discharges (DWR, 1991). The principal source of organic carbon loading to Delta waters comes from natural runoff from soils and agricultural return flows within the Delta. TOC concentrations for the Banks Pumping Plant during 1990 to 1993 ranged from 2.6 to 10.5 mg/l, approximately double that at Greene’s Landing. Recent work has shown an average increase in TOC concentrations of 1.5 mg/l between Greene’s Landing and the Banks Pumping Plant, which could be largely attributed to agricultural drainage (Brown and Caldwell et al., 1995).

Nutrients in the Delta (nitrogen, phosphate, and silicate) are derived from several sources including river inflow, ocean water, runoff, wetlands, atmospheric fallout (rain and dust), and upstream sewage treatment plants. Nutrient concentrations vary seasonally. In the northern reach, where river flow provides most of the nutrient load, nutrient concentrations are highest in winter and lowest in summer (SFEP, 1992). Nutrients lead to algal blooms that can deplete oxygen in the water during decomposition.

Metals, pesticides and petroleum hydrocarbons enter the Delta through several avenues, including agricultural runoff, municipal and industrial wastewater discharge, urban runoff, recreational uses, river inflow, and atmospheric deposition (SFEP, 1992). The concentrations of these pollutants in the Delta vary both geographically and seasonally. Pesticides from agricultural runoff are of particular concern, as biologically significant concentrations have been recorded in portions of the Delta (SFEP, 1992). Toxic effects of priority pollutants to aquatic life can vary with flow levels, as water flowing into and through the Delta acts to dilute concentrations of priority pollutants.

Finally, levels of *Cryptosporidium*, *Giardia*, and other pathogens in Delta waters are becoming of increasing concern to municipal water suppliers. *Giardia* was not detected at Banks Pumping Plant or Checkpoint 29, but was found in one sample at the Delta Mendota Canal at a concentration of 6 cysts per 100 liters. *Cryptosporidium* was detected at Banks Pumping Plant, the Delta Mendota Canal, and Checkpoint 29 at mean concentrations of 54, 40, and 17 oocysts per 100 liters, respectively (MWD, 1993).

**Area Setting**

Surface water quality in Folsom Reservoir, Lake Natoma, and the lower American River depends primarily on the mass balance of various water quality constituents from a variety of sources including groundwater inputs, tributary inflow, permitted discharges from municipal and industrial sources, direct watershed runoff, urban runoff, and stormwater discharges. Resultant
water quality varies somewhat among years and seasonally within a year based primarily on
these and other related factors.

- **Folsom Reservoir and Lake Natoma.** Folsom Reservoir is formed by Folsom Dam, which is
  located approximately 30 miles upstream from the American River's confluence with the
  Sacramento River. Folsom Reservoir has a storage capacity of approximately 975,000 AF.
  Reclamation operates Folsom Dam and Reservoir for the purposes of flood control, meeting
  water contract obligations, providing adequate instream flows in the lower American River
  for recreation and fisheries resources, and as a means of meeting Delta water quality
  standards.

  Folsom Reservoir and Lake Natoma have numerous beneficial uses. State law defines
  beneficial uses of California’s waters as uses that may be protected against quality
  degradation. Such beneficial uses include, but are not limited to, domestic, municipal,
  agricultural and industrial supply, power generation, recreation, aesthetic enjoyment,
  navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources or
  preserves (Water Code Section 13050(f)). The following existing and potential beneficial
  uses have been defined by the Central Valley Regional Water Quality Control Board
  (CVRWQCB) for these waterbodies (RWQCB, 1994):

  - municipal, domestic, and industrial water supply;
  - irrigation;
  - power;
  - water contact and non-contact recreation;
  - warm and cold freshwater habitat, warm freshwater spawning habitat; and
  - wildlife habitat.

  Water quality in Folsom Reservoir and Lake Natoma is generally acceptable for the
  beneficial uses currently defined for these waterbodies. However, taste and odor problems
  have periodically occurred in municipal water supplies diverted from Folsom Reservoir in the
  past, which were attributed to blue-green algal blooms that occasionally occur in the reservoir
  as a result of elevated water temperatures.

- **Lower American River.** The lower American River encompasses the 23-mile reach of river
  between Nimbus Dam and the river’s confluence with the Sacramento River. Beneficial uses
  of the lower American River include all of those listed for Folsom Reservoir and Lake
  Natoma as well as recreational canoeing and rafting, warm and cold fish migration habitat,
  and cold spawning habitat (RWQCB, 1994).

  Historically, water quality parameters for the lower American River have typically been well
  within acceptable limits to achieve water quality objectives and beneficial uses identified for
  this waterbody (SWRCB, 1992), and remain so today. Principal water quality parameters of
  concern for the river (e.g., pathogens, nutrients, total dissolved solids [TDS], total organic
  carbon [TOC], priority pollutants, and turbidity) are primarily affected by urban land use
  practices and associated runoff and stormwater discharges. The stormwater discharges to the
  river temporarily elevate levels of turbidity and pathogens during and immediately after
storm events. TOC and TDS levels in the lower American River are relatively low compared to Sacramento River and Delta waters, and thus are generally not of substantial concern.

Although urban land use practices, urban runoff and stormwater discharges all contribute priority pollutants to the river, recent monitoring has not identified any priority pollutant at concentrations consistently above State water quality objectives (City of Sacramento, 1993). However, water quality objectives for dissolved oxygen, temperature, and pH are not always met in the lower American River (Sacramento County, 1992). Finally, taste and odor problems occasionally arise (generally during the late summer months) in the domestic water supplies taken from the lower American River at the Fairbairn WTP.

Water released from Folsom Reservoir, through Lake Natoma, and into the lower American River affects numerous water quality parameters in the river. In addition, operation of Folsom Dam and Reservoir directly affects lower American River temperatures throughout much of the year. Water temperatures in the lower American River are often unfavorably high for salmonids during the summer and fall months of the year. Elevated river temperatures can be particularly problematic to the river's salmonid resources under low-flow conditions, which occur during the drier years.

**MASTER PROJECT DRAINAGE STUDY**

The *Master Project Drainage Study* provides the following with regard to protection of water quality:

The on-site project drainage would be designed to provide water quality treatment of runoff from paved and other developed areas prior to release into the swales and streams. This treatment will consist of the following:

1. Directing some of the flow to sheet discharge onto grassy areas or open space.

2. The installation of “Fossil Filter” or equivalent petroleum absorbing insert assemblies in the project drop inlets.

3. The placement of water quality interceptor devices.

4. The placement of water quality sediment basins within detention facilities and channels.

5. Use of rock-lined ditches below pipe outlets.

Other best management practices will involve prompt re-vegetation of disturbed areas.

Regional proposed project Stormwater Quality facilities are shown on Figure IVA1 (EIR Figure 4.3-11). Preliminary sizing for the basins shown are presented in Table IVA1 (EIR Table 4.3-16). Sizing of these facilities is based on the
methodologies outlined in the ‘BMP Sizing Recommendations – Technical Subcommittee of the PRSCG – Placer Regional Stormwater Coordination Group,’ dated 7/23/04., dated May 25, 2005. The sizing outlined in Table IVA1 (EIR Table 4.3-20) also assumes that no other inner basin treatment or BMPs are proposed which would reduce the size of the regional facilities. However, some of the BMPs typically implemented on projects like this may reduce the size of the regional facilities, by treating a portion of the flows upstream of the proposed regional basin or structural BMP locations.

<table>
<thead>
<tr>
<th>Table 4.3-20</th>
<th>Preliminary Regional Stormwater Quality Basin Sizing</th>
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## Table 4.3-20

### Preliminary Regional Stormwater Quality Basin Sizing

<table>
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<tr>
<th>Water Quality Basin ID</th>
<th>Shed ID</th>
<th>Total Area (ac)</th>
<th>% DCIA</th>
<th>Composite C</th>
<th>UBSV (cu ft/ac)</th>
<th>Detention Volume</th>
<th>5% Reserve</th>
<th>Total Volume (cu ft)</th>
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Preliminary Regional Stormwater Quality Basin Sizing

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Source: Civil Solutions, 2006

**PROPOSED WATER QUALITY-RELATED GOALS AND POLICIES**

The following goals and policies related to water quality are contained in the proposed Specific Plan.

Goal 4.8 Reduce water quality impacts within the Plan Area to the maximum extent practicable.

Goal 4.9 Site-specific development projects should incorporate low-impact development design principles into the site layout.

Policy 4.24 Stormwater Quality Improvements. Stormwater management improvements disbursed through the Plan Area provide treatment to runoff before it enters the natural drainage conveyance systems in open space areas. In addition, by integrating the stormwater management system throughout the Plan Area, individual parcels can provide specific stormwater management elements that respond to the particular site conditions. This will promote the removal of various potential pollutants from each parcel before they are discharged into the drainage system. The following standards will apply to development projects.
1. During construction, BMPs shall be provided to stabilize soils in place and minimize the amount of sediment entering the storm drain system and drainage ways. BMPs shall generally consist of a combination of the following measures: Minimizing soil disturbance, hydroteeeding, fiber rolls, inlet protection, stabilized construction access, etc.

2. After construction, regional water quality facilities identified in the Master Project Drainage Report shall be constructed concurrently with the backbone drainage infrastructure for permanent water quality treatment.

3. Development projects shall provide site-specific postconstruction water quality treatment facilities on-site to capture and remove the pollutants before they are discharged from the site. Water quality treatment facilities shall generally consist of a combination of the following measures: Vegetated swales, infiltration trenches/basins, filter strips, sand/oil separators, trench drains, porous pavement, etc.

Policy 4.25 Low-Impact Development Design. Site-specific development projects shall incorporate low-impact development design strategies that may include:

1. Minimizing and reducing impervious surfaces of site development, i.e., roadways, sidewalks, driveways, parking areas, and rooftops

2. Breaking up large areas of impervious surface and directing flows from these areas to stabilized vegetated areas

3. Conserving natural resources and ecosystems by minimizing the impacts of development on sensitive site features, such as streams, floodplains, wetlands, woodlands, and significant on-site vegetation.

4. Maintaining natural drainage courses

5. Providing runoff storage dispersed uniformly throughout the site through the use of a variety of detention, retention, and runoff techniques that may include:
   a. Bioretention facilities and swales (shallow vegetated depressions engineered to collect, store and infiltrate runoff)
   b. Filter strips (grass or other close-growing vegetation planted between polluting sources and downstream receiving water bodies)
   c. Dry wells and infiltration trenches (excavated trenches filled with stone to control rooftop runoff and allow slow release back into the soil)
Goal 4.10 Conserve and preserve water quality within the Placer Vineyards Plan Area.

Policy 4.26 Site grading will be undertaken and controlled so that sediment runoff is minimized. In locations approved by the County detention basins may be located in open space areas so as to minimize increases in peak flows from the site. The basins may facilitate groundwater recharge, but to a limited degree because of the predominance of clay soils in the area. To minimize runoff, paved parking areas will be designed to provide the minimum amount of paving area necessary to meet required parking and circulation standards. The following standards apply to site-specific development projects.

1. Stormwater management plans will be prepared that comply with all standards and requirements of the National Pollutant Discharge Elimination System (NPDES) and the grading, erosion, and improvement standards in the Placer County Stormwater Management Plan.

2. Grading plans submitted for Placer County review and approval will include an erosion and sediment control plan that includes erosion control measures to protect waterways from erosion and debris during and after construction activities.

3. Grading plans will be designed to minimize the area of disturbance by construction activities.

4. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented for site-specific projects.

5. Concurrent with construction of site improvements, stormwater BMPs will be constructed and maintained in accordance with the SWPPP as approved by the Central Valley Regional Water Quality Control Board.


Policy 4.27 Impacts on Streams and Riparian Areas. Impacts on Curry Creek and Dry Creek shall be avoided through the conveyance of open space buffers and the location of adjacent land uses. A 100-foot setback shall be provided for perennial streams (Curry Creek). The majority of the active floodplain of Dry Creek lies on the opposite bank and not within the reach of Dry Creek adjacent to the Plan Area. Adequate open space protection has been designated in the Specific Plan to mitigate impacts on Dry Creek. Implementation of the Specific Plan will also ensure that there would be no net loss of riparian habitat (see Policy 4.18).
Policy 4.28 Construction of stream crossings or other improvements in the Dry Creek and Curry Creek corridors will be kept to the absolute minimum necessary and will meet the following standards.

1. Streambed Alteration Agreement will be obtained from the California Department of Fish and Game (CDFG) prior to commencement of construction of stream crossings.

2. Areas adjacent to finished improvements in Curry Creek and Dry Creek that are disturbed during construction activities will be hydroseeded and revegetated.

3. Disturbed areas in Curry Creek and Dry Creek not actively being developed will be planted, mulched, or otherwise protected by an acceptable means for the duration of the winter.

4. Construction activities within Curry Creek or Dry Creek that would result in disturbed areas being left unprotected between October 15 and March 15 will not be permitted.

5. Construction roads crossing creek systems will be used only when necessary and other access routes are not feasible.

6. Construction roads crossing creek systems will incorporate culverts if roads remain in place during winter season.

7. Erosion control measures will be in place prior to the onset of the rainy season but no later than October 15 during construction.

8. Permanent roadway stream crossings will be designed for a 100-year flood event.

9. Stream crossings will be designed with approaches as close to a right angle wherever feasible.

10. Stream crossings will be designed to reduce erosion and stream degradation by the placement of structures.

11. Rock energy dissipaters or other Placer County approved methods will be used at outflow points of all culverts.

Policy 4.29 Placer County will identify a schedule of inspection and maintenance of construction sites to ensure erosion control measures are operative through the winter period.
Policy 8.4  Service Standards. All Plan Area improvements shall be designed and constructed in accordance with standards listed in the Placer County Land Development Manual and Storm Water Management Manual.

Policy 8.5  Drainage Standards for Individual Projects. Individual projects shall provide appropriate short- and long-term best management practices and source controls consistent with the land use.

Drainage Design Criteria

- Open space corridors have been created in the Plan Area to convey stormwater flows. All development will occur outside of these corridors so as to provide 100-year flood protection to all residences.

- Piped drainage collection facilities of up to 96 inches in diameter will be used before open channels are chosen to convey urban storm runoff.

- Manage urban runoff through use of stormwater conveyance, detention, and water treatment facilities. Planned channel improvements should include components to mitigate adverse impacts on wetlands.

- When possible, increase the depth of existing drainage courses to accommodate the storm drainage collection.

- Vegetation proposed within the low-flow open channel(s) shall provide treatment of urban stormwater runoff.

REGULATORY SETTING

CLEAN WATER ACT

The discharge of dredged or fill material into Waters of the United States is regulated by the Corps under Section 404 of the Clean Water Act. Construction activities that impact designated jurisdictional areas generally fall under Corps regulation. These regulations are intended to limit degradation of water quality. Because the proposed Specific Plan contains areas of Corps jurisdiction, improvements anticipated within the Specific Plan area would be subject to these regulations.

National Pollutant Discharge Elimination System

During the reauthorization of the Clean Water Act, Sections 402(P) through Section 405 of the Water Quality Act of 1987 were added, providing for a program to eliminate pollution from non-point municipal and industrial sources. Land development and construction activities of one or more acres are also included under this legislation. The addition of stormwater discharges to the National Pollutant Discharge Elimination System (NPDES), the primary federal water quality permit system administered by the EPA, was completed on October 31, 1990, when EPA signed
the final regulations. On November 16, 1990, the final rule and regulations for the NPDES Permit Application for Storm Water Discharges [40 Code of Federal Regulations (CFR) 122-124] were published in the Federal Register.

SWRCB has the authority to issue NPDES permits in Placer County. SWRCB has issued two types of stormwater permits. A general permit has been issued for non-point municipal and industrial stormwater discharges, excluding construction activities. A second permit applies to all construction activity (with the exception of those on Indian lands and the Lake Tahoe hydrogeologic unit, which operates under a separate general permit).

Development in the Specific Plan area would fall under the general construction activity stormwater discharge permit process. The general construction permit authorizes the discharge of stormwater and prohibits the discharge of materials other than stormwater and all discharges that contain a hazardous substance in excess of reportable quantities established in 40 CFR 117.3 or 40 CFR 302.4, unless a separate NPDES permit has been issued to regulate those discharges. A general permit would require that a project applicant control discharges associated with construction activity by:

- eliminating or reducing non-stormwater discharges to stormwater systems and other waters of the nation;
- developing and implementing a stormwater pollution prevention plan (SWPP); and
- performing inspections of stormwater control structures and pollution prevention measures.

NPDES Stormwater Phase II is a far-reaching federally mandated program requiring installation of BMPs to improve non-point source pollution of stormwater runoff. Among other requirements, the law requires installation of BMPs for water quality control for long-term (i.e., post-construction) improvement in water quality runoff from development projects. The six basic elements of the NPDES Phase II permit are:

- Public Education and Outreach on Storm Water Impacts
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

Under the provisions of NPDES II, the Specific Plan will be required to design and install such BMPs as are determined to be appropriate.

**CENTRAL VALLEY BASIN PLAN**

Regulatory standards for water quality in Dry Creek, Curry Creek and the Upper Natomas East Main Drainage Canal tributaries, are established by the Water Quality Control Plan (The Basin Plan) for the Sacramento River Basin (Basin 5A), which is developed and implemented by the Regional Water Quality Control Board--Central Valley Region (CVRWQCB). The Sacramento River Basin extends generally from the northern half of Sacramento County through the Central
Valley and encompasses approximately 26,500 square miles. The principal streams in the basin are the Sacramento River and its larger tributaries, including the American River (RWQCB 1994).

The Basin Plan specifies beneficial uses of receiving waters, water quality objectives imposed to protect the designated beneficial uses, and strategies and schedules for achieving water quality objectives. It includes narratives and numerical objectives designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, non-contact and contact water recreation, ground water recharge, fresh water replenishment, hydro-electric power generation, and preservation and enhancement of fish, wildlife and other aquatic resources.

The Basin Plan was originally adopted and approved in 1986 and has been subsequently revised and amended a number of times. The Basin Plan was last revised in September 2004.

**PORTER-COLOGNE WATER QUALITY CONTROL ACT**

California Water Code Section 13000, *et seq.*, also known as the Porter-Cologne Water Quality Control Act (Act), gives the State of California, through the SWRCB and the various RWQCB, the primary responsibility for control of state water quality. The primary enforcement mechanisms are Water Code Sections 13260, 13301, 13304, and 13266.

Section 13260 states that any person proposing to or discharging waste within any region that could affect state water quality, other than into a community sewer system, must file a report with the Board that contains such information as required by the Board. Proposed changes or changes in the character of any previously approved discharge requires an additional report be filed. Criminal penalties can be attached to violations of the Act. However, the Regional Board may issue waste discharge requirements (WDRs) in response to such a report.

Section 13266 states that each City or County must notify the Board if a subdivision map is filed, or if a building permit is filed which may involve the discharge of waste other than from dwellings involving five families or less, or discharge other than to a community sewer system.

Finally, Section 13301 gives Boards the authority to issue cease and desist orders for violations of the Act, while Section 13304 provides the State Attorney General with the power to petition the Superior Court for prohibitory or mandatory injunctions to stop violations of the Act.

**Regional Water Quality Control Board – Water Quality Control Plan for the Sacramento-San Joaquin River Basins**

The Water Quality Control Plan (Basin Plan) for the Sacramento-San Joaquin River Basins, adopted by the RWCQB on December 9, 1994 and reprinted (as amended in 1995 and 1996) on September 1, 1998, provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River Basins. The Basin Plan contains specific numeric water quality objectives for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, TDS, temperature, turbidity, and trace elements, as well as numerous narrative water quality
objectives, that are applicable to certain waterbodies or portions of waterbodies. As discussed above, the Basin Plan contains specific numeric standards for Delta inflow and outflow, chloride, and electrical conductivity (a measure of water’s ability to conduct an electric current, based on the relative abundance of free ions in the water, which come from the dissociation of solid materials into the water). Thus, electrical conductivity is directly related to TDS. Electrical conductivity standards in the Delta exist for both agricultural and fish and wildlife beneficial uses.

Bay-Delta Pollutant Policy Document and Accord

The Pollutant Policy Document (PPD) for the San Francisco/Sacramento-San Joaquin Delta Estuary was adopted by the SWRCB on June 21, 1990. The PPD sets forth basic policies for the control of toxic pollutants in the Bay-Delta Estuary. The PPD identifies seven pollutants of concern: arsenic, cadmium, copper, mercury, selenium, silver, and polynuclear aromatic hydrocarbons (PAHs). The PPD also indicates that publicly owned treatment works (POTWs) are a significant source (i.e., greater than 10%) of three of the seven pollutants of concern: cadmium, mercury, and silver. The RWQCB has identified the entire Bay-Delta as a waterbody of concern and designated the seven pollutants listed by the PPD as pollutants of concern. The most significant provision of the document for POTWs is the mass emission strategy (MES), which is designed to control the accumulation of toxic pollutants in sediments and aquatic tissue.

In June, 1994, State and federal agency cooperation was formalized with the signing of a Framework Agreement. The agreement stated that the State and federal agencies would focus on the following three areas of concern: water quality standards formulation, coordination of SWP and CVP operations with regulatory requirements, and long-term solutions to problems in the Bay-Delta Estuary (DWR, 1995). On December 15, 1994, an agreement was reached regarding water quality standards and related provisions that would remain in effect for three years. This agreement included springtime export limits, regulation of the salinity gradient, specified springtime flows on the lower San Joaquin River and intermittent closure of the Delta Cross Channel gates. Many of the standards and provisions in the December 1994 agreement were incorporated into the SWRCB’s Draft Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin Delta Estuary dated December, 1994. After revisions were made that addressed comments, the final Delta Water Quality Control Plan was adopted on May 22, 1995 (SWRCB, 1995), and remains in effect today.

Antidegradation Policy (State Water Board Resolution 68-16)

In addition to designating beneficial uses and water quality objectives to define water quality standards, federal water quality regulations require each state to adopt an “antidegradation” policy and to specify the minimum requirements for the policy (40 CFR 131.12). The SWRCB has interpreted State Water Board Resolution 68-16 to incorporate the federal antidegradation policy.

The SWRCB adopted State Water Board Resolution 68-16 on October 28, 1968. The goal of this policy is to maintain high quality waters where they exist in the state. Resolution 68-16 does not prohibit any reduction to existing water quality. Rather, the RWQCB applies Resolution 68-
16 when considering whether to allow a certain degree of degradation to occur or remain. As stated in Resolution 68-16, whenever the existing quality of water is better than that defined by state water quality objectives and policies, such existing high water quality will be maintained until it has been demonstrated to the State that any change will: 1) be consistent with the maximum benefit to the people of the state; 2) not unreasonably affect present and anticipated beneficial use of such water; and 3) not result in water quality less than that prescribed in water quality control plans or policies (RWQCB, 1994). In addition, the discharger must apply best practicable treatment or control measures to assure that: 1) a pollution or nuisance will not occur and 2) the highest water quality, consistent with the maximum benefit to the people of the State, will be maintained (RWQCB, 1994). Hence, for actions that produce significant changes in water quality, the policy requires a demonstration that such changes result in the maximum benefit to the people of the State, would be necessary to the social and economic welfare of the community, and would be consistent with the antidegradation policies.

The Porter-Cologne Water Quality Control Act states that water quality objectives are to be established that “...will ensure the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” The State Water Code further states that “...it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses.” This policy statement supports the position that some level of water quality change is allowable under the antidegradation policies.

**LOCAL**

**Placer County Stormwater Management Plan 2003-2008**

A *Stormwater Management Plan* has been adopted by Placer County that describes a comprehensive program to reduce pollution of stormwater runoff in portions of western Placer County, including the Specific Plan area. The program is designed to comply with the Clean Water Act and meet federal and NPDES stormwater regulations for small municipal separate stormwater systems. The CVRWQCB issued an NPDES permit to Placer County based on this plan. The permit must be renewed every five years. Placer County will need to renew their permit in 2008.

**California Stormwater Best Management Practice Construction Handbook**

The *Stormwater Best Management Practice Handbook for Construction and New Development/Redevelopment*, prepared by the California Stormwater Quality Association and last updated in September of 2004, provides general guidance for selecting and implementing Best Management Practices (BMPs) that will eliminate or reduce the discharge of pollutants from construction sites to waters of the state and developing and implementing stormwater pollution prevention plans (SWPPPs) that document the selection and implementation of BMPs for a particular construction project.
Placer County General Plan

The Placer County General Plan includes the following policies pertaining to water quality.

Section 4 – Public Facilities and Services:

4.E.10. The County shall strive to improve quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grease separators, and other best management practices (BMPs).

4.E.14. The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.

IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, Placer County has determined that a project could have a significant effect on water quality if it would:

- Violate any water quality standards or waste discharge requirements.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.

Potential impacts under the proposed Specific Plan water supply were analyzed for water quality as they pertain to drinking and recreation purposes throughout the regional and local study area. Table 4.3-21 lists the impact indicators and significance thresholds used in the water quality analysis for water supply.
Table 4.3-21
Water Quality Impact Indicators and Significance Thresholds

<table>
<thead>
<tr>
<th>Impact Indicator</th>
<th>Significance Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concentration of contaminants in affected water bodies measured by decreases in:</td>
<td>A substantial increase in the concentration of contaminants in affected water bodies, based on:</td>
</tr>
<tr>
<td>• End-of-month reservoir storage for Folsom, Shasta or Trinity; and</td>
<td>• A substantial change in end-of-month reservoir storage, relative to the existing condition, for any month of the year over the 70-year simulation for Folsom, Shasta, and Trinity reservoirs, or</td>
</tr>
<tr>
<td>• Monthly mean flow for lower American River, upper Sacramento River and lower Sacramento River.</td>
<td>• Change in monthly mean flow (cfs) of substantial magnitude or frequency, for any month of the year over the 70-year simulation, for the lower American River (Nimbus Dam and Watt Avenue), upper Sacramento River (Keswick), and lower Sacramento River (Freeport).</td>
</tr>
</tbody>
</table>

Ambient water quality, as a function of soluble and insoluble contaminant concentrations, is affected in part by river dilution capacity. Altered river flow regimes, therefore, could have an effect on dilution capacity and, correspondingly, affect the existing levels of nutrients, pathogens, TDS, TOC, and priority pollutant loadings through reduced dilution. Accordingly, the water quality analysis considered potential changes in reservoir storage and river flows.

It is recognized, however, that other factors such as increased constituent loading from urban runoff and stormwater, and wastewater discharges would also contribute to increases in the concentrations/levels of nutrients, pathogens, TDS, TOC, turbidity, and/or priority pollutants.

4.3.4-1 Surface water quality in the Specific Plan area could be degraded following site development by the introduction of urban pollutants including vehicle oils and greases, heavy metals on roads, parking lots, and driveways, fertilizers and pesticides used on site landscaping, and toxic compounds released from auto maintenance areas into surface runoff.

Newly planted vegetation, newly paved roadways and anticipated combinations of sod/seed activity could result in long-term water quality degradation as a result of development under the Specific Plan. The high use of roads and parking areas on a daily basis would contribute vehicle oils and grease to the site stormwater discharge. In commercial areas, stormwater runoff could convey a wide range of pollutants to receiving waters. Vehicles contribute oil, grease, and metals onto roads and parking lots. Excessive use of fertilizers, pesticides and herbicides on the site landscaping can also result in leaching of nutrients and toxic compounds into stormwater runoff. Such compounds are soluble and would not, therefore, be removed by the use of detention basins.
Uncontrolled, these urban pollutants can directly or indirectly affect aquatic life. High concentrations of toxins in runoff can be lethal to aquatic life. Chronic, low levels can enter the food chain, affecting the long-term breeding success of populations and lower reproductive potential. Aquatic and wildlife habitat can also be adversely affected by the accumulation of toxins, which can indirectly affect aquatic and wildlife resources. Direct discharge from developments could occur towards the Curry Creek and northern portions of the NEMDC Drainage Sheds. The addition of runoff from the Specific Plan area poses the potential for water quality degradation as a result of direct discharge to the creeks within the Specific Plan area.

Pollutant levels are typically highest during late summer and fall when pollutants, previously bound to particulates in the sediments, are released during the first large rainfall event ("first flush") of the season. Since pollutants are typically concentrated, the potential for toxic events is more likely during first flush events because the dilution factor is usually low.

Common pollutants found in urban runoff include trace metals (copper, lead, zinc, cadmium, chromium, arsenic and nickel), PCBs, oil and grease, nutrients, coliform bacteria, organic compounds, and sediment. Generally, the high level of metals can be traced to one of several urban sources, including vehicle operation and maintenance, atmospheric fall-out, and illegal sewage discharges.

BMPs such as detention ponds, wetlands, filters, and vegetated swales have been shown to reduce urban pollutant levels in stormwater. A number of studies have been conducted over the past two decades regarding the pollutant removal effectiveness of urban stormwater BMPs. For example, wetland BMPs, such as shallow marshes, extended detention wetlands and ponded wetlands have demonstrated median removal rates of 77% for bacteria; 90% for hydrocarbons, including oil and grease; and 69% for cadmium. Ponds have demonstrated median removal rates of 57% and 73% for copper and lead, respectively. Filters have been shown to be 81% effective in removing hydrocarbons, including oil and grease; 80% effective in removing zinc; 87% effective in removing total suspended solids (TSS); and 66% effective in removing organic carbon, based on the median rates of a number of reported studies. Drainage swales have demonstrated median removal efficiencies of 81% for TSS, 67% for organic carbon, and 71% for zinc (Schueler 1997).

The Master Project Drainage Study provides that on-site project drainage would be designed to provide water quality treatment of runoff from paved and other developed areas prior to release into swales and streams. Treatment would include directing some of the flow to sheet discharge onto grassy areas or open space, installation of “Fossil Filter” or equivalent petroleum absorbing insert assemblies in project drop inlets, placement of water quality interceptor devices, placement of water quality sediment basins within detention facilities and channels, and use of rock-lined ditches below pipe outlets. Other BMPs would involve prompt re-vegetation of disturbed areas. All of these features would assist in reducing project-related surface water quality impacts.

The proposed Specific Plan also contains a number of policies related to water quality and the “low impact development” concept. For example, Goal 4.9 specifies that low impact development design principles should be used in site layout. These include minimizing and reducing impervious surfaces, breaking up large areas, directing flows to vegetated areas, maintaining natural drainage courses dispersing detention/retention areas, etc.
However, due to the inevitable increase in impervious areas and traffic trips within the Specific Plan area, an increase in urban pollutants could gradually occur over the life of the Specific Plan. Given the extent of proposed development and roadway improvements, the overall potential for generation of urban pollutants, and because drainage from the Specific Plan area is ultimately conveyed into a potable water source, this is a potentially significant impact.

Mitigation Measures

Through implementation of contemporary techniques for treatment and control of runoff, the direct water quality impacts of the project can be mitigated to a less than significant level. The following mitigation measures anticipate that the developers will incorporate a source control approach to managing storm water into the design of the project (low impact development) and will employ a variety of integrated BMPs to reduce storm water runoff, which will protect surface water quality:

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

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

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

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

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

4.3.4-1f Storm drainage from all new development impervious surfaces (including roadways) shall be collected and routed through specially designed catch basins, vaults, filters, etc. for entrapment of sediment, debris and oils/greases as approved by the Placer County Department of Public Works. Maintenance of these facilities shall be provided by the project owners/permittees unless and until a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming and catch basin cleaning program shall be provided to the Placer County Department of Public Works upon request. Prior to improvement plan or final subdivision map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

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

4.3.4-2 Construction during both wet and dry weather will affect water quality with increased sedimentation, operation and maintenance of construction vehicles and storage of materials that could release contamination to surface waters.

Development and ultimate urbanization of the Specific Plan area improvements could result in water quality degradation over the duration of construction. Grading operations result in a loss of vegetation, exposing the soil to erosion, particularly in steep areas. The exposed soils could be carried by storm runoff during the rainy season to downstream waters, resulting in sediment transport. These increased sediment loads could substantially degrade water quality in downstream drains, especially over the construction duration and buildout of the Specific Plan area. In addition, the operation and maintenance of construction vehicles and equipment, the loading and unloading of construction materials, and construction waste could release contaminants to the Specific Plan area that would be washed off by stormwater discharges. This increase in sediment loads and turbidity in local drains would be considered a significant short term water quality impact.

Mitigation Measures

New developments of one acre or larger are subject to a NPDES permit. The purpose of the permit is to protect water quality from development that would discharge into Waters of the U.S.
The need for an NPDES permit would be triggered with any application for development of one acre or greater in the Specific Plan area. In addition, private development projects are subject to Placer County Flood Control District and Placer County Department of Public Works requirements, which require the submittal of an erosion control plan. In addition, there are a number of appropriate BMPs that could be applied during construction, including among others, covering of exposed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation or permanent seeding. The Specific Plan provides for the application of similar BMPs and compliance with an NPDES. The following measures build upon these requirements and reduce the significant impact of short-term surface water quality degradation that would occur during the development of the Specific Plan area to a less than significant level:

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

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

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

4.3.4-3 Improvements to drainage swales and channels could result in the removal of existing vegetation. Loss of vegetation could result in increased bank erosion, higher water velocities and water quality degradation.

Existing seasonal wetlands as identified in the wetlands delineations (see Section 4.4 of this Revised Draft EIR) occur in proximity to drainage improvements. Hydraulic features of channels would be affected by vegetation removal and minor ephemeral drainage areas are to be replaced with storm drains. Sediment transport and increased project site and upstream flows would require new channels to be created and a new water quality regimen for design. This new basis will reflect urbanized conditions and not conditions that exist at present. Roughness
coefficients for existing natural drainageways are relatively high and would result in lower velocities, longer durations for sediment drop-out and overall increased water quality. Removal of the bank and channel vegetation would result in lower roughness coefficients, greater velocities, and in turn greater risk of bank erosion. Less vegetation would also limit the ability to naturally enhance water quality and result in direct outflow of potential contaminants to downstream systems, including groundwater recharge areas used in connection with potable water sources.

The Master Project Drainage Study proposes to collect runoff from the project area within storm drainage systems that would discharge into channels and detention facilities. Channels would consist of newly constructed channel systems and parallel flood control channels where “avoidance” areas are to be maintained in a natural state. The channels would be excavated below the existing grade and would “daylight” at the downstream end to natural grades at the project boundaries. Low flow channels would be constructed to confine the conveyance of year round nuisance waters. Figure 4.3-5 shows the locations of proposed improvements and natural features to remain. The figure also references a number of cross sections that provide a concept of how the channelization and “avoidance” areas would appear within the project open space areas. Three of the cross sections are shown in Figure 4.3-6. The remainder of the cross sections are available for viewing in Appendix V of the Specific Plan.

In order to preserve the integrity of avoidance areas within the project where wetlands and critical habitat are to be preserved, it is necessary that the project not adversely affect mean annual and peak annual events. This means that increases in flow rates for these events should not be allowed within the unaltered swales. Additionally, where seasonal wetlands are identified (see Section 4.4 of this Revised Draft EIR), nuisance waters from non-storm discharges should be diverted to the flood control facilities to retain the seasonal nature of the existing features. Special structures are proposed to divert excess flood waters to the flood control channels, or to divert nuisance waters away from the existing swales.

The Master Project Drainage Study proposes the use of several types of facilities to provide attenuation in reducing peak flow discharges from the project site that may have an affect on water quality. The main method of providing detention attenuation will be through the use of existing swales and excavated flood control channel detention facilities upstream of regulating culvert facilities. Other types of attenuation facilities proposed with the project include excavated lake areas, constructed wetlands area and water quality basin and channels.

Although it is planned that major swales and drainage channels on the site be retained, loss of vegetation within and adjacent to existing swales and channels will occur due to project construction. This is considered a potentially significant impact.

Mitigation Measures

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

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

4.3.4-4 Groundwater quality in the Specific Plan area could be degraded during and after construction by the introduction of construction pollutants and urban pollutants, including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas.

Contaminants can be naturally-occurring as well as introduced. Comparison of groundwater quality data with applicable water quality standards and guidelines for drinking and irrigation indicate elevated levels of TDS/specific conductance, chloride, sodium, bicarbonate, boron, fluoride, nitrate, iron, manganese, and arsenic may be of concern in some locations within the groundwater subbasin.

A groundwater contamination plume exists beneath McClellan Park, approximately four miles south of the Specific Plan area (see Figure 4.3-10). Remediation is in progress at McClellan Park and the plume is not expanding. Any effects on area groundwater resources from the plume would be less than significant, due to the ongoing remediation efforts and distance.

Project-related activity during construction and operation could degrade groundwater quality; however, due to the characteristics of soils on-site (predominantly hydrological Group D) and depth to groundwater (measured at 55 to 125 feet in depth), little percolation to groundwater occurs. Existing wells on-site could, however, transmit pollutants to groundwater, if not properly sealed and abandoned upon cessation of agriculture. Further individual wells that continue to be used in the SPA for domestic and agricultural purposes could be contaminated.
Mitigation Measure

The following mitigation measure will reduce impacts related to contamination of wells and groundwater to a less than significant level:

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

INITIAL SURFACE WATER SUPPLY

An initial water supply is proposed to serve the Specific Plan area until a Sacramento River supply can be implemented. The immediate (or initial) surface water supply need was identified as 6,000 AFA. This amount is anticipated to be needed by the Specific Plan area by the time the long-term surface water supply becomes available (i.e., 6 to 8 years into the future) and consists of available water from PCWA’s unused American River water supply diverted at PCWA’s new permanent American River Pump Station, conveyed and treated at the existing Foothill Water Treatment Plant, and delivered through PCWA’s existing transmission pipeline system to the vicinity of Industrial Avenue. PCWA diversions from the MFP at the American River Pump Station location were previously evaluated in the American River Pump Station Project Final EIS/EIR, American River Basin Cumulative Impact Report, 2001. A booster pump and storage tank currently under construction would allow PCWA to introduce its water into the City of Roseville pipeline system. Under an existing agreement with the City of Roseville, PCWA can convey 10 MGD through the City’s pipeline system to a location near Baseline Road and Fiddyment Road. Extension of this pipeline westerly in Baseline Road could deliver an initial water supply to Placer Vineyards (see Figure 3-5 in Chapter Three of this Revised Draft EIR).

A secondary initial water supply could be made available if the Sacramento River project has not begun delivery of water when the available initial supply, as described above, has been fully used. It consists of use of a portion (6,000 AFA of the 29,000 AF of PCWA Middle Fork American River water currently contracted to SSWD, formerly Northridge Water District. The supply would be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Specific Plan area via a new pipeline extending from the Cooperative Transmission Pipeline that currently ends in Antelope Road near Walerga Road. This pipeline would be extended westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Alternatively, this
supply could be conveyed in a pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area.

4.3.4-5 The initial surface water supply could affect the concentration of contaminants in the lower American River, which could affect the quality of drinking water available at other locations in the CVP system.

Increased diversions from Folsom Reservoir associated with the implementation of the proposed Specific Plan initial water supply could reduce storage levels in Folsom Reservoir and reduce flows in the lower American River. The CVP reservoirs are operated in an integrated fashion, and reduced storage levels in Folsom Reservoir could affect storage levels in other CVP waterbodies and/or watercourses (e.g., Shasta and Trinity reservoirs) and flows in the Sacramento River and into the Delta.

The proposed Specific Plan initial surface water supply would result in either no change or slight increases (up to 0.1%) in 70-year mean monthly CVP reservoir storage levels relative to the existing condition (Template Output B-105 to B-107). Long-term average monthly mean flows in the lower American and Sacramento rivers would remain unchanged or decrease slightly (up to a maximum 0.7% for the lower American River) relative to the existing condition (Template Output B-108 to B-111). These small reductions in reservoir storage and flows, acting indirectly to dilute the concentrations of water quality parameters, would have a small and immeasurable potential-adverse impact to ambient water quality.

Concentrations of water quality parameters of interest such as nutrients, pathogens, TDS, TOC, turbidity, and priority pollutants (e.g., metals, organics) would not be expected to be altered substantially, if at all, by the implementation of the proposed Specific Plan initial surface water supply, relative to the existing condition. Dilution capacities, potentially affected by altered hydrology, would not be significantly affected. Thus, any impacts to water quality for waterbodies associated with the CVP resulting from reductions in Folsom Reservoir storage or lower American River flows would be less than significant relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.3.4-6 The initial surface water supply could affect Delta water quality.

Throughout the 70-year period of hydrologic record, the long-term average monthly Delta outflow for the proposed Specific Plan initial water supply would remain unchanged, relative to the existing condition (Template Output B-413). While in some individual years the reduction in Delta outflow would be measurable (i.e., up to 8 cfs), overall, the magnitude of change, relative to the existing condition, would not likely impart a measurable or significant impact to Delta water quality in the long-term. Under the proposed Specific Plan initial water supply, the greatest shift in the long-term average monthly position of X2 relative to the existing condition would be 0.2 km (Technical Appendices A-13 to A-24).
The model simulations conducted for the proposed Specific Plan initial water supply included conformance with X2 requirements set forth in the SWRCB Initial Water Quality Control Plan, as well as Interior’s Final Administrative Proposal for the Management of 3406(b)(2) Water. Therefore, the export-to-inflow ratios under the proposed Specific Plan initial surface water supply would not exceed the maximum export ratio as set by the SWRCB Interim Water Quality Control Plan. Overall, there would be less than significant impacts to Delta water quality under the proposed Specific Plan initial water supply, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

OFF-SITE INFRASTRUCTURE

4.3.4-7 Construction of off-site infrastructure can affect water quality causing increased sedimentation, operation and maintenance of construction vehicles, and storage of materials that could release contamination to surface waters.

Installation of utilities and roadway widening could result in water quality degradation over the duration of construction. Grading operations result in a loss of vegetation, exposing the soils to erosion. The exposed soils could be carried by storm runoff during the rainy season to downstream waters resulting in sediment transport. These increased sediment loads could substantially degrade water quality in downstream areas. In addition, the operation and maintenance of construction vehicles and equipment, the loading and unloading of construction materials, and construction waste could release contaminants to the site that would be washed off by stormwater discharges. This increase in sediment loads and turbidity in local drains would be considered a significant short term water quality impact.

Mitigation Measures

New developments of one acre or larger are subject to an NPDES permit. The purpose of the permit is to protect water quality from development that would discharge into Waters of the U.S. The need for an NPDES permit would be triggered with any application for development of one acre or greater. In addition, within Placer County development is subject to Placer County Flood Control District and Placer County Department of Public Works requirements, which require the submittal of an erosion control plan. However, as shown in Figures 3-5, 3-6 and 3-7 in Chapter Three of this Revised Draft EIR, off-site infrastructure may be built in Sutter County, Sacramento County, and/or the City of Roseville, as well as in Placer County. These jurisdictions do, however, have requirements that are similar to Placer County’s. In addition, NPDES requirements apply in all jurisdictions. Although Placer County cannot compel compliance with mitigation measures in other jurisdictions, SWRCB requires compliance with NPDES and the following mitigation measures would reduce the significant impact of short-term surface water quality degradation that could occur during the development of off-site infrastructure in Placer County to a less than significant level:
4.3.4-7a Prior to approval of improvement plans for improvement projects of one acre or greater, the developer/project proponent shall submit a Storm Water Pollution Prevention Plan (SWPP), obtain from the SWRCB a General Construction Activity Stormwater Permit under the NPDES and comply with all requirements of the permit to minimize pollution of stormwater discharges during construction activities.

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

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

CUMULATIVE IMPACTS AND MITIGATION MEASURES

4.3.4-8 The Specific Plan area could contribute to the cumulative affect of water quality due to the introduction of urban pollutants including vehicle oils and greases; heavy metals on roads, parking lots, and driveways; fertilizers and pesticides used on site landscaping; and toxic compounds released from auto maintenance areas into surface runoff.

Newly planted vegetation, newly paved roadways and anticipated combinations of sod/seed activity from planned development (see Figure 4.1-2 in Section 4.1 of this Revised Draft EIR) in the watersheds of Dry Creek, Curry Creek, and Steelhead Creek could result in long-term water quality degradation. The high use of roads and parking areas daily within the region would contribute vehicle oils and grease to the site stormwater discharge. In commercial areas, stormwater runoff may convey a wide range of pollutants to receiving waters. Vehicles contribute oil, grease, and metals onto roads and parking lots. Excessive use of fertilizers, pesticides and herbicides on the site landscaping can also result in leaching of nutrients and toxic compounds into stormwater runoff. Such compounds are soluble and would not, therefore, be removed by the use of detention basins.

Uncontrolled, these urban pollutants can directly or indirectly affect aquatic life. High concentrations of toxins in runoff can be lethal to aquatic life; chronic, low levels may enter the food chain, affecting the long-term breeding success of populations and lower reproductive potential. Aquatic and wildlife habitat can also be adversely affected by the accumulation of toxins, which can indirectly affect aquatic and wildlife resources.
Pollutant levels are typically highest during late summer and fall when pollutants, previously bound to particulates in the sediments, are released during the first large rainfall event (“first flush”) of the season. Since pollutants are typically concentrated, the potential for toxic events is more likely during first flush events because the dilution factor is usually low.

Common pollutants found in urban runoff include trace metals (copper, lead, zinc, cadmium, chromium, arsenic and nickel), PCBs, oil and grease, nutrients, coliform bacteria, organic compounds, and sediment. Generally, the high level of metals can be traced to one of several urban sources, including vehicle operation and maintenance, atmospheric fall-out, and illegal sewage discharges.

BMPs such as detention ponds, wetlands, filters, and vegetated swales have been shown to reduce urban pollutant levels in stormwater. A number of studies have been conducted over the past two decades regarding the pollutant removal effectiveness of urban stormwater BMPs. For example, wetland BMPs, such as shallow marshes, extended detention wetlands and ponded wetlands have demonstrated median removal rates of 77% for bacteria; 90% for hydrocarbons, including oil and grease; and 69% for cadmium. Ponds have demonstrated median removal rates of 57% and 73% for copper and lead, respectively. Filters have been shown to be 81% effective in removing hydrocarbons, including oil and grease 80% effective in removing zinc; 87% effective in removing total suspended solids (TSS); and 66% effective in removing organic carbon; based on the median rates of a number of reported studies. Drainage swales have demonstrated median removal efficiencies of 81% for TSS; 67% for organic carbon; and 71% for zinc (Schueler 1997).

The Specific Plan would add over 4,000 acres of urban development that would incrementally contribute to an increase in urban pollutants within the watersheds. Given the extent of proposed development in the Curry Creek, Steelhead Creek and Dry Creek watersheds (in excess of 30,000 acres) and roadway improvements, the cumulative potential for the generation of urban pollutants, and because drainage from the area is ultimately conveyed into a potable water source (Sacramento River), this potential long-term water quality degradation is considered a cumulatively considerable significant impact.

Mitigation Measure

Mitigation Measure 4.3.4-1a–e, above, will reduce the impact of cumulative long-term surface water quality degradation that would occur after the development of improvements in the Specific Plan area. However, because Placer County cannot assure that pollutant levels will be reduced to pre-development levels on an area-wide basis, long-term impacts will remain significant, cumulative and unavoidable.

4.3.4-9 The Specific Plan could contribute to cumulative degradation of Dry Creek water quality, including additional erosion and sedimentation due to increased effluent discharge from the DCWWTP.
The following analysis is excerpted from a technical memorandum prepared by Merritt Smith Consulting, October, 2005:

The Central Valley Regional Water Quality Control Board (RWQCB) issued a NPDES permit regulating discharges from the DCWWTP in 2000 (NPDES No. CA00164, Order No. 5-00-164). The permitted capacity of the DCWWTP is 18.0 MGD (ADWF). NPDES permits expire and must be renewed every five years. Through its development and adoption of NPDES permits every five years, the RWQCB stipulates effluent and receiving water limitations that must be met, thereby assuring compliance with receiving water quality criteria/objectives and protection of beneficial uses.

Table 1 [EIR Table 4.3-22] indicates the total estimated future flow from the DCWWTP, plus flow from UGAs [Urban Growth Areas] located outside the 2005 service, area, is 19.3 MGD. This is 1.3 MGD greater than the current permitted capacity of the DCWWTP, but is 5.6 MGD less than the 24.9 MGD future flow projected in the 1996 Master Plan EIR. Thus, the impacts assessment for the DCWWTP in the 1996 Master Plan is based on greater flow than is currently projected, including UGA flows. In this regard, the approach used to evaluate impacts in this TM [Technical Memorandum] is conservative.

<table>
<thead>
<tr>
<th>Table 4.3-22 (Table I)</th>
<th>Estimated Future Wastewater Flows</th>
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<tbody>
<tr>
<td></td>
<td>DCWWTP</td>
</tr>
<tr>
<td></td>
<td>Inside</td>
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<tr>
<td>2005 Service Area</td>
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<tr>
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<tr>
<td>SMD-3</td>
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<tr>
<td>SPMUD</td>
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<tr>
<td>Placer</td>
<td>0.01</td>
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<tr>
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</tr>
<tr>
<td>Regional University</td>
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<tr>
<td>Orchard Creek</td>
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</tr>
<tr>
<td>Sierra Vista &amp; Creekview</td>
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</tr>
<tr>
<td>Total</td>
<td>14.9</td>
</tr>
<tr>
<td>Current Permitted Capacity</td>
<td>18.0</td>
</tr>
</tbody>
</table>

1(All flows million gallons per day average dry weather flow. Inside refers to areas within the 2005 service area and outside refers to areas located outside the 2005 service area)

Source: Art O’Brien, City of Roseville, October 17, 2005

The 1996 Master Plan EIR (Roseville, City of 1996) identified the following significant/potentially significant impacts to water quality and aquatic biological resources associated with treatment and discharge of anticipated future DCWWTP discharges in Dry Creek (i.e., operational impacts, not temporary construction-related impacts):
Degradation of water quality in Dry Creek due to increased effluent discharge (Impact 7-2); and
Erosion and sedimentation (Impact 5-2),
Degradation of habitat for anadromous fish (Chinook salmon and steelhead trout) from Dry Creek WWTP discharge (Impact 4-11).

The 1996 EIR introduced mitigation that would reduce each of these impacts to a less-than-significant level. The first impact listed above attempted to address overall degradation of water quality due to increased effluent discharge. The latter two impacts identified in the 1996 EIR derive wholly, or in part, from the hydraulic effects of greater discharge rates. The erosion and sedimentation impact derives wholly from the hydraulics of higher discharge rates, whereas the degradation of anadromous salmonid habitat impact was identified from both hydraulic and water quality changes anticipated under increased effluent discharge in the future. Consistent with the organization of the 1996 EIR, the two main impact categories discussed below are: 1) water quality degradation due to increased discharge of treated effluent, and 2) flow-related effects on anadromous salmonids and other aquatic life. With regard to the water quality degradation category of assessment, this TM evaluates not only constituents specifically discussed in the City’s 1996 EIR, but also evaluates additional constituents of potential concern under the future cumulative condition.

Several factors indicate the analysis of impacts in this TM is conservative:

- The total estimated future flow of 19.3 MGD from the DCWWTP is 5.6 MGD less than the 24.9 MGD future flow projected and evaluated in the 1996 Master Plan EIR.

- This analysis assumes all of the dry weather flow will be discharged. However, dry season discharge to Dry Creek will be less than average dry weather flow generated because a portion of the flow will be returned to the UGAs as recycled water for irrigation instead of being discharged to Dry Creek.

- The West Roseville Specific Plan EIR includes mitigation Measure 4.11-5, which conditions issuance of building permits on obtaining all the necessary permits to treat, discharge and reuse flows from the Specific Plan area. SPWA, as a responsible CEQA agency, has indicated its intent to request a similar mitigation measure for the UGAs that are the subject of this TM.

**Water Quality Degradation Due to Increased Discharge**

The 1996 Master Plan EIR identified significant impacts to Dry Creek water quality resulting from increase water temperature and elevated levels of trace metals and organic pollutants. The impact of the UGAs with respect to these constituents is discussed below. Other constituents of potential concern (i.e.,
toxicity, mercury, pH, biostimulatory substances, dissolved oxygen, and taste and odors) are also evaluated.

- **Temperature.** The 1996 Master Plan EIR identified elevated temperature as an element of the significant impact to the water quality in Dry Creek. The 1996 Master Plan EIR included the following to mitigate for this impact:
  
  - Install cooling towers if necessary (Mitigation Measure 7-4).

Following mitigation, this element of the overall water quality impact would be reduced to a less-than-significant level.

Consistent with this mitigation measure, the City installed temperature cooling units at the DCWWTP, and began operating them in 2004. The City monitors receiving water temperature under the NPDES Permit Monitoring and Reporting Program.

Additional flows from the UGAs to the DCWWTP service area would cause additional temperature increases in Dry Creek, downstream of the DCWWTP outfall. The amount of additional thermal load added to Dry Creek would be directly related to the incremental increase in wastewater flow from the UGAs being treated and discharged at the DCWWTP. Because the 2015 condition assessed in the City’s 1996 Master Plan EIR was determined to be significant, the future cumulative condition with the UGA flows added also would be significant, and the UGA contribution to the future cumulative condition would be considerable.

As the capacity of the DCWWTP is expanded to accommodate flows from the UGAs, cooling units would be added, as necessary, to address the increased wastewater flow needing cooling, thereby assuring continued compliance with the temperature objectives in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) and thermal protection of aquatic resources. The treatment and discharge of UGA flows from the DCWWTP into Dry Creek would not result in any new thermal impacts not identified in the 1996 Master Plan EIR. Full Implementation of the already identified mitigation will reduce the future cumulative Dry Creek thermal impact to a less-than-significant level. No new mitigation measures are required in light of the additional UGA flows; rather, Mitigation Measure 7-4, already identified by the City, may simply need to be implemented sooner, or to a greater or expanded level as needed to address the UGA flows in addition to the flows evaluated in the 1996 Master Plan EIR. Implementation of Mitigation Measure 7-4, as in the case of flows considered in the 1996 Master Plan EIR, reduces this impact to a less-than-significant level.
• **Trace Metals and Organic Pollutants.** The 1996 Master Plan EIR identified the introduction of elevated levels of trace metals and organic pollutants as an element of the significant impact to the water quality in Dry Creek. The 1996 Master Plan EIR identified the following mitigation for this impact:

- install advanced treatment facilities (Mitigation Measure 7-2)
- institute metals source controls/pre-treatment (Mitigation Measure 7-3)

Following mitigation, this element of the overall water quality impact would be reduced to a less-than-significant level.

Additional flows from the UGAs to the DCWWTP service area would cause the percentage of water in the Dry Creek channel composed of treated effluent, downstream of the DCWWTP outfall, to be higher, all other factors (e.g., creek hydrology) remaining the same. Consequently, instream concentrations of trace metals and organic pollutants downstream of the outfall would increase in proportion to the incremental increase in wastewater flow from the UGAs being treated and discharged at the DCWWTP. Because the 2015 condition assessed in the City’s 1996 Master Plan EIR was determined to be significant, the future cumulative condition with the UGA flows added also would be significant, and the UGA contribution to the future cumulative condition would be considerable.

As the capacity of the DCWWTP is expanded to accommodate flows from the UGAs, any advanced treatment facilities that the City constructs and operates to comply with its NPDES permit would be expanded (or initially constructed for an expanded capacity) to address the increased wastewater flow from the UGAs, thereby assuring continued compliance with all Basin Plan pollutant objectives and California Toxic Rule criteria. The treatment and discharge of UGA flows from the DCWWTP into Dry Creek would not result in any pollutant impacts that would not occur in the absence of the UGA flows. Implementation of the mitigation measures identified in the 1996 EIR, to the degree necessary, to comply with water quality standards under future cumulative flows will reduce the future cumulative Dry Creek pollutant impact to a less-than-significant level. No new mitigation measures are required in light of the additional UGA flows; rather, Mitigation Measures 7-2 and 7-3, already identified by the City, may simply need to be implemented sooner, or to a greater or expanded level. Implementation of Mitigation Measures 7-2 and 7-3, as in the case of flows considered in the 1996 Master Plan EIR, reduces this impact to a less-than-significant level.

• **Aquatic Life Toxicity.** The DCWWTP currently performs chronic three-species bioassay testing of its effluent quarterly. These bioassays determine a No Observable Effect Concentration (NOEC) and an Inhibition Concentration for a set percentage effect (IC25). For example, the IC25 is the concentration of toxicant that would cause a 25% reduction in mean young per female in the
**Ceriodaphnia dubia** reproduction test or a 25% reduction in growth for the test population. The IC$_{25}$ is used because it is a very sensitive, non-lethal endpoint, which attempts to be indicative of the “first signs” of an effect on the test population. LC$_{50}$, the lethal concentration to 50% of the test population, is a test endpoint showing a much greater level of toxic effect. The NOEC is the lowest dilution ratio (i.e., the largest proportion of effluent) at which no toxic effect is observed. The IC$_{25}$ is a point estimate that approximates the highest dilution ratio (i.e., the smallest proportion of effluent) at which a specified level (25%) of effect is observed. These results are reported in toxicity units (TU), which are defined as:

\[
TU_c = \frac{100}{NOEC}
\]

For example, 8 TU$_c$ represents a test result where the NOEC was observed at 12.5% effluent, or a dilution ratio of 1 part effluent to 7 parts dilution water. Similarly, 16 TU$_c$ represents a test result where the NOEC was observed at 6.25% effluent, or a dilution ratio of 1 part effluent to 15 parts dilution water. As TU$_c$ increases, more dilution water is required to have no effect on the test organisms. A TU$_c$ of <1 indicates that no effect was observed in undiluted (100%) effluent, relative to control tests.

The three-species bioassay results for the DCWWTP for all four quarterly tests performed in 2003 and 2004, and the first two quarters of 2005 (i.e., 10 tests) show results of <1 TU$_c$ for all *C. dubia* (water flea), *P. promelas* (fathead minnow), and *S. capricornutum* (algae) tests, with the exception of the *C. dubia* reproduction test for the first quarter of 2004 which had a reported TU$_c$ of 1.1. These results show that the undiluted effluent is non-toxic to aquatic life.

DCWWTP effluent quality under the future cumulative condition would be maintained at essentially equivalent or possibly higher quality levels (if additional or more restrictive NPDES limits are permitted by the RWQCB), relative to current effluent quality. Therefore, no aquatic life toxicity would be expected in the future, once the DCWWTP is adequately expanded/upgraded, as necessary, and permitted to treat the incremental flows, including UGA flows. This would be a less-than-significant cumulative impact.

- **Mercury.** The current NPDES permit contains a mercury (Hg) mass-loading limit of 1.71 pounds per year for the combined discharge of the DCWWTP and the PGWWTP. Based on Finding 25f in the NPDES permit, this limit is performance-based and is based on a flow weighted average mercury concentration plus 20% using effluent quality data from January 1996 through September 1999. The average Hg concentration (based on detectable values during this period and upon which the mass loading limit was based) is 0.058 µg/L (see Table 2 [*EIR Table 4.3-23*]). Finding 25f indicates the Hg...
concentration data are questionable because “clean technique” was not used. This means that the actual concentration would likely be less than 0.058 µg/L. Indeed, the average concentration (based on detectable values) in 2004 through 2005 was 0.012 µg/L, a period during which clean techniques were used (see Table 2 [EIR Table 4.3-23]). Thus, actual flow could be as much as 0.058/0.012 or 4.9 times greater than the flow upon which the mass loading limit is based without causing the limit to be exceeded. The current NPDES permits have a combined permitted flow of 30 MGD, and the total incremental UGA flow (from areas outside the 1996 EIR area) is 12 MGD, for a total flow of 42 MGD or a 1.4-fold increase. This flow increase factor is less than 4.9, indicating that the combined incremental flow of all UGAs will not cause the Hg mass loading limit to be exceeded. Therefore, the cumulative impact of the discharge from DCWWTP and PGWWTP on mercury loading is considered to be less than significant.

- **pH.** The NPDES permit for the DCWWTP has an effluent limitation that requires discharges to have a pH between 6.5 and 8.5 units. Based on the current science regarding pH requirements of freshwater aquatic life, the beneficial use most sensitive to creek pH, the Central Valley RWQCB is processing a Basin Plan amendment that will remove the 0.5 unit change requirement of the current pH objective, leaving the component that requires controllable factors affecting water quality to maintain receiving water pH between 6.5 and 8.5 units (RWQCB 2002). Because the permit requires effluent discharged to Dry Creek to have a pH between 6.5 and 8.5 and incremental UGA flows will not affect the pH of effluent, future discharges, regardless of volume, would not cause Dry Creek pH to fall outside this range. Once the DCWWTP is expanded to accommodate future cumulative flows, the higher rate of discharge will not cause Dry Creek pH to fall below a pH of 6.5 or be raised above 8.5. Based on these facts, the future cumulative condition for pH in Dry Creek will have a less-than-significant impact on the creek’s beneficial uses, including aquatic life uses, which are the uses most sensitive to creek pH.

- **Biostimulatory Substances (Nutrients).** Based on the DCWWTP bioassay data, current undiluted DCWWTP effluent does not contain sufficient biostimulatory substances (i.e., nitrogen and phosphorus) to cause a significant increase in cell production in the S. capricornutum (algae) bioassay. Under existing conditions, Dry Creek, downstream of the DCWWTP discharge, is not characterized by excess, nuisance level plant or algae communities. Consequently, it is not expected that nuisance level plant or algae communities would develop in Dry Creek, downstream of the DCWWTP outfall, under the future cumulative condition when higher rates of effluent discharge, including UGA flows, result in a greater proportion of creek water being constituted by treated effluent. Consequently, nutrient loading from the DCWWTP under the future cumulative condition constitutes a less-than-significant impact to nutrient water quality.
- **Dissolved Oxygen.** The 1996 Master Plan EIR mitigation measures to address receiving water quality degradation impacts are as follows:
  
  - install advanced treatment facilities (Mitigation Measure 7-2, which is assumed to include mitigation for oxygen-related impacts since dissolved oxygen impacts were not addressed in particular in the 1996 Master Plan EIR).
  - institute metals source controls/pre-treatment (Mitigation Measure 7-3).

### Table 4.3-23 (Table 2)
**Total Recoverable Mercury Concentrations in the City of Roseville's Wastewater Treatment Plant Effluent**

<table>
<thead>
<tr>
<th>Analysis Period</th>
<th>Sample Date</th>
<th>Concentration (µg/L)</th>
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</thead>
<tbody>
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<td></td>
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<td>0.04</td>
</tr>
<tr>
<td></td>
<td>5/6/96</td>
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<td>8/13/96</td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>5/13/97</td>
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<tr>
<td></td>
<td>9/10/97</td>
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<tr>
<td></td>
<td>11/4/97</td>
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<tr>
<td></td>
<td>2/27/98</td>
<td>&lt;0.02</td>
</tr>
<tr>
<td></td>
<td>6/23/98</td>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
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<td></td>
<td>5/26/99</td>
<td>&lt;0.02</td>
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<tr>
<td></td>
<td>7/20/99</td>
<td>0.041</td>
</tr>
<tr>
<td></td>
<td>12/5/99</td>
<td>&lt;0.02</td>
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**Basis for NPDES Permit Mass Limit**

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<tr>
<th>Period Average (Detected Concentrations Only)</th>
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**Clean Sampling Techniques Implemented**

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</tr>
<tr>
<td>4/19/05</td>
<td>0.043</td>
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</table>

**Period Average (Detected Concentrations Only)**

<table>
<thead>
<tr>
<th>Period Average (Detected Concentrations Only)</th>
<th>0.012</th>
</tr>
</thead>
</table>

Following mitigation, this element of the overall water quality impact would be reduced to a less-than-significant level.

The DCWWTP produces Title 22 quality, tertiary-treated effluent characterized by low BOD (typically less than 3 mg/L) and ammonia (typically less than 0.3 mg -N/L). As such, its biochemical oxygen demand is relatively low. Re-aeration of downstream waters due to physical processes
and photosynthesis tends to largely offset the oxygen demand of the effluent as it flows downstream, thereby resulting in small, if any, downstream dissolved oxygen (DO) sags (i.e., reductions in instream DO levels relative to background levels). This is shown by the historic DO data summarized in Table 3 [EIR Table 4.3-24].

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
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<th>May</th>
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<th>Jul</th>
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<tbody>
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<td>Avg-R2</td>
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<td>10.2</td>
<td>11.0</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Notes:  
R1 = upstream of the DCWWTP discharge  
R2 = downstream of the DCWWTP discharge  
R3 = approximately 1 mile downstream of the DCWWTP discharge

As discharge rates increase in the future, the proportion of creek water constituted by effluent also will increase, as will the total oxygen demand of the discharged effluent. As such, a possibility exists that receiving water DO limitations (which derive directly from Basin Plan DO objectives) would not be met even if NPDES effluent BOD and ammonia limits are met. Available data are insufficient to conclusively establish whether the future cumulative discharge rates from the DCWWTP will result in DO sags downstream that will cause Dry Creek DO levels to fall below applicable Basin Plan DO objectives. Because future discharges could potentially cause Dry Creek DO concentrations to fall below the applicable DO objective, the future cumulative DO condition in Dry Creek is considered to be potentially significant. The contribution of the UGA flows would be cumulatively considerable.

Although DO levels in Dry creek were not specifically addressed in the 1996 EIR, this EIR’s Mitigation Measure 7-2 (install advanced treatment facilities) is the same measure that would be implemented to address a DO issue. The type of advanced treatment facility would, of course, be tailored to the constituent of concern.

As the capacity of the DCWWTP is expanded to accommodate flows from the UGAs, any advanced treatment facilities that the City constructs and operates to comply with its NPDES DO limitations would be expanded (or initially constructed for an expanded capacity) to address the increased wastewater flow from the UGAs, thereby assuring continued compliance with all Basin Plan DO objectives. Based on available information, the UGA flows are not
expected to create a DO impact where, in the absence of the UGA flows, one would not exist. More likely, the UGA flows would simply further contribute to a cumulative DO impact, should one occur in the future. Consequently, no new mitigation measure(s) would be required in light of the additional UGA flows; rather, the advanced treatment facilities that the City would already have identified to address the potential DO impact may simply need to be implemented sooner, or to a greater or expanded level. Implementation of Mitigation Measure 7-2, as in the case of flows considered in the 1996 Master Plan EIR, reduces this impact to a less-than-significant level.

- **Tastes and Odors.** The Basin Plan states that “Waters shall not contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.” There is no history of taste and odor problems in Dry Creek, at locations downstream of the DCWWTP discharge. Municipal water supply taste and odor problems are often associated with algae production in source waters. The biostimulatory substance assessment presented above concludes that problematic levels of bio-stimulation and associated increased algal production is not expected to occur in Dry Creek under the future cumulative condition.

Effluent quality under the future cumulative condition will be maintained at essentially equivalent or possibly higher quality levels (if additional or more restrictive NPDES limits are permitted by the RWQCB), relative to current effluent quality. Therefore, no taste and odor problems would be expected in the future, once the DCWWTP is adequately expanded/upgraded, as necessary, and permitted to treat the incremental flows, including UGA flows. This would be a less-than-significant cumulative impact.

**Flow-Related Effects**

Flow can affect habitat and result in flooding. Each type of effect is addressed below.

- **Flooding Effects.** Appendix A [see Appendix D of this EIR] describes an analysis of the effects of discharge from DCWWTP on water surface elevation in Dry Creek under 100-year flow conditions. The analysis indicates that water surface elevation would be increased less than 0.02 feet at key locations. This impact is considered less than significant.

- **Effects on Salmonids and Other Aquatic Life.** Increasing the flows in Dry Creek through the discharge of additional treated effluent will result in channel conveyance of higher flow volumes with associated higher water velocities which could cause additional bed scour and bank erosion. Bed scour and bank erosion, if it occurs as a result of the incremental flows, would increase water
column turbidity and altering substrate composition downstream of the DCWWTP outfall.

- **Sedimentation/Turbidity.** Due to the constraints of the NPDES permit’s effluent limits, the only mechanism for the discharge to cause sedimentation and higher turbidities within Dry Creek under future cumulative conditions would be via the hydraulic effects of the higher flows resuspending creek bed sediments and eroding creek banks near the outfall, and in downstream reaches. The undiluted effluent discharged from the DCWWTP under the future cumulative condition will have very low turbidity (i.e., average < 2 NTU) and suspended matter.

Appendix A [see Appendix D of this EIR] describes velocity of water in Dry Creek under high and low streamflow conditions with and without the incremental UGA flows. The velocity of water indicates the amount of energy available to scour sediment from the bed and bank of the stream. Under high flow conditions, which is the channel forming condition, Appendix A [see Appendix D of this EIR] indicates water velocity is not affected to a measurable extent by the incremental UGA flows. Under low flow conditions, the overall stream velocity regime is much lower than at high flow conditions, indicating much less bed and bank erosion would generally be expected under low flow conditions relative to the high flow condition evaluated in the study described in Appendix A. Therefore, the impact of the incremental UGA flows on velocity and erosion is considered to be less than significant.

- **Water Quality Degradation (Temperature).** The temperature impact has been discussed previously (see Water Quality Degradation due to Increased Discharge section above).

- **Water Quality Degradation (Contaminant Levels).** The contaminant impact has been discussed previously (see Water Quality Degradation due to Increased Discharge section above).

Based on the above discussion, the following effects on water quality, erosion and sedimentation are *cumulatively less than significant* and no mitigation is required: mercury loading, changes in pH, nutrient loading, change in taste or creation of odors, velocity, bank scour, and turbidity. The following effects are *cumulatively considerable and significant* but can be mitigated to a less than significant level by application of mitigation measures set forth in the 1996 WWTP Master Plan EIR: temperature change, introduction of trace metals and organics, and changes in dissolved oxygen.

**Mitigation Measures**

The following measures appear in the 1996 DCWWTP Master Plan EIR. Merritt Smith Consulting has determined, after recent analysis, that continued compliance with these
mitigation measures is sufficient to reduce impacts related to temperature change, introduction of trace metals and organics, and changes in dissolved oxygen to a less than significant level:

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

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

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

4.3.4-10 The Specific Plan could contribute to cumulative degradation of Sacramento River water quality due to increased effluent discharge from the SRWTP.

The SRWTP 2020 Master Plan EIR evaluated potential impacts to water quality associated with treatment and discharge of anticipated future SRWTP discharges in Sacramento River. Effects on water quality were considered to be significant if the project: substantially degrades Sacramento River or Delta water quality; causes or substantially contributes to the exceedance of water quality standards, objectives, or criteria required to protect beneficial uses, outside the zone of initial mixing; or substantially impairs the integrity of the Sacramento River or Delta as a whole. The project would contribute to, but would not exceed the flows analyzed in the 2020 Master Plan EIR.

The evaluation included an assessment of effects on receiving water quality from the discharge of additional effluent from the SRWTP and storm water/onsite drainage under the project. The following water quality characteristics and constituents were evaluated for their impacts based on the thresholds of significance listed above: effluent biochemical oxygen demand (bod) and ammonia, and effects on river dissolved oxygen (do) levels; bromide; carbon tetrachloride; chloride; cyanide; chlorodibromomethane and dichlorobromomethane; electrical conductivity; Giardia and cryptosporidium; lindane (gamma-bhc); 1,4-dichlorobenzene; ammonia; arsenic; bis(2-ethylhexyl)phthalate; chloride; chloroform; chlorpyrifos; copper; diazinon; lead; mercury; methylene chloride (dichloromethane); nitrate + nitrite; nutrient loading and eutrophication; pathogens; Ph; selenium; silver; tetrachloroethene (tetrachloroethylene); total dissolved solids (tds); total organic carbon (toc); total suspended solids (tss); zinc; toxicity/additive toxicity; and construction and operation of the proposed master plan facilities and control of storm water runoff.

The SRWTP 2020 Master Plan EIR found all impacts associated with increased effluent discharge from SRWTP to the Sacramento River to be less than significant. Although the Placer Vineyards Specific Plan would contribute to future discharge volumes, the above described water quality conclusions would not be altered. This impact is less than significant.

Mitigation Measures

No mitigation measures are required.
4.3.4-II The Specific Plan could contribute to cumulative effects resulting from increased diversions and changes in CVP operations that could result in reduced river flows and reservoir storage.

Changes in the operation of the CVP and SWP under the cumulative condition could be expected to substantially reduce water storage levels in Folsom, Shasta, and Trinity reservoirs, and substantially reduce flows in the lower American and Sacramento rivers, relative to existing conditions. Under the cumulative condition, long-term average Folsom Reservoir water storage would be reduced by up to 11% during September, relative to the existing condition. Similarly, Shasta Reservoir long-term average water storage would be reduced by up to 7% in September under the cumulative condition, and Trinity Reservoir long-term average water storage would be reduced by up to 5% during June, relative to the existing condition. For the lower American River at Nimbus Dam, long-term average flows under the cumulative condition would be reduced by up to 15%, relative to the existing condition. Long-term average upper Sacramento River flows under the cumulative condition would be reduced by up to 9%, and long-term average lower Sacramento River flows would be reduced by up to 5%, relative to the existing condition. The greatest reductions in storage and flows would be from September through November, when existing flows are already low. Such reductions in storage and flow rates would result in increased concentrations of contaminants of concern. Increases in constituent concentrations that may occur under the cumulative condition could be sufficiently large to cause state or federal water quality criteria or standards to be exceeded, while such standards are not exceeded under the existing condition. Therefore, impacts to water quality under the cumulative condition would be potentially significant.

Incremental Contribution of the Long-Term Water Supply

The proposed long-term water supply would have no cumulatively considerable contribution to reductions in reservoir water storage or flow rates that would occur under the cumulative condition. In regards to Folsom Reservoir end-of-month water storage, the proposed long-term water supply would not contribute substantially to the reductions in long-term average storage that occur under the cumulative condition. Furthermore, the proposed long-term water supply would result only in increases in Folsom Reservoir end-of-month storage relative to the cumulative condition. The largest increase would be 0.2% during July and December (Template Output H-105). The proposed long-term water supply would contribute up to 1% of the cumulative reduction in long-term average water storage in Shasta Reservoir in any given month. During June and July, under the proposed long-term water supply, end-of-month storage would decrease by a maximum of 1,000 AF relative to the cumulative condition (Template Output H-106). At Trinity Reservoir, there would be no cumulatively considerable contribution to cumulative reductions in long-term average water storage at Trinity Reservoir. In fact, reductions in water storage at Trinity Reservoir would not occur and the greatest increase that would occur under the proposed long-term water supply, relative to the cumulative condition, would be 0.1% during all months except January and April (Template Output H-107). Therefore, the proposed long-term water supply would have no cumulatively considerable contribution to water quality impacts to CVP reservoirs that could occur under the cumulative condition. As the long-term water supply would not contribute to the impacts that occur under
the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Therefore, this impact is considered less than significant.

The proposed long-term water supply would have no cumulatively considerable contribution to flow reductions under the cumulative condition in either the lower American or the Sacramento rivers. The proposed long-term water supply would contribute up to 8% of the total cumulative reduction in long-term average lower American River flows in any given month (Template Output H-108 to H-109). The greatest flow reduction that would occur in the lower American River below Nimbus Dam and at the mouth under the proposed long-term water supply would be 250 cfs compared to the cumulative condition. These flow reductions of up to 250 cfs occur as a step function in the model as a result of small changes in Folsom Reservoir storage (i.e., decreases in storage ranging from 4 to 12 TAF). These changes occur as a result of a modeling trigger (which releases water from Folsom Reservoir during dry year conditions, as defined in the model framework), and would not be experienced under real-time operations. Accordingly, the greatest reduction in flow that would occur under the proposed long-term water supply under real time operations in the lower American River below Nimbus Dam and at the mouth would be 196 cfs, respectively, compared to the cumulative condition (Technical Appendix G-313 to G-324 and G-361 to G-372). These reductions would be considered small because 196 cfs out of 4,821 cfs (monthly mean flow in the lower American River below Nimbus Dam) and 197 cfs out of 4,774 cfs (monthly mean flow in the lower American River at the mouth) would not be reductions of enough magnitude to constitute a significant effect to lower American River flows. In addition, the long-term average flow in the lower American River below Nimbus and at the mouth would not decrease more than 0.2% in all months simulated, under the proposed long-term water supply (Template Output H-108 to H-109).

For the upper Sacramento River below Keswick, the proposed long-term water supply would contribute up to 3% of the cumulative reduction in long-term average flow in any given month. The long-term average flow in the upper Sacramento River under the proposed long-term water supply, relative to the cumulative condition, would not reduce more than three cfs in any given month (Template Output H-110). In the lower Sacramento River at Freeport, the proposed long-term water supply would contribute up to 1% of the cumulative reduction in long-term average flow in any given month. Long-term average flow at Freeport would only decrease a maximum of 0.1% during October and August under the proposed long-term water supply (Template Output H-111).

The changes in monthly river flow under the proposed long-term water supply would not be of sufficient magnitude or frequency to result in a substantial increase in the concentration of contaminants in these water bodies. In addition, the greatest decreases in flow would not be experienced under real time operations. Consequently, the proposed long-term water supply would have no cumulatively considerable contribution to significant water quality impacts that could occur under the cumulative condition. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.
Mitigation Measures

No mitigation measures are required.

4.3.4-12 The proposed Specific Plan could contribute to a cumulative effect on Delta water quality.

Reductions in long-term average Delta outflow of up to approximately 8% would occur during all months except April, July and August, when slight increases would occur under the cumulative condition, relative to the existing condition. Reductions in monthly mean flows of 5% or more (up to 42%), relative to the existing condition, would occur in 233 of the 840 months analyzed throughout the 70-year period of hydrologic record. Such reductions would occur with sufficient frequency and magnitude to result in potentially significant cumulative impacts to water quality.

The long-term average position of X2 would move upstream less than one kilometer during any given month under the cumulative condition, relative to the existing condition. However, there would be 31 occurrences, of the 840 months included in the analysis, in which the position of X2 would shift by one km or more, relative to the existing condition. Such shifts would be of sufficient magnitude to result in potentially significant cumulative impacts to water quality parameters that are influenced by the position of X2.

Incremental Contribution of the Long-Term Water Supply

The proposed long-term water supply would contribute to reductions in Delta outflow of 5% or more in 1 month to the 233 months under the cumulative condition (Technical Appendix H-1 to H-12). In 756 out of the 840 months simulated, monthly mean Delta outflow under the long-term water supply would be essentially equivalent to or greater than the cumulative condition. Furthermore, the proposed long-term water supply would result in maximum changes in the long-term average Delta outflow to be within 12 cfs, relative to the cumulative condition (Template Output H-413). Therefore, the proposed long-term water supply would not result in outflow reductions of sufficient frequency or magnitude to have a cumulatively considerable contribution to the potentially significant reductions in Delta outflow that would occur under the cumulative condition. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.

The proposed long-term water supply would not have a cumulatively considerable contribution to shifts in the position of X2. Specifically, the long-term average position of X2 would not shift during any given month under the proposed long-term water supply condition (Template Output 429). Moreover, in 806 of the 840 months simulated, the monthly mean position of X2 under the proposed long-term water supply would be essentially equivalent to the position under the cumulative condition. The greatest shift in the position of X2 under the proposed long-term water supply would be 0.3 km, representing a maximum change of 0.003%, relative to the cumulative condition (Technical Appendix H-13 to H-24). Therefore, the proposed long-term water supply would not have a cumulatively considerable contribution to future potentially
significant water quality impacts in the Delta. As the long-term water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.

Reductions in long-term average Delta outflow of up to approximately 8% would occur under the cumulative condition, relative to the existing condition. Monthly reductions of 5% or more (up to 42%), relative to the existing condition, would occur in 233 of the 840 months analyzed throughout the 70-year period of hydrologic record. Such reductions would occur with sufficient frequency and magnitude to result in potentially significant cumulative impacts to water quality. The proposed Specific Plan long-term water supply would contribute 1 month to the 233 months with outflow reductions under the cumulative condition (Technical Appendix G-1 to G-12). Therefore, the proposed long-term water supply would not result in outflow reductions of sufficient frequency or magnitude to contribute substantially to the potentially significant reductions in Delta outflow that would occur under the cumulative condition.

The long-term average position of X2 would move upstream less than one kilometer under the cumulative condition, relative to the existing condition. However, there would be 21 occurrences, of the 840 months included in the analysis, in which the position of X2 would shift by one km or more, relative to the existing condition. Such shifts would be of sufficient magnitude to result in potentially significant impacts to water quality parameters that are dependent upon the position of X2. The proposed Specific Plan long-term water supply, however, would not contribute considerably to shifts in the position of X2 (Technical Appendix G-13 to G-24). Therefore, the proposed long-term surface water supply’s contribution to future significant water quality impacts in the Delta, would be less than cumulatively considerable (i.e., less than significant).

Mitigation Measures

No mitigation measures are required.
ENDNOTES


4.4

BIological Resources
4.4 BIOLOGICAL RESOURCES

4.4.1 INTRODUCTION

This section describes the biological resources that occur, or potentially occur, in the Placer Vineyards Specific Plan area and associated off-site infrastructure areas. The biological analysis is based on data collected during field reconnaissance, follow-up surveys, and existing documentation of biological resources in the area. This documentation addresses the vegetation communities present and the wildlife and plant species occurring, or potentially occurring, in the affected areas, as well as the suitability of habitats to support special-status species and sensitive habitats, including potential jurisdictional waters of the United States. This section also includes a discussion of potentially significant impacts on biological resources and mitigation measures necessary to reduce impacts to, where possible, a less than significant level.

METHODOLOGY

Available information pertaining to the natural resources of the region was reviewed, including biological resource documentation from other projects in the vicinity of the Specific Plan area. Literature review included:

- The Placer Vineyards Specific Plan, Placer County, California (January 2006)

- California Department of Fish and Game (CDFG) California Natural Diversity Data Base (CNDDB: Citrus Heights, Rio Linda, Roseville and Pleasant Grove 7.5-minute series quadrangles, 2000, 2004 and 2005)


- California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California, 1994


- The Placer County Tree Preservation Ordinance and General Plan


The Specific Plan area was surveyed by Foothill Associates biologists between December 1999 and February 2000, with subsequent field work to delineate jurisdictional waters of the United States in the spring of 2000 as well as in the summer of 2001 for an additional 290-acre parcel bounded by Baseline Road on the north, Dyer Lane on the south, 14th Street on the west, and Tanwood Avenue on the east. Field investigations involved conducting general plant and
wildlife surveys focusing on portions of the Specific Plan area with the potential to support special-status species and sensitive habitats. Color aerial photography of the Specific Plan area was used to identify and map vegetation types and sensitive habitats.

As part of this assessment, Foothill Associates biologists prepared a preliminary delineation of waters of the United States utilizing the U.S. Army Corps of Engineers (Corps) 1987 three-parameter methodology to delineate jurisdictional waters of the U.S. for a portion of the Specific Plan area (portion previously identified as “Phase 1”). This methodology required collection of hydric soils, hydrophytic vegetation, and hydrologic data at several locations to establish the jurisdictional edge of waters of the U.S. Data points were surveyed to determine the percent dominance by hydrophytic vegetation, as determined by the *U.S. Fish and Wildlife Service National List of Plant Species that Occur in Wetlands: 1988 California (Region 0)*. Waters of the U.S. were mapped through a combination of the aerial photography and field survey, not utilizing Global Positioning System (GPS) standards that are now required to delineate waters of the United States by the Corps of Engineers. Between 2002 and 2005, individual participating property owners contracted with ECORP Consulting, Foothill Associates, and/or Gibson and Skordal to conduct on-site wetland delineations according to Corps’ standards. These individual property-specific delineations, all of which will be verified by the Corps, have been composited to produce a reliable wetland map for the properties surveyed. The prior-conducted wetland assessment compiled by Foothill Associates remains the standard analytical tool for the properties not subsequently surveyed. Foothill Associates also completed an Arborist Report for the area formerly designated as “Phase 1” in accordance with the Placer County Tree Ordinance. It is included as Appendix F of this Revised Draft EIR. Surface Water Resources, Inc. (SWRI) contributed to the initial surface water supply analysis contained in this section.

During 2005 and 2006, ECORP Consulting has conducted in-field wetland mapping (using aerial photography) to support impact analysis for the off-site infrastructure. While this mapping has not yet been compiled to Corps’ standards, due to inability to access properties and resultant inability to compile the required data points and GPS data, the data are believed to be a reliable representation of the existing conditions along the alignments and will support impact analysis appropriate to this document.

### 4.4.2 ENVIRONMENTAL SETTING

The Specific Plan area is located in western Placer County within the Sacramento Valley. Major waterways within this area include the Sacramento and Feather Rivers, with numerous supporting tributaries such as Dry Creek and Auburn Ravine. Dry Creek borders the Specific Plan area along its southeastern boundary. Both historical and present-day land uses in the region include agricultural land (cultivated crops, irrigated pasture for cattle, and rice farming) and rural residential developments. Land to the southwest (Natomas Basin) and east (the City of Roseville) is currently being developed for residential, commercial, and recreational uses. The region is accessible by several major highway corridors that include Interstates 5 and 80 and State Highways 65, 70, and 99. The off-site infrastructure generally follows the rights-of-way of existing roads.
**VEGETATION/HABITAT TYPES**

Vegetation in the Specific Plan area is dominated by a mixture of cultivated agricultural land and non-native annual grassland (some of which is grazed), with scattered vernal pools, other seasonal wetlands, stock ponds, ephemeral (and formerly ephemeral) drainages, and some riparian habitat. With historical agricultural water inputs, some of the formerly ephemeral watercourses have become intermittent. Where changed, these watercourses support emergent marsh vegetation and scattered stands of scrub riparian habitat. The ongoing transition of Curry Creek to an apparent perennial watercourse is probably attributable to development upstream. A substantial riparian corridor occurs along the southeastern edge of the property adjacent to Dry Creek. Two stands of blue oak woodland and several scattered individual oak trees represent the majority of the upland trees in the Specific Plan area. Non-native landscaping dominates the rural residential portions of the Specific Plan area.

Habitat communities occurring in the Specific Plan area are identified in Tables 4.4-1 and 4.4-2. Figure 4.4-1 illustrates the habitat types in the Specific Plan area and wetland types and acreages are described in detail in Figure 4.4-2.

In Tables 4.4-1 and 4.4-2 and as shown in Figure 4.4-1, properties surveyed and properties requiring additional resource identification are depicted. Notably, the habitat surveys performed for these properties vary both in level of detail and accuracy, since not all of the results have been confirmed. Exclusions 1 through 4, as identified in Figure 4.4-1, are the properties requiring additional resource identification. Property owners in these areas are currently not participating in the Specific Plan. As a result, the properties have not been completely surveyed for wildlife or plant species. Estimates of resources were made for these areas at varying levels of detail using aerial photographs and other record sources. Additional resource identification is required for those properties if they are to participate in the future.

<table>
<thead>
<tr>
<th>Table 4.4-1</th>
<th>Existing Biological Resources Within the Specific Plan Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat Type</strong></td>
<td><strong>Properties Surveyed</strong></td>
</tr>
<tr>
<td>Wetlands</td>
<td>153.4</td>
</tr>
<tr>
<td>Riparian Habitat (Native)</td>
<td>42.0</td>
</tr>
<tr>
<td>Riparian Habitat (Non-Native)</td>
<td>0.6</td>
</tr>
<tr>
<td>Oak Woodland</td>
<td>44.3</td>
</tr>
<tr>
<td>Oak Savannah</td>
<td>22.7</td>
</tr>
<tr>
<td>Grassland</td>
<td>2,339.2</td>
</tr>
<tr>
<td>Agricultural Land</td>
<td>1,372.3</td>
</tr>
<tr>
<td>Roads/Other Surface Cover:</td>
<td>16.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,991.4</td>
</tr>
</tbody>
</table>

### Table 4.4-2
Existing Wetlands and Waters Within the Specific Plan Area

<table>
<thead>
<tr>
<th>Wetland/Waters Type</th>
<th>Properties Surveyed</th>
<th>Properties Requiring Additional Resource Identification</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depressional Wetlands</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vernal Pool</td>
<td>35.2</td>
<td>5.9</td>
<td>41.1</td>
</tr>
<tr>
<td>Seasonal Wetland</td>
<td>27.1</td>
<td>0.0</td>
<td>27.1</td>
</tr>
<tr>
<td>Seasonal Wetland Swale</td>
<td>15.8</td>
<td>0.0</td>
<td>15.8</td>
</tr>
<tr>
<td>Seasonal Marsh</td>
<td>0.2</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Pond</td>
<td>18.9</td>
<td>2.9</td>
<td>21.7</td>
</tr>
<tr>
<td>Drainage Swale</td>
<td>2.2</td>
<td>0.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Stock Pond</td>
<td>5.2</td>
<td>0.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Slope Seasonal Wetland</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Riverine Wetlands</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canal/Ditch</td>
<td>0.7</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Creek</td>
<td>0.5</td>
<td>0.0</td>
<td>0.5</td>
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<tr>
<td>Ephemeral Drainage</td>
<td>4.3</td>
<td>0.0</td>
<td>4.3</td>
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<tr>
<td>Intermittent Drainage</td>
<td>19.9</td>
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<tr>
<td>Channel</td>
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<td>1.5</td>
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<tr>
<td>Riverine Seasonal Wetlands</td>
<td>15.7</td>
<td>2.2</td>
<td>17.8</td>
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<tr>
<td>Riverine Seasonal Marsh</td>
<td>5.6</td>
<td>8.2</td>
<td>13.9</td>
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<tr>
<td>Riverine Perennial Marsh</td>
<td>0.6</td>
<td>0.0</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153.4</strong></td>
<td><strong>19.2</strong></td>
<td><strong>172.6</strong></td>
</tr>
</tbody>
</table>


### SEASONAL WETLAND

Seasonal wetlands occur throughout the Specific Plan area. They are typically associated with shallow drainages, swales or depressions, and typically support wetland vegetation including grasses such as Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), perennial ryegrass (*Lolium perenne*), curly dock (*Rumex crispus*), annual bluegrass (*Poa annua*), and rabbitsfoot grass (*Polypogon monspeliensis*). These wetland types are reported as “depressional seasonal wetlands” and “riverine seasonal wetlands” in the above tables. The Specific Plan area contains 60.7 acres of seasonal wetlands, 58.5 of which occur within the properties surveyed.

### VERNAL POOLS
Vernal pools are shallow depressions underlain by a hardpan layer causing them to inundate. These wetland features support typical vernal pool plant species found in the Sacramento Valley. Plant species observed in these habitats include coyote-thistle (Eryngium vaseyi), popcorn flower (Plagiobothrys stipitatus), tricolored monkeyflower (Mimulus tricolor), and downingia (Downingia spp.). The Specific Plan area contains approximately 41 acres of vernal pools, 35 acres of which occur within the properties surveyed.

EPHEMERAL DRAINAGE/POND

The ephemeral drainages and stock ponds in the Specific Plan area are mostly devoid of vegetation, and in the case of ponds only support a fringe of perennial vegetation dominated by cattail (Typha latifolia), tule (Scirpus acutus), and common rush (Juncus effusus). The remainder of pond surface acreage is open water. Ephemeral drainages have a defined bed and bank. These drainages remain dry most of the time, carrying water only during and/or shortly after rain events. There are approximately four acres of ephemeral drainage mapped within the Specific Plan area; all are within the properties surveyed. Stock ponds represent approximately five acres in the Specific Plan area; all are within the properties surveyed.

SEASONAL MARSH/RIPARIAN

Where water remains in an intermittent drainage long enough, emergent marsh vegetation can become established. Riparian habitat occurs along the southeastern edge of the property adjacent to Dry Creek. Another small, sparse stand of riparian habitat occurs in association with an intermittent drainage in the southwestern portion of the Specific Plan area (i.e., southeast quadrant of Ownership Unit 19). Riparian trees such as arroyo willow (Salix lasiolepis), Goodding’s black willow (Salix gooddingii), and Fremont’s cottonwood (Populus fremontii) occur in these areas. The associated understory consists of woody and herbaceous plant species such as Himalayan blackberry (Rubus discolor), dallis grass (Paspalum sp.), and Johnson grass (Sorghum halepense). Just upstream to the east, across Palladay Road, there is a 0.5 acre stand of eucalyptus planted around a stock pond. This has been designated as “non-native riparian” habitat. The Specific Plan area contains approximately 0.2 acres of depressional seasonal marsh, 13.9 acres of riverine seasonal marsh, and approximately 42 acres of riparian area. All of the identified seasonal marsh and riparian resources occur on properties surveyed.

OAK WOODLAND/SAVANNAH

Two stands of remnant blue oak woodland totaling approximately 44.3 acres occurs in the Specific Plan area; both stands are on properties surveyed. Blue oak woodlands are dominated by blue oaks (Quercus douglasii) and they have a non-native herbaceous understory typical of non-native grassland habitat. Several scattered oaks also occur throughout the Specific Plan area, and approximately 23 acres of oak savannah habitat have been identified (almost all of which is on properties surveyed). Overall, the trees appear to be in fair health and are deteriorating due to widespread fungi decay.
GRASSLAND

Non-native grassland that is used for grazing occurs throughout the region. It is dominated by non-native grasses and other herbaceous species such as those found in the aforementioned agricultural land, with the exception of Fitch’s tarweed (Hemizonia fitchii) and soft chess (Bromus hordeaceus), which are the predominant species found in non-native grassland. The Specific Plan area contains approximately 3,473 acres of grassland, of which approximately 2,339 acres occur within the properties surveyed.

AGRICULTURAL LAND

Cultivated agricultural land is a major land use throughout the region. Typically, these areas are actively maintained (disced) throughout the year for cultivated grain crops such as wheat. Some areas are flooded for rice production, as well as irrigated for year round cattle grazing. Upland herbaceous vegetation primarily consists of non-native grass species such as wild oats (Avena sp.), foxtail (Hordeum murinum), annual ryegrass (Lolium multiflorum), and annual bluegrass (Poa annua). Additional weedy herbaceous species include yellow star thistle (Centaurea solstitialis), filaree (Erodium sp.), and wild radish (Raphanus sativus). The Specific Plan area contains approximately 1,448 acres characterized as agricultural, of which approximately 1,372 acres occur within the properties surveyed.

WILDLIFE/HABITAT TYPES

The wildlife species supported by each vegetation community within the Specific Plan area are identified below.

VERNAL POOLS

By definition, vernal pools are underlain by a water-restricting layer. Therefore, these shallow depressions support plant and invertebrate communities that thrive in inundated conditions. The invertebrate species that potentially occur in vernal pools include common species such as clam shrimp (Cyzicus or Lynceus sp.), seed shrimp species, and several aquatic insects such as predaceous diving beetles (Family Dytiscidae), crawling water beetles (Family Haliplidae), back swimmers (Family Notonectidae), and water fleas (Daphnia sp.). Potential listed species include vernal pool fairy shrimp (Branchinecta lynchii) and vernal pool tadpole shrimp (Lepidurus packardi). Wetlands occurring on approximately eight hundred acres of the properties surveyed have been surveyed (dry-season) according to USFWS protocol. Branchinecta (presumed B. lynchii) and/or Lepidurus packardi cysts have been identified on the Ownership Units 3 and 10 (for a map of Ownership Units, see Figure 3-11).

RIPARIAN

Riparian areas provide habitat for a variety of wildlife. Bird species expected to occur in the riparian habitat in association with the on-site intermittent drainage include northern harrier
(Circus cyaneus), red-tailed hawk (Buteo jamaicensis), northern flicker (Colaptes auratus),
white-crowned sparrow (Zonotrichia leucophrys), song sparrow (Melospiza melodia), black
phoebe (Sayornis nigricans), yellow-rumped warbler (Dendroica coronata), spotted towhee
(Pipilo erythrophthalmus), and American goldfinch (Carduelis tristis). Common mammal
species expected to occur in this habitat type include raccoon (Procyon lotor) and striped skunk
(Mephitis mephitis). Opossum (Didelphis marsupialis) is also commonly observed in riparian
habitats.

**FISHERIES**

Dry Creek forms the southeastern boundary for the Specific Plan area and is the only feature in
the Specific Plan area known to support a variety of fish species. Although the on-site ponds
could support warm water species such as sunfishes, these areas are not significant habitats for
other common species or listed species, such as Chinook salmon (Oncorhynchus tshawytscha) or
steelhead (Oncorynchus mykiss). Since some of the off-site infrastructure areas potentially
cross several drainages, listed fish species could also occur in these features. Listed and other
special-status fish species are discussed later in this section under Special-Status Species.

**BLUE OAK WOODLAND**

Blue oak woodlands provide cover, foraging and roosting opportunities for a wide range of avian
species. Species observed in this habitat type include northern flicker, dark-eyed junco (Junco
hyemalis), white-breasted nuthatch (Sitta carolinensis), acorn woodpecker (Melanerpes
formicivorus), house finch (Carpodacus mexicanus), mourning dove (Zenaida macroura), and
scrub jay (Aphelocoma coerulescens).

**GRASSLAND**

Species observed in this habitat type include American kestrel (Falco sparverius), mourning
dove, American crow (Corvus brachyrhynchos), brewer’s blackbird (Euphagus cyanocephalus),
and western meadowlark (Sturnella neglecta). Additional species expected to occur here include
house finch, savannah sparrow (Passerculus sandwichensis), western kingbird (Tyrannus
verticalis), and California ground squirrel (Spermophilus beecheyi). Seasonal wetlands within
the region are associated with the non-native grassland habitats. Wildlife species expected to
occur in seasonal wetlands are similar to those observed or expected to occur in the non-native
grasslands.

**AGRICULTURAL LAND**

Agricultural land provides food and cover for small mammals, which in turn provide a prey base
for raptors. Wildlife species observed in this habitat type include birds of prey such as
Swainson’s hawk, loggerhead shrike, American kestrel, northern harrier, turkey vulture
(Cathartes aura), and white-tailed kite. Additional species observed here include white-crowned
sparrow, Brewer’s blackbird, western meadowlark, and European starling (Sturnus vulgaris).
**OFF-SITE INFRASTRUCTURE**

Primary habitat types in the off-site infrastructure areas are annual grassland; riparian woodland; landscaped areas associated with industrial, commercial, rural and medium to high-density residential uses; oak woodland; seasonal and vernal pool complexes; and other waters such as creek and small drainage crossings. Wetland types within the off-site infrastructure areas are shown in Figures 4.4-3 and 4.4-4. Although impacts to wetland areas from off-site infrastructure have been quantified and reported in Tables 4.4-10 and 4.4-12, upland resources are not quantified. This latter decision was made because most disturbances will be temporary and minor in nature with facilities placed underground or in existing paved areas. The actual area of impact will physically be very small; however, a larger area was surveyed around each facility to ensure that sensitive resources would not be adversely affected.

The long-term surface water supply corridor generally follows the alignment of Baseline/Riego Road, south along Pleasant Grove Road and then westerly along Elverta Road to the Sacramento River. The initial surface water supply corridor extends from the Specific Plan area easterly along Baseline Road to connect to the City of Roseville pipeline at Fiddyment Road. It is also proposed to provide recycled water to the project site from the Dry Creek Wastewater Treatment Plant (DCWWTP), and at some future time, the Pleasant Grove Wastewater Treatment Plant (PGWWTP). To receive recycled water from the DCWWTP, a connection will be made to an existing 24-inch gravity recycled water line constructed as part of the Dry Creek West Placer Community Facilities District #1. The pipeline currently terminates south of Dry Creek on the east side of Walerga Road. The line will be extended in a northerly direction along Walerga Road to Baseline Road where it will turn west to the project site. In the future, as the west Roseville area develops, a line will be extended west along Phillip Road from the PGWWTP and then in a southward direction generally along the alignment of Watt Avenue to Baseline Road and will supplement and/or replace the DCWWTP supply (Figure 3-18).

The corridor for the sewer connection to the Sacramento Regional County Sanitation District (SRCSD) sewer system extends from the Specific Plan area southerly following the alignment of Sorrento Road to the SRCSD Upper Northwest Interceptor at a point in Elkhorn Boulevard. The corridor for the connection of the westernmost 4,350 acres of the Specific Plan area to the DCWWTP extends from the Specific Plan area south on Watt Avenue to PFE Road, then easterly along the alignment of PFE Road and northerly to the plant by way of one of three proposed alignments. A third off-site corridor is proposed to provide sewer service to the easterly 890 acres. This corridor would extend in a southerly direction across Dry Creek, then east along the south side of Dry Creek to a point east of Walerga Road where it would connect to an existing wastewater force main (Figures 3-6 and 3-7).

In addition to the utility lines described above, it will be necessary to widen Watt Avenue between Baseline Road and Pepperidge Drive in Sacramento County. Baseline Road will also be widened adjacent to the Specific Plan area in Placer County and five intersections will be improved along Riego Road (the extension of Baseline Road in Placer and Sutter Counties). Riego Road intersections to be improved in Sutter County include both legs of Pleasant Grove Road and East Natomas Road. Intersections to be improved along Baseline Road in Placer
County include Locust Road and Dyer/Brewer. Improvements may also be necessary at the Dry Creek Wastewater Treatment Plant and Sacramento Regional Wastewater Treatment Plant to accommodate the project; however, improvements will occur within the developed footprints and it is anticipated that no biological or wetland resources will be affected.

**DRY CREEK WASTEWATER TREATMENT PLANT (DCWWTP), INCREASED FLOWS AND AQUATIC RESOURCES EFFECTS**

Merritt Smith Consulting has prepared a Technical Memorandum to evaluate future anticipated compliance with water quality regulations in Dry Creek, and to assess the future cumulative impacts to water quality and aquatic biological resources in Dry Creek due to the prospect of treating and discharging greater amounts of wastewater from the DCWWTP (see Appendix Q of this Revised Draft EIR). The technical memorandum acknowledges the future cumulative assessments included in previous EIRs, which address wastewater flows from within the current DCWWTP service area, and determines whether discharge of additional treated flows from proposed projects (including a significant portion of the Specific Plan) that are outside the current service area would result in any new significant cumulative impacts, not previously identified, or that would be more severe than those previously identified.

The assessment of impacts to water quality and aquatic resources described in the technical memorandum is intended to contribute to a common basis for the cumulative impacts discussion of the project-specific CEQA documentation being prepared for proposed projects. The areas considered in the assessment include:

- Placer Vineyards
- Placer County Sewer Maintenance District No. 3
- Areas in the South Placer Municipal Utility District not currently within the service area boundary (i.e., flows for which discharge impacts have not already been addressed in a CEQA document).
- Placer Ranch
- Curry Creek
- Regional University
- Orchard Creek
- Sierra Vista and Creekview Specific Plan areas.

The cumulative assessment builds upon the cumulative assessments included in the City of Roseville’s 1996 Master Plan EIR and *West Roseville Specific Plan EIR*. The following background related to aquatic biological resources is excerpted from the technical memorandum:

Because aquatic biological resources are an identified beneficial use of Dry Creek, certain limitations included in the NPDES permit [for DCWWTP] act to assure compliance with receiving water criteria/objectives adopted for the protection of aquatic life. By complying with aquatic life water quality criteria/objectives in the receiving waters downstream of the DCWWTP discharge, these resources are protected and maintained. As part of the permit
renewal process, State (i.e., California Department of Fish and Game) and federal (i.e., NOAA Fisheries and the U.S. Fish and Wildlife Service) agencies charged with management of fisheries and aquatic resources receive a copy of the Tentative NPDES permit for review and comment. This further assures that the limitations included in the NPDES permit, when met, will protect fish and aquatic resources in the receiving water, downstream of the discharge.

Information used for assessment of DCWWTP aquatic resource impacts in this Revised Draft EIR under IMPACTS AND MITIGATION MEASURES below is excerpted from the technical memorandum.

SACRAMENTO REGIONAL WASTEWATER TREATMENT PLANT (SRWTP)

The SRWTP 2020 Master Plan provides the planning capacity for future needs of the Sacramento Regional Wastewater Treatment Plant. The future capacity needs of SRWTP are based on population-based wastewater flow projections of the current service area, annexation of West Sacramento in the year 2007, and water conservation rates. Other possible future annexations, such as Placer Vineyards, were not included in the projections.

SRWTP is operated by Sacramento Regional County Sanitation District (SRCSD) and is located ten miles south of downtown Sacramento on a 3,500 acre site. SRWTP occupies 900 acres and the remaining 2,600 acres consists of open space land and provides a buffer zone between the facilities and surrounding land uses. Nearby land uses include residential development to the north, east, and south. Industrial development is located to the south, Interstate 5 and the Sacramento River are located west of the property, and a 1,000-foot-wide restricted development area is located to the south.

SRWTP discharges its treated effluent into the Sacramento River. Currently, the SRCSD is conducting several studies and implementing various programs to investigate the most cost-effective ways to reduce pollutants of concern that are discharged to the Sacramento River. In particular, the SRWTP discharge permit identifies mercury, lindane and the orthophosphate (OP) pesticides, chlorpyrifos and diazinon, as pollutants of concern. These studies and programs focus on removing these and other pollutants discharged to the Sacramento River and improving river water quality.

SPECIAL-STATUS SPECIES

The following discussion describes the plant and animal species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and could require specialized habitat conditions. Listed and special-status species are defined as:

- Listed or proposed for listing under the state or federal Endangered Species acts;
- Protected under other regulations (e.g. Migratory Bird Treaty Act);
- CDFG Species of Special Concern;
• Listed as species of concern by CNPS or USFWS; or
• Receiving consideration during environmental review under CEQA.

Special-status species were considered for this analysis based on field survey results, a review of the CNDDDB database, a review of the USFWS lists for special-status species occurring in the region, and CNPS literature (see Table 4.4-3). Only species that are known to occur, or that potentially occur, in the Specific Plan area and Off-site Infrastructure areas based on the analysis in the tables are discussed further in this Revised Draft EIR. Figures 4.4-5 (Plan area CNDDDB) and 4.4-6 (Off-site Infrastructure CNDDDB) show results of the CNDDDB search.

<table>
<thead>
<tr>
<th>Table 4.4-3</th>
<th>Listed and Special-Status Species Potentially Occurring in the Specific Plan Area, Specific Plan Area Vicinity, or Off-site Infrastructure Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Federal (USFWS)</td>
</tr>
<tr>
<td>PLANTS</td>
<td></td>
</tr>
<tr>
<td>Dwarf downingia Downingia pusilla</td>
<td>--</td>
</tr>
<tr>
<td>Bogg's Lake hedge hyssop Gratiola heterosepala</td>
<td>--</td>
</tr>
<tr>
<td>Red Bluff dwarf rush Juncus leiospermus var. Leispermus</td>
<td>---</td>
</tr>
<tr>
<td>Legenere Legenere limosa</td>
<td>--</td>
</tr>
<tr>
<td>Sacramento Orcutt grass Orcuttia viscida</td>
<td>E</td>
</tr>
<tr>
<td>Slender Orcutt grass Orcuttia tenuis</td>
<td>T</td>
</tr>
<tr>
<td>Valley sagittaria Sagittaria sanfordii</td>
<td>SC</td>
</tr>
<tr>
<td>Henderson’s bentgrass Agrostis hendersonii</td>
<td>SC</td>
</tr>
<tr>
<td>Ahart’s dwarf rush Juncus leiospermus var. ahartii</td>
<td>SC</td>
</tr>
</tbody>
</table>
### Table 4.4-3
Listed and Special-Status Species Potentially Occurring in the Specific Plan Area, Specific Plan Area Vicinity, or Off-site Infrastructure Areas

<table>
<thead>
<tr>
<th>Species</th>
<th>Federal (USFWS)</th>
<th>State (CDFG)</th>
<th>CNPS</th>
<th>Habitat</th>
<th>Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pincushion navarretia Navarretia leucocephala</td>
<td>---</td>
<td>---</td>
<td>1B</td>
<td>Vernal pools</td>
<td>Low: the disturbed nature of the vernal pools in the Specific Plan area likely precludes the occurrence of this species. Could occur in pools within the off-site infrastructure areas.</td>
</tr>
<tr>
<td>Hartweg’s golden sunburst Pseudobahia bahiaefolia</td>
<td>E</td>
<td>E</td>
<td>1B</td>
<td>Foothills, woodlands, clay grasslands</td>
<td>Low: the disturbed nature of the vernal pools in the Specific Plan area likely precludes the occurrence of this species. Could occur in pools within the off-site infrastructure areas.</td>
</tr>
<tr>
<td>California hibiscus Hibiscus californicus</td>
<td>---</td>
<td>---</td>
<td>2</td>
<td>Marsh, riparian</td>
<td>Unlikely: due to absence of suitable habitat.</td>
</tr>
<tr>
<td>Big-scale balsamroot Balsamorhiza macrolepis</td>
<td>---</td>
<td>---</td>
<td>1B</td>
<td>Cismontane woodland, valley/fothill grassland</td>
<td>Unlikely: due to disturbed nature of Specific Plan area habitat.</td>
</tr>
</tbody>
</table>

**INVERTEBRATES**

| Vernal pool tadpole shrimp Lepidurus packardi | E               | ---          | ---  | Vernal pools, some seasonal wetlands          | High: the species is known to occur in the Specific Plan area and may occur in the off-site infrastructure areas. |
| Vernal pool fairy shrimp Branchinecta lynchi | T               | ---          | ---  | Vernal pools, some seasonal wetlands          | High: the species is known to occur in the Specific Plan area and may occur in the off-site infrastructure areas. |
| California linderiella Linderiella occidentalis | SC             | ---          | ---  | Vernal pools, some seasonal wetlands          | Medium: potential habitat occurs in vernal pools and some seasonal wetlands throughout the Specific Plan area and off-site infrastructure areas. |
| Valley elderberry longhorn beetle Desmocerus californicus dimorphus | T               | ---          | ---  | Elderberry shrubs                            | Low: although not observed, shrubs could occur in the Specific Plan area in Dry Creek and off-site infrastructure areas. Within the Specific Plan area, this species is not expected to be adversely affected by project activities. |

**FISH**

| Chinook salmon (fall/late fall run) Oncorhynchus tshawytscha | P               | CSC          | ---  | Sacramento River and its perennial tributaries below Keswick Dam | High: due to the fact that the Dry Creek corridor is considered potential habitat for this species. However, there is a lack of perennial watercourses in the developable Specific Plan area. Could occur in appropriate habitats within the off-site infrastructure areas. |
| Central Valley steelhead Oncorhynchus mykiss | T               | ---          | ---  | Sacramento River and its perennial tributaries | High: due to the fact that the Dry Creek corridor is considered potential habitat for this species. However, there is a lack of perennial watercourses in the developable Specific Plan area. Could occur in appropriate habitats within the off-site infrastructure areas. |

**AMPHIBIANS/REPTILES**

| Western spadefoot toad Spea (=Scaphiopus) hammondii | SC              | CS C         | ---  | Grasslands with seasonal breeding pools       | Unlikely: although vernal pools occur in the Specific Plan area and off-site infrastructure areas, the disturbed nature of the land (i.e. active cultivation), degraded condition of these habitats, and lack of CNDDB records, likely precludes the occurrence of this species. |
Table 4.4-3
Listed and Special-Status Species Potentially Occurring in the Specific Plan Area, Specific Plan Area Vicinity, or Off-site Infrastructure Areas

<table>
<thead>
<tr>
<th>Species</th>
<th>Federal (USFWS)</th>
<th>State (CDFG)</th>
<th>CNPS</th>
<th>Habitat</th>
<th>Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>California tiger salamander <em>Ambystoma californiense</em></td>
<td>C</td>
<td>CSC</td>
<td>---</td>
<td>Valley-foothill grasslands with suitable breeding pools</td>
<td>Unlikely: the disturbed nature of the vernal pools, degraded condition of these habitats in the Specific Plan area and off-site infrastructure areas likely precludes presence of this species.</td>
</tr>
<tr>
<td>Western pond turtle <em>Emys (=Clemmys) marmorata</em></td>
<td>SC</td>
<td>CSC</td>
<td>---</td>
<td>Permanent water bodies with basking sites such as logs and rocks</td>
<td>Medium: although not observed, potential habitats occur in the on-site stock ponds and creeks. Could occur in appropriate habitats in the off-site infrastructure areas; however, there are no historical records known for Placer County.</td>
</tr>
<tr>
<td>California horned lizard <em>Phrynosoma coronatum frontale</em></td>
<td>---</td>
<td>CSC</td>
<td>---</td>
<td>Valley-foothill woodlands and riparian habitats with annual grasslands</td>
<td>Low: the disturbed nature of the Specific Plan area likely precludes presence of this species, although the species could occur in appropriate habitats in the off-site infrastructure areas.</td>
</tr>
<tr>
<td>Giant garter snake <em>Thamnophis gigas</em></td>
<td>T</td>
<td>T</td>
<td>---</td>
<td>Perennial water bodies with sufficient cover vegetation</td>
<td>Low: due to the lack of suitable habitat in the Specific Plan area. Could occur in association with the off-site infrastructure areas to the Sacramento River or the SRWTP, remaining off-site infrastructure areas are outside known range of this species.</td>
</tr>
<tr>
<td>BIRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bald eagle <em>Haliaeetus leucocephalus</em></td>
<td>T</td>
<td>---</td>
<td>---</td>
<td>Large open water bodies with suitable wintering sites (large trees)</td>
<td>Unlikely: due to the lack of suitable habitat in the Specific Plan area and off-site infrastructure areas.</td>
</tr>
<tr>
<td>Burrowing owl <em>Athene cunicularia</em></td>
<td>MBTA</td>
<td>CSC</td>
<td>---</td>
<td>Grasslands with friable soils for burrowing</td>
<td>Medium: potential habitat occurs throughout the Specific Plan area. Could occur in appropriate habitats within the off-site infrastructure areas.</td>
</tr>
<tr>
<td>Swainson’s hawk <em>Buteo swainsoni</em></td>
<td>MBTA</td>
<td>T</td>
<td>---</td>
<td>Large trees, riparian woodlands and open grasslands/agricultural fields for foraging</td>
<td>High: potential foraging habitat occurs throughout the Specific Plan area and off-site infrastructure areas. One raptor nest was observed along the seasonal marsh drainage in the south-central portion of the Specific Plan area - likely red-tailed hawk nest. A Swainson’s hawk nest has, however, been observed off-site in the area north of Baseline Road.</td>
</tr>
<tr>
<td>Little willow flycatcher <em>Empidonax traillii brewsteri</em></td>
<td>SC</td>
<td>---</td>
<td>---</td>
<td>Open river valleys or large mountain meadows with lush growth</td>
<td>Medium: may occur as a migrant species. Not expected to nest.</td>
</tr>
<tr>
<td>Bank swallow <em>Riparia riparia</em></td>
<td>MBTA</td>
<td>T</td>
<td>---</td>
<td>Fine-textured siliceous or sandy vertical banks along rivers</td>
<td>Unlikely: due to the lack of suitable habitat in the Specific Plan area and off-site infrastructure areas.</td>
</tr>
<tr>
<td>Tricolored blackbird <em>Agelaius tricolor</em></td>
<td>MBTA</td>
<td>CSC</td>
<td>---</td>
<td>Freshwater marsh and blackberry brambles</td>
<td>Medium: suitable habitats occur in the seasonal marsh corridor in the south-central portion of the Specific Plan area. Could occur in appropriate habitats in the off-site infrastructure areas.</td>
</tr>
<tr>
<td>Species</td>
<td>Federal (USFWS)</td>
<td>State (CDFG)</td>
<td>CNPS</td>
<td>Habitat</td>
<td>Potential for Occurrence</td>
</tr>
<tr>
<td>---------</td>
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<td>-------------------------</td>
</tr>
<tr>
<td>Herons and Egrets (including white-faced ibis and black-crowned night heron)</td>
<td>MBTA *(rookery) ---</td>
<td>---</td>
<td>Marshlands and ponds</td>
<td>Medium: could forage in on-site ponds but has not been observed. No nest sites (rookeries) found in the Specific Plan area. Could occur in appropriate habitats in the off-site infrastructure areas.</td>
<td></td>
</tr>
<tr>
<td>Raptors (hawks, owls, falcons)</td>
<td>MBTA</td>
<td>CSC (some) ---</td>
<td>Large trees, riparian woodlands and open grasslands for foraging</td>
<td>High: potential habitat occurs throughout the Specific Plan area. Red-tailed hawks were observed foraging and one nest was observed along the seasonal marsh drainage in the south-central portion of the Specific Plan area. Likely occurs in appropriate habitats in the off-site infrastructure areas.</td>
<td></td>
</tr>
<tr>
<td>Prairie falcon <em>Falco mexicanus</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Grassland</td>
<td>High: expected to winter and forage, but not nest.</td>
<td></td>
</tr>
<tr>
<td>Ferruginous hawk <em>Buteo regalis</em></td>
<td>SC</td>
<td>CSC ---</td>
<td>Grassland</td>
<td>High: expected to winter and forage, but not nest.</td>
<td></td>
</tr>
<tr>
<td>Merlin <em>Falco columbarius</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Grassland, woodland</td>
<td>High: expected to winter and forage, but not nest.</td>
<td></td>
</tr>
<tr>
<td>Golden eagle <em>Aquila chrysaetos</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Grassland</td>
<td>Medium: foraging</td>
<td></td>
</tr>
<tr>
<td>Short-eared owl <em>Asio flammeus</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Marsh, grassland</td>
<td>High: wintering</td>
<td></td>
</tr>
<tr>
<td>Loggerhead shrike <em>Lanius ludovicianus</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Grassland, woodland</td>
<td>High: expected to occur on site and potentially nest.</td>
<td></td>
</tr>
<tr>
<td>Northern harrier <em>Circus cyaneus</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Marsh, grassland</td>
<td>High: expected to forage and potentially nest on site.</td>
<td></td>
</tr>
<tr>
<td>Horned lark <em>Eremophila alpestris actia</em></td>
<td>---</td>
<td>CSC ---</td>
<td>Grassland, agricultural land</td>
<td>Medium: expected to forage, but not next.</td>
<td></td>
</tr>
<tr>
<td>Grasshopper sparrow <em>Ammodramus savannarum</em></td>
<td>---</td>
<td>--- ---</td>
<td>Grassland</td>
<td>Low: may potentially occur on site and nest.</td>
<td></td>
</tr>
<tr>
<td>Long-billed curlew <em>Numenius americanus</em></td>
<td>FSC</td>
<td>CSC ---</td>
<td>Grassland, pasture</td>
<td>Medium: wintering, but not nest</td>
<td></td>
</tr>
</tbody>
</table>

**BATS (Townsend's big-eared, small-footed, long-eared, fringed, long-legged, and Yuma)** | SC | CSC --- | Forests and woodlands with sources of water for feeding; maternity roosts in a variety of protected areas (e.g. rock crevices, caves, buildings, mine shafts, etc.) | Low: no potential maternity roost sites were found during reconnaissance, although these species could forage in the Specific Plan area and off-site infrastructure areas. May roost in limited areas within the off-site infrastructure areas. |

**SPECIAL-STATUS PLANTS**

Of the seven special-status plants evaluated for this assessment, six typically occur in vernal pool habitats (i.e., dwarf downingia, Boggs Lake hedge-hyssop, Red Bluff dwarf rush, legenere,
Sacramento Orcutt grass, and slender Orcutt grass). However, due to either their shallow depth or disturbed nature (due to either historical or active cultivation), the lack of CNDDB records, and the lack of on-site survey sightings, their potential for occurrence in vernal pools in the Specific Plan area has been deemed low. These species could also occur in pools within the off-site infrastructure areas. Valley sagittaria is a special-status plant species that is also unlikely to occur in the Specific Plan area, given the lack of observations, CNDDB records, and the limited habitat values of on-site stock ponds. This species could also occur in appropriate habitats in the off-site infrastructure areas. During 2003, ECORP Consulting conducted rare plant surveys targeting wetland-inhabiting special-status plants on approximately 1,865 acres of properties surveyed (i.e., Ownership Units 4, 15, 12a, 12b, 7, and 19) with negative results (see Figure 3-11).

SPECIAL-STATUS WILDLIFE

Invertebrates

California linderiella, a special concern species, vernal pool fairy shrimp, and vernal pool tadpole shrimp (both listed species) are associated with vernal pools and require inundation to complete their life cycle. The vernal pools occurring throughout the Specific Plan area are marginal, but still could support these species. The pools in the off-site infrastructure areas represent potential habitat for these species. As discussed above, determinate dry season surveys, according to USFWS protocol, conducted on approximately eight hundred acres of the properties surveyed, have yielded fairy shrimp cysts (presumed to be Branchinecta lynchi) and tadpole shrimp cysts on Ownership Unit 3, and (again presumed) Branchinecta lynchi cysts on Ownership Unit 10 (see Figure 3-11).

Valley elderberry longhorn beetle (VELB) is a federally-listed, threatened species that occurs in association with elderberry shrubs, where it completes its life cycle. Elderberry shrubs were not observed in the Specific Plan area, but could occur in the Dry Creek riparian area. There is a potential for elderberry shrubs to occur in the off-site infrastructure areas, and elderberry shrubs could be disturbed by Specific Plan projects such as construction of trails and widening of Watt Avenue.

Amphibians and Reptiles

Of the five special-status amphibian and reptile species evaluated for this assessment, Northwestern pond turtle is the only species that is likely to occur in the Specific Plan area. Since this species was not observed during reconnaissance surveys, this species potential to occur in the on-site ponds has been deemed low. The remaining species are not expected to occur in the Specific Plan area due to the lack of suitable habitats or degraded conditions. However, these species could occur in appropriate habitats in the off-site infrastructure areas.

Birds
Of the six individual species and two groups evaluated for this assessment, three species (Swainson’s hawk, tricolored blackbird, and burrowing owl) and members of the two groups (herons, egrets, and raptors) could occur in the Specific Plan area and are of particular concern. Swainson’s hawks prefer agricultural fields adjacent to nest sites for foraging. Due to the proximity of the Specific Plan area to known nest sites, this species could forage throughout the Specific Plan area as well as nest in select trees. Tricolored blackbirds prefer marsh habitats and are less likely to nest in blackberry brambles in the Central Valley. Because these habitats are present in the Specific Plan area, the species could nest here, although these habitats are now part of the open space design for the Specific Plan area. Common raptors, such as red-tailed hawks, were observed foraging in the Specific Plan area. One raptor nest was found in a small tree along the seasonal marsh drainage in the southern portion of the Specific Plan area; therefore, raptors could nest in the Specific Plan area, as well as the off-site infrastructure areas.

Other species that could occur include Loggerhead shrike, which is resident in the Central Valley. Loggerhead shrike use small trees and shrubs within open grassland and agricultural settings as nesting territories. The California horned lark winters throughout the Central Valley, including western Placer County. However, this subspecies nests in San Joaquin Valley and Coast Range open grassland communities and is not expected to nest in western Placer County. Horned larks that nest on the Valley floor in western Placer County are comprised of the "ruddy" subspecies (E. a. rubea), which are not considered a special-status species. Long-billed curlews are winter visitants to the Central Valley, including western Placer County. They do not nest in this region. They can be found foraging within open grassland and agricultural settings throughout the Central Valley during winter. Herons and egrets could also forage in the area; however, although both are protected under the MBTA, neither is a special species of concern, unless a rookery (nest site) is present. No rookeries were observed during field surveys.

Mammals

The only special-status mammals that could occur in the Specific Plan area are bats. Townsend’s big-eared bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis prefer arid upland areas in California in a wide variety of habitats including arid wooded and brushy uplands near water. These species feed on moths, flies, and beetles. The Specific Plan area and off-site infrastructure areas provides suitable foraging opportunities for these species; however, no potential maternity roost sites were found during the survey, and these species are not expected to breed in the Specific Plan area, but could breed within the off-site infrastructure areas.

SPECIAL-STATUS FISH

Chinook salmon (spring-run, fall-run, late fall-run, and winter run) and steelhead require cold, clean water flowing over a gravel bottom in order to successfully reproduce. These species are known to occur in the Sacramento River and many of its tributaries below Keswick Dam in Shasta County. Neither winter-run nor spring-run Chinook salmon use the Dry Creek system. Fall-run salmon and steelhead use of upstream portions of the Dry Creek system (i.e., Miners Ravine and Secret Ravine) indicates that these species migrate through that portion of Dry Creek
adjacent to the Specific Plan area. However, no habitat for these species occurs in the developable portion of the Specific Plan area. These species could occur in appropriate habitat in off-site infrastructure areas (utility line and roadway crossings); however, project proponents have stated that jack and bore construction methods will be used for utility line crossings affecting Dry Creek.

Fall-run Chinook salmon may enter the American River, and its tributaries (e.g., Dry Creek), from mid-September through January. Peak upstream migration generally occurs from mid-October through December, though spawning may occur from mid-October through February. Fall-run Chinook salmon exhibit “ocean type” behavior, in which adult salmon spawn immediately upon entering the spawning tributary. This strategy is in contrast to “stream type” behavior, in which the sexual products (eggs and sperm) become mature while the fish is in the stream environment (e.g., winter-run and spring-run Chinook salmon). Adults of all races of Chinook salmon die soon after spawning. Fall-run Chinook salmon fry are known to emerge from the American River (and from Dry Creek) spawning gravels from January through mid-April. They rear to smoltification in the American River from January through mid-July, leaving freshwater habitat within their first year of life. Data collected by the CDFG in 1999 and 2000 indicate that emigration of juvenile Chinook salmon smolts in secret ravine largely occurs from February through June, with peak emigration occurring from March through May.

Steelhead, the anadromous form of rainbow trout, historically inhabited most tributaries to the Sacramento River, including Dry Creek. Dry Creek is designated by National Marine Fisheries Service (“NOAA Fisheries”) as critical habitat for the Central Valley ESU steelhead. Typically, juvenile steelhead emigrate as age class 1+ fish (one year in fresh water), through the Sacramento River and the Sacramento-San Joaquin Estuary, from November through May. Juvenile steelhead emigration from Dry Creek largely occurs from late March through May. Upstream spawning migration of adults and downstream migration of juvenile steelhead and Chinook salmon generally occur after October 15 and prior to June 15. Consequently, most construction activities that may potentially affect instream habitat conditions, and that are permitted by the U.S. Army Corps of Engineers and NOAA Fisheries, typically take place between June 15 and October 15.

CRITICAL HABITAT DESIGNATION

VERNAL POOL SPECIES

The USFWS has engaged in lengthy rulemaking proceedings to designate as Critical Habitat under the Endangered Species Act certain lands in Placer County and in California generally (including portions of Oregon). On September 24, 2002, the USFWS published a proposed rule to designate Critical Habitat for four vernal pool crustaceans and eleven vernal pool plants. 67 FR 59884. The four vernal pool crustaceans included the Conservancy fairy shrimp
Branchinecta conservatio), longhorn fairy shrimp (Branchinecta longiantenna), vernal pool fairy shrimp, and vernal pool tadpole shrimp. The 11 vernal pool plant species included the Butte County meadowfoam (Limnanthes floccosa ssp. californica), Contra Costa goldfields (Lasthenia conjugens), Hoover’s spurge (Chamaesyce hooveri), fleshy (or succulent) owl’s-clover (Castilleja campestris ssp. succulenta), Colusa grass (Neostapfia colusana), Greene’s tuctoria (Tuctoria greenei), hairy Orcutt grass (Orcutta pilosa), Sacramento Orcutt grass (Orcuttia inaequalis), slender Orcutt grass (Orcuttia tenuis), and Solano grass (Tuctoria mucronata).

On July 15, 2003, the USFWS made a final determination of Critical Habitat for the 15 vernal pool species. The final rule was published in the Federal Register on August 6, 2003, and excluded certain lands from the final designation: lands that were already subject to policy or management plans, and lands within five California counties based on potential economic impacts (Butte, Madera, Merced, Sacramento, and Solano Counties). (68 FR 46684.)

In January 2004, Butte Environmental Council and other parties filed a complaint in the United States District Court for the Eastern District of California, alleging that, among other things, the USFWS improperly excluded several acres from the final designation of Critical Habitat for the 15 vernal pool species and failed to properly consider the economic impacts of designating Critical Habitat. On October 28, 2004, the District Court issued a Memorandum and Order remanding the rulemaking to the USFWS to reconsider the exclusions from the final Critical Habitat designation.

On December 28, 2004, the USFWS reopened the comment period on the designation to solicit any new information regarding the exclusion of lands based on non-economic considerations. The USFWS issued its final rule on March 8, 2005, regarding those particular lands, effectively re-affirming the non-economic exclusions contained in the August 2003 final rule.

On June 30, 2005, the USFWS published a draft Economic Analysis for the reconsideration of Critical Habitat designation of lands within Butte, Madera, Merced, Sacramento, and Solano Counties. (70 FR 37739.) The USFWS issued its final rule on August 11, 2005, regarding those lands excluded from Critical Habitat designation based on economic considerations. (70 FR 46924.) The USFWS’ final rule became effective on September 12, 2005.

In addition to excluding certain lands within the five California counties, the final rule excluded several other lands, identified by census tract number, from a variety of other California counties, including Placer County. Specifically, the final rule excludes both census tracts in Placer County that comprise all 5,230 acres of the Specific Plan area. (70 FR 46950.) As such, none of the lands within the Specific Plan area are designated as Critical Habitat for the 15 vernal pool species. The USFWS Recovery Plan recommends that the project preserve at least 85% of vernal pool grasslands within the project site.

SALMONID SPECIES
The National Marine Fisheries Service ("NOAA Fisheries") issued a final rule on September 2, 2005 designating Critical Habitat for two evolutionarily significant units ("ESUs") of chinook salmon and five ESUs of steelhead listed under the Endangered Species Act. (70 FR 52488.) NOAA Fisheries designated approximately 8,935 net miles of riverine habitat and 470 square miles of estuarine habitat in California within the geographical areas presently occupied by the seven ESUs.

Critical Habitat boundaries for these species include the stream channels within the designated stream reaches, and include a lateral extent as defined by the ordinary high-water line. (70 FR 52537; 33 C.F.R. Section 329.11.) In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. (70 FR 52537.) Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain, and is reached at a discharge which generally has a recurrence interval of one to two years on the annual flood series. (70 FR 52537.)

As part of its final rulemaking, NOAA Fisheries designated certain streams in Placer County as Critical Habitat for the Central Valley Steelhead ESU. (70 FR 52537.) NOAA Fisheries designated Dry Creek in the Valley-American Hydrologic Unit (Fifth Field Calwater Hydrologic Sub-Area Number 551921) as Critical Habitat for the California Central Valley Steelhead. (70 FR 52616.) Dry Creek is the only stream located within the Specific Plan area that is designated as Critical Habitat for steelhead.

**FINAL RECOVERY PLAN**

On December 15, 2005, the U.S. Fish & Wildlife Service approved a Final Recovery Plan for the Vernal Pool Ecosystems of California and Southern Oregon ("Recovery Plan"). This Recovery Plan features 33 plant and animal species that occur exclusively or primarily within a vernal pool ecosystem in California and Southern Oregon. Twenty federally-listed vernal pool ecosystem plant and animal species are identified. The Recovery Plan also addresses 13 species of special concern. The overall goals of the Recovery Plan are to achieve and protect in perpetuity self-sustaining populations of the vernal pool species, provide for delisting of 20 federally-listed plant and animal species, and ensure the long-term conservation of the 13 species of special concern (Recovery Plan, p. viii).

Western Placer County, including the Specific Plan area, is identified as a core area within the Southeastern Sacramento Vernal Pool Region. Vernal pool species characterizing this core area include vernal pool fairy shrimp, vernal pool tadpole shrimp, California fairy shrimp, western spadefoot toad, Bogg’s Lake hedge-hyssop, Ahart’s dwarf rush, and legenere. The Recovery Plan designates the western Placer County core area as a “Priority 2” recovery priority area. Although the Recovery Plan does not establish regulatory limits or requirements, Priority 2 recommends the protection of 85% of the suitable vernal pool habitat within the core area (Recovery Plan, p. III-118).

**SENSITIVE HABITATS**
Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 21083.4 of the Public Resources Code, Section 1600 of the Fish and Game Code, or Section 404 of the Clean Water Act (CWA). Habitats may also be protected under specific local policies. Sensitive habitats in the Specific Plan area include blue oak woodland, some riparian vegetation and waters of the U.S. (e.g., wetlands, including vernal pools, seasonal wetlands). Sensitive habitats in the Specific Plan area are shown in Figures 4.4-1 and 4.4-2. Sensitive habitats that are likely to occur in the off-site infrastructure areas are riparian woodland, oak woodlands, seasonal wetland and vernal pool complexes, and other wetlands such as creek and small drainage crossings.

BLUE OAK WOODLAND AND OAK TREES

Blue oak woodlands support a high diversity of upland wildlife habitat and are considered sensitive natural communities. Although oak trees and oak woodland habitats are not afforded special protection under federal law, the California legislature enacted SB 1334 in 2004, which added oak woodland conservation regulations to the Public Resources Code.

In addition, the Placer County Tree Ordinance regulates all projects with the potential to affect any protected trees. Protected trees are defined as any native tree species with a diameter at breast height (DBH) of six inches or greater. Vegetation mapping indicates approximately 44 acres of oak woodland occur in the Specific Plan area, all on properties surveyed. A tree survey of a portion of the Specific Plan area, conducted by Foothill Associates, has been included as Appendix F of this Revised Draft EIR.

RIPARIAN

Riparian habitats typically support diverse vegetation and numerous wildlife species and as a result, these habitats are considered to be of high biological value. Riparian habitats are not recognized under state or federal law as Critical Habitats; however, the decline of riparian habitats is a concern of the CDFG and CNPS. Vegetation mapping indicates approximately 43 acres of riparian habitat occur in the Specific Plan area, all on properties surveyed.

WATERS OF THE U.S.

Jurisdictional waters of the U.S. include jurisdictional wetlands and other waters of the U.S. including creeks, ponds, and intermittent and ephemeral drainages. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Corps 1987). The majority of jurisdictional wetlands in the U.S. meet three wetland delineation criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Jurisdictional waters of the U.S. can also be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). As discussed in Regulatory Framework, jurisdictional waters of the U.S. are subject to Section 404 of the CWA and are regulated by the U.S. Army Corps of Engineers (Corps).
Approximately 153 acres of waters of the U.S. are located on surveyed properties. These consist of approximately 104 acres of depressional wetlands, such as vernal pools, isolated seasonal wetlands, drainage swales, and/or ponds with another 49 acres of riverine wetlands, including riverine seasonal wetlands. Ephemeral and intermittent drainages comprise 4 and 20 acres, respectively. Wetter portions of the drainage features support another 5.6 acres of riverine seasonal marsh, and 0.6 acres of perennial marsh. Stock ponds and channelized drainages comprise another approximately five and two acres, respectively. Approximately 0.5 acres of perennial creek (i.e., Dry Creek) have been mapped within the Specific Plan area boundary.

**SURFACE WATER SUPPLY**

Biological resources information for the surface water supply discussion have been excerpted from descriptions contained in the Placer County Water Agency (PCWA) *American River Pump Station Project EIS/EIR* (PCWA and U.S. Bureau of Reclamation, 2001) and the *American River Basin Cumulative Report* prepared by the U.S. Bureau of Reclamation (Reclamation) as part of the referenced EIS/EIR (August 2001). The Reclamation and PCWA are undertaking the Sacramento River Diversion project (also known as the Sacramento River Water Reliability Study project) to meet urban water supply needs within the PCWA water services boundary. The Reclamation and PCWA’s pending Sacramento River water diversion project is separate and independent of the proposed Placer Vineyards Specific Plan.

The regional setting includes the terrestrial resources (riparian and wetland vegetation and associated species that use them for habitat) of the American and Sacramento rivers and reservoirs that could be influenced by the proposed Specific Plan water supply. The discussion identifies conclusions and determinations for each species and Critical Habitat. The impact assessment focuses on habitats and special-status species.

This Revised Draft EIR addresses the biological impacts of proposed surface water supplies for the Specific Plan – both the initial surface water supply from the American River and a long-term surface water supply from the Sacramento River. Although much of the following water supply analysis may not apply specifically to the development of the Specific Plan area, at the request of the PCWA and in order to ensure a full evaluation of water supply issues and off-site impacts, this Revised Draft EIR addresses not only the terrestrial biological effects associated with the proposed Specific Plan, but also the indirect aquatic biological effects associated with obtaining the water supplies necessary to serve the Specific Plan area. For a more complete description of water supplies proposed for the Specific Plan area, see Section 4.3.3 of this Revised Draft EIR.

**TERRESTRIAL RESOURCES**

The following discussion includes terrestrial resources that could be directly or indirectly affected by implementation of the proposed Specific Plan surface water supply project. As implementation of the water supply could result in changes to Central Valley Project (CVP) hydrology, brought about by changes in integrated CVP/State Water Project (SWP) operations, certain CVP components and associated waterways are included in the regional study area.
These facilities include Shasta, Keswick, and Trinity reservoirs, the upper and lower Sacramento River, and the Sacramento-San Joaquin Delta. Detailed descriptions of the terrestrial resources associated with these facilities are provided below.

**Shasta, Keswick, and Trinity Reservoirs**

- **Vegetation Surrounding Reservoirs.** Much of the vegetation surrounding the reservoirs consists of forested habitats, with small enclaves of oak woodland, grassland, and chaparral. Pine forest habitats are located on the upland banks, and slopes of the reservoirs are dominated by ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*Pinus jeffreyi*), Douglas fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), and incense cedar (*Calocedrus decurrens*). Chaparral occurs in forest openings, and is characterized by several native shrubs such as manzanita (*Arctostaphylos* sp.) and various species of ceanothus (*Ceanothus* sp.). Non-native grasslands and oak-pine woodlands are similar to habitats described for Folsom Reservoir (see local study area description). Similar to other CVP reservoirs, including Folsom Reservoir, the drawdown zone of these reservoirs is expected to be devoid of substantial vegetation, and contiguous riparian communities are not present in these areas due to constantly changing water levels and hence, water availability. Therefore, the drawdown zones do not provide or promote the establishment of high-value plant communities or wildlife habitat.

- **Wildlife of Reservoirs.** Ponderosa pine forest and chaparral habitats associated with the reservoirs support a variety of birds, including western tanager (*Piranga ludoviciana*) and white-breasted nuthatch (*Sitta carolinensis*). Raptors that use these habitats near water include osprey (*Pandion haliaetus*) and bald eagle. Mammal species likely to occur in these habitats include the mule deer (*Odocoileus hemionus*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), ringtail (*Bassariscus astutus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), black bear (*Ursus americanus*), and beaver (*Castor canadensis*).

**Upper and Lower Sacramento River**

- **Vegetation of the Sacramento River.** Much of the Sacramento River is confined by levees that reduce the natural spatial diversity of riparian vegetation. Agricultural land (e.g. rice, dry grains, pastures, orchards, vineyards, and row and truck crops) is common along the lower reaches of the Sacramento River, but is less common in the upper portions. The bands of riparian vegetation that occur along the Sacramento River are similar to that found along the lower American River, but are somewhat narrower and not as botanically diverse. The riparian communities consist of Valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), wild grape (*Vitis californica*), box elder (*Acer negundo*), elderberry (*Sambucus mexicana*), and willow (*Salix* sp.). Freshwater, emergent wetlands occur in the slow moving backwaters and are primarily dominated by tules (*Scirpus acutus var. occidentalis*), cattails (*Typha* sp.), rushes (*Juncus* sp.), and sedges (*Carex* sp.) (SAFCA and Reclamation, 1994). Although riparian vegetation occurs along the Sacramento River, these areas are discontinuous, and confined to narrow bands between the river and the river side of the levee.
• **Wildlife of the Sacramento River.** The wildlife species inhabiting the riparian habitats along the lower Sacramento River are essentially the same as those found along the lower American River. These include, but are not limited to, wood duck (*Aix sponsa*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), green heron (*Butorides virescens*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus cinerascens*), sora (*Porzana carolina*), great horned owl (*Bubo virginianus*), Swainson's hawk (*Buteo swainsoni*), California ground squirrel (*Spermophilus beecheyi*), and coyote (*Canis latrans*). The freshwater/emergent wetlands represent habitat for many wildlife species, including reptiles and amphibians such as the western pond turtle, bullfrog (*Rana catesbeiana*), and Pacific tree frog (*Hyla regilla*). Agricultural areas adjacent to the river also represent foraging habitat for many raptor species.

**Sacramento-San Joaquin Delta**

• **Vegetation of the Delta.** Most of the vegetation in the Delta consists of irrigated agricultural fields and associated ruderal (disturbed-adapted or weedy), non-native vegetation fringes that border cultivated fields. Throughout much of the Delta, these areas border the levees of various sloughs, channels, and other waterways within the historic floodplain. Native habitats include remnant riparian vegetation that persists in some areas, with brackish and freshwater marshes also being present. Saline wetlands consist of pickleweed (*Salicornia virginica*), cord grass (*Spartina sp.*), glasswort (*Salicornia sp.*), saltgrass (*Distichlis spicata*), sea lavender (*Limonium californicum*), arrow grass (*Triglochin spp.*), and shoregrass (*Monanthochloe littoralis*). These wetlands are very sensitive to fluctuations in water salinity, which are determined, in part, by inflows to the Delta (San Francisco Estuary Project, 1993).

• **Wildlife of the Delta.** The wetlands of the Delta represent habitat for a number of shorebirds and waterfowl species including killdeer (*Charadrius vociferous*), California black rail (*Laterallus jamaicensis coturniculus*), western sandpiper (*Calidris mauri*), long-billed curlew (*Numenius americanus*), greater yellow-legs (*Tringa melanoleuca*), American coot (*Fulica americana*), American wigeon (*Anas americana*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), canvasback (*Aythya valisineria*), and common moorhen (*Gallinula chloropus*). These areas also support a number of mammals such as coyote, gray fox (*Urocyon cereoargenteus*), muskrat (*Ondatra zibethicus*), river otter (*Lontra canadensis*), and beaver. Several species of reptiles and amphibians also occur in this region.

**SPECIAL-STATUS SPECIES**

The following is a discussion of plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies and organizations. This discussion focuses on, and summarizes, species addressed in previous biological studies of the study area, and those species that have been added to state and federal special-status species lists since the time those studies were conducted. Special-status biological resources also include unique
habitats or plant communities that are of relatively limited distribution, or are of particular value to wildlife. Sources for determination of the status of these biological resources are:

Plants: CDFG (1996a), CNPS (1994), and Hickman (1993)

A number of special-status plant and wildlife species are known to occur within the region (USFWS, 1991a; USFWS, 1996). These species are listed in Table 4.4-4. The following discussion focuses only on those species occurring or potentially occurring that could be affected by the proposed increases in water diversions. A brief summary of the life history requirements of each species, and their occurrence, is included in the table.

<table>
<thead>
<tr>
<th>Table 4.4-4</th>
<th>Special-Status Species Potentially Occurring - Surface Water Supply in the Study Area</th>
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</thead>
<tbody>
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<td>Species</td>
<td>USFWS</td>
</tr>
<tr>
<td><strong>PLANTS</strong></td>
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<tr>
<td>PALMATE-BRACTED BIRD'S BEAK Cordylyanthus palmastrus</td>
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<td>HOOVER'S SPURGE Chamaesyce hooveri</td>
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<td>SUISUN THISTLE Cirsium hydrolphilum var. hydrolphilum</td>
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<td>SUISUN MARSH ASTER Aster lentus</td>
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<td>BRISTLY SEDGE Carex comossa</td>
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<td>SLOUGH THISTLE Cirsium crassicaule</td>
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<td>POINT REYES BIRD'S-BEAK Cordylyanthus maritimus ssp. palustris</td>
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<td>WRIGHT'S TRICHOCORONIS Trichocoronis wrightii var. wrightii</td>
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<td>MAD-DOG SKULLCAP Santellaria lateriflora</td>
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<td>EEL-GRASS PONDWEED</td>
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</table>
Table 4.4-4

Special-Status Species Potentially Occurring - Surface Water Supply in the Study Area

<table>
<thead>
<tr>
<th>Species</th>
<th>USFWS</th>
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<th>CNPS</th>
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<td>HAIRLESS POPCORN-FLOWER</td>
<td>-</td>
<td>-</td>
<td>1A</td>
<td>coastal marsh and alkaline meadows</td>
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<td>Plagiobothrys glaber</td>
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<td>DELTA MUDWORT</td>
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<td>-</td>
<td>2</td>
<td>marshes and swamps</td>
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<td>MASON'S LILAEOPSIS</td>
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<td>CR</td>
<td>1B</td>
<td>freshwater and brackish marshes and swamps, and riparian scrub</td>
<td>Potential habitat occurs within the study area.</td>
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<tr>
<td>DELTA TULE PEA</td>
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<td>-</td>
<td>1B</td>
<td>freshwater and brackish marshes and swamps</td>
<td>Potential habitat occurs within the study area.</td>
</tr>
<tr>
<td>Lathyrus jepsonii var. jepsonii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DELTA BUTTON-CELERY</td>
<td>-</td>
<td>CE</td>
<td>1B</td>
<td>riparian scrub in vernaly mesic clay depressions</td>
<td>Presumed extirpated within the study area.</td>
</tr>
<tr>
<td>Eryngium racemosum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SANFORD'S ARROWHEAD</td>
<td></td>
<td></td>
<td></td>
<td>shallow freshwater marshes and swamps</td>
<td>Two known occurrences along the lower American River (SAFCA 1994);</td>
</tr>
<tr>
<td>Sagittaria sanfordi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVERTEBRATES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VALLEY ELDERBERRY LONGHORN</td>
<td>FT</td>
<td>-</td>
<td>-</td>
<td>elderberry shrubs</td>
<td>Critical Habitat designated along the lower American River.</td>
</tr>
<tr>
<td>BEETLE Desmocerus californicus dimorphus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMPHIBIANS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALIFORNIA TIGER SALAMANDER</td>
<td>C</td>
<td>CSC</td>
<td>-</td>
<td>vernal pools and grasslands</td>
<td>Unlikely to occur within the study area; no appropriate habitat present.</td>
</tr>
<tr>
<td>Ambystoma californiense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WESTERN SPADEFOOT TOAD</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>vernal pools and grasslands</td>
<td>Unlikely to occur within the study area; no appropriate habitat.</td>
</tr>
<tr>
<td>Scaphiopus hammondii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALIFORNIA RED-LEGGED FROG</td>
<td>FT</td>
<td>CSC</td>
<td>-</td>
<td>deep-water ponds with overhanging vegetation</td>
<td>Extirpated in the Sacramento Valley.</td>
</tr>
<tr>
<td>Rana aurora draytonii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPTILES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WESTERN POND TURTLE</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>perennial wetlands</td>
<td>Known to occur along the lower American River.</td>
</tr>
<tr>
<td>Clemmys marmorata</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIANT GARTER SNAKE</td>
<td>FT</td>
<td>CT</td>
<td>-</td>
<td>sloughs, streams, waterways, irrigation canals, and rice fields</td>
<td>Unlikely to occur within the study area; no appropriate habitat.</td>
</tr>
<tr>
<td>Thamnophis gigas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BALD EAGLE</td>
<td>FT</td>
<td>CE</td>
<td>-</td>
<td>open water habitats for foraging and large trees near open water for perching</td>
<td>Occasionally observed at Folsom Reservoir and the Lower American River during the winter (SAFCA and Reclamation, 1994).</td>
</tr>
<tr>
<td>Haliaeetus leucocephalus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHARP-SHINNED HAWK</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>riparian woodlands and coniferous forests</td>
<td>Could occur in the riparian woodland along the lower American River during winter.</td>
</tr>
<tr>
<td>Accipiter striatus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COOPER'S HAWK</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>riparian woodland</td>
<td>Known to occur along the lower American River.</td>
</tr>
<tr>
<td>Accipiter cooperii</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWAINSON'S HAWK</td>
<td>-</td>
<td>CT</td>
<td>-</td>
<td>riparian woodland and grasslands</td>
<td>Potential nesting habitat occurs along the lower American River; no recent nesting at Folsom Reservoir, and Lake Natoma (SAFCA, 1994).</td>
</tr>
<tr>
<td>Buteo swainsoni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMERICAN PEREGRINE FALCON</td>
<td></td>
<td>CE</td>
<td>-</td>
<td>ledges or high, vertical cliffs near rivers and lakes</td>
<td>Potential foraging habitat occurs within the study area.</td>
</tr>
<tr>
<td>Falco peregrinus anatum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALIFORNIA BLACK RAIL</td>
<td>-</td>
<td>CT</td>
<td>-</td>
<td>freshwater emergent wetlands</td>
<td>Potential habitat occurs within the delta portion of the study area.</td>
</tr>
<tr>
<td>Laterallus jamaicensis coturniculus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANK SWALLOW</td>
<td>-</td>
<td>CT</td>
<td>-</td>
<td>steep, vertical banks for nesting and riparian habitat for foraging</td>
<td>Known nesting colony along the lower American River (SAFCA and Reclamation, 1994).</td>
</tr>
<tr>
<td>Riparia riparia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YELLOW WARBLER</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>riparian habitat</td>
<td>Several known occurrences along the lower American River.</td>
</tr>
<tr>
<td>Dendroica petechia brewsteri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRICOLORED BLACKBIRD</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>freshwater marsh</td>
<td>Known to occur along the lower American River and Folsom</td>
</tr>
</tbody>
</table>
### Table 4.4-4
Special-Status Species Potentially Occurring - Surface Water Supply in the Study Area

<table>
<thead>
<tr>
<th>Species</th>
<th>USFWS</th>
<th>CDFG</th>
<th>CNPS</th>
<th>Habitat</th>
<th>Potential For Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>YELLOW-BREASTED CHAT</td>
<td>-</td>
<td>CSC</td>
<td>-</td>
<td>riparian</td>
<td>Reservoir (SAFCA and Reclamation, 1994). Known to occur along the lower American River.</td>
</tr>
</tbody>
</table>

USFWS Federal Listing Categories:  C = Candidate for listing; FT = Federal Threatened; PE = Federal Proposed Endangered; PT = Federal Proposed Threatened

CDFG State Listing Categories:  CT = California Threatened; CE = California Endangered; CR = California Rare; CSC = California Species of Special Concern

California Native Plant Society (CNPS) Categories:* 1B = Plants rare, threatened, or endangered in California and elsewhere; 2 = Plants rare, threatened, or endangered in California, but more common elsewhere

* CNPS is a private non-profit organization that works closely with CDFG throughout the state. CNPS-developed information serves as an important source of data for consideration by CDFG and USFWS in recommendations for listing State or Federal threatened and endangered plant species.


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**FISH RESOURCES AND AQUATIC HABITAT**

The environmental setting descriptions contained in the PCWA *American River Pump Station Project EIS/EIR* related to fisheries are incorporated by reference in their entirety (PCWA and Reclamation, 2001). The descriptions of the various aquatic habitat settings specific to the regional, local, and regulatory setting descriptions contained in this section are, for the most part, taken directly from that document.

**Shasta and Keswick Reservoirs**

Potential water surface elevation- and storage-related impacts to the warmwater and coldwater fisheries of Shasta and Keswick reservoirs were assessed using the same methods described for Folsom Reservoir.

- **Lake Shasta.** Lake Shasta is a deep, two-story reservoir supporting a wide variety of cold and warmwater fish species. Coldwater fish use the lower, coldwater pool, while warmwater fish use the warmer, surface water layer. Coldwater species include rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), landlocked white sturgeon (*Acipenser transmontanus*), and landlocked silver salmon (*Oncorhynchus kisutch*); and warmwater species include smallmouth bass (*Micropterus dolomieui*), largemouth bass (*Micropterus salmoides*), spotted bass (*Micropterus punctulatus*), black crappie (*Poxomis nigromaculatus*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), channel catfish (*Ictalurus punctatus*), white catfish (*Ameirus catus*), and brown bullhead (*Ameirus nebulosus*). Other, nongame species in Lake Shasta are hardhead (*Mylopharodon conocephalus*), golden shiner (*Notemigonus chrysoleucas*), threadfin shad (*Dorosoma petenense*), common carp (*Cyprinus carpio*), Sacramento sucker (*Catostomus occidentalis*) and Sacramento squawfish (pikeminnow) (*Ptychocheilus grandis*).

Shasta Dam plays a major role in maintaining ecosystem values since such a large demand exists on the water resource (i.e., meeting Bay-Delta water quality standards and meeting...
requirements for the endangered winter-run Chinook salmon) (Reclamation 1999). These regulating uses cause water surface elevations to fluctuate by approximately 55 feet over the course of a year, which disturb the reservoir’s littoral (i.e., shallow, nearshore) habitats. Disruptions to littoral habitat also occur from shoreline wave action caused by wind and boating activity.

- **Keswick Reservoir.** No storage- or water surface elevation-related impacts to the fishery resources of Keswick Reservoir are expected to occur since, as a regulating afterbay of Shasta Reservoir, its monthly storage and water surface elevation will be affected little, if at all, by the proposed Specific Plan surface water supply. Consequently, no quantitative assessment of potential storage or water surface elevation-related impacts to fishery resources in this water body is warranted. Similarly, the proposed Specific Plan surface water supply would not be expected to substantially alter water temperatures within Keswick Reservoir. Accordingly, a quantitative assessment of potential temperature-related impacts to fishery resources within this reservoir was not warranted.

**Sacramento River**

The upper Sacramento River is often defined as the portion of the river from Princeton (RM 163), which is the downstream extent of salmonid spawning in the Sacramento River (Burmester pers. comm. 1996), to Keswick Dam, the upstream extent of anadromous fish migration and spawning. The Sacramento River serves as an important migration corridor for anadromous fishes moving between the ocean and/or Delta and upper river/tributary spawning and rearing habitats. The upper Sacramento River is differentiated from the river's "headwaters" which lie upstream of Shasta Reservoir. The upper Sacramento River provides a diversity of aquatic habitats, including fast-water riffles and shallow glides, slow-water deep glides and pools, and off-channel backwater habitats.

More than 30 species of fish are known to use the Sacramento River. Of these, a number of both native and introduced species are anadromous. Anadromous species include Chinook salmon, steelhead, green sturgeon (*Acipenser medirostris*) and white sturgeon, striped bass (*Morone saxatilis*) and American shad (*Alosa sapidissima*). The upper Sacramento River is of primary importance to native anadromous species, and is presently used for spawning and early-life-stage rearing, to some degree, by all four runs of Chinook salmon (i.e., fall, late-fall, winter, and spring runs) and steelhead. Consequently, various life stages of the four races of Chinook salmon and steelhead can be found in the upper Sacramento River throughout the year. Other Sacramento River fish are considered resident species, as they complete their life cycle entirely within freshwater, often in a localized area. Resident species include rainbow and brown trout, largemouth and smallmouth bass, channel catfish, sculpin (*Cottus asper*), Sacramento squawfish (pikeminnow), Sacramento sucker, hardhead, and common carp (Reclamation 1991b).

The lower Sacramento River is generally defined as that portion of the river from Princeton to the Delta, at approximately Chipps Island (near Pittsburg). The lower Sacramento River is predominantly channelized, leveed and bordered by agricultural lands. Aquatic habitat in the
lower Sacramento River is characterized primarily by slow-water glides and pools, is depositional in nature, and has reduced water clarity and habitat diversity, relative to the upper portion of the river.

Many of the fish species utilizing the upper Sacramento River also use the lower river to some degree, even if only as a migratory pathway to and from upstream spawning and rearing grounds. For example, adult Chinook salmon and steelhead primarily use the lower Sacramento River as an immigration route to upstream spawning habitats and an emigration route to the Delta. The lower river is also used by other fish species (e.g., Sacramento splittail (*Pogonichthys macrolepidotus*) and striped bass) that make little to no use of the upper river (i.e., upstream of RM 163). Overall, fish species composition in the lower portion of the Sacramento River is quite similar to that of the upper Sacramento River and includes resident and anadromous cold and warmwater species. Many fish species that spawn in the Sacramento River and its tributaries depend on river flows to carry their larval and juvenile life stages to downstream nursery habitats. Native and introduced warmwater fish species primarily use the lower river for spawning and rearing, while juvenile anadromous fish species also use the lower river, to some degree, for rearing.

An important component of aquatic habitat throughout the Sacramento River is referred to as Shaded Riverine Aquatic Cover (SRA). SRA consists of the portion of the riparian community that directly overhangs or is submerged in the river. SRA provides high-value feeding and resting areas and escape cover for juvenile anadromous and resident fishes. SRA also can provide some degree of local temperature moderation during summer months due to the shading it provides to nearshore habitats (USFWS 1992). The importance of SRA to Chinook salmon was demonstrated in studies conducted by the USFWS (DeHaven 1989). In early summer, juvenile Chinook salmon were found exclusively in areas of SRA, and none were found in nearby rip-rapped areas (DeHaven 1989).

The following paragraphs provide a description of the application of hydrologic and water temperature modeling output to identify potential effects to riverine fisheries resulting from implementation of the proposed Specific Plan surface water supply. Additional American River diversions could potentially alter seasonal Sacramento River water temperatures and flows, which could change the relative habitat availability for Sacramento River fish. Therefore, potential flow-related impacts were evaluated at several specific locations on the Sacramento River. Finally, Reclamation’s Sacramento River Chinook Salmon Mortality Model was used to estimate annual, early lifestage losses (from egg potential) for fall-run, late fall-run, winter-run, and spring-run Chinook salmon populations. Temperature input to the Sacramento River Chinook Salmon Mortality Model consists of monthly mean temperatures at nine locations between Shasta Dam and Vina Bridge. Mortality estimates for each of the four runs were modeled under the proposed Specific Plan surface water supply, which were then compared to modeled mortality estimated for each run under the existing condition. Potential impacts to the four Chinook salmon runs in the Sacramento River were evaluated using the same criteria established for the lower American River Chinook Salmon Mortality Model (see discussion under lower American River, Fall-Run Chinook Salmon).
The Sacramento River is used by a number of fish species of primary management concern, either as direct habitat during one or more of their life stages or as a migration corridor to upstream habitat in other river systems. For these reasons, species-specific impact assessments were warranted for this river system and were conducted for the following species of primary management concern:

- Winter-run Chinook salmon;
- Spring-run Chinook salmon;
- Fall-run Chinook salmon;
- Late fall-run Chinook salmon;
- Steelhead;
- Sacramento splittail;
- American shad; and
- Striped bass.

These species are of primary management concern due either to the importance of their commercial and/or recreational fisheries (i.e., fall-run Chinook salmon, American shad, and striped bass) and/or because they are a species currently or recently listed or proposed for listing under the federal ESA and/or CESA (i.e., steelhead, winter-run and spring-run Chinook salmon, and Sacramento splittail). The species selected for species-specific assessments include those sensitive to changes in both river flow and water temperature throughout the year, therefore, an evaluation of effects to these species is believed to reasonably encompass the range of potential effects upon other Sacramento River fish species (e.g., green sturgeon) that could potentially be affected by the proposed Specific Plan surface water supply.

Changes in Sacramento River water temperatures that could occur as a result of the implementation of the proposed Specific Plan surface water supply would not be expected to adversely affect fish species present in the upper Sacramento River, with the possible exceptions of Chinook salmon and steelhead. If implementation of the proposed Specific Plan surface water supply induced elevated water temperatures, spawning and rearing success of these anadromous salmonids could be affected because of their low thermal tolerance. Moreover, because: (1) thermal requirements of Chinook salmon and steelhead are generally similar; (2) the NOAA Biological Opinion for Winter-Run Chinook Salmon (NOAA 1993 as revised in 1995) has established quantitative temperature criteria for the upper Sacramento River to protect winter-run Chinook salmon; and (3) Reclamation has developed a Sacramento River Chinook Salmon Mortality Model applicable to all four runs of Chinook salmon, this assessment focused quantitatively on Chinook salmon. Impact findings for the four runs of Chinook salmon provide a technical basis from which to infer whether steelhead would be impacted by seasonal changes in water temperatures. For all runs of Chinook salmon in the Sacramento River, the time periods for the evaluation of potential effects to individual lifestages were based on life history descriptions from *Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Pacific Southwest) – Chinook Salmon* (Allen and Hassler 1986).

**Winter-Run Chinook Salmon.** The analysis of potential impacts to winter-run Chinook salmon is based upon individual life-stages (i.e., adult immigration; spawning, incubation, and initial
rearing; and juvenile rearing and emigration) because each lifestage exhibits preferences for different flow and temperature conditions.

**Flow-Related Effects**

To assess flow-related effects to winter-run Chinook salmon, long-term average and monthly mean flows released from Keswick Dam (RM 302) and in the Sacramento River at Freeport (RM 46) simulated for the proposed Specific Plan surface water supply were compared to those simulated for the existing condition. These comparisons were conducted for each of the following lifestages and time periods:

- Adult immigration (December through July);
- Spawning, incubation, and initial rearing (April through August); and
- Juvenile rearing and emigration (August through December).

The NOAA Biological Opinion for Winter-Run Chinook salmon provides flow criteria for the Sacramento River below Keswick Dam (NOAA 1993, as revised in 1995). NOAA requires that Reclamation maintain a minimum release from Keswick Dam of 3,250 cfs from October 1 through March 31. To evaluate the potential for implementation of the proposed Specific Plan surface water supply to result in changes in the frequency in which Sacramento River flow requirements are met, an assessment of flow levels below this threshold was conducted during the applicable lifestage. Thus, releases from Keswick Dam during December through March of the adult immigration period and during October through December of the juvenile emigration period were evaluated under the proposed Specific Plan surface water supply and compared to those simulated under the existing condition to determine potential changes in the frequency of flows below the 3,250 cfs criterion.

No specific flow criteria have been identified for fish in the lower Sacramento River. Therefore, potential flow-related effects determinations for the lower Sacramento River were based on an evaluation of the frequency and magnitude of change in modeled monthly mean flow at Freeport, relative to the existing condition.

**Temperature-Related Effects**

Water temperature-related effects to Sacramento Winter-Run Chinook salmon were evaluated through three distinct assessments focusing on the different lifestages and concurrent time periods, as described above. Temperature-related effects to individual winter-run Chinook salmon lifestages were based on water temperatures in the Sacramento River at Bend Bridge, Jelly’s Ferry, and Freeport. Bend Bridge and Jelly’s Ferry are used because the NOAA Biological Opinion for winter-run Chinook salmon provides temperature criteria for the Sacramento River at these locations, and the majority of winter-run Chinook salmon spawning occurs in the upper Sacramento River, between Keswick Dam and Red Bluff Diversion Dam (RM 243). Freeport is provided as an additional location for passage (immigration and emigration) considerations.
Potential changes in the frequency of exceedance of temperature criteria, as established in the Winter-Run Chinook Salmon Biological Opinion, also were evaluated during each applicable lifestage. The Biological Opinion specifies that:

- Daily average water temperatures not in excess of 56°F are required in the Sacramento River at Bend Bridge from April 15 through September 30; and
- Daily average water temperatures not in excess of 60°F are required in the Sacramento River at Bend Bridge from October 1 through October 31.

In dry water years, the location of the temperature compliance point is moved from Bend Bridge downstream to Jelly’s Ferry. For all discussions that follow, if modeling output indicates that there would be instances in which either the 56°F or the 60°F water temperature criteria would be exceeded under the proposed Specific Plan surface water supply, relative to the existing condition, a more detailed analysis of effects by individual water-year type and location was conducted. Although the NOAA (1993) temperature criteria are stated as daily averages, the available hydrologic and water temperature models allow only for monthly mean temperature analyses and output. Consequently, this assessment was based on monthly mean water temperature data output from Reclamation’s existing models.

**Adult Immigration (December through July).** Long-term average and monthly mean water temperatures simulated for each month of the December through July period under the proposed Specific Plan surface water supply were compared to those under the existing condition at Bend Bridge, Jelly’s Ferry, and Freeport in the Sacramento River. In addition, NOAA temperature criteria are applicable from April through July of the winter-run Chinook salmon adult immigration period. For these months, the frequency of monthly mean water temperatures greater than 56°F was determined under the proposed Specific Plan surface water supply and compared to the frequency of index exceedance under the existing condition.

**Spawning, Incubation, and Initial Rearing (April through August).** Long-term average and monthly mean water temperatures simulated for each month of the April through August period under the proposed Specific Plan surface water supply were compared to those under the existing condition at Bend Bridge, Jelly’s Ferry, and Freeport in the Sacramento River. In addition, NOAA temperature criteria are applicable throughout the entire winter-run Chinook salmon spawning, incubation, and initial rearing period. For these months, the frequency of monthly mean water temperatures greater than 56°F was determined under the proposed Specific Plan surface water supply and compared to the frequency of index exceedance under the existing condition.

Additionally, Reclamation's (1991) Sacramento River Chinook Salmon Mortality Model (LSALMON2) was used to assess potential temperature-related effects to the early lifestage survival of winter-run Chinook salmon, as well as the other runs of Chinook
salmon in the Sacramento River. Model output represents the percentage of potential emergent fry produced, based on all eggs brought to the river by spawning adults, that would survive under the temperature regime that would occur under each model simulation. The LSALMON2 model calculates temperature-induced mortality (the percentage of potential emergent fry lost as a result of temperature-induced mortality of pre-spawned eggs, fertilized eggs incubating in the gravel, and pre-emergent fry).

As discussed in the Trinity River Mainstem Fishery Restoration EIS/EIR (Trinity River EIS/EIR) (USFWS et al. 1999), the mortality model uses weekly average water temperatures obtained from the Sacramento River Water Temperature Model and tracks water temperature impacts on Chinook salmon egg and larval (sac-fry) development. Algorithms are used to compute the cumulative survival of eggs spawned in a particular week through fry emergence from the spawning gravel. Temperature mortality schedules (relationships) for Chinook salmon eggs and larvae were developed that establish temperature-related instantaneous daily mortality rates for modeling salmon losses. Recent (1990 through 1996) spawning distributions for winter-run Chinook salmon were used in the salmon mortality model (Rowell 1997 in USFWS et al. 1999). The model uses spatial and temporal distribution information of spawning activity specific for each salmon run in the Sacramento River. Three river reaches, including Keswick to Balls Ferry (upper), Balls Ferry to Red Bluff (middle), and downstream of Red Bluff (lower) are used in the analysis of temperature-related mortality of Chinook salmon. Within each river reach, a specific temperature-related mortality estimate is calculated. From these three partial mortality estimates, a cumulative mortality estimate, for each run, is then calculated for each water year for the simulated period of record (69 years). The complement (i.e., survival = 100 – mortality) of these calculated percent losses are discussed for impact assessment purposes. For this analysis, annual early lifestage survival estimated for the proposed Specific Plan surface water supply was compared to that estimated for the existing condition for each year of the 69-year period of record.

**Juvenile Rearing and Emigration (August through December).** The same methodology described for winter-run Chinook salmon spawning, incubation, and initial rearing was used to evaluate potential temperature-related effects to winter-run Chinook salmon juvenile rearing and emigration with the following modifications:

- The period of assessment was August through December;

- The number of years (of the 69 years modeled) that monthly mean water temperatures would exceed the index value of 65°F were determined at Bend Bridge, Jelly’s Ferry and in the Sacramento River at Freeport;

- Mean water temperatures for the years (of the 69 years modeled) during August through October that were shown to exceed the 56°F and 60°F index values identified in the NOAA Biological Opinion were determined at Bend Bridge and Jelly’s Ferry; and
– Reclamation's Salmon Mortality Model was not used, because it does not assess mortality beyond the emergent fry lifestage.

The temperature index values for juvenile rearing and emigration are different from the indexes for spawning and incubation because adult and juvenile winter-run Chinook salmon are believed to tolerate water temperatures up to 65°F without substantial adverse effects, whereas incubating eggs and pre-emergent fry incur substantial reductions in survival when water temperatures exceed 56°F.

• **Spring-Run Chinook Salmon.** To assess flow- and temperature-related effects to spring-run Chinook salmon adult immigration, spawning, egg incubation and initial rearing, and juvenile rearing and emigration, the methodology described above for Sacramento River winter-run Chinook salmon was used with the following modifications:

  - The adult immigration period was evaluated from March through September;
  - The spawning/incubation and initial rearing was evaluated from August through January;
  - The juvenile rearing and emigration period was evaluated from December through April;
  - Although 56°F is used as an index temperature for spawning, egg incubation, and initial rearing, an analysis of the exceedance of NOAA temperature criteria was not required, as no regulatory requirement exists for Sacramento River spring-run Chinook salmon; and
  - Output for spring-run Chinook salmon from Reclamation's LSALMON2 Model was used to assess potential temperature-related effects to early lifestage survival for this salmon run.

• **Fall-Run Chinook Salmon.** To assess flow- and temperature-related effects to fall-run Chinook salmon adult immigration, spawning, egg incubation and initial rearing, and juvenile rearing and emigration, the methodology described above for Sacramento River winter-run Chinook salmon was used with the following modifications:

  - The adult immigration period was evaluated from September through November;
  - The spawning/incubation and initial rearing was evaluated from October through February;
  - The juvenile rearing and emigration period was evaluated from February through June;
  - Although 56°F is used as an index temperature for spawning, egg incubation, and initial rearing, an analysis of the exceedance of NOAA temperature criteria was not required, as no regulatory requirement exists for Sacramento River fall-run Chinook salmon; and
• Output for fall-run Chinook salmon from Reclamation's LSALMON2 Model was used to assess potential temperature-related effects to early lifestage survival for this salmon run.

• **Late Fall-Run Chinook Salmon.** To assess flow- and temperature-related effects to late fall-run Chinook salmon adult immigration, spawning, egg incubation and initial rearing, and juvenile rearing and emigration, the methodology described above for Sacramento River winter-run Chinook salmon was used with the following modifications:

  - The adult immigration period was evaluated from October through April;
  - The spawning/incubation and initial rearing was evaluated from December through April;
  - The juvenile rearing and emigration period was evaluated from April through October;
  - Although 56°F is used as an index temperature for spawning, egg incubation, and initial rearing, an analysis of the exceedance of NOAA temperature criteria was not required, as no regulatory requirement exists for Sacramento River fall-run Chinook salmon; and
  - Output for late fall-run Chinook salmon from Reclamation's LSALMON2 was used to assess potential temperature-related effects to early lifestage survival for this salmon run.

• **Steelhead.** Environmental conditions required by steelhead are generally similar to those required by fall-run Chinook salmon; therefore, flow- and temperature-related impact determinations for steelhead for the periods of September through November and February through June were based on the same modeling output used to assess effects to Sacramento River fall-run Chinook salmon during these periods. However, because steelhead rear within the Sacramento River Basin year-round, additional flow and temperature impact assessments for over-summer rearing juvenile steelhead were made for the months of the year not addressed by the fall-run Chinook salmon assessments (i.e., July through September and December through March). Flow- and temperature-related effects to steelhead during the July through September period were assessed via the same methods used to assess flow- and temperature-related effects to fall-run Chinook salmon during the February through June period.

For the temperature-related effects analysis, no steelhead mortality modeling could be performed as a part of the assessment for this species, because no steelhead mortality model has been developed for the Sacramento River. However, as discussed in the Trinity River EIS/EIR, mortality estimates for late fall-run Chinook salmon can be used as a conservative surrogate for steelhead mortality estimates. Because it is likely that the actual number of steelhead spawning in the mainstem Sacramento River is likely to be much less than those spawning in tributaries to the Sacramento River (Hallock 1989 in USFWS et al. 1999), any potential adverse effects on steelhead populations, as a result of changes in water temperatures under the proposed Specific Plan surface water supply, would likely be less than that estimated via the late fall-run Chinook salmon mortality output (USFWS et al. 1999).
Splittail. Splittail move throughout the Sacramento River, which serves as a migration corridor to spawning habitat within the Sacramento River and its tributaries. Splittail spawning and migration activities are limited to the portion of the Sacramento River below Red Bluff Diversion Dam, although occurrence in the upper reaches of the Sacramento River is coincident with wet water year types (Moyle 2002). Water surface elevations in the Sacramento River have the potential to influence the amount of inundated riparian vegetation available to splittail for spawning habitat along the Sacramento River shoreline. Due to the frequency, magnitude and duration of riparian vegetation flooding, the quality and quantity of potential splittail spawning habitat has the potential to be affected by changes in releases from Shasta Reservoir under the proposed Specific Plan surface water supply. Consequently, if flows are reduced under the proposed Specific Plan surface water supply, then the availability of inundated riparian vegetation available for spawning habitat could be reduced during the splittail spawning season (February through May).

To assess flow-related effects to potential splittail spawning habitat availability during each month of the February through May period, the frequency and magnitude of flow changes under the proposed Specific Plan surface water supply were determined, relative to the existing condition. Typically, as done in the lower American River analysis, a measure of the amount of riparian habitat inundated is regressed against flow to establish a relationship between flow and available habitat. However, such a relationship for flooded riparian habitat has not been determined for the Sacramento River. Therefore, the analysis of potential effects to splittail habitat focuses on the frequency and magnitude of monthly mean flow changes.

Splittail reportedly spawn at water temperatures from 48°F to 68°F (Wang 1986). To evaluate potential temperature-related effects to splittail, the frequency in which monthly mean water temperatures in the Sacramento River at Freeport would be within this range during the February through May period was determined under the proposed Specific Plan surface water supply and compared to that under the existing condition. For the purposes of assessing temperature-related effects to splittail in the Sacramento River, water temperatures at Freeport effectively represent the range of water temperatures that splittail would encounter when using the lower portion of the river for movement, spawning, and initial rearing.

American Shad. As the majority of American shad spawning migrations into the Sacramento River are believed to occur during May and June, potential changes in river flows during these months were evaluated for this species. To evaluate potential flow-related effects to American shad attraction, migration, and spawning, the frequency and magnitude of flow changes under the proposed Specific Plan surface water supply were evaluated, relative to the existing condition.

To evaluate potential water temperature-related effects to American shad spawning, monthly mean water temperatures under the proposed Specific Plan surface water supply were determined and compared to those under the existing condition for the months of May and
June. A conservative approach for assessing potential water temperature effects was to assume that American shad may spawn throughout the river and, therefore, to evaluate water temperature conditions at Freeport. Specifically, the frequency in which monthly mean May and June water temperatures in the Sacramento River at Freeport would be within the reported preferred range for American shad spawning (60°F to 70°F) was determined under the proposed Specific Plan surface water supply and compared to that under the existing condition.

- **Striped Bass.** Potential flow-related effects to the striped bass sport fishery were assessed by determining the frequency and magnitude in which flows at Freeport under the proposed Specific Plan surface water supply would be reduced, relative to the existing condition, during the May and June spawning and initial rearing period. Optimal water temperatures for juvenile striped bass spawning and initial rearing are reported to range from approximately 59°F to 68°F (Moyle 2002). Therefore, to evaluate potential water temperature-related effects to striped bass spawning and initial rearing, the frequency in which monthly mean water temperatures in the Sacramento River at Freeport during May and June would be within this range was calculated for the proposed Specific Plan surface water supply and compared to the frequency within this range under the existing condition.

**Feather River**

- **Lake Oroville.** Lake Oroville is the second largest reservoir in California, and like many other California foothill reservoirs, is steep-sided, with large surface fluctuations and a low surface-to-volume ratio. It is a warm, monomictic reservoir that thermally stratifies in the spring, destratifies in the fall, and remains destratified throughout the winter. Due to the stratification, Lake Oroville has been said to contain a “two-story” fishery, supporting both coldwater and warmwater fisheries that are thermally segregated for most of the year. The coldwater fish use the deeper, cooler, well-oxygenated hypolimnion, whereas the warmwater fish are found in the warmer, shallower, epilimnetic, and littoral zones. Once Lake Oroville destratifies in the fall, the two fishery components mix in their habitat utilization.

Lake Oroville’s coldwater fishery is primarily composed of coho salmon and brown trout, although rainbow trout and lake trout are periodically caught. The fishery is managed by CDFG with two primary objectives: the first is to produce trophy (> 5 lbs.) salmonids, the other is to provide a quality fishery characterized by high salmonid catch rates. These management strategies are explained by CDFG in detail in DWR’s 1999 *Lake Oroville Annual Report of Fish Stocking and Fish Habitat Improvements*. The coldwater fisheries for coho salmon and brown trout are sustained by hatchery stocking because natural recruitment to the Lake Oroville coldwater fishery is very low. This occurs because of insufficient spawning and rearing habitat in the reservoir and accessible tributaries, and natural and artificial barriers to migration into the tributaries with sufficient spawning and rearing habitat. A “put-and-grow” hatchery program is currently in use, where salmonids are raised at CDFG hatcheries and stocked in the reservoir as juveniles (>5 per pound), with the intent that these fish will grow in the reservoir before being caught by anglers (DWR 2001).
The Lake Oroville warmwater fishery is a regionally important self-reproduction fishery. The black bass fishery is the most significant, both in terms of angler effort and economic impact on the area. Spotted bass are the most abundant bass species in Lake Oroville, with largemouth being next, followed by redeye bass (Micropterus coosae) and smallmouth bass. Catfish are the next most popular warmwater fish at Lake Oroville, with both channel and white catfish present in the lake. White crappie (Pomoxis annularis) and black crappie are also found in Lake Oroville, though populations fluctuate widely from year to year. Bluegill and green sunfish are the two primary sunfish species in Lake Oroville, though red ear sunfish (Lepomis microlophus) and warmouth (Lepomis gulosus) are also present in very low numbers. Considered by many to be a nuisance species, common carp are also abundant in Lake Oroville (DWR 2001). The primary forage fish in Lake Oroville are wakasagi (Hypomesus nipponensis) and threadfin shad. Threadfin shad were intentionally introduced in 1967 to provide forage for gamefish, whereas the wakasagi migrated down from an upstream reservoir in the mid-1970s (DWR 2001).

Sacramento-San Joaquin Delta

The Bay-Delta estuary provides habitat for a diverse assemblage of fish and macroinvertebrates. Many of the fish and macroinvertebrate species inhabit the estuary year-round, while other species inhabit the system on a seasonal basis as a migratory corridor between upstream freshwater riverine habitat and coastal marine waters, as seasonal foraging habitat, or for reproduction and juvenile rearing. The geographic distribution of species within the estuary is determined, in part, based upon salinity gradients, which range from freshwater within the Sacramento and San Joaquin River systems to marine conditions near the Golden Gate Bridge. The abundance, distribution, and habitat use by these fish and macroinvertebrates has been monitored over a number of years through investigations conducted by the CDFG, USFWS, DWR, and a number of other investigators. Results of these monitoring programs have shown changes in species composition and abundance within the system over the past several decades. Many of the fish and macroinvertebrate species have experienced a generally declining trend in abundance with several native species, including winter-run and spring-run Chinook salmon, steelhead, delta smelt (Hypomesus transpacificus), and Sacramento splittail, currently or recently being listed for protection under the federal ESA or CESA. Portions of the estuary have been identified as Critical Habitat for species such as winter-run Chinook salmon and delta smelt. A number of fish and macroinvertebrate species inhabiting the estuary also support recreational and commercial fisheries, such as fall-run Chinook salmon, Dungeness crab (Cancer magister), Bay shrimp (Crangon franciscorum), Pacific herring (Clupea harengus), northern anchovy (Engraulis mordax), and many others, and hence the estuary also has been identified as Essential Fish Habitat (EFH) for these species.

The following paragraphs describe the aquatic habitats and fish populations within the Delta, and were primarily taken directly from the Interim South Delta Program (ISDP) Draft EIS/EIR (DWR and Reclamation 1996). This discussion has been updated to include information from
Many factors have contributed to the decline of Delta species, including changes in hydrologic patterns resulting from water project operations, loss of habitat, contaminant input, entrainment in diversions, and introduction of non-native species. Pumps and siphons divert water for Delta irrigation and municipal and industrial use or into CVP and SWP canals. River inflow, Delta Cross Channel operations, and diversions (including agricultural and municipal diversions and export pumping) affect Delta species through changes in habitat conditions (e.g., salinity intrusion), and mortality attributable to entrainment in diversions.

Despite the high degree of habitat modification that has occurred in the Delta, Delta habitats are of key importance to fisheries, as illustrated by the more than 120 fish species that rely on its unique habitat characteristics for one or more of their lifestages (EPA 1993). Fish species found in the Delta include anadromous species, as well as freshwater, brackish water, and saltwater species. The Delta provides spawning and nursery habitat for more than 40 resident and anadromous fish species, including delta smelt, Sacramento splittail, American shad, and striped bass. Also, the Delta is a migration corridor and seasonal rearing habitat for Chinook salmon and steelhead. All anadromous fish of the Central Valley either migrate through the Delta to spawn and rear upstream or are dependent on the Delta to provide some critical part of their life cycle. Delta smelt, which have been listed under both the federal ESA and CESA, and Sacramento splittail, which were previously listed under the federal ESA, reside year-round within the Delta. Species such as green sturgeon, which are proposed for listing as threatened under the federal ESA, use the Delta as a migratory corridor, juvenile nursery, and adult foraging habitat, with spawning occurring further upstream within the mainstem Sacramento River. Longfin smelt (*Spirinchus thaleichthys*), which have been identified as a species of special concern, inhabit the Delta estuary year-round. Other species which have been listed for protection under the federal ESA and/or CESA, including winter-run and spring-run Chinook salmon and steelhead, use the estuary as a migratory corridor and as juvenile foraging habitat with spawning and egg incubation occurring further upstream within the Sacramento and San Joaquin River systems. All known native and exotic fish species found in the Delta, including those no longer present are listed in Table 4.4-5.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Life History</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific lamprey</td>
<td><em>Lampetra tridentata</em></td>
<td>A</td>
<td>Declining</td>
</tr>
<tr>
<td>River lamprey</td>
<td><em>Lampetra ayersi</em></td>
<td>A</td>
<td>SC</td>
</tr>
<tr>
<td>White sturgeon</td>
<td><em>Acipenser transmontanus</em></td>
<td>A</td>
<td>Declining; fishery</td>
</tr>
<tr>
<td>Green sturgeon</td>
<td><em>Acipenser medirostris</em></td>
<td>A</td>
<td>SC; FP</td>
</tr>
<tr>
<td>American shad</td>
<td><em>Alosa sapidissima</em></td>
<td>A</td>
<td>Fishery</td>
</tr>
</tbody>
</table>

1 The SDIP is being pursued to address the needs of the Delta aquatic environment, as well as longstanding statewide, regional, and local water supply needs. Flows into and out of the Delta have a major effect on these resources. The SDIP Draft EIS/EIR addresses the north and south Delta, as well as rivers upstream of the Delta, because implementation of the SDIP may affect fish and aquatic habitat within these areas.
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Life History</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threadfin shad</td>
<td><em>Dorosoma petenense</em></td>
<td>A</td>
<td>Common</td>
</tr>
<tr>
<td>Steelhead</td>
<td><em>Oncorhynchus mykiss</em></td>
<td>A</td>
<td>SC; FT; fishery</td>
</tr>
<tr>
<td>Pink salmon</td>
<td><em>Oncorhynchus gorbuscha</em></td>
<td>A</td>
<td>SC; rare</td>
</tr>
<tr>
<td>Chum salmon</td>
<td><em>Oncorhynchus keta</em></td>
<td>A</td>
<td>SC; rare</td>
</tr>
<tr>
<td>Coho salmon</td>
<td><em>Oncorhynchus kisutch</em></td>
<td>A</td>
<td>SC; FT</td>
</tr>
<tr>
<td>Chinook salmon</td>
<td><em>Oncorhynchus tshawytscha</em></td>
<td>A</td>
<td>fishery;</td>
</tr>
<tr>
<td>Sacramento fall-run</td>
<td></td>
<td></td>
<td>Fishery</td>
</tr>
<tr>
<td>Late fall-run</td>
<td></td>
<td></td>
<td>SC</td>
</tr>
<tr>
<td>Winter-run</td>
<td></td>
<td></td>
<td>FE; SE</td>
</tr>
<tr>
<td>Spring-run</td>
<td></td>
<td></td>
<td>ST; FT</td>
</tr>
<tr>
<td>San Joaquin fall-run</td>
<td></td>
<td></td>
<td>Fishery</td>
</tr>
<tr>
<td>Spring-run</td>
<td></td>
<td></td>
<td>Extinct</td>
</tr>
<tr>
<td>Longfin smelt</td>
<td><em>Spirinchus thaleichthys</em></td>
<td>A-R</td>
<td>SC</td>
</tr>
<tr>
<td>Delta smelt</td>
<td><em>Hypomesus transpacificus</em></td>
<td>R</td>
<td>FT; ST</td>
</tr>
<tr>
<td>Wakasagi</td>
<td><em>Hypomesus nipponensis</em></td>
<td>R?</td>
<td>Invading</td>
</tr>
<tr>
<td>Thickett chub</td>
<td><em>Gila crassicauda</em></td>
<td>R</td>
<td>Extinct</td>
</tr>
<tr>
<td>Hitch</td>
<td><em>Lavinia exilicauda</em></td>
<td>R</td>
<td>Unknown</td>
</tr>
<tr>
<td>Sacramento blackfish</td>
<td><em>Orthodon microlepidotus</em></td>
<td>R</td>
<td>Unknown</td>
</tr>
<tr>
<td>Sacramento splittail</td>
<td><em>Pogonichthys macrolepidotus</em></td>
<td>R</td>
<td>SC</td>
</tr>
<tr>
<td>Hardhead</td>
<td><em>Mylopharodonconcocephalus</em></td>
<td>N</td>
<td>SC</td>
</tr>
<tr>
<td>Sacramento pikeminnow</td>
<td><em>Ptychocheilusgrandis</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Fathead minnow</td>
<td><em>Pimephalespromelas</em></td>
<td>N</td>
<td>Rare</td>
</tr>
<tr>
<td>Golden shiner</td>
<td><em>Notemigonuschrysoleucas</em></td>
<td>R?</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Common carp</td>
<td><em>Cyprinuscarpio</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Goldfish</td>
<td><em>Carassiusauratus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Sacramento sucker</td>
<td><em>Catostomusoccidentalis</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Black bullhead</td>
<td><em>Ameiurusmelas</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Brown bullhead</td>
<td><em>Ameiurusnebulosus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Yellow bullhead</td>
<td><em>Ameiurusalatalis</em></td>
<td>R</td>
<td>Rare?</td>
</tr>
<tr>
<td>White catfish</td>
<td><em>Ameiuruscatus</em></td>
<td>R</td>
<td>Abundant</td>
</tr>
<tr>
<td>Channel catfish</td>
<td><em>Ictaluruspunctatus</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Blue catfish</td>
<td><em>Ictalurusfurcatus</em></td>
<td>R?</td>
<td>Rare</td>
</tr>
<tr>
<td>Western mosquitofish</td>
<td><em>Gambusiaaffinis</em></td>
<td>R</td>
<td>Abundant</td>
</tr>
<tr>
<td>Rainwater killifish</td>
<td><em>Lucania parva</em></td>
<td>R?</td>
<td>Rare</td>
</tr>
<tr>
<td>Striped bass</td>
<td><em>Morone saxatilis</em></td>
<td>R-A</td>
<td>Abundant</td>
</tr>
<tr>
<td>Inland silverside</td>
<td><em>Menidia beryllina</em></td>
<td>R</td>
<td>Abundant</td>
</tr>
<tr>
<td>Sacramento perch</td>
<td><em>Archoplitesinterruptus</em></td>
<td>N</td>
<td>SC</td>
</tr>
<tr>
<td>Bluegill</td>
<td><em>Lepomis macrochirus</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Redear sunfish</td>
<td><em>Lepomis microlophus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Green sunfish</td>
<td><em>Lepomis cyanellus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Warmouth</td>
<td><em>Lepomisgulosus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>White crappie</td>
<td><em>Pomoxisannularis</em></td>
<td>R</td>
<td>Common</td>
</tr>
</tbody>
</table>
### Table 4.4-5

**Fishes of the Sacramento-San Joaquin Delta**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Life History</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black crappie</td>
<td><em>Pomoxis nigromaculatus</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Largemouth bass</td>
<td><em>Micropterus salmoides</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Smallmouth bass</td>
<td><em>Micropterus dolomieui</em></td>
<td>R</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Bigscale logperch</td>
<td><em>Percina macrolepida</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Yellow perch</td>
<td><em>Perca flavescens</em></td>
<td>N</td>
<td>Rare</td>
</tr>
<tr>
<td>Tule perch</td>
<td><em>Hysterocarpus traski</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Threespine stickleback</td>
<td><em>Gasterosteus aculeatus</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Yellowfin goby</td>
<td><em>Acanthogobius flavimanus</em></td>
<td>R</td>
<td>Common</td>
</tr>
<tr>
<td>Chameleon goby</td>
<td><em>Tridentiger trigonocephalus</em></td>
<td>R</td>
<td>Invading</td>
</tr>
<tr>
<td>Staghorn sculpin</td>
<td><em>Leptocottus armatus</em></td>
<td>M</td>
<td>Common</td>
</tr>
<tr>
<td>Prickly sculpin</td>
<td><em>Cottus asper</em></td>
<td>R</td>
<td>Abundant</td>
</tr>
<tr>
<td>Starry flounder</td>
<td><em>Platichthys stellatus</em></td>
<td>M</td>
<td>Common</td>
</tr>
</tbody>
</table>

A = anadromous; R = resident; N = non-resident visitor; M = marine; SC = species of special concern; FT = federal threatened; ST = state threatened; FE = federal endangered; SE = state endangered; FP = federal proposed; FC = federal candidate


- **Delta Outflow.** Water development has altered Delta habitat by influencing a number of downstream conditions, including Delta outflow, the salinity field in the western Delta and the bays, and the location of the entrainment zone (X2). Water development has changed the volume and timing of freshwater flows through the Estuary. Each year, diversions reduce the volume of freshwater that otherwise would flow through the Estuary. During this century, the volume of the Estuary's freshwater supply that has been depleted each year by upstream diversions, in-Delta use, and Delta exports has grown from about 1.5 million acre-feet (maf) to nearly 16 maf. As a result, the proportion of Delta outflow depleted by upstream and Delta diversions has grown substantially.

  Water development has also greatly altered seasonal flows into and through the Estuary. Flows have decreased substantially in April, May, and June and have increased slightly during the summer and fall (SFEP 1992). Seasonal flows influence the transport of eggs and young organisms through the Delta and into San Francisco Bay. Flows during the months of April, May, and June play an especially important role in determining the reproductive success and survival of many estuarine species including salmon, striped bass, American shad, delta smelt, longfin smelt, splittail, and others (Stevens and Miller 1983; Stevens et al. 1985; Herbold 1994; Meng and Moyle 1995). Delta outflow also plays an important role in the availability of estuarine rearing habitat for delta smelt and other estuarine species (Moyle et. al. 1992).

- **Salinity.** In many segments of the Estuary, but particularly in Suisun Bay and the Delta, salinity is controlled primarily by freshwater flow. By altering the timing and volume of flows, water development has affected salinity patterns in the Delta and in parts of San Francisco Bay (SFEP 1992). Under natural conditions, the Carquinez Strait/Suisun Bay region marks the approximate boundary between salt and freshwater in the Estuary during much of the year. In the late summer and fall of drier years, when Delta outflow is minimal, seawater moves into the
Delta from San Francisco Bay. Releases of freshwater from upstream storage facilities have increased Delta outflows during summer and fall. These flows have correspondingly limited the extent of salinity intrusion into the Delta.

Salinity is an important habitat factor in the Estuary. Estuarine species characteristically have optimal salinity ranges, and their survival may be affected by the amount of habitat available within the species' optimal salinity range. The extent of salinity intrusion into the Delta provides an index of potential effects of water supply operations on spawning habitat availability throughout the Delta. Because the salinity field in the Estuary is largely controlled by freshwater outflows, the level of outflow may determine the surface area of optimal salinity habitat that is available to the species (Hieb and Baxter 1993; Unger 1994).

- **Entrapment Zone Location and X2.** The entrapment zone is a region of the Estuary characterized by higher levels of particulates, higher abundances of several types of organisms, and turbidity maximum. It is commonly associated with the position of the two parts per trillion (ppt) salinity near-bottom isohaline (X2), but actually occurs over a broader range of salinities (Kimmerer 1992). Lateral circulation within the Estuary or chemical flocculation may play a role in the formation of the turbidity maximum of the entrapment zone.

Although recent evidence indicates that X2 and the entrapment zone are not as closely related as previously believed (Reclamation et al. 1995), X2 continues to be used as an index of the entrapment zone location or area of increased biological productivity. Food production within the Delta may be directly related to the location of X2 in Suisun Bay (DWR and Reclamation 2005). Historically, X2 has varied between San Pablo Bay (River km 50) during high Delta outflow and Rio Vista (River km 100) during low Delta outflow. In recent years, it has typically been located between approximately Honker Bay and Sherman Island (River km 70 to 85). X2 is controlled directly by the volume of Delta outflow, although changes in X2 lag behind changes in outflow. Minor modifications in outflow do not greatly alter the X2 location. The location of X2 during the late winter through spring (February – May) is included as a regulatory requirement in the 1995 Water Quality Control Plan.

The Delta provides habitat for the following federal- or state-listed or recreationally or commercially important fish species:

- American shad;
- Delta smelt;
- Fall-run and late fall-run Chinook salmon;
- Northern Anchovy;
- Sacramento splittail;
- Spring-run Chinook salmon;
- Starry Flounder (*Platichthys stellatus*);
- Steelhead;
- Striped bass; and
- Winter-run Chinook salmon
The habitat requirements and distribution for Chinook salmon, striped bass, American shad, delta smelt, and Sacramento splittail are representative of the habitat requirements and distribution of other Delta fish species (Jones and Stokes 2001). Therefore, the above species encompass the range of potential effects to other Delta fishery resources.

- **Recent Decline of Open-Water Fish Species in the Delta.** In January 2005, DWR biologists identified and reported an unexpected decline of open-water fish species in the Delta. A draft white paper discussing the findings was distributed among Interagency Ecological Program agencies and a study plan was developed to begin intensive data analysis and technical studies into the causes of the decline. The Interagency Ecological Program agencies have agreed to provide approximately $2 million to support the initial studies. The study plan is designed to explore historical data to clarify the nature of the decline and preliminarily screen possible explanations for the decline from among three broad categories: (1) ecological effects of non-indigenous species introductions, (2) unexpected effects of recent changes in water project operations, and (3) toxic effects of agricultural chemicals and blue-green algae. The correct explanation may be simple or it may involve a combination of factors. At this time, it is too speculative to include a more detailed discussion of these pelagic fish issues as they relate to project-specific aspects of the proposed Specific Plan. Therefore, the analysis that has been completed for this project is based on the best available science to date.

To evaluate potential impacts to Delta fish resources, changes in monthly mean Delta outflow for the 70-year simulation period of record under the proposed Specific Plan surface water supply were determined for each month of the year and were compared to monthly mean Delta outflow under the existing condition. The frequency and magnitude of differences in Delta outflow were evaluated, relative to life history requirements for Delta fish. In addition, changes in monthly mean X2 position were determined for all months of each year, with an emphasis on the February through June period.

Impacts to delta smelt, splittail, striped bass, and other Delta fishery resources were considered adverse if hydrology under the proposed Specific Plan surface water supply showed a substantial decrease in monthly mean Delta outflow, relative to hydrology under the existing condition, during one or more months of the February through June period, if a substantial shift in the long-term monthly mean X2 position occurred (i.e., more than one km), or if Delta export/inflow ratios were increased to where allowable export limits would be exceeded. The USFWS and Reclamation have in past documents (i.e., *Trinity River Mainstem Fishery Restoration EIS/EIR*) applied a 10% modeled exceedance in changes in X2 position during the February through June period to determine potentially significant impacts to fish populations in the Delta. Therefore, the significance criteria used in this document (i.e., one km or more shift in X2 position) to determine potentially significant impacts to Delta fish populations is very conservative (rigorous), relative to the significance criteria used by the resource agencies in previous documents.

Folsom Reservoir

*Placer Vineyards Specific Plan* 4.4-42  *March, 2006*

*Revised Draft EIR*
Vegetation of Folsom Reservoir. Habitats associated with Folsom Reservoir include non-native grassland, blue oak-pine woodland, and mixed oak woodland. Non-native grasslands occur around the reservoir, primarily at the southern end. The reservoir rim is surrounded by a barren band (the draw down zone) as a result of historic fluctuations in water elevations. The majority of this zone is devoid of vegetation, although arroyo willows (Salix lasiolepis) and narrow-leaved willows (Salix exigua) have established in some areas. (USFWS, 1991a). The only contiguous riparian vegetation occurs along Sweetwater Creek at the southern end of the reservoir (USFWS, 1991a).

Non-native grassland consists of wild oats (Avena fatua), soft chess brome (Bromus hordeaceus), ryegrass (Lolium multiflorum), mustard (Brassica sp.), and foxtail (Hordeum murinum ssp. leporinum). The oak woodland habitat located on the upland banks and slopes of the reservoir is dominated by live oak (Quercus wislizenii), blue oak (Quercus douglasii), and foothill pine (Pinus sabiniana) with several species of understory shrubs and forbs including poison oak (Toxicodendron diversilobum), manzanita (Arctostaphylos sp.), California wild rose (Rosa californica), and lupine (Lupinus sp.).

Wildlife of Folsom Reservoir. Oak-pine woodlands and non-native grasslands in the reservoir area support a variety of birds, including acorn woodpecker (Melanerpes formicivorus), Nuttall's woodpecker (Picoides nuttallii), western wood pewee (Contopus sordidulus), scrub jay (Aphelocoma californica), Bewick's wren (Thryomanes bewickii), plain titmouse (Parus inornatus), hermit thrush (Catharus guttatus), loggerhead shrike (Lanius ludovicianus), black-headed grosbeak (Pheucticus melanocephalus), dark-eyed junco (Junco hyemalis), and Bullock's oriole (Icterus bullockii). A number of raptors will also use oak woodlands for nesting, foraging, and roosting. These include red-tailed hawk (Buteo jamaicensis), American kestrel (Falco sparverius), sharp-shinned hawk (Accipiter striatus), Cooper's hawk (Accipiter cooperii), red-shouldered hawk (Buteo lineatus), great horned owl, and long-eared owl (Asio otus). Mammal species likely to occur in the woodland habitat include mule deer, coyote, bobcat, gray fox, Virginia opossum (Didelphis virginiana), raccoon, striped skunk, black-tailed jackrabbit (Lepus californicus), California ground squirrel, and a variety of rodents. Amphibians and reptiles that may be found in oak woodlands include California newt (Taricha torosa), Pacific tree frog, western fence lizard (Sceloporus occidentalis), gopher snake (Pituophis melanoleucus), common king snake (Lampropeltis getulus), and western rattlesnake (Crotalus viridis).

The non-native grassland surrounding Folsom Reservoir represents habitat for a variety of rodents, which in turn serve as a prey base for carnivores such as hawks and owls, coyote, bobcat, gray fox, and some snakes. Although very few birds will nest in the grassland areas, a number of species will forage in this habitat, including white-crowned sparrow (Zonotrichia leucophrys), lesser goldfinch (Carduelis psaltria), western meadowlark (Sturnella neglecta), and several raptor species. Migratory waterfowl are known to feed and rest in the grasslands associated with the north fork of Folsom Reservoir (USFWS, 1991a). Several of the reptiles and amphibian species that inhabit the oak woodlands will also occur in the adjacent non-native grasslands.
• **Warmwater Fisheries.** Folsom Reservoir's warmwater fish species (black bass, sunfish, crappie, and catfish) use the warm upper layer of the reservoir and nearshore littoral habitats throughout most of the year. Seasonal changes in reservoir storage, as it affects reservoir water surface elevation (feet msl), and the rates at which water surface elevation changes during specific periods of the year, can directly affect the reservoir's warmwater fish resources. Reduced water surface elevations can reduce the availability of nearshore littoral habitats used by warmwater fish for spawning and rearing, therefore reducing spawning and rearing success and subsequent year class strength. In addition, decreases in reservoir water surface elevation during the primary spawning period for nest building of warmwater fish (March through July) may result in reduced initial year class strength through warmwater fish nest "dewatering."

To assess potential water surface elevation-related impacts to the warmwater fish of Folsom Reservoir, the following two-phased approach was used. First, a relationship between reservoir water surface elevation and acres of nearshore littoral habitat containing submerged structure (submerged macrophytes and/or inundated terrestrial vegetation) was developed. Using this relationship, the mean number of acres of littoral habitat was estimated for each month of the primary spawning and rearing period (March through September) under the proposed Specific Plan water supply, relative to that modeled for the existing condition.

Second, the magnitude of change (feet msl) in reservoir water surface elevation occurring each month of the primary spawning period for nest building fish (March through July), under the proposed Specific Plan surface water supply, was determined and compared to that modeled for the existing condition. A recent study by CDFG, which examined the relationship between reservoir water surface elevation fluctuation rates and nesting success for black bass, suggests that a reduction rate of 0.15, 0.18, and 0.39 meter per day (m/day) or greater would result in 100% nest mortality (or 0% nest survival) for largemouth bass, smallmouth bass, and spotted bass, respectively (Lee, pers. comm., 1998). However, CDFG reservoir biologists suggest that, on the average, a nest survival rate of at least 20% is necessary to maintain the long-term population levels of high fecundity, warmwater fish (Lee, pers. comm., 1998). Using nest survival curves developed by CDFG, reservoir fluctuation criteria were developed that would provide a minimum nest survival rate of approximately 20% for largemouth bass, the bass species found by CDFG to be most sensitive to reservoir water surface elevation fluctuations.

A reduction rate of nine feet msl per month would represent an approximate water level decrease of 0.3 feet msl per day (ft/day) (0.09 m/day) during a nesting event, which would correlate to an approximate nest survival rate of 20% for largemouth bass (Lee, pers. comm., 1998). Therefore, a decrease in mean Folsom Reservoir water surface elevation of nine feet msl or more per month was selected as the threshold beyond which spawning success of nest building warmwater fish (black bass, sunfish, crappie, and catfish) could potentially result in long-term population declines. To evaluate impacts to warmwater fish, the number of times that reservoir reductions of nine feet msl or more per month that could occur under the proposed Specific Plan surface water supply, were compared to the number of occurrences that were modeled to occur under the existing condition.
Criteria for reservoir water elevation increases (nest flooding events) are not recommended by CDFG. Overall fishery benefits would result in greater reservoir water elevations that would be associated with rising water levels that would offset negative impacts due to nest flooding (Lee, pers. comm., 1998). Therefore, the likelihood of spawning-related impacts from nest flooding is not addressed for reservoir fisheries.

- **Coldwater Fisheries.** During the period when Folsom Reservoir is thermally stratified (April through November), coldwater fish within the reservoir reside primarily within the reservoir's metalimnion and hypolimnion, where water temperatures remain suitable. Reduced reservoir storage (TAF) during this period could reduce the reservoir's coldwater pool volume, thereby reducing the quantity of habitat available to coldwater fish species during these months. Reservoir coldwater pool size generally decreases as reservoir storage decreases, although not always in direct proportion due to the influence of reservoir basin morphometry. Therefore, to assess potential storage-related impacts to coldwater fish habitat availability in Folsom Reservoir, end-of-month storage modeled for each year of the 70-year period of record under the proposed Specific Plan water supply was compared to end-of-month storage under the existing condition for each month of the April through November period. Substantial reductions in reservoir storage were considered to result in substantial reductions in coldwater pool volume and, therefore, habitat availability for coldwater fish. Impacts to the coldwater fisheries were further assessed by determining whether seasonal changes in reservoir storage, and associated changes in water-surface elevation, would be expected to indirectly affect coldwater fish species by adversely affecting the productivity of their primary prey species (threadfin shad and wakasagi).

**Lake Natoma**

No storage- or water surface elevation-related impacts to fishery resources of Lake Natoma are expected to occur. As a regulating afterbay of Folsom Reservoir, its monthly storage and water surface elevation would be affected little, if at all, by the proposed Specific Plan surface water supply, relative to the existing condition. Consequently, no quantitative assessment of potential storage- or water surface elevation-related impacts to fishery resources in this water body is warranted.

As the increased diversion under the proposed Specific Plan surface water supply could alter the temperature of water released from Folsom Dam, and as Lake Natoma's temperature at any given time is largely dictated by the temperature of water released from Folsom Dam, these additional diversions could change seasonal water temperatures within Lake Natoma. The small changes in reservoir water temperatures that could occur would not be expected to adversely affect the reservoir's warmwater fisheries. Conversely, increases in lake water temperatures could adversely affect coldwater species such as rainbow trout stocked by CDFG. To assess the potential impacts of altered reservoir water temperatures to fishery resources within the reservoir, monthly mean temperatures of water released from Nimbus Dam were determined for the proposed Specific Plan surface water supply, and compared to monthly mean temperatures modeled under the existing condition, for each month of the year. Temperatures of water
released from Nimbus Dam were used as an "index" to represent the relative changes in Lake Natoma water temperatures that could occur under the proposed Specific Plan surface water supply, relative to the existing condition.

**Nimbus Hatchery**

As the additional diversions could alter Lake Natoma water temperatures during some months, and as Nimbus Hatchery diverts its water supply directly from Lake Natoma throughout the year, the proposed Specific Plan surface water supply could change hatchery water temperatures during some months of the year. Nimbus Hatchery production remains relatively unaffected when hatchery temperatures remain below 60°F. However, increased disease and mortality of hatchery reared fish often occurs when temperatures exceed 60°F. Losses from these factors become a particular problem when hatchery water temperatures exceed 65°F for extended periods. Water temperatures exceeding 68°F for even short periods (days) are particularly detrimental to hatchery fish held at high densities, and could require the hatchery to release and/or transfer most or even all of its fish to prevent unacceptably high mortality (B. Barngrover, pers. comm., 1997).

To assess potential temperature-related impacts to Nimbus Hatchery operations, monthly mean temperatures of water released from Nimbus Dam under the proposed Specific Plan surface water supply were modeled and compared to those modeled under the existing condition for each month of the year. The number of years of the 69 years modeled that monthly mean Nimbus Dam release temperatures would exceed the index values of 60°F, 65°F, and 68°F under the proposed Specific Plan surface water supply were determined and compared to the frequency of exceedance of these temperature index values under the existing condition. In addition, for each month of the year, the mean temperature of water released from Nimbus Dam for the years exceeding each of these temperature index values was determined.

**Lower American River**

- **Vegetation of the Lower American River.** The lower American River provides a diverse assemblage of vegetation communities, including freshwater marsh and emergent wetland, riparian scrub, riparian forest, and in the upper, drier areas further away from the river, oak woodland and non-native grassland. The current distribution and structure of riparian communities along the river has been determined by human-induced changes such as gravel extraction, dam construction and operations, and levee construction and maintenance, as well as by both historic and on-going streamflow and sediment regimes and channel dynamics (Sands, et al., 1985; Watson, 1985).

As a result of these factors, several riparian vegetation zones exist along the banks of the lower American River. The composition and vegetative structure of these zones at any particular location along the river depends on the geomorphology and other physical characteristics of the river bank. In general, willow scrub and alders tend to occupy areas within the active channel of the river, which are repeatedly disturbed by elevated winter and spring river flows. Plant species in this zone typically include various species of willow.
Cottonwood-willow thickets and cottonwood forests occupy the narrow belts along the active river channel where repeated disturbance by occasional large flows keep the communities at earlier stages. Fremont’s cottonwood (*Populus fremontii*) dominates these riparian forest zones. Other species associated with this habitat include willow, poison oak, wild grape, blackberry (*Rubus ursinus*), northern California black walnut (*Juglans californica* var. *hindsii*), white alder (*Alnus rhombifolia*), and acacia (*Acacia* sp.). Alder-cottonwood forest is typical of the steep, but moist banks along much of the river corridor. Valley oak woodland occurs on upper terraces composed of fine sediment where prolonged availability of soil moisture provides a long growing season. Valley oak (*Quercus lobata*) is the dominant tree species in these areas, although some of the sites also have a cottonwood component as a result of infrequent flood inundation. Live oak woodland occurs in the more arid and gravelly terraces that are isolated from the fluvial dynamics and moisture of the river. Non-native grassland commonly occurs in areas that have been disturbed by human activity and can be found on many of the sites within the river corridor.

Backwater areas and off-river ponds that are recharged during high flows support emergent wetland vegetation. These habitat areas are located throughout the length of the river, but occur more regularly downstream of the Watt Avenue bridge. Plant species that dominate this habitat type include various species of willow, sedge, cattail, bulrush (*Scirpus* sp.), rush, barnyard grass (*Echinochloa crusgalli*), slough grass (*Paspalum dilatatum*), and lycopus (*Lycopus americanus*).

- **Wildlife of the Lower American River.** Previous studies have determined that the cottonwood-dominated riparian forest and areas associated with the backwater and off-river ponds are highest in wildlife diversity and species richness relative to other river corridor habitats (Sands, et al., 1985; Watson, 1985; USFWS, 1991). More than 220 species of birds have been recorded along the lower American River and more than 60 bird species are known to nest in the riparian habitats (USFWS 1991). Common species that can be found along the river include great blue heron, mallard, red-tailed hawk, red-shouldered hawk, American kestrel, California quail (*Callipepla californica*), killdeer, belted kingfisher (*Ceryle alcyon*), western scrub jay, ash-throated flycatcher, tree swallow (*Tachycineta bicolor*), and American robin (*Turdus migratorius*). Additionally, more than 30 species of mammals reside along the river, including striped skunk, Virginia opossum, brush rabbit (*Sylvilagus bachmani*), raccoon, western gray squirrel (*Sciurus griseus*), California ground squirrel, meadow vole (*Microtus pennsylvanicus*), muskrat, black-tailed deer, gray fox, and coyote.

The most common reptiles and amphibians that depend on the riparian habitats along the river include western toad (*Bufo boreas*), Pacific tree frog, bullfrog, western pond turtle, western fence lizard, common garter snake (*Thamnophis sirtalis*), and gopher snake.

Along with providing food, cover, and nesting habitat for several species, the lower American River functions as a wildlife corridor for the movement of animals between the valley floor and the foothills of the Sierra Nevada.
• **River Channel Hydrology and Riparian Vegetation Relationships along the Lower American River.** The type and distribution of riparian vegetation along a river is generally a function of the complex hydrologic and geomorphic conditions of the river (Watson, 1985). In particular, water availability and magnitude (i.e., flow regimes), floodplain geology, and channel morphology are the driving forces behind the ability of various riparian plants to germinate, establish, and grow. Flood flows mobilize bank and riverbed sediments that result in the deposition of nutrient-rich sediments on the floodplain that, when timed with the release of seeds in the spring, provides suitable areas for seed germination. High water (flushing) flows, usually occurring in late winter and early spring, are necessary to clear the river channel of debris, control the encroachment of vegetation, and unclog sediments. Water availability during the summer and early fall months can determine growth rates and plant types. The structure and composition of the channel bed and banks affects the rate of channel migration, the elevation of the water surface during low-flow periods, the lateral movement of groundwater into the banks, the transport and deposition of sediments, and how often certain areas are inundated by flood flows. These, in turn, affect overall plant diversity, growth, and generation.

• **History of Events Affecting the Riparian Corridor.** From Folsom Reservoir to the confluence with the Sacramento River, the lower American River has undergone tremendous change over the past one hundred years. The combination of gold mining, gravel dredging, levee building, land clearing, water diversion projects, and reservoir construction have dramatically altered the riverbed and channel, as well as overall flow regimes. Specifically, the construction of flood control levees reduced the width of the riparian corridor by isolating the floodplain from the river; these levees also changed channel erosion patterns and reduced migration. In addition, the construction of the Folsom and Nimbus Dams has significantly altered both the streamflow and sediment regime of the lower American River. In particular, the magnitude and frequency of flood flows has been effectively reduced, causing a reduction in the frequency of overbank flows that deposit sediments on the higher terraces that are conducive to seed germination. The dam complex also significantly reduced the amount of sediment supply to the lower reaches of the river from its watershed.

The existing channel morphology of the lower American River spans a continuum from a meandering belt confined within relatively resistant terraces and bluffs in the upper reaches to a low gradient and semi-confined floodplain channel in the lower reaches (Watson 1985). Channel pattern and morphology in the upper 11 miles of the river, to the Folsom and Nimbus dam complex, is largely controlled by resistant bedrock exposures that characterize this portion of the river. Bank erosion and deposition of sediments is relatively minor, with most sediment being transported through or temporarily stored in the river channel. Point bars within this reach are forming in some areas, but are typically small. Prior to urbanization and levee construction, the American River deposited sediment in a floodplain belt that widens toward the confluence with the Sacramento River. Lateral migration of the river channel was slowly occurring over time. However, channel realignment and levee construction have confined the river to a substantially narrower belt. The low gradient and blockage of channel migration has allowed for the formation of gravel bars and sediment
deposits throughout this portion of the river. Terraces, once commonplace and complex as a result of extensive overbank flooding, now only occur in specific areas between the levees.

The current composition of the riparian plant communities along the lower American River is a function of the resulting set of hydrologic, geomorphic, and substrate conditions that have occurred there over time; it is also a result of the adaptations of the riparian system to these conditions. In the upper reaches of the river near Nimbus Dam, steep banks of resistant soils and bedrock allow only a very slow rate of erosion and sediment deposition. In these areas, alder-dominated vegetation occurs as stringers along portions of the channel, particularly along the base of bluffs and steep banks. Further down the river where gravel bars and point bars occur as a result of sediment transport and storage along the channel bed, regeneration of willows occurs on scoured gravel bar sites. Cottonwoods also form small stringers on freshly deposited sediment on point bars as well as on less steep terraces with suitable seed beds, where even-aged stands of older cottonwoods occur.

Most of the riparian forest habitat immediately adjacent to the lower American River is dominated by cottonwood intermixed with willows. In addition, several backwater and off-river ponds occur at some of the bars along the river. Riparian zones support a greater abundance and diversity of wildlife than any other terrestrial habitat in California (Sands, et al., 1985). Previous studies have determined that the riparian vegetation surrounding the backwater channels and off-river ponds ranked very high in overall wildlife diversity and species richness (Sands, et al., 1985). Due to the biological importance of these areas, the following discussion focuses on the relationship of changes in river flows to both cottonwood trees and river-associated ponds.

- **Cottonwood Growth Along the Lower American River.** The germination, establishment, growth, and long-term survival of Fremont cottonwoods along the lower American River is dependent upon the dynamic flow regimes and fluvial geomorphic processes of the river. In particular, the capacity of the river to erode, transport, and deposit alluvial materials is central to the structure and maintenance of cottonwood ecosystems. Cottonwood seed release and establishment has adapted over time to the flow regime and fluvial process of the lower American River, and as a result, the maintenance of this regime is vital to maintain a viable cottonwood riparian system.

Successful regeneration of cottonwoods relies on the synchronous timing of seed dispersal and appropriate soil moisture levels to germinate and establish successfully (Stromberg, 1995). Cottonwoods disperse seeds over a two- to six-week period, typically in the early to mid-spring months. Dispersed seeds rapidly lose the ability to germinate, so seeds must encounter suitable germination sites soon after release. Germination takes place on freshly deposited alluvial soils in areas along the river bank low enough in elevation to provide adequate moisture but high enough to avoid subsequent same-year flooding after establishment. Peak water flows of sufficient magnitude are necessary, just prior to seed dispersal, to provide these suitable germination sites.
To survive, cottonwood seedlings require a continuous source of adequate moisture (Scott, et al., 1996). Consequently, river flows must decline at a rate that allows seedling roots to maintain continuous contact with saturated or sufficiently moist substrate. If river flows and the alluvial groundwater table drop too rapidly, seedling survival decreases appreciably (Scott, et al., 1993). Studies have shown that first-year seedlings of Fremont cottonwood survive only where the groundwater depth is less than one meter, and tolerate daily declines of no more than a few centimeters per day (Stromberg, et al., 1991; Segelquist, et al., 1993). Summer flows are critical to the continued survival of newly established seedlings and provide necessary moisture when evapotranspiration is highest (Scott, et al., 1993). Long-term survival of established cottonwoods is generally related to the depth of groundwater and to river flows. While cottonwoods can adapt to drought periods, overall growth and long-term maintenance of these trees depends on the ability of root systems to reach the groundwater table, which is recharged by adequate river flows.

While few studies have been conducted on the long-term flow regimes necessary for continued cottonwood regeneration and growth maintenance along the lower American River, several relatively short-term studies have provided insights into the relationship between river flows and cottonwood growth. In one study, the annual radial growth rate of young cottonwoods along a particular segment of the lower American River was found to be significantly related to the groundwater depth and to river flows during the March through October growing season (Stromberg 1995). The study found that cottonwoods had little or no radial growth when average river flows during the growing season dropped below 1,765 cfs. Monthly mean flows of 1,765 cfs are recommended by Stromberg (1995) as necessary for maintenance of radial growth. In order to assure some growth of cottonwoods, the USFWS recommends that an average minimum streamflow of 2,000 cfs occur during the March through October growing season.

A USFWS study concluded that an average flow of 3,000 cfs is required to provide "reasonable" growth and maintenance conditions for riparian vegetation (USFWS 1996). This recommendation is based on work by Caicco (1996 in City/County (Sacramento) Office of Metropolitan Water Planning (CCOMWP) 1999), which identified minimum flows of 3,000 cfs as sufficient for reasonable growth of cottonwoods. The USFWS (1997) correlated monthly mean flows of 3,000 cfs from April though June to peak inundation flows of 5,000 to 13,000 cfs, levels deemed critical to establishment of seedlings on riverine terraces.

- **Backwater Ponds of the Lower American River.** Backwater ponds are areas adjacent to the mainstem of a river that may be connected to the river by surface water during high winter flood flows and by groundwater during other times of the year. Backwater pond areas along the American River Parkway are generally the result of naturally formed gravel deposits and human-induced dredging, although some are likely to be remnant oxbow lakes, such as Bushy Lake (Sands, et al., 1985). These backwater ponds and lagoons are known to occur throughout the lower American River system, but occur predominantly at Sacramento Bar, Arden Bar, Rossmoor Bar, and between Watt Avenue and Howe Avenue (Sands, et al., 1985).
Vegetation around these ponds is typical of the riparian associations in the area and is composed of mixed-age willow, alder, and cottonwood. The water is slower moving and the ponds are isolated from human disturbances, and as a result, these areas tend to be of higher value to wildlife (Sands, et al., 1985). Wildlife species that have been recorded in these areas include: pied-billed grebe (*Podilymbus podiceps*), American bittern (*Botaurus lentiginosus*), green heron, common merganser (*Mergus merganser*), wood duck, yellow warbler (*Dendroica petechia*), warbling vireo (*Vireo gilvus*), dusky-footed woodrat (*Neotoma fuscipes*), western gray squirrel, Pacific tree frog, and western toad.

Studies have been conducted to determine how these backwater ponds are influenced by flows in the lower American River (Sands et al., 1985). These ponds are located at varied distances from the river channel, have varied depths, and are at different elevations along the river. Ponds were studied in the spring of 1985 at flow regimes of 1,300 cfs and 2,750 cfs. In general, these studies concluded the following: (1) while the interrelationship of the ponds with the river is complex, the ponds do respond to changes in water levels in the American River; (2) the response of ponds to changes in water flows and river levels is dependent upon the distance of the ponds from the river channel, the permeability of the soils surrounding the ponds, and the nature of intervening soils and gravels; (3) the impact of changes in pond water levels on vegetation and wildlife may differ in intensity between sites depending on local soil compaction and root distribution of individual plants; (4) flows of at least 2,700 cfs are required to adequately recharge the ponds closest to the river; (5) at sustained flows of 1,300 cfs or below, many of the ponds would become more shallow and smaller, hold very little water, and become choked with willows; (6) further reductions in river flows, to levels in the 500 cfs range, would result in these ponded areas becoming completely dry, resulting in deterioration of the riparian vegetation and quality wildlife habitats associated with the ponds; and (7) to provide continued recharge of off-river ponds, flows in the range of 2,750 to 4,000 cfs are needed (Sands et al., 1985; Sands 1986).

An important consideration for the maintenance of backwater pond habitats is the frequency and duration of the necessary recharge flows. Past studies have not come to definitive conclusions about specific frequency and duration needs. Historically, however, the flows high enough to allow recharge have occurred most often either in the winter or spring. This pattern allows the backwater ponds to be recharged prior to the important spring and summer growing seasons. Therefore, it appears that regular recharge flows during most of the winter or spring months are sufficient to maintain backwater pond habitats.

- **Fisheries of the Lower American River.** The proposed Specific Plan surface water supply could affect lower American River flows and water temperatures during portions of the year. The lower American River is the water body within the study area with the greatest potential to experience impacts to fisheries associated with implementation of the proposed Specific Plan surface water supply due to anticipated changes in Reclamation's operation of Folsom Reservoir. Folsom Reservoir, because of its proximity to the Delta, is often used by Reclamation to make releases when additional Delta outflow is required to meet Delta salinity standards. Consequently, Folsom Reservoir storage can be reduced, resulting in
reduced coldwater pool volume. If the coldwater cool disappears, releases from Nimbus Dam would be warmer and would have the potential to exceed suitable temperature ranges for fish species of primary management concern in the lower American River.

Because a number of fish species of primary management concern use the lower American River during one or more of their lifestages, species-specific impact assessments were warranted for this water body and were conducted for the following species of primary management concern:

- Fall-run Chinook salmon
- Steelhead
- Splittail
- American shad
- Striped bass

These species are of primary management concern due either to the importance of their commercial and/or recreational fisheries (i.e., Chinook salmon, steelhead, American shad, and striped bass) and/or they are a species currently or recently listed under the federal ESA and/or CESA (i.e., steelhead, Chinook salmon, and splittail). The species selected for species-specific assessments include those sensitive to changes in both river flow and water temperature throughout the year, and therefore, an evaluation of impacts to these species is believed to reasonably encompass the range of potential impacts to lower American River fish resources that could occur under the proposed Specific Plan surface water supply, relative to the existing condition.

Potential impacts resulting from changes in river flows and water temperatures were evaluated for each of the species of primary management concern. These species are known to use the lower American River during discrete time periods associated with specific lifestages, and so potential impacts were evaluated using species-specific assessment parameters, where appropriate. The impact assessment methodologies used to assess potential flow- and temperature-related impacts to the above indicator species are described below.

- **Fall-Run Chinook Salmon.** Watt Avenue represents the river location above which approximately 98% of fall-run Chinook salmon spawning occurs. To assess flow related impacts to fall-run Chinook salmon spawning, incubation and initial rearing, monthly mean flows at Watt Avenue and below Nimbus Dam under the proposed Specific Plan surface water supply were compared to monthly mean flows under the existing condition for each month of the October through February period.

  Changes in flows during the period March through June also were assessed at Watt Avenue to further address potential impacts to fry and juvenile lifestage rearing during these months. Flows at the mouth of the lower American River were compared between modeling simulations to assess flow-related impacts to adult immigration and juvenile emigration. The frequency with which specified flow levels were met was determined.
Temperature-related impacts to lower American River fall-run Chinook salmon were evaluated through three distinct assessments focusing on distinct lifestages and periods, including: (1) adult immigration (September through November); (2) spawning/incubation and initial rearing (October through February); and (3) juvenile rearing and emigration (March through June), using the multi-step analysis described below.

**Adult Immigration (September through November).** Temperature-related impacts to adult immigration were based on water temperature at the mouth of the lower American River and at Freeport on the Sacramento River. The 69-year average water temperatures for each month of the September through November period that would occur at the American River mouth and at Freeport under the proposed Specific Plan surface water supply were compared to those under the existing condition. In addition, monthly mean water temperatures at the American River mouth and at Freeport were compared for each month of the adult immigration period over the 69-year period of record. Therefore, a total of 483 months for each month were included in the analysis.

**Spawning/Incubation and Initial Rearing (October Through February).** First, the long-term average water temperatures for each month of the October through February period that would occur below Nimbus Dam or at Watt Avenue under the proposed Specific Plan surface water supply were compared to the long-term average water temperatures for each of these months, at these same locations, under the existing condition. Water temperatures generally warm with increasing distance downstream during October, and 98% of all spawning occurs upstream of Watt Avenue. The most conservative assessment of thermal impacts to Chinook salmon spawning and incubation during October is based on Watt Avenue water temperatures. Therefore, all temperature assessments for the month of October are based on water temperatures at Watt Avenue. Conversely, since water temperatures generally cool with increasing distance downstream during the period November through January, and since water temperatures generally change little between Nimbus Dam and Watt Avenue during February, temperature impact assessments for spawning and incubation during the months November through February are based on water temperatures below Nimbus Dam, thereby providing the most conservative assessment.

Second, the number of years (of the 69 years modeled) that monthly mean water temperatures would exceed 56°F below Nimbus Dam or at Watt Avenue was determined for each month of the October through February period, and compared to those modeled under the existing condition.

Third, for each month of the October through February period, the mean water temperature below Nimbus Dam or at Watt Avenue for the years (of the 69 years
modeled) exceeding the 56°F index value was determined under the proposed Specific Plan surface water supply and compared to those under the existing condition.

Finally, Reclamation's lower American River Fall-Run Chinook Salmon Mortality Model was used to assess potential temperature-related impacts to the early lifestage of Chinook salmon. Annual early lifestage survival (the complement of mortality) estimated for the proposed Specific Plan surface water supply were compared to that estimated for the existing condition for each year of the 69-year period of record. Model output represents the percentage of potential emergent fry produced, based on all eggs brought to the river by spawning adults, that would survive under the temperature regime that would occur under each model simulation. The model calculates temperature-induced mortality (the percentage of potential emergent fry lost as a result of temperature-induced mortality of pre-spawned eggs, fertilized eggs incubating in the gravel, and pre-emergent fry). Losses for each of these three early lifestages are then tallied by the model and output as a percent loss (mortality) from egg potential (all eggs brought to the river by immigrating adults) for each year modeled. The complement (i.e., survival = 100 - mortality) of these calculated percent losses is discussed for impact assessment purposes.

**Juvenile Rearing and Emigration (February through June).** The same methodology was used to evaluate potential water temperature-related impacts to fall-run Chinook salmon juvenile rearing and emigration with the following modifications:

- The period of assessment was February through June;
- The number of years (of the 69 years modeled) that monthly mean water temperatures would exceed the index value of 65°F were determined at Watt Avenue and the lower American River mouth;
- Mean water temperatures for the years (of the 69 years modeled) that were shown to exceed the 60°F and 65°F index values were determined at Watt Avenue; and
- Reclamation's Salmon Mortality Model was not used, since it does not assess mortality beyond the emergent fry life stage.

The temperature index values for immigration/emigration and spawning/incubation are different since adult and juvenile fall-run Chinook salmon are believed to tolerate water temperatures up to 65°F without substantial adverse impacts, whereas incubating eggs and pre-emergent fry incur substantial reductions in survival when water temperatures exceed 60°F. The majority of fall-run Chinook salmon and steelhead rearing is believed to occur above Watt Avenue (River Mile (RM) 9.5), and water temperatures generally increase between Nimbus Dam and Watt Avenue during the February through June period. Use of Watt Avenue water temperatures for assessing temperature-related impacts to juvenile Chinook salmon during this period provides the most conservative assessment.
In addition to the assessments described above, water temperature-related impacts to juvenile emigration through the lower portion of the river were assessed based on temperatures at the mouth using the temperature index value described above.

- **Steelhead.** Environmental conditions required by steelhead are not significantly different from those required by fall-run Chinook salmon, and therefore, flow- and temperature-related impact determinations for steelhead for the period October through June were based on the same modeling output used to assess impacts to fall-run Chinook salmon during this period. However, as steelhead rear within the lower American River year-round, additional flow and temperature impact assessments were made for the months of the year not addressed by the fall-run Chinook salmon assessments (i.e., July through September).

Flow-related impacts to steelhead during the July through September period were assessed via the same methods used to assess flow-related impacts to fall-run Chinook salmon during the October through June period.

Temperature-related impacts to steelhead juvenile rearing during the July through September period were assessed via the same methods used to assess temperature-related impacts to fall-run Chinook salmon juvenile rearing and emigration during the March through June period. In addition, the number of months exceeding 65°F for each model simulation, as well as the average water temperature for the months exceeding this index value, was also determined for the July through September over-summer rearing period. No steelhead mortality model has been developed for the lower American River; therefore, no steelhead mortality modeling could be performed as a part of the assessment for this species.

- **Splittail.** Splittail may spawn in the lower American River in extremely low numbers, with the majority of splittail spawning that could occur taking place in the lower sections of the river (i.e., downstream of RM 12). Consequently, altered river flows from the proposed Specific Plan surface water supply could impact the availability of potential splittail spawning habitat within the lower American River by reducing the amount of riparian vegetation that would be inundated during the splittail spawning season (February through May).

The lower American River from RM 5 to the mouth is largely influenced by the water surface elevation of the Sacramento River. Sacramento River stage often controls the water surface elevation here, and the extent to which splittail spawning habitat, particularly inundated riparian vegetation, along this lower reach of the river channel would be available. Conversely, river stage in the portion of the river between RM 8 and RM 12, which is characterized by abundant backwater habitat, is controlled primarily by lower American River flows. The frequency and duration of riparian vegetation flooding in this area and, therefore, the quality and quantity of potential splittail spawning habitat has the potential to be adversely affected by reduced flows.

To assess flow-related impacts to potential splittail spawning habitat availability during each month of the February through May period, for each year of the 70-year period of record, the
amount of riparian habitat inundated in acres (dependent variable) was regressed against flow in cfs (independent variable). Using river flows at Watt Avenue (RM 9.5), the number of acres of flooded riparian habitat between RM 8 and RM 9 was determined under the proposed Specific Plan surface water supply and compared to that under the existing condition. Field measurements conducted for the interim re-operation of Folsom Dam and Reservoir indicated that the total amount of riparian vegetation inundated within RM 8 to RM 9 ranged from 2.4 acres at a river flow of 4,540 cfs to 35.8 acres at a river flow of 22,570 cfs (SAFCA 1999).

The simple linear regression analysis performed identified a positive, statistically significant \((r^2=0.99; P<0.001)\) relationship between flow and the total acreage of riparian vegetation inundated within RM 8 to RM 9. This relationship is defined by the equation:

\[
\text{Habitat} = (0.001874 \times Q) - 6.4585
\]

Where: Habitat = the total amount of riparian vegetation inundated within the study area (acres); and

\(Q\) = flow within the study area (cfs)

The x-intercept of the linear regression line occurs at 3,456 cfs, which indicates that zero acres of riparian habitat are inundated within the study area at river flows of approximately 3,456 cfs or less. For river flows between 3,456 cfs and 22,571 cfs, the total acreage of riparian vegetation inundated within the study area increased by approximately 1.9 acres for each 1,000 cfs increase in flow. As previously discussed, field observations determined that the first 2.4 acres of riparian vegetation inundated primarily occurred within a narrow strip along the riverbank. This inundation zone was noted as being very shallow (i.e., generally less than two feet deep) and, therefore, unlikely to provide suitable potential habitat for splittail. Based on this observation, more than 2.4 acres of inundated vegetation must be present within the study area before potentially suitable splittail spawning habitat would be available.

Splittail reportedly spawn at water temperatures from 48°F to 68°F (Wang 1986). To evaluate potential water temperature-related impacts to splittail, the number of years (of the 69 years modeled) that monthly mean water temperatures at Watt Avenue and the mouth would be within this preferred range during the period February through May was determined under the proposed Specific Plan surface water supply and compared to that under the existing condition. For the purposes of assessing water temperature-related impacts to splittail in the American River, water temperatures at Watt Avenue and the mouth effectively represent the range of water temperatures that splittail would encounter when using the lower portion of the river for spawning and initial rearing.

- **American Shad.** The flow-related impact assessments conducted for fall-run Chinook salmon and steelhead described above provided for an evaluation of the relative change in monthly mean flows in the lower American River under the proposed Specific Plan surface water supply for all months of the year. Consequently, findings from these assessments also were used, in part, to assess potential flow-related impacts to American shad.
As the majority of American shad spawning migrations into the lower American River are believed to occur during May and June, changes in river flows during these months warrant further assessment for this species. The relative number of adult American shad entering the lower American River during May and June is believed to be largely influenced by flows at the mouth. Snider and Gerstung (1986) recommended flow levels of 3,000 to 4,000 cfs during May and June as sufficient "attraction flows" to sustain the American shad fishery in the lower American River. Impacts to American shad attraction flows were assessed by determining the number of years (of the 70-year period of record) during which May and June flows at the mouth would be less than 3,000 cfs under the proposed Specific Plan surface water supply, relative to that determined for the existing condition.

To evaluate potential water temperature-related impacts to American shad spawning, monthly mean water temperatures under the proposed Specific Plan surface water supply were determined and compared to those under the existing condition for the months of May and June. A conservative approach for assessing potential water temperature impacts was to assume that American shad may spawn throughout the river and, therefore, to evaluate water temperature conditions below Nimbus Dam and the mouth. Specifically, the number of years (of the 69 years modeled) that mean May and June water temperatures below Nimbus Dam and the mouth would be within the reported preferred range for American shad spawning (60°F to 70°F) was determined under the proposed Specific Plan surface water supply and compared to that under the existing condition.

- **Striped Bass.** Although no study to date has definitively determined whether striped bass spawn in the lower American River, it is believed that little, if any, striped bass spawning occurs there (DeHaven 1978, in Snider and Gerstung 1986). Nevertheless, the lower American River is used by juvenile striped bass for rearing and supports a striped bass sport fishery during May and June.

The flow-related impact assessments conducted for fall-run Chinook salmon and steelhead address all months of the year. Hence, potential flow-related impacts to striped bass, as they pertain to juvenile rearing habitat availability, were assessed using the same data produced to assess flow-related impacts to fall-run Chinook salmon and steelhead.

In addition to juvenile rearing considerations, the number of adult striped bass entering the lower American River during the summer is believed to vary with flow levels and food production. Snider and Gerstung (1986) suggested that flows of 1,500 cfs at the mouth during May and June would be sufficient to maintain the striped bass sport fishery in the lower American River. Hence, potential flow-related impacts to the striped bass sport fishery were assessed by determining the number of years (of the 70-year period of record) that flows at the mouth would be less than 1,500 cfs in May and June under the proposed Specific Plan surface water supply compared to the number of years this would occur during these months under the existing condition.
Optimal water temperatures for juvenile striped bass rearing are reported to range from approximately 59°F to 68°F (Moyle, 2002). Therefore, to evaluate potential water temperature-related impacts to striped bass juvenile rearing, the number of years (of the 69 years modeled) that monthly mean water temperatures below Nimbus Dam and at the mouth during May and June would be within the preferred range of 59°F to 68°F for juvenile striped bass spawning and initial rearing was determined under proposed Specific Plan surface water supply and compared to those modeled under the existing condition.

**SPECIFIC PLAN PROPOSED BIOLOGICAL RESOURCES-RELATED GOALS AND POLICIES**

The following goals and policies related to biological resources are contained in the Specific Plan. Unless otherwise noted, all references to tables and figures are to the Specific Plan.

**Goal 3.5** Encourage a pattern of development that conserves and incorporates the natural resources of the site in a manner that enhances the quality of life within the urban community.

**Goal 3.6** Protect and conserve the Dry Creek riparian corridor and significant oak groves located throughout the site, and compensate for development impacts with permanent off-site preservation of natural resources, open space, and farmland soils.

**Goal 3.13** Create an interconnected parks and open space system within Placer Vineyards that provides for the preservation and enhancement of natural resources and offers a variety of recreational opportunities for the community.

**Policy 3.4** Natural Resource Management.

1. The following natural features of the site are protected in open space areas and serve as the framework for the system of drainage corridors and greenways through the Plan Area.

   a. Environmentally sensitive areas, such as high-quality wetlands and streams, shall be protected in open space with landscape buffers.

   b. Concentrations of existing oak trees, such as the oak groves and oak trees located along Dyer Lane, shall be preserved in open space.

   c. The Dry Creek riparian corridor shall be a protected natural resource area, shared between the existing plant and wildlife communities and future residents.

**Goal 4.1** Establish a comprehensive approach for the replacement of affected open space and agricultural and habitat areas.
Policy 4.1  Open Space Mitigation and Management Plans. One acre of open space will be preserved within Placer County for each acre of open space affected within the Specific Plan area. The process through which this will be accomplished will be the approval and implementation of a series of Open Space Mitigation and Management Plans that address the management of a specific property to be preserved for mitigation of lost open space, agricultural land, and habitat. An Open Space Mitigation and Management Plan will be required for each individual development project or grouping of projects within the Specific Plan area.

4.2.2  Wetlands Avoidance and Preservation

Goal 4.2  Avoid and minimize adverse impacts on wetlands to the extent feasible.

Policy 4.2  Individual development projects shall, to the extent feasible, develop plans that will preserve and protect existing wetland areas.

Goal 4.3  Develop a plan for mitigation of disturbance of on-site wetlands.

Policy 4.3  Where wetland avoidance is not feasible, a wetland mitigation plan will be developed before site disturbance to mitigate all wetland impacts. Mitigation plans will be prepared in accordance with all state and federal regulations and in conjunction with the request for permits from regulatory agencies.

Policy 4.4  Wetland feasibility studies will be prepared to ensure successful establishment of the compensation wetlands in conjunction with the request for permits from regulatory agencies.

Policy 4.5  Compensation wetlands will be constructed within designated open space areas of the Plan Area; or wetland mitigation credits will be purchased from the USFWS approved mitigation bank; or land at an off-site location will be purchased to preserve and or construct mitigation wetlands; or a combination of these alternatives will be implemented.

Goal 4.4  Establish a maintenance and monitoring program to ensure that wetland compensation areas are protected and mitigation measures are successful.

Policy 4.6  Maintenance and monitoring of wetland compensation areas will be conducted in accordance with requirements of USACE and pursuant to the issuance of a Section 404 permit.

Policy 4.7  Maintenance of wetland compensation areas will be the responsibility of a County Service Agency (CSA) or other funding mechanism satisfactory to USACE and Placer County.
Policy 4.8 Monitoring of the efficacy of the mitigation program will comply with federal agency requirements as well as California Clean Water Act and Fish and Game Code, Streambed Alteration Agreements, and all DFG provisions.

Policy 4.9 Maintenance and monitoring programs will be required for compensation wetlands purchased in mitigation banks.

Goal 4.5 Provide development plan features that will ensure the long-term health of wetland areas.

Policy 4.10 Only passive recreation activities compatible with natural communities will be allowed in wetland preserve areas.

Policy 4.11 Hunting, dumping, operation of motorcycles, or any other activities that could be detrimental to the wetland ecosystems are strictly prohibited.

4.3.1 Special-Status Species Habitat Avoidance

Goal 4.6 Identify potential special-status species habitat areas and mitigate impacts on these areas.

Policy 4.12 Biological surveys will be conducted to identify potentially occurring special-status species before disturbance of habitat areas and in conjunction with requests for permits from regulatory agencies.

Policy 4.13 Where special-status species habitats are indicated, project-specific mitigation measures will be developed in consultation with Placer County, DFG, and/or USFWS.

Policy 4.14 Where state or federally listed special-status species may be adversely affected, required consultation will be conducted and/or appropriate permits obtained before disturbance of habitat areas.

4.4.1 Tree Preservation

Goal 4.7 Preserve oak trees and riparian woodlands.

Policy 4.15 Oaks and other native trees with trunk diameters 6 inches or greater, measured at 4 feet above grade, will be preserved wherever feasible.

Policy 4.16 Location and preservation of oaks and other native trees will be indicated on site-specific, tentative maps.

Policy 4.17 Mitigation for trees removed from existing riparian or improved drainage corridors will be accomplished according to the following procedures:
• For each riparian tree removed, one 15-gallon tree, one 2-inch by 10-inch tube container (Deepot 40) seedling for each inch of diameter of the removed tree, and three 1-gallon shrubs will be planted in the riparian or improved drainage corridors.

• For each oak tree greater than 6 inches diameter at breast height that is removed, one 15-gallon tree, one 2-inch by 10-inch tube container (Deepot 40) seedling for each inch of diameter of the removed tree, and three 1-gallon shrubs will be planted.

Policy 4.18 Site-specific design and tree preservation, removal, and mitigation will be identified on an individual project basis and shall conform to the requirements developed in the Open Space Mitigation and Management Plan.

Policy 4.19 During construction, brightly colored, temporary plastic fencing that is at least 4 feet tall will be erected 1 foot outside the outermost edge of the tree’s dripline or around the combined dripline of groves or lines of trees for protection. Signs will be erected in accordance with the Placer County Tree Preservation Ordinance.

Policy 4.20 Soil disruptions within driplines of existing oaks and other native trees identified for preservation will be avoided where feasible. Paving shall not be placed in the driplines of trees to be preserved.

Policy 4.21 Grading and landscaping will be designed to prevent overspray or runoff within tree driplines.

Policy 4.22 Irrigation will not occur within the driplines of indigenous oaks except as prescribed by the project arborist or landscape architect.

Policy 4.23 Plantings within driplines of indigenous oaks will be limited to species that require no irrigation and are tolerant of the natural semiarid habitat of the oaks.

7.3 Open Space

Goal 7.2 Create an interconnected system of open space that encompasses the preservation and enhancement of natural habitat areas for the use, appreciation, and enjoyment of the community.

Goal 7.3 Locate open space accessible to residents and link these lands to community activity areas and recreation areas.

Goal 7.4 Use landscape buffers to protect the natural environment from the built environment, to separate incompatible land uses, and to provide transitions from higher intensity
urban development to more rural developments around the Placer Vineyards Plan Area.

Open Space Buffers

Policy 7.15 Design of Open Space and Buffer Areas. Open space and buffer areas should be designed consistent with the following guidelines:

1. Trails and park amenities should be carefully sited to avoid disturbance of sensitive natural resources on-site. Sensitive preserve areas, wetland areas, or stands of oak trees may be protected using fences to discourage access and help establish plantings.

2. Within open space areas, grading, realignment, and excavation will be required for flood protection, stormwater drainage, or retention ponds.

3. Fences, 4 feet in height and open in character, shall be used to protect sensitive habitat and other preservation areas or to restrict vehicular access at streets.

4. Within open space areas, landscaping will be low-water-use grasses, ground covers, California native trees, and the plants recommended for use in open space areas in Appendix B, “Recommended Plant List.”

5. Within buffer areas landscaping will consist of plants, including evergreen and deciduous trees, shrubs, and ground cover.

6. See Figure 7.1 for the locations of open space buffers and Figure 7.10-7.12 for detailed plans and cross sections.

Policy 7.16 Buffer Areas Adjacent to the Special Planning Area. Open space buffers shall be provided along the entire edge of the Special Planning Area. Except adjacent to the railroad right-of-way, which will serve as an open space buffer, open space buffers shall be provided as indicated in Figure 7.10.

Policy 7.17 Buffers along the County Line. A 200-foot buffer shall be designed along the Sacramento County line from Tanwood Road to Palladay Road. A 50-foot-wide buffer is provided along the Sacramento County border, adjacent to Gibson Ranch Park (see Figure 7-11).

Policy 7.18 Oak Grove Open Space Areas. Concentrations of significant oak trees on the site shall be preserved in two large oak grove open space areas—one located at the northwest corner of Dyer Lane and 12th Street and the other on the east side of the Plan Area along the Dry Creek Corridor. These open spaces shall preserve the existing stands of oak trees and serve as passive open space areas that provide
a visual and educational resource to the community. [See Figure 4.2-5 in Section 4.2 of this Revised Draft EIR.]

Policy 7.19 Open Space Character. Open space areas should complement the character of the existing site (which is predominantly Valley oak or savanna). These areas can integrate wildlife habitat enhancement and restoration while providing local residents with opportunities for passive recreation, ecological observation and education, and gardening. A brief description of what the open space design concept is provided below with a recommended plant palette provided in Appendix B. [See Table 4.2-1 in Section 4.2 of this Revised Draft EIR.]

Valley Oak Savanna:

The open space areas may consist of woodland canopies dominated by valley oak trees, scattered throughout rolling topography. Additional tree species may include buckeye, western redbud, and California coffeeberry. Understory shrubs can support the woodland and may include upland scrub species such as California wild grape, elderberry, manzanita, toyon, and California blackberry. Ground cover and meadow areas consisting of native grasses and forbs including penstemon, monkey flower, California brome, barley, wild rye, and needlegrass can be included in the woodland. Birds that may be attracted to the savanna include California quail, woodpecker, and hawk, while wildlife may include dusky footed woodrat, mule deer, gray fox, and rabbits.

8.2.3 Drainage and Flood Control

Policy 8.6 Beaver Dam Management. When found to create a potential health and safety hazard, beaver dams shall be breached or removed according to procedures determined by the County, including proper disposal of vegetation and woody materials removed from beaver dams.

4.4.3 REGULATORY SETTING

The following describes federal, state, and local environmental laws and policies that are relevant to the CEQA review process.

FEDERAL

UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.
The United States Fish and Wildlife Service (USFWS) is responsible for implementation of the FESA. During project review, this agency is given the opportunity to comment on the potential of the project to affect listed plants and animals.

In addition to formal listing under the FESA, species receive additional consideration during the CEQA process discussed below. Species that may be considered for review are included on a list of “Species of Concern” developed by the USFWS. It tracks species in the nation whose numbers, reproductive success, or habitat may be threatened.

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

The USFWS also has the responsibility for identifying Critical Habitat areas for endangered and threatened plants and animals. When a species is proposed for listing as endangered or threatened under the FESA, the USFWS must consider whether there are areas of habitat essential to the species’ conservation, which may be proposed for designation as Critical Habitat. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species that may require special management and protection. In determining the Critical Habitat for a species, the USFWS is required to use the best scientific data available. In addition, before designating any particular area as Critical Habitat, the USFWS must consider the economic impact, and any other relevant impact, associated with this designation. If the costs associated with designating an area as Critical Habitat outweigh the benefits, the USFWS may exclude that area from Critical Habitat, unless excluding the area would result in the extinction of the species in question. The absence or removal of a Critical Habitat designation does not relieve a landowner from its obligation to comply with the requirements of FESA.

**UNITED STATES ARMY CORPS OF ENGINEERS (USACE)**

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

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries
between jurisdictional waters and uplands are determined in a variety of ways, depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 C.F.R. Section 328.3[b]). Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the “normal circumstances” for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 C.F.R. Section 328.4[c][1]). The OHWM is defined by the Corps as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 C.F.R. Section 328.3[e]).

NATIONAL MARINE FISHERIES SERVICE

Similar to the USFWS authority for federally-listed species, the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) is responsible for implementation of FESA for listed fish species. During project review, NOAA is given the opportunity to comment on the potential of the project to affect federally listed fish species.

FISH AND WILDLIFE COORDINATION ACT

The FWCA, as amended, proposed to assure that fish and wildlife resources receive equal consideration with other project purposes and will be coordinated with other features of water resources development projects. The goal of the FCWA is to encourage developers to design water-related projects (e.g., flood control, irrigation, navigation, hydroelectric power) to enhance the quality and enjoyment of fish and wildlife resources by incorporating such goals into project plans.

STATE

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)

Similar to the FESA, the State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is intended to operate in conjunction with CEQA to protect endangered and threatened species. The California Department of Fish and Game (CDFG) is responsible for implementation of the CESA. During project review, CDFG is given the opportunity to comment on the potential of the project to affect plants and animals that are listed.
The CDFG has jurisdiction under Section 1600 et seq. of the California Fish and Game Code over fish and wildlife resources of the state. As amended effective January 1, 2004, Fish and Game Code Sections 1600 through 1616 regulate activities by which a public or private entity proposes to “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.” In general, a Streambed Alteration Agreement is necessary where any such proposed activity would “substantially adversely affect an existing fish or wildlife resource.” In proposing any such agreement made available in draft form to the project proponent in a timely manner, the Department of Fish and Game may propose measures to protect those resources. The law requires the CDFG to solicit input from applicants in order to try to reach mutual agreement as to the scope and effect of such measures. Arbitration may be necessary where no such agreement can be reached.

Section 3503.5 of the California Fish and Game Code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. It is common, though not mandatory, practice for lead agencies to formulate significance thresholds from the questions posed in Appendix G.

**CALIFORNIA NATIVE PLANT SOCIETY (CNPS)**

The CNPS is a nonprofit corporation not affiliated with any governmental agency that maintains a list of plant species native to California that, according to CNPS, have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review by Placer County, although the listing of plants by CNPS should not be confused with the official listing of species by the USFWS or the NOAA under FESA, or the CDFG under CESA.

**OAK WOODLANDS CONSERVATION - PUBLIC RESOURCES CODE SECTION 21083.4**

In 2004, the California legislature enacted SB 1334, which added oak woodland conservation regulations to the Public Resources Code. This new law requires a County to determine whether
a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a County determines that there may be a significant effect to oak woodlands, the County must require oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. Such mitigation alternatives includes: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement of trees; contribution of funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; and/or other mitigation measures developed by the County.

**FISHERIES**

Management of non-anadromous fish and other aquatic species is the responsibility of the USFWS, whereas management of anadromous fish is the responsibility of NOAA. CDFG is a state "trustee agency" for aquatic species under CEQA. Sensitive aquatic species are regulated by the federal ESA and CESA. The following discussion addresses fisheries management plans and other regulatory initiatives relative to aquatic species in the study area.

**CENTRAL VALLEY PROJECT IMPROVEMENT ACT**

The CVPIA (Title 34 of Public Law (P.L.) 102-575) amends the authorization of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes of the CVP having equal priority with irrigation and domestic uses of CVP water. It also elevates fish and wildlife enhancement to a level having equal purpose with power generation.

The CVPIA identifies several measures to meet these new purposes. Significant among these is the broad goal of restoring natural populations of anadromous fish (Chinook salmon, steelhead, green and white sturgeon, American shad, and striped bass) in Central Valley rivers and streams to double their recent average levels. The Anadromous Fish Restoration Program (AFRP) directs the Secretary of the Interior to:

... develop within three years of enactment and implement a program which makes all reasonable efforts to ensure that, by the year 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not less than twice the average levels attained during the period of 1967-1991 ...

The USFWS has assumed the lead role in the AFRP. Under USFWS direction, technical teams have assisted in the establishment of components of the AFRP. A key element of the program is instream flow recommendations, including objectives for the lower American River, upper Sacramento River, and the Delta.

The Secretary of the Interior also is directed, under Section 3406(b)(2) of the CVPIA, to dedicate and manage 800,000 AFA of CVP yield for the primary purpose of implementing the fish, wildlife, and habitat restoration and measures authorized by that title. Management of the 800,000 AFA for fishery and habitat restoration is still under consideration; however,
Reclamation has voluntarily implemented AFRP flow-related actions both for the Delta and upstream reservoirs. Moreover, both Reclamation and the USFWS have required the implementation of the AFRP actions in any modeling studies associated with federal actions or otherwise affecting the CVP. While it is recognized that recent litigation regarding the accounting of 3406(b)(2) water has resulted in uncertainty in how to characterize 3406(b)(2) actions, Reclamation has yet to suggest any specific approach (for planning and impact assessment purposes) other than AFRP actions. Inclusion of AFRP flow-related actions both for the Delta and upstream reservoirs best represents implementation of management of 3406(b)(2) water.

**ECOSYSTEM RESTORATION PROGRAM PLAN OF THE CALFED BAY-DELTA PROGRAM**

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecosystem health and improve water management for beneficial uses of the Bay-Delta system. The program addresses problems in four resource areas: ecosystem quality, water quality, system integrity, and water supply reliability. Programs to address problems in the four resource areas will be designed and integrated to fulfill the CALFED mission.

The goal for ecosystem quality is to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species. The CALFED Ecosystem Restoration Program Plan (ERPP) addresses this goal. The foundation of the ERPP is restoration of ecological processes that are associated with streamflow, stream channels, watersheds, and floodplains. These processes create and maintain habitats essential to the life history of species dependent on the Delta. In addition, the ERPP aims to reduce the effects of stressors that inhibit ecological processes, habitats, and species.

Key restoration actions for Sacramento River fisheries being proposed by this program include the following:

- Enhancing river flows;
- Restoring the natural river meander process;
- Enhancing riparian and riverine habitats;
- Maintaining suitable water temperatures for salmonids;
- Reducing fish losses at points of water diversion;
- Improving anadromous fish passage at existing barriers;
- Maintaining and improving water quality;
- Improving hatchery and stocking programs; and
- Improving management of inland harvest of salmonids.

Such restoration actions, when implemented over the next few decades, are expected to improve Sacramento River fisheries, including salmonid fisheries, over the existing condition. The ERPP establishes similar restoration goals for other major water courses throughout the Central Valley.
In 1993, CDFG published *Restoring Central Valley Streams: A Plan for Action*, which was developed to address the protection of anadromous fish habitat in Central Valley streams (CDFG 1993). This plan identified the following five priorities for the lower American River, and established them as recommendations:

- Maintain specified instream flow releases below Nimbus Dam throughout the year;
- Establish minimum fall carryover storage at Folsom Reservoir to maintain suitable year-round stream temperatures;
- Control rapid-flow fluctuations to protect eggs and fry of anadromous fish;
- Develop a coordinated multi-agency management plan; and
- Develop and implement a continuing program for the purpose of restoring and replenishing, as needed, spawning gravel lost from the construction and operation of the CVP dams, bank protection projects, and other actions that have reduced the availability of spawning gravel and rearing habitat in the lower American River.

*Steelhead Restoration Plan for the American River*

In 1991, CDFG published the *Steelhead Restoration Plan for the American River*. The plan has two main objectives (CDFG 1991):

- Restoring and maintaining naturally produced steelhead as an integral component of the American River ecosystem; and
- Restoring the population to a level that will sustain a quality steelhead fishery and provide for other non-consumptive uses.

The plan focuses on restoring habitat conditions within the American River, and on supplementing the existing fisheries population with artificially reared fish. The plan also recommends that the overall CVP operations be adjusted to allow for the elimination of drastic flow fluctuations in the American River; states water temperature objectives during spawning, incubation, emergence, and juvenile rearing lifestages; and suggests maintenance of a minimum coldwater pool in Folsom Reservoir throughout the summer.

*National Marine Fisheries Service Biological Opinion for Winter-Run Chinook Salmon*

In 1993, NOAA assessed the potential impacts of Reclamation's operation of the CVP on the federally-listed, winter-run Chinook salmon. Based on this assessment, NOAA issued a biological opinion concluding that operation of the CVP would likely jeopardize the continued existence of winter-run Chinook salmon. Reasonable and prudent alternatives to CVP
operations were developed to avoid jeopardy, including specific flow, temperature, reservoir storage, and diversion requirements in the Sacramento River and in the Delta. NOAA reinitiated consultation on CVP operations when the “Principles for Agreement” that formed the basis for the Bay-Delta Plan was originally signed, and they subsequently issued a revised biological opinion in 1995. Reclamation currently operates the CVP in accordance with the *Winter-Run Chinook Salmon Biological Opinion* (NOAA 1993, as revised in 1995).

**U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION FOR DELTA SMELT**

In 1995, Reclamation consulted with the USFWS on impacts to the federally-listed delta smelt potentially resulting from CVP operations. The USFWS concluded that operation of the CVP would not jeopardize the continued existence of delta smelt. This conclusion was based on the benefits to delta smelt expected from operating the CVP in accordance with the *Biological Opinion for Winter-Run Chinook Salmon* (NOAA, 1993 as revised in 1995) and the Bay-Delta Plan.

**U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION FOR SPLITTAIL**

USFWS removed Sacramento splittail from the list of threatened species on September 22, 2003, and did not identify it as a candidate for listing under the ESA. Sacramento splittail are however, identified as a California species of special concern and, informally, as a federal species of concern.

**LONG-TERM CENTRAL VALLEY PROJECT AND STATE WATER PROJECT OPERATIONS CRITERIA AND PLAN (OCAP) BIOLOGICAL OPINIONS**

The Long-Term CVP and SWP OCAP serves as the operational standard by which Reclamation operates the integrated CVP/SWP system. The OCAP describes how Reclamation and DWR operate the CVP and the SWP to divert, store, and convey water consistent with applicable law (Reclamation 2004). A biological assessment for the CVP and SWP OCAP was issued by Reclamation on March 22, 2004. On June 30, 2004, Reclamation issued a revised OCAP and associated revised biological assessment. In October 2004, NOAA issued a biological opinion on the effects of the long-term OCAP for the CVP and SWP on federally-listed endangered Sacramento River winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, threatened Central Valley steelhead, threatened southern Oregon/ northern California coast coho salmon, and threatened central California coast steelhead and their habitat. The October 2004 biological opinion superseded all previous biological opinions regarding the OCAP for the CVP and SWP. CVP terms and conditions from the NOAA October 2004 biological opinion associated with the American River Division include:

- Reclamation shall manage the cold water supply within Folsom Reservoir and make cold water releases from Folsom Reservoir to balance the needs of Central Valley steelhead and fall-run Chinook salmon in the American River downstream of Nimbus Dam.
• Reclamation shall minimize the adverse effects of flow fluctuations associated with Folsom and Nimbus Reservoir operations on Central Valley steelhead spawning, egg incubation, and fry and juvenile rearing within the American River.

In addition, in July 2004, USFWS issued a biological opinion for the coordinated operations of the CVP and SWP and the OCAP on the federally threatened delta smelt. These OCAP biological opinions address required commitments under the ESA for continued operation of the CVP and SWP. Reclamation is committed to continue operating the CVP in conformance with existing or new biological opinions addressing listed species.

LOCAL

PLACER COUNTY GENERAL PLAN

Placer County General Plan Goals, Objectives, and Policies

In addition to state and federal regulations, the Placer County General Plan defines certain goals, objectives, and policies protecting natural resources:

Open Space, Habitat, and Wildlife Resources:

Goal 1.I: To establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community’s enjoyment.

Policies:

1.I.1. The County shall require that significant natural open space and cultural resources be identified in advance of development and incorporated into site-specific development project design. The Planned Residential Developments (PDs) and the Commercial Planned Developments (CPD) provisions of the Zoning Ordinance can be used to allow flexibility for this integration with valuable site features.

1.I.2. The County shall require that development be planned and designed to avoid areas rich in wildlife or of a fragile ecological nature (e.g. areas of rare or endangered plant species, riparian areas). Alternatively, where avoidance is infeasible or where equal or greater ecological benefits can be obtained through off-site mitigation, the County shall allow project proponents to contribute to off-site mitigation efforts in lieu of on-site mitigation.

Water Resources:

Goal 6.A: To protect and enhance the natural qualities of Placer County’s streams, creeks and groundwater.

Policies:
6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from the centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species. Based on more detailed data, which is supplied as a part of the review for a specific project, the County may determine that such setback is not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

a. Reasonable use of the property would otherwise be denied;

b. The location is necessary to avoid or mitigate hazards to the public;

c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

d. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

6.A.3. The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability:

a. Avoid the disturbance of riparian vegetation;

b. Replace riparian vegetation (on-site, in-kind);

c. Restore another section of creek (in-kind); and/or

d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).

6.A.4. Where creek protection is required or proposed, the County should require public and private development to:

a. Preserve creek corridors and creek setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protections. If a creek is proposed to be included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval;

b. Designate such easement or dedication areas (as described in a. above) as open space;
c. Protect creek corridors and their habitat value by actions such as: 1) providing an adequate creek setback, 2) maintaining creek corridors in an essentially natural state, 3) employing creek restoration techniques where restoration is needed to achieve a natural creek corridor, 4) utilizing riparian vegetation within creek corridors, and where possible, within creek setback areas, 5) prohibiting the planting of invasive, non-native plants (such as vinca major and eucalyptus) within creek corridors or creek setbacks, and 6) avoiding tree removal within creek corridors;

d. Provide recreation and public access near creeks consistent with other General Plan policies;

e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off-site; and 2) temporary vegetation sufficient to stabilize disturbed areas.

f. Provide for long-term creek corridor maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.

6.A.9. The County shall require that newly-created parcels include adequate space outside of watercourses’ setback areas to ensure that property owners will not place improvements (e.g., pools, patios, and appurtenant structures), within areas that require protection.

6.A.11. Open space located in watersheds which serve reservoirs is important to the adequate performance of those reservoirs for their intended purposes and should be preserved and protected.

The watershed is defined as those lands draining into a reservoir and having an immediate effect upon the quality of water within that reservoir. Those lands located within the watershed and within 5,000 feet of the reservoir shall be considered as having an immediate effect.

Wetland and Riparian Areas:

Goal 6.B: To protect wetland communities and related riparian areas throughout Placer County as valuable resources.

Policies:

6.B.1. The County shall adopt the “no net loss” policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California
Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

6.B.2. The County shall require new development to mitigate wetland loss in both regulated and non-regulated wetlands to achieve “no net loss” through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation banking program that provides the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

6.B.3. The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of the wetlands.

6.B.4. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the survival and nesting of wetland and riparian species.

6.B.5. The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less than significant impact under CEQA.

Fish and Wildlife Habitat:

Goal 6.C: To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

Policies:

6.C.1. The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

a. Wetland areas including vernal pools.

b. Stream environment zones.
c. Any habitat for rare, threatened or endangered animals or plants.
d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitats.
e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.
f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.
g. Important spawning areas for anadromous fish.

6.C.4. The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by California Department of Fish and Game officials, the U.S. Fish and Wildlife Service, and Placer County Resource Conservation District.

6.C.5. The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work.

6.C.6. The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species’ habitats.

6.C.9. The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat within or near the project area.

Vegetation:

Goal 6.D: To preserve and protect the valuable vegetation resources of Placer County.

Policies:

6.D.3. The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

6.D.4. The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.
6.D.5. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.

6.D.6. The County shall ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.

6.D.7. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be restored or expanded, where possible.

6.D.8. The County shall require that new development preserve natural woodlands to the maximum extent possible.

6.D.12. The County shall support the retention of heavily vegetated corridors along circulation corridors to preserve their rural character.

6.D.13. The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.

6.D.14. The County shall require that new development avoid, as much as possible, ecologically-fragile areas (e.g., areas of rare or endangered species of plants, riparian areas). Where feasible, these areas should be protected through public acquisition of fee title or conservation easements to ensure protection.

Open Space for the Preservation of Natural Resources:

Goal 6.E: To preserve and enhance open space lands to maintain the natural resources of the county.

Policies:

6.E.1. The County shall support the preservation and enhancement of natural land forms, natural vegetation, and natural resources as open space to the maximum extent feasible. The County shall permanently protect, as open space, areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.

6.E.2. The County shall require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible:

   a. High erosion hazard areas;
   b. Scenic and trail corridors;
   c. Streams, streamside vegetation;
   d. Wetlands;
e. Other significant stands of vegetation;
f. Wildlife corridors; and
g. Any areas of special ecological significance.

6.E.5. The County shall coordinate with local, state, and federal agencies and private organizations to establish visual and physical links among open space areas to form a system that, where appropriate, includes trails. Dedication of easements shall be encouraged, and in many cases, required as lands are developed and built.

PLACER COUNTY CONSERVATION PLAN

Placer County is currently preparing a Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) to address the conservation of natural communities, endangered species, and other less sensitive species of native wildlife. The County is also in the process of applying for a Clean Water Act Section 404 Programmatic General Permit (“PGP”) through the County Aquatic Resource Permit (“CARP”), CDFG Master Streambed Alteration Agreement (MSAA), and Clean Water Act Section 401 Water Quality Certification. Collectively, the NCCP, HCP, PGP, MSAA, and Water Quality Certification application have been termed the Placer County Conservation Plan (PCCP) and the 404 PGP is referred to as the “CARP”). The County has divided up this planning process into three geographical regions. At this time, the County is focusing on Phase 1, which will address conservation and development of lands within western Placer County (land west of Auburn to the County line). The purpose of the PCCP will be to encourage and simplify the process of conserving sensitive habitats for special-status species. Once the Plan is approved, it will likely allow for incidental take of covered species with the requirement of mitigation of lost habitat at approved ratios. Listed species that are presumed to be covered by such a plan include Swainson’s hawk (Buteo swainsoni), vernal pool fairy shrimp (Branchinecta lynchi), vernal pool tadpole shrimp (Lepidurus packardi), and several listed fish species. As a result of preparing the PCCP, Placer County, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service entered into a Natural Community Conservation Planning Agreement on September 10, 2001. The agreement concerns the development of joint conservation plans under the California Natural Community Conservation Planning Act (NCCPA) and the Federal Endangered Species Act (FESA).

The Planning Agreement requires all projects designed during the preparation of the Phase I Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) to be consistent with the principles and objectives of the conservation process. In April 2004, the County published a Conservation Strategy Overview that outlined key conservation planning principles directing the preparation of the NCCP/HCP. In addition, science advisors to the county have prepared the Report of the Science Advisors (January 2004), which provides the County with principles for conservation, species protection, and adaptive management. Both of these documents, in combination with past mitigation recommendations from state and federal resource agencies, provide the County with the necessary direction to apply towards interim project mitigation analysis and determine a mitigation strategy consistent with the conservation planning process.
Since activities related to this project may commence prior to the approval of the Phase 1 PCCP, mitigation measures in this Revised Draft EIR are designed to be implemented absent the approved conservation plan.

The parties agreed that projects, actions, and activities proposed or implemented within areas covered by the Agreement during preparation of the corresponding NCCP/HCP should not compromise its successful development or implementation. The parties further agreed that interim projects should not be delayed solely due to preparation of the NCCP/HCP. The agreement established interim project review guidelines. The proposed Placer Vineyards Specific Plan is subject to the guidelines included in the Agreement, which are summarized below:

7.1 **Permitting by the Wildlife Agencies.** The Wildlife Agencies will issue or deny permits or approvals for and complete regulatory reviews of Interim Projects in accordance with CESA and FESA and other applicable State or Federal law. Consistent with their respective legal authorities, the Wildlife Agencies may request or require project design features or mitigation measures that complement a proposed NCCP/HCP. But the Wildlife Agencies will not delay or suspend issuance of a permit or approval for an interim project due solely to the preparation of the NCCP/HCP.

7.2 **Identification of areas with high, long-term conservation value.** The Wildlife Agencies may provide maps, as data and time allow, that identify areas with high long-term conservation value that are potentially crucial elements of a regional preserve system designed to adequately conserve habitat for Target Species and proposed Covered Species. The purpose of the maps would be to assist the County in making land use decisions that do not compromise the successful development or implementation of the NCCP/HCPs. The County will specifically identify for the Wildlife Agencies the Interim Projects within the areas identified as having high long-term conservation value on the Wildlife Agencies’ maps.

7.3 **Discretionary approvals by the County.** The County will approve or disapprove Interim Projects in accordance with the County’s established standards and processes. However, to ensure that Interim Projects will not compromise the successful development or implementation of the NCCP/HCP, and to facilitate CESA and FESA compliance for Interim Projects that require it, the County agrees to confer with the Wildlife Agencies about certain projects that will require a discretionary approval from the County or will be carried out by the County.

7.4 **Informal conference.** The Parties agree to meet and confer at the request of any Party to discuss any Interim Project that has been identified by the County in accordance with this Section 7.4. The Parties will meet and confer at least once a month for this purpose, unless otherwise agreed by the Wildlife Agencies and the County. The purpose of the conference will be to evaluate whether an Interim Project identified by the County, together with any proposed mitigation measures, would compromise the successful
development or implementation of the NCCP/HCP being prepared for the Planning Subarea in which the project would occur and, if so, what feasible actions would make the project compatible with the successful development and implementation of the NCCP/HCP. This Section 7.4 does not restrict the County’s discretionary authority with regard to Interim Projects; nor does it give the Wildlife Agencies the authority to approve or disapprove Interim Projects. The Parties recognize that the Wildlife Agencies will retain their authority and responsibility for implementation and enforcement of CESA, FESA and other State and Federal wildlife protection laws. However, by agreeing to confer about Interim Projects when they are initially proposed, the Parties intend to create an opportunity to address the projects’ potential impacts to species listed in Exhibit 2 or natural communities identified in Section 6.3.4 expeditiously and in coordination with the County’s project review process.

**PLACER LEGACY OPEN SPACE AND AGRICULTURAL CONSERVATION PROGRAM**

The Placer Legacy Open Space and Agricultural Conservation Program (Placer Legacy Program) is an innovative and nationally significant endeavor initiated by the County as a basis to realize its objective of comprehensive planning for preservation of biological resources, agricultural lands, and open space, and to serve as a model for future endeavors by similar communities in the United States.

The *Placer County General Plan*, adopted in 1994, contains policies to preserve open space, agricultural and natural resources, some of which are listed in this section. In December 1997, the Placer County Board of Supervisors directed the Planning Director to initiate a program to provide for long-term preservation of open space in Placer County. In April 1998, the Board of Supervisors formed a citizen advisory committee and initiated an open space implementation program in accordance with specified goals, elements, and measures of success. This program became the Placer Legacy Program. The specific objectives of the Placer Legacy Program are to:

- Maintain a viable agricultural segment of the economy;
- Conserve natural features necessary for access to a variety of outdoor recreation opportunities;
- Retain important and historic areas;
- Preserve the diversity of plant and animal communities;
- Protect endangered and other special status plant and animal species;
- Separate urban areas into distinct communities; and
- Ensure public safety.

A core interest of the Placer Legacy Program is to enable the County to make itself a willing buyer to persons wishing to sell interest in lands having value for conservation purposes.

Based on input and analysis from the Scientific Working Group, the Citizens Advisory Committee and the public, the County identified guidelines for preparation of a joint natural community conservation plans/habitat conservation plans. These guidelines have been
incorporated into the Placer Legacy Program’s implementation documents, the Placer Legacy Program Summary Report (June 2000), and the Placer Legacy Program Implementation Report (June 2000). These guidelines may be modified during development of the NCCP/HCPs to fulfill the requirements of State and federal law.

The parties listed above and other public agencies have entered into the “Framework Agreement regarding the Planning, Development and Implementation of the Placer Legacy Program”, which established a framework for cooperation and collaboration among State and federal agencies and local governments in the development and implementation of the Placer Legacy Program. It describes opportunities for partnership and collaboration among the County, cities in Placer County, the PCWA, and State and federal regulatory and land management agencies in the development of the Placer Legacy Program.

NATOMAS BASIN HABITAT CONSERVATION PLAN

As authorized by the federal Endangered Species Act (FESA), the Natomas Basin Habitat Conservation Plan (NBHCP) is the conservation plan designed to support applications for federal permits under Section 10(a)(1)(B) of the FESA. The NBHCP is also intended to serve as an application for incidental take permits under State law pursuant to Section 2081(b) of the California Fish and Game Code. The Final NBHCP (2003) is based upon the 1997 NBHCP that was the basis for issuance of permits to the City of Sacramento. The 1997 NBHCP has been modified as a result of litigation involving a challenge to issuance of take permits to the City of Sacramento. The Final NBHCP has also been modified to include participation by the Permittees of the City of Sacramento, Sutter County and TNBC, and potential permittees, Natomas Central Mutual Water Company, and Reclamation District Number 1000.

The purpose of the NBHCP is to promote biological conservation in conjunction with development within the Natomas Basin. The NBHCP establishes a multi-species conservation program to minimize and mitigate the expected loss of habitat values and incidental take of Covered Species that could result from urban development, operation and maintenance of irrigation and drainage systems, and certain activities associated with the Natomas Basin Conservancy (TNBC) management of its system of reserves established under the NBHCP. The primary biological goal of the NBHCP is to create a system of reserves, with both wetland and upland components, that would support viable populations of Giant Garter snake, Swainson’s hawk, and 20 other Covered Species. The NBHCP primarily focuses preservation, restoration, and mitigation efforts on the Giant Garter snake and Swainson’s hawks and provides standards and protocols for their protection.

4.4.4 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused
by projects under its review. However, agencies may also rely upon the guidance provided by
the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. In
addition, CEQA Guidelines Section 15065(a) includes what amount to mandated thresholds of
significance involving biological resources.

Pursuant to Section 15065(a)(1), the biological impacts of the proposed Specific Plan are
considered significant if the project would:

- Substantially\(^2\) reduce the habitat of a fish or wildlife species;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community; or
- Substantially reduce the number or restrict the range of an endangered, rare or threatened
  species.

CEQA Guidelines Section 15380 defines what is meant in Section 15065 by the term
“endangered, rare or threatened species.” A species of animal or plant is presumed to be
“endangered, rare, or threatened” if the species has been officially listed or designated as such
under the FESA or the CESA and the regulations implementing those statutory schemes [CEQA
Guidelines, Section 15380(c).]. In addition, a species that has not been officially listed under
these statutes and regulations may still be considered endangered, rare or threatened under the
following circumstances:

- If the species’ survival and reproduction in the wild are in immediate jeopardy from one or
  more causes, including loss of habitat, change in habitat, overexploitation, predation,
  competition, disease or other factors;

- If the species, although not presently threatened with extinction, exists in such small numbers
  throughout all or a significant portion of its range that it could become endangered if its
  environment worsens; or

- If the species is likely to become endangered within the foreseeable future throughout all or a
  significant portion of its range and could be considered under the federal definition of
  “threatened.”

Appendix G to the CEQA Guidelines includes a series of questions addressing projects’ potential
impacts on various categories of environmental resources. These questions, formulated by the
California Resources Agency in 1998 after extensive public input (including input from leaders
in the statewide community of environmental consultants), identify areas of inquiry in which
agencies should engage, and are commonly used by lead agencies in the formulation of criteria

\(^2\) CEQA does not quantitatively define the term “substantially,” as used to describe a reduction of a species;
population, its habitat, or its range. What is “substantial” varies with each species, based on limiting factors, natural
variability, and the sum of the project-related effects on all life stages of a species. Determining if a reduction is
“substantial” is considered relative to background natural variation; the impact should also be measured in a well-
designed sampling program.
for determining the significance of impacts. In reliance on the areas of inquiry, Placer County has determined that impacts to biological resources could be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, of the California Department of Fish and Game or U.S. Fish and Wildlife Service.

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

- Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool and coastal) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

- Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

Notably, the criteria quoted above addressing impacts to “wetlands” apply only to “federally protected wetlands as defined by Section 404 of the Clean Water Act.” In 1998, when Appendix G to the CEQA Guidelines was most recently updated, the U.S. Army Corps of Engineers contended that federal jurisdiction over wetlands extended to isolated waters not adjacent to navigable waters. In Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, (2001) 531 U.S. 159, however, the United States Supreme Court held that federal jurisdiction applied only to navigable waters, their tributaries, and areas adjacent thereto. In contrast, the 1994 Placer County General Plan employs a broader definition, though in 1994 it tracked the understanding employed by federal agencies. The Glossary to the General Plan defines “wetlands” as “transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water.” Under a ‘unified’ methodology now used by all federal agencies, wetlands are defined as “those areas meeting certain criteria for hydrology, vegetation, and soils.”
General Plan Policy 6.B.1 states that “[t]he County shall support the ‘no net loss’ policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.” Because, at the time the General Plan was adopted in 1994, this policy was thought to extend County regulatory authority to isolated waters such as vernal pools that are not adjacent to navigable waters or their tributaries, the County currently interprets the reach of this policy as extending beyond what the United States Supreme Court has said is the statutory jurisdiction of the U.S. Army Corps of Engineers. For this reason, Placer County has determined that impacts to biological resources could be considered significant if the project would:

- Have a substantial adverse effect on wetlands as defined by the 1994 Placer County General Plan (including, but not limited to, marsh and vernal pools) through direct removal, filling, hydrological interruption, or other means.

In addition, although Placer County does not yet have an adopted Habitat Conservation Plan, or Natural Community Conservation Plan, interim planning agreements have been executed that are precedent to the habitat plans now under development. For this reason, Placer County has determined that impacts to biological resources could also be considered significant if the project would:

- Conflict with the provisions of an executed interim planning agreement that has been entered precedent to the adoption of a Habitat Conservation Plan or Natural Community Conservation Plan.

**SURFACE WATER SUPPLY STANDARDS OF SIGNIFICANCE**

Indicators of potential project-related effects to terrestrial resources include different environmental conditions (e.g., flows, backwater recharge) that could impact riparian vegetation. Specific evaluation criteria were developed for terrestrial resources based on available guidelines and resource agency standards and are presented in Table 4.4-6. Effect indicators and evaluation criteria developed for use in assessing the significance of potential impacts upon fish resources and aquatic habitat that may result from the Specific Plan water supply are presented in Table 4.4-7. The effect indicators and evaluation criteria presented in Table 4.4-7 are consistent with the criteria for the mandatory findings of significance as presented in Section 15065(a) of the CEQA Guidelines. As stated in this section, the project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare, or threatened species. The aquatic resources impact assessment is completed for all life stages of the species evaluated, including spawning, incubation and initial rearing, juvenile rearing and emigration, and adult immigration. For the fisheries and aquatic resources impact assessment,
Table 4.4-6
Terrestrial Resources Effect Indicators and Evaluation Criteria

<table>
<thead>
<tr>
<th>Effect Indicator</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shasta and Trinity Reservoirs</strong></td>
<td></td>
</tr>
<tr>
<td>The end-of-month reservoir water surface elevation (feet/msl) during March through September.</td>
<td>Substantial alteration in the end-of-month water surface elevation over seasonal, annual, and long-term time periods, relative to the existing condition over the simulated 70-year period of record.</td>
</tr>
<tr>
<td><strong>Upper Sacramento River</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) from March through October.</td>
<td>Decrease in flow, relative to the existing condition, of sufficient magnitude and frequency to adversely affect the growth, maintenance, and reproductive capacity of the riparian vegetation in the upper Sacramento River for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td><strong>Lower Sacramento River</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) from March through October.</td>
<td>Decrease in flow, relative to the existing condition, of sufficient magnitude and frequency to adversely affect the growth, maintenance, and reproductive capacity of vegetation in the lower Sacramento River and the Delta for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Position of X2.</td>
<td>Upstream shift in X2 position, relative to the existing condition, of sufficient magnitude (i.e., greater than 1 km) and frequency to adversely affect the growth, maintenance, and reproductive capacity of vegetation in the lower Sacramento River and the Delta for any month of this period over the 70-year period of record.</td>
</tr>
</tbody>
</table>

-effect indicators such as water temperature, flows, nest-dewatering events, and littoral habitat availability are used to evaluate if the proposed project would have an adverse effect on the species’ habitat and range. Exceedance of water temperature evaluation criteria identified by the NOAA for certain species (i.e., 56°F at Bend Bridge for April 15 through September 30 for winter-run Chinook salmon) is one such effect indicator. Reduction of reservoir water surface elevations can reduce the availability of nearshore littoral habitat used by warmwater fish for spawning and rearing, therefore reducing spawning and rearing success and subsequent year class strength, so reservoir water surface elevation is another effect indicator used. In addition, decreases in reservoir water surface elevation during the primary spawning period for nest building of warmwater fish (March through July) may result in reduced initial year class strength through warmwater fish nest “dewatering.” Changes in river flows and water temperatures during certain periods of the year have the potential to affect spawning, fry emergence, and juvenile emigration. Therefore, exceedance of river flows and water temperatures criteria during certain times of the year (i.e., Spawning/Incubation and Initial Rearing [October through February]) also is used as an effect indicator.
<table>
<thead>
<tr>
<th>Effect Indicator</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>maintenance and reproductive capacity of vegetation of the Delta for any month of this period over the 70-year period of record.</td>
<td></td>
</tr>
</tbody>
</table>

**Folsom Reservoir**

The end-of-month reservoir water surface elevation (feet/msl) during March through September.

Substantial alteration in the end-of-month water surface elevation over seasonal, annual, and long-term time periods relative to the existing condition over the simulated 70-year period of record.

**Lake Natoma**

The end-of-month reservoir water surface elevation (feet/msl) during March through September.

Substantial alteration in the end-of-month water surface elevation over seasonal, annual, and long-term time periods relative to the existing condition over the simulated 70-year period of record.

**Lower American River**

**Growth of Fremont Cottonwoods**

Substantial reduction in monthly mean flows (cfs) below the 1,765 cfs threshold by a frequency and magnitude that would adversely affect the minimum flows to allow maintenance of radial growth of cottonwoods, relative to the existing condition, for any month of this period over the simulated 70-year period of record.

The monthly mean flows (cfs) below Nimbus Dam and at H Street Bridge occurring each month from March through October.

Substantial reduction of monthly mean flows (cfs) below the 2,000 cfs threshold by a frequency and magnitude that would adversely affect minimum flows to allow some growth of cottonwoods relative to the existing condition, for any month of this period over the simulated 70-year period of record.

Substantial reduction of monthly mean flows (cfs) below the 3,000 cfs threshold by a frequency and magnitude that would adversely affect reasonable flows to allow reasonable to maximum growth and maintenance of cottonwoods relative to the existing condition, for any month of this period over the simulated 70-year period of record.

The monthly mean flow (cfs) below Nimbus Dam and at H Street Bridge for all months of the year.

Substantial reduction of winter and spring monthly mean flows below 5,000 cfs (an amount estimated to represent instantaneous peak flows of 5,000 to 13,000 cfs) by a frequency and magnitude that would adversely affect inundation of riparian terraces adjacent to and remote from the lower American River, relative to the existing condition, over the simulated 70-year period of record.

**Backwater Recharge and Terrace Inundation**

The monthly mean flows (cfs) below Nimbus Dam and at H Street Bridge occurring all months of the year.

Substantial reduction of winter and spring monthly mean flows below 2,700 cfs by a frequency and magnitude that would adversely affect adequate recharge of backwater ponds to the river, relative to the existing condition.
### Table 4.4-6
**Terrestrial Resources Effect Indicators and Evaluation Criteria**

<table>
<thead>
<tr>
<th>Effect Indicator</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>existing condition, over the simulated 70-year period of record.²</td>
<td>Substantial reduction of winter and spring monthly mean flows below 4,000 cfs by a frequency and magnitude that would adversely affect adequate recharge of backwater off-river ponds, relative to the existing condition, over the simulated 70-year period of record.²</td>
</tr>
</tbody>
</table>

**Backwater Recharge and Terrace Inundation**

- Elderberry shrubs and other associated species on open terraces and backwater areas during the months of March through October.
- Substantial change in instream flow by a frequency and magnitude that would adversely affect elderberry shrubs and their associated species, relative to the existing condition, over the simulated 70-year period of record.

² Fremont cottonwoods are used as an indicator species for assessment of riparian habitats as much of the lower American River riparian habitat is dominated by this species, and the correlation between cottonwoods and flow in the lower American River are well documented.

### Table 4.4-7
**Fisheries and Aquatic Resources Diversion-Related Effect Indicators and Evaluation Criteria**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warmwater Fisheries</strong></td>
<td></td>
</tr>
<tr>
<td>Mean number of acres of littoral habitat for each month of the primary spawning and rearing period (i.e., March through September).</td>
<td>Decrease in monthly mean quantity (acres) of littoral habitat, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term population levels of warmwater fish for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>End-of-month reservoir water surface elevation (feet/-msl) occurring each month of the primary spawning and rearing period for nest-building warmwater fish (i.e., March through September).</td>
<td>Decrease in monthly mean reservoir water surface elevation more than nine feet per month, relative to the baseline condition, of sufficient frequency to adversely affect long-term population levels of warmwater fish for any month of this period over the 70-year period of record.</td>
</tr>
</tbody>
</table>

| **Coldwater Fisheries**                                                         |                                                                                      |
| End-of-month storage (TAF) for each month of the April through November period. | Decrease in monthly mean reservoir storage, relative to the baseline condition, which also would reduce the coldwater pool, of sufficient magnitude to adversely affect long-term population levels of coldwater fish for any month of this period over the 70-year of record. |

**Sacramento River**

**Winter-Run Chinook Salmon**
<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the adult immigration period (i.e., December through July).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory response, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the adult immigration period (i.e., December through July).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration, for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) below Keswick Dam and at Freeport for each month of the spawning and incubation and initial rearing period (i.e., April through August).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Bend Bridge and Jelly’s Ferry for each month of the spawning and incubation and initial rearing period (i.e., April through August).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F), for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the juvenile rearing and emigration period (i.e., August through December).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the juvenile rearing and emigration period (i.e., August through December).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Average annual early lifestage survival.</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
</tbody>
</table>

**Sacramento River**

**Spring-Run Chinook Salmon**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the adult immigration and holding period (i.e., March through September).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory response, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the adult immigration and holding period (i.e., March through September).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration, for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Effect Indicators</td>
<td>Evaluation Criteria</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) below Keswick Dam and at Freeport for each month of the spawning and incubation and initial rearing period (i.e., August through January).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Bend Bridge and Jelly’s Ferry for each month of the spawning and incubation and initial rearing period (i.e., August through January).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F), for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the juvenile rearing and emigration period (i.e., December through April).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the juvenile rearing and emigration period (i.e., December through April).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Average annual early lifestage survival.</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
</tbody>
</table>

**Sacramento River**

**Fall-Run Chinook Salmon**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the adult immigration period (i.e., September through November).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory response, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the adult immigration period (i.e., September through November).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration, for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) below Keswick Dam and at Freeport for each month of the spawning and incubation and initial rearing period (i.e., October through February).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the spawning and incubation and initial rearing period (i.e., October through February).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F), for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the juvenile rearing and emigration period (i.e., February through June).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Effect Indicators</td>
<td>Evaluation Criteria</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the juvenile rearing and emigration period (i.e., February through June).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Average annual early lifestage survival.</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
</tbody>
</table>

**Sacramento River**

**Late Fall-Run Chinook Salmon**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the adult immigration period (i.e., October through April).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory response, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the adult immigration period (i.e., October through April).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration, for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) below Keswick Dam and at Freeport for each month of the spawning and incubation and initial rearing period (i.e., December through April).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the spawning and incubation and initial rearing period (i.e., December through April).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F), for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the juvenile rearing and emigration period (i.e., April through October).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport for each month of the juvenile rearing and emigration period (i.e., April through October).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Average annual early lifestage survival.</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
</tbody>
</table>

**Steelhead**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the adult immigration period (i.e., December through March).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory responses</td>
</tr>
</tbody>
</table>
## Table 4.4-7
**Fisheries and Aquatic Resources Diversion-Related Effect Indicators and Evaluation Criteria**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>for each month of the adult immigration period (i.e., December through March).</td>
<td></td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for the spawning and</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect initial year-class strength for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>incubation period (i.e., December through March).</td>
<td></td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>for each month of the spawning and incubation period (i.e., December through</td>
<td></td>
</tr>
<tr>
<td>March),</td>
<td></td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport in the Sacramento River</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect initial year-class strength and juvenile rearing for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>for each month of the juvenile over-summer rearing period not covered in the fall-</td>
<td></td>
</tr>
<tr>
<td>run Chinook salmon juvenile rearing analysis (i.e., July through September).</td>
<td></td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial adverse affects to juvenile rearing (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>for each month of the juvenile over-summer rearing period not covered in the fall-</td>
<td></td>
</tr>
<tr>
<td>run Chinook salmon juvenile rearing analysis (i.e., July through September).</td>
<td></td>
</tr>
<tr>
<td>Monthly mean flow (cfs) below Keswick Dam and at Freeport for each month of the</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency, to adversely affect juvenile emigration for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>juvenile emigration period (i.e., February through June).</td>
<td></td>
</tr>
<tr>
<td>Monthly water mean temperature (°F) at Bend Bridge, Jelly’s Ferry, and Freeport</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>for each month of the juvenile emigration period (February through June).</td>
<td></td>
</tr>
<tr>
<td>Average annual early lifestage survival, based on LSALMON2 output for late fall-</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
<tr>
<td>run Chinook salmon.</td>
<td></td>
</tr>
<tr>
<td><strong>Sacramento River</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Splittail</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at Freeport during each month of the February through</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect potential splittail habitat availability for each month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>May spawning period.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.4-7
**Fisheries and Aquatic Resources Diversion-Related Effect Indicators and Evaluation Criteria**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean water temperatures (°F) at Freeport and the mouth during each month of the February through May spawning period.</td>
<td>Substantial increase in the frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for spittail spawning (i.e., 68°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Parameter 1 Description</td>
<td>Parameter 2 Description</td>
</tr>
<tr>
<td>Sacramento River</td>
<td></td>
</tr>
<tr>
<td><strong>Striped Bass</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at Freeport for each month of the May through June spawning period.</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect potential striped bass habitat availability for each month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Freeport for each month of the May through June spawning period.</td>
<td>Substantial increase in the frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for striped bass spawning (i.e., 59°F to 68°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>American Shad</td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at Freeport for each month of the May through June spawning period.</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect potential American shad habitat availability for each month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Freeport for each month of the May through June spawning period.</td>
<td>Substantial increase in frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for American shad spawning (i.e., 60°F to 70°F) for any month of the identified period over the 69-year period of record.</td>
</tr>
<tr>
<td>Lake Natoma</td>
<td></td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) of water released from Nimbus Dam for each month of the year.</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term population levels of coldwater fish, for any month of the year over the 70-year period of record.</td>
</tr>
<tr>
<td>Nimbus Hatchery</td>
<td></td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) of water released from Nimbus Dam for each month of the year.</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency that would result in reduced hatchery production (using index temperatures of 60°F, 65°F, and 68°F) during any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Lower American River</td>
<td></td>
</tr>
<tr>
<td>Fall-Run Chinook Salmon</td>
<td></td>
</tr>
<tr>
<td>Monthly mean flow (cfs) at the mouth of the American River for each month of the adult</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to</td>
</tr>
</tbody>
</table>
### Table 4.4-7
Fisheries and Aquatic Resources Diversion-Related Effect Indicators and Evaluation Criteria

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>immigration period (i.e., September through December).</td>
<td>adversely affect upstream passage or olfactory response, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at the mouth of the American River and at Freeport on the Sacramento River for each month of the adult immigration period (i.e., September through December).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration, for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) below Nimbus Dam and at Watt Avenue for each month of the spawning and incubation and initial rearing period (i.e., October through February).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) below Nimbus Dam and at Watt Avenue for each month of the spawning and incubation and initial rearing period (i.e., October through February).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F), for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) at Watt Avenue and the mouth of the American River for each month of the juvenile rearing and emigration period (i.e., February through June).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration, for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) below Nimbus Dam, at Watt Avenue, at the mouth of the lower American River, and at Freeport for each month of the juvenile rearing and emigration period (i.e., February through June).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing and emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Average annual early lifestage survival. Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
<td>Decrease in annual early lifestage survival, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect long-term initial year-class strength over the 70-year period of record.</td>
</tr>
</tbody>
</table>

**Lower American River**

**Steelhead**

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly mean flow (cfs) at the mouth of the American River for each month of the adult immigration period (i.e., December through March).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect upstream passage or olfactory responses for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) at the mouth of the American River and at Freeport on the Sacramento River for each month of the adult immigration period (i.e., December through March).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect adult immigration for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) at Watt Avenue for the spawning and incubation period (i.e., December through March).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect initial year-class strength for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Effect Indicators</td>
<td>Evaluation Criteria</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) below Nimbus Dam and at Watt Avenue for each month of the spawning and incubation period (i.e., December through March).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial egg and alevin loss (e.g., resulting temperatures &gt;56°F for any month of this period over the 69-year period of record).</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) at Watt Avenue for the juvenile rearing period (i.e., year round)</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile rearing for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperature (°F) below Nimbus Dam and at Watt Avenue for each month of the juvenile rearing period (i.e., year-round).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to result in substantial adverse affects to juvenile rearing (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flow (cfs) at Watt Avenue, the mouth of the American River and at Freeport for each month of the juvenile emigration period (i.e., February through June).</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency, to adversely affect juvenile emigration for any month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly water mean temperature (°F) at Watt Avenue, at the mouth of the American River, and at Freeport for each month of the juvenile emigration period (February through June).</td>
<td>Increase in monthly mean water temperature, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect juvenile emigration (e.g., resulting temperatures &gt;65°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td><strong>Lower American River</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Splittail</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean acreage of flooded riparian habitat at Watt Avenue during each month of the February through May spawning period.</td>
<td>Decrease in monthly mean quantity of inundated riparian habitat, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect potential splittail habitat availability for each month of this period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) at Watt Avenue and the mouth of the Lower American River during each month of the February through May spawning period.</td>
<td>Substantial increase in the frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for splittail spawning (i.e., 68°F) for any month of this period over the 69-year period of record.</td>
</tr>
<tr>
<td><strong>Lower American River</strong></td>
<td></td>
</tr>
<tr>
<td><strong>American Shad</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at the mouth of the Lower American River during each month of the May through June spawning period.</td>
<td>Substantial decrease in the frequency, relative to the baseline condition, in which monthly mean flows at the mouth are above the CDFG recommended “attraction flow” of 3,000 cfs for American shad spawning migrations during each month of the identified period, over the 70-year period of record.</td>
</tr>
</tbody>
</table>
| Monthly mean water temperatures (°F) below Nimbus Dam and the mouth of the lower American River during the May through June spawning period. | Substantial increase in frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for American shad spawning (i.e., 60°F to 70°F) for any
### Table 4.4-7
Fisheries and Aquatic Resources Diversion-Related Effect Indicators and Evaluation Criteria

<table>
<thead>
<tr>
<th>Effect Indicators</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effect Indicators</strong></td>
<td><strong>Evaluation Criteria</strong></td>
</tr>
<tr>
<td>month of the identified period over the 69-year period of record.</td>
<td></td>
</tr>
<tr>
<td><strong>Lower American River</strong></td>
<td></td>
</tr>
<tr>
<td><em>Striped Bass</em></td>
<td></td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at the mouth of the Lower American River during the May through June striped bass spawning period.</td>
<td>Decrease in monthly mean flow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect striped bass juvenile spawning for May and June over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean flows (cfs) at the mouth of the Lower American River during the May through June striped bass sport fishery.</td>
<td>Substantial decrease in the frequency, relative to the baseline condition, in which monthly mean flows at the mouth are above the CDFG recommended “attraction flow” of 1,500 cfs for the striped bass sport fishery for each month of the identified period over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean water temperatures (°F) below Nimbus Dam and at the mouth during the May through June spawning period.</td>
<td>Substantial increase in frequency, relative to the baseline condition, in which monthly mean water temperatures exceed the reported upper temperature range for striped bass spawning (i.e., 59°F to 68°F) for any month of the identified period over the 69-year period of record.</td>
</tr>
<tr>
<td><strong>Delta</strong></td>
<td></td>
</tr>
<tr>
<td>Monthly mean Delta outflow (cfs) for all months of the year.</td>
<td>Decrease in monthly mean Delta outflow, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect Delta fish resources over the 70-year period of record.</td>
</tr>
<tr>
<td>Monthly mean location of X2 and Delta export/inflow ratios during the February through June period.</td>
<td>Change in the monthly mean position of X2 and Delta export/inflow ratio, relative to the baseline condition, of sufficient magnitude and frequency to adversely affect spawning and rearing habitat and downstream transport flows over the 70-year period of record.</td>
</tr>
<tr>
<td>Export: Inflow (E:I) ratio.</td>
<td>Exceedance of the maximum E:I identified in the SWRCB Interim Water Quality Control Plan</td>
</tr>
</tbody>
</table>

Source: SWRI, 2002

The exact quantification of fish mortality, however, is not feasible, as flow-habitat relationships are contingent on several evolving environmental conditions, and these conditions cannot be precisely factored into one model capable of predicting actual river conditions at specific locations at specific times. Nevertheless, models can be used as a comparative planning tool useful for impact assessment purposes. For example, the Reclamation’s Salmon Mortality Model is used to determine a relative index of the magnitude of change that could occur during specific months of particular water year types under the project condition, relative to the existing condition, and whether the relative magnitude anticipated would be expected to result in impacts to fish within the study area. Resource agencies such as NOAA and USFWS accept this method of analysis as appropriate for applicability to project effects on fish populations and habitats and have used this model for assessment of impacts in a variety of their project reports.
As previously discussed in Section 4.4.2 under the fisheries description, Reclamation's (1991) River Chinook Salmon Mortality Model is used to assess potential temperature-related effects to the early lifestage survival of winter-run Chinook salmon, as well as the other runs of Chinook salmon in the project area rivers. The mortality model uses weekly average water temperatures obtained from the River Water Temperature Model and tracks water temperature impacts on Chinook salmon egg and larval (sac-fry) development. The model uses spatial and temporal distribution information of spawning activity specific for each salmon run in the project area rivers. Various river reaches are used in the analysis of temperature-related mortality of Chinook salmon. Within each river reach, a specific temperature-related mortality estimate is calculated. For this analysis, annual early lifestage survival estimated for the proposed Specific Plan interim water supply was compared to that estimated for the existing condition for each year of the 69-year period of record.

Environmental conditions required by steelhead are generally similar to those required by fall-run Chinook salmon, therefore, flow- and temperature-related impact determinations for steelhead for the period October through June are based on the same modeling output used to assess impacts to fall-run Chinook salmon during this period. However, because steelhead rear year-round, additional flow and temperature impact assessments are made for the months of the year not addressed by the fall-run Chinook salmon assessments (i.e., July through September). Flow-related impacts to steelhead during the July through September period are assessed via the same methods used to assess flow-related impacts to fall-run Chinook salmon during the October through June period.

Temperature-related impacts to steelhead juvenile rearing during the July through September period are assessed via the same methods used to assess temperature-related impacts to fall-run Chinook salmon juvenile rearing and emigration during the March through June period. In addition, the number of months exceeding 65°F for each model simulation, as well as the average temperature for the months exceeding this index value also is determined. As no steelhead mortality model has been developed, no steelhead mortality modeling could be performed as a part of the assessment for this species.

The effect indicators and assessment methods used in the analysis conducted for this Revised Draft EIR satisfy the requirements outlined in section 15065(a) of the CEQA Guidelines (2004). The analysis uses indicators and methodology that account for potential effects to a species habitat and population, as well as the surrounding environment. Criteria for river flows, water temperatures, and reservoir elevations are all used in the analysis and if exceedance of any of the criteria will happen under the proposed Specific Plan water supply, then the potential impact to the species can be determined.

**OPEN SPACE AND BIOLOGICAL RESOURCE MITIGATION AND MANAGEMENT STRATEGY FOR THE PLACER VINEYARDS SPECIFIC PLAN**

**MITIGATION STRATEGY**
County staff, working with their colleagues in state and federal regulatory agencies, have devised a mitigation strategy (reflected in Mitigation Measure 4.4-1 below) that is intended to dovetail with the eventual requirements of the Placer County Conservation Plan (PCCP). However, at the time of release of this Revised Draft EIR for the Placer Vineyards Specific Plan, the PCCP had not yet been adopted, and the County is not certain as to what those requirements will be. The PCCP will be the result of a collaborative process with numerous other agencies. It is not possible to accurately predict at this time the final range of agreements of an adopted PCCP. Mitigation Measure 4.4-1 includes specific standards for the amount of preservation or restoration that must occur for each acre of habitat that would be lost to Specific Plan development. The standards depend on the type of resource. The intent of this Mitigation Strategy is to provide a single, all-inclusive mitigation measure that can simultaneously mitigate for all biological resources of concern, consistent with strategies likely to find their way into the PCCP, while also mitigating impacts on open space and agricultural lands. This approach is considered viable and practical because, among other reasons, the vast majority of open space properties available as mitigation lands already support agriculture (e.g., grazing) and could continue to support agriculture even with the presence of restored or re-created vernal pools or other similar wetlands features.

The County’s goal, in devising this global mitigation strategy as described in Mitigation Measure 4.4-1, has been to formulate a biological mitigation program that can simultaneously satisfy the requirements of CEQA, the Placer County General Plan, the California Endangered Species Act, the Clean Water Act, Fish and Game Code provisions dealing with Streambed Alteration Agreements, and the federal Endangered Species Act. At the same time, the program seeks to strike a reasonable balance between on-site resource avoidance and off-site preservation and restoration.

It remains possible that either the Board of Supervisors, in considering the proposed Specific Plan and the alternatives presented in this Revised Draft EIR, or any one of the state and federal regulatory agencies with jurisdiction over some of the natural resources within the Specific Plan area, will determine, based on the laws and/or policies governing their actions, that the global mitigation measure does not include sufficient on-site avoidance and instead relies too heavily on off-site preservation, creation, restoration, and enhancement. The ultimate balance struck will be a function of the outcome of all of the regulatory approvals, at all levels of government, required for development within the Specific Plan area. Notably, the Placer County General Plan and Mitigation Measure 4.4-1 will set the minimum mitigation ratios needed for the off-site mitigation component of the eventual federal/state/local mitigation package.

In short, the global mitigation measure represents the County’s efforts to establish a feasible mitigation program to satisfy the myriad federal, state, and local statutes, regulations, and policies affecting open space, agricultural lands, and biological resources. County staff strongly believes that the mitigation measure more than satisfies the requirements of CEQA.

**APPLICANT INITIATED MITIGATION PROPOSAL**
In order to mitigate project impacts to open space, agricultural land, and biological resources, including regulated wetlands and other waters, and other significant natural habitat areas (as required by Mitigation Measure 4.4-1 below), the Placer Vineyards property owners have committed to preserve, create, restore, and/or enhance appropriate mitigation resources at levels required to mitigate project impacts to less than significant levels where possible and to mitigate impacts consistent with state and federal requirements. The Placer Vineyards property owners have identified the five potential mitigation sites shown in Table 4.4-8, which are subject to further review by the resource agencies through the state and federal permitting process, and would achieve the mitigation requirements contemplated by this Revised Draft EIR (see Figure 4.4-7).

As shown on Figure 4.4-7, Placer Vineyards property owners, at the time of the release of this Revised Draft EIR, had begun to acquire lands to satisfy mitigation requirements likely to arise under this Revised Draft EIR and an approved Specific Plan. Those lands are located throughout the south Placer County area. Although none of the mitigation land is connected to another, at least two of them include highly valuable existing habitat, and all mitigation lands occur in areas the County has designated for open space/agricultural land uses. Some of the mitigation lands (e.g., Antonio Mountain Ranch) are included in a band of property already committed to preserves; this band runs generally east to west along an axis defined as Moore Road. The County recognizes that, in considering in the future whether the preservation, creation, restoration and/or enhancement of such lands would constitute appropriate mitigation for particular Subsequent Specific Plan Projects, it might be anomalous to reject such properties in favor of others that, despite being contiguous with the core preserve or surrounded on all sides by lands designated for Agriculture, had lower overall habitat, open space, or agricultural values, and thus would be less effective in serving the overall purposes of the mitigation strategy reflected in Mitigation Measure 4.4-1. The County further recognizes that, in considering proposed mitigation lands, it should look favorably upon sites identified for conservation or mitigation in the PCCP as ultimately adopted.

### Table 4.4-8
Potential Mitigation Sites

<table>
<thead>
<tr>
<th>Placer County APN #</th>
<th>Name</th>
<th>Gross Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>021-283-013-000</td>
<td>Antonio Mountain Ranch (a portion)</td>
<td>660</td>
</tr>
<tr>
<td>021-283-001-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-283-021-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-283-012-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-283-011-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-110-034-000</td>
<td>Lincoln Ranch</td>
<td>1,079</td>
</tr>
<tr>
<td>021-110-036-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-110-002-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-030-002-000</td>
<td>Musolino Children’s Trust</td>
<td>301</td>
</tr>
<tr>
<td>017-010-001-510</td>
<td>Placer 312</td>
<td>312</td>
</tr>
</tbody>
</table>
Landowners of approximately 3,991 acres are participating in development activities within the Specific Plan area; however, approximately 17 acres of these holdings contains roads, houses and other hard surfaces, leaving approximately 3,974 acres of natural open space. In addition, landowner participants propose to preserve approximately 714 acres of natural open space areas, reducing open space conversion impacts to 3,260 acres. The remaining 1,239 acres includes the 979 acre SPA, which will remain in its present agricultural zoning category. Therefore, another 260 acres of impacts due to the conversion of agricultural land/open space to urban development are anticipated to occur outside of the properties surveyed, resulting in a total of 3,520 acres of habitat loss. Thus, at a 1:1 replacement ratio of impact to open space, there is approximate parity between impacts and potential mitigation proposed by the applicants.

The Placer Vineyards property owners either may acquire the five mitigation sites identified above or alternative mitigation sites may be provided that would achieve comparable mitigation ratios in accordance with Mitigation Measure 4.4-1. A combination of one or more of the mitigation sites identified above would establish a core preserve area of approximately one thousand acres. Replacement of agricultural lands will also be achieved under the Applicant-Initiated Mitigation Proposal (although mitigation in-kind is not required for agricultural lands developed by the Project, meaning that lost grazing land need not be replaced with other grazing land but rather may instead be replaced with row crop or orchard lands, or that the latter kinds of lands may be replaced with grazing lands.). Of the mitigation sites identified above, one thousand acres would be set aside and protected by permanent conservation easement in accordance with the mitigation phasing requirements set forth in Mitigation Measure 4.4-1(g), in order to facilitate the development of a County-wide preserve system and to meet the Initial Core Preserve criterion (outlined in Mitigation Measure 4.4-1).

The best available current information regarding existing mitigation resources for vernal pool complex habitat and other wetlands/waters at the identified mitigation properties is reported in Table 4.4-9.

### Table 4.4-9
**Existing Mitigation Resources**

<table>
<thead>
<tr>
<th>Placer County APN #</th>
<th>Name</th>
<th>Gross Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>020-130-015-000</td>
<td>Redwing</td>
<td>993</td>
</tr>
<tr>
<td>020-130-048-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>020-130-049-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>020-130-047-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>020-130-046-000</td>
<td></td>
<td></td>
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<tr>
<td>021-130-035-000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>021-030-080-000</td>
<td>Vogt</td>
<td>145</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>3,490</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Placer County APN#</th>
<th>Name</th>
<th>Existing Vernal Pool Complex Habitat</th>
<th>Existing Wetlands and Other Waters</th>
<th>Restoration and/or Creation Potential, Vernal Pool Complex Habitat</th>
<th>Restoration and/or Creation Potential, Wetlands and Other Waters</th>
<th>Gross Acres</th>
</tr>
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<tbody>
<tr>
<td>021-283-013-000</td>
<td>Antonio Mountain Ranch</td>
<td>34</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>660</td>
</tr>
<tr>
<td>021-283-001-000</td>
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<td></td>
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<tr>
<td>021-110-034-000</td>
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<tr>
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<td></td>
<td></td>
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</tr>
<tr>
<td>021-030-002-000</td>
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<tr>
<td>020-130-049-000</td>
<td></td>
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</tr>
<tr>
<td>020-130-047-000</td>
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<td></td>
<td></td>
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<tr>
<td>021-130-035-000</td>
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</tr>
<tr>
<td>021-030-008-000</td>
<td>Vogt</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>145</td>
</tr>
<tr>
<td>Total</td>
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<td>190</td>
<td>186</td>
<td>174</td>
<td>132</td>
<td>3,490</td>
</tr>
</tbody>
</table>


Restoration and/or creation potential at Antonio Mountain Ranch and Redwing have been estimated from conceptual level preliminary planning conducted for these sites. For the other sites, this Revised Draft EIR provides a conservative estimate regarding restoration and/or creation potential, based upon the assumption of approximately 5% of total property area. Given the anticipated mitigation requirements created by Mitigation Measure 4.4-1 and the mitigation acreage estimated to be available at the identified potential mitigation properties, there is adequate mitigation supply to meet the project needs at mitigation bank ratios as shown in Table 4.4-12. Each of the identified potential preserve sites would be in proximity to agricultural use or surrounded on two sides by lands designated for agricultural use and as such would constitute adequate preserve sites.

Given the above considerations, the Placer Vineyards property owners propose to mitigate the project’s open space, agricultural, and biological resources impacts at the mitigation properties identified above or at alternative locations providing comparable replacement and preservation habitat. Based on the mitigation ratios included in Table 4.4-12, there may be a shortage of preservation habitat if applied to both direct and indirect impacts. Nonetheless, sufficient preservation habitat would be available for direct impacts and extensive restoration and creation opportunities would be available to offset indirect impacts under the Applicants’ Initiated Mitigation Proposal. Alternatively, mitigation would be implemented at these properties (or other comparable mitigation sites) either:

a. according to the terms of the PCCP (once approved) and incidental take authorizations; or
b. as permitted in independent regulatory processes administered by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and California Department of Fish and Game.

In addition to the one thousand acres of open space that is proposed to be set-aside prior to ground disturbance, the remainder of the mitigation requirements (including wetland preservation and/or habitat restoration, creation, or enhancement) would be addressed on an incremental basis as the development of individual projects proceeds. Should the identified mitigation properties become unavailable or undesirable, comparable replacement properties acceptable to the County will be identified.

4.4-1 Development will remove the majority of open space in the Specific Plan area.

For the purposes of the following discussion, development impacts refer to impacts resulting from the development of residential lots, commercial facilities, public facilities, utilities, access roads, and active use parks. Development of the proposed Specific Plan (excluding off-site infrastructure) potentially would result in the loss of approximately 3,520 acres of open space and agricultural land which serves as Swainson’s hawk foraging habitat (the project site is within five miles of known active Swainson's hawk nests), including approximately 61 acres of vernal pool habitat (consisting of vernal pools, seasonal wetlands, seasonal wetland swales, and drainage swales), 28.3 acres of other waters or wetlands, and approximately 18 acres of oak savannah habitat (as shown in Tables 4.4-10 and 4.4-11). On-site open space and avoidance areas could be used to establish compensatory habitat for some habitat loss associated with these impacts, if capable of supporting such habitat mitigation and the resulting conditions provide suitable long-term conservation of the newly-established values. Specific mitigation measures will be determined and incorporated into the Open Space Mitigation and Management Plans required by Mitigation Measure 4.4-1 below.

Special-status species and more common wildlife and plant species are found throughout project area open space. Some species use more than one habitat (i.e., raptors could nest in a riparian corridor and forage in agricultural land). Open space can also be used by wildlife to move from one habitat area to another. Even though a portion of the project will be retained in open space (particularly drainage and riparian areas), urbanization of the area will fragment the large mosaic of habitats that occur on-site and in the surrounding area. This fragmentation could affect the range of some species, and reduce the value of preserved habitat (e.g., by removing foraging habitat from the vicinity of nesting habitat). Furthermore, the Placer County General Plan supports preservation and enhancement of natural vegetation and resources as open space, particularly open space that is interconnected and of sufficient size to protect biodiversity, accommodate wildlife, and sustain ecosystems (General Plan Goal 6E and Policies 6.D.6, 6.E.1 and 6.E.3). For these reasons, the loss of open space, regardless of the habitat it supports, is considered a significant impact.

Mitigation Measure

Implementation of the following mitigation measure would substantially lessen the significant impacts to biological resources due to the conversion of open space and agricultural land, and
would preserve habitat for a variety of special status species, but will not mitigate the impact to a
less than significant level. Although this measure will ensure that similar open space is
preserved elsewhere in the County, the project site itself will still be converted to urban uses, so
there will be a net reduction in open space. It would not be feasible to create 3,520 acres of new
open space to offset development of the Specific Plan area. Therefore, while the loss of open
space will be substantially lessened by the following mitigation measure, the impact will still
remain significant and unavoidable:

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

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

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

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

**4.4-1b Habitat Mitigation:** Applicants for projects developed under the Specific Plan shall obtain applicable permits from the state and federal resource agencies, as needed. Land preserved to meet the habitat mitigation requirements of this Mitigation Measure and/or any additional habitat mitigation that is required by any governmental agency for any development project undertaken pursuant to the Specific Plan shall be counted towards the required “open space” mitigation set forth in Mitigation Measure 4.4-1, provided that the mitigation land is within Placer County. Preservation of mitigation land may occur through a permanent conservation easement, fee title, or purchase of mitigation credits satisfactory to Placer County.
Applicants for projects developed under the Specific Plan are required to satisfy the Placer County General Plan “no net loss of wetlands” standard in connection with proposed development that impacts aquatic resources. To satisfy the “no net loss of wetlands” standard, the applicants shall include a preservation component and a variety of wetland enhancement, restoration and creation activities that are to be conducted on lands preserved. The measures that follow describe ratios to be achieved to provide for preservation, restoration, creation, and enhancement to offset impacts to wetland (non-vernal pool) impacts, vernal pool impacts, and riparian impacts as shown in Table 4.4-12.

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

Vernal Pool Habitat Impacts: Impacts to vernal pool (fairy shrimp and tadpole shrimp) habitat will be mitigated through preservation or restoration of acreage based on each acre directly impacted (see Table 4.4-12 for mitigation ratios). In this context, restoration is intended to be construction of vernal pools at densities within the range of historical levels as identified on 1937 aerial photos, or other valid historical evidence, for the proposed preserve site to be restored. Required ratios are set forth in Table 4.4-12. Buffers of such off-site mitigation lands will be consistent with requirements of the PCCP as ultimately adopted by the County to the extent that the PCCP is adopted prior to the acquisition of preserve sites, and to the extent feasible. Both the wetland and upland components of all wetland mitigation lands shall be credited towards open space mitigation requirements and uplands shall count as wetland buffers when appropriate. To minimize indirect effects to the preserve site, the County may impose measures such as controlling and redirecting runoff from adjoining properties or the construction or removal of fences.

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

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

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

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

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

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

4.4-1e **Funding for Mitigation Land Acquisition (or Easement Establishment) and Monitoring and Maintenance:** Funding for mitigation land acquisition (or easement establishment) and monitoring and maintenance may be financed, if acceptable to the County, through a Mello-Roos CFD or other funding mechanism similar to the funding mechanism used to fund Specific Plan infrastructure construction. The specific funding plan, including a method for preserve acquisitions and for long-term preserve management, shall be described in an approved Open Space Mitigation and Management Plan.
4.4-1f **Excess Open Space and/or Habitat:** Excess open space and/or habitat (after taking into account habitat mitigation requirements stated above) within mitigation lands acquired for the mitigation of impacts associated with an approved development project within the Specific Plan area may be used to mitigate for subsequent development projects within the Specific Plan area. Transfer of excess open space and habitat shall be accomplished through a private cost sharing agreement.

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

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

4.4-1i **Placer County Conservation Plan:** As previously described, at the time of the release of this Revised Draft EIR, Placer County was preparing a Natural Community Conservation Plan, a Habitat Conservation Plan Programmatic Section 404/401 Compliance and a Master Streambed Alteration Agreement to comply with the state and federal Endangered Species Acts. Collectively, this planning effort is known as the Placer County Conservation Plan (PCCP). Once the approved PCCP is in place, open
space and biological resource mitigation measures shall be implemented in such a manner as to be consistent with the PCCP.

4.4-1j Preserves for Agricultural or Open Space Mitigation Only: As an alternative to the establishment of preserves that mitigate for one or more biological resources in addition to mitigating for lost open space and agricultural lands, applicants for individual projects within the Specific Plan area may instead establish preserves intended only to mitigate for loss of open space or agricultural lands without a complementary wetland, Swainson’s hawk or other significant biological mitigation purpose. In such cases, the preserve may occur in any portion of western Placer County so long as the preserve is within an area designated for agricultural or open space use on the Placer County General Plan. Such preserves are only required to meet the minimum 80 acre parcel size requirement for parcels in the Agricultural/Open Space land use category of the General Plan.

In lieu of the above described measures, the Specific Plan or subsequent phases of the Specific Plan may fulfill mitigation requirements by compliance with the terms of the adopted PCCP. Such compliance, as determined by Placer County, shall constitute sufficient mitigation that will obviate the need to comply with this mitigation measure, to the extent that an affected agricultural and/or biological resource is addressed in the PCCP.

4.4-2 Development could remove habitat for potentially occurring listed vernal pool invertebrates.

Development of the Specific Plan area is estimated to result in the loss of approximately 41 acres of vernal pools, primarily within properties that have been surveyed for wetlands (see Table 4.4-10). Vernal pools are considered potential habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp, both federally-listed species. Depending upon determination by the USFWS, these non-vernal pool type wetlands are also sometimes considered to be habitat for federally-listed aquatic invertebrate species. Landowners are currently conducting surveys to determine the presence/absence of federally-listed aquatic invertebrates in vernal pools and other wetlands on several properties within the Specific Plan area. If negative results are obtained, then impacts actually experienced from development will be less than stated above. The Placer County General Plan also supports protection of habitat for areas that support rare or endangered species (Policy 6.C.6). The loss of habitat for these protected species could reduce the number of these species occurring in Placer County and the surrounding region.

Seasonal wetlands such as vernal pools and swales and seasonal marsh areas are characterized by small watersheds and brief periods of inundation and saturation during the winter and early spring. Therefore, the hydrology of seasonal wetlands is sensitive to variations in precipitation, evapo-transpiration, soil water-holding capacity, soil permeability, and the storage capacity of the wetland. Development proposed under the Specific Plan would alter the natural topography and drainage patterns of the Specific Plan area. The addition of paved surfaces, summer irrigation, and changes in the rates of soil infiltration could potentially change the amount and
timing of water entering adjacent seasonal wetlands. Special status wildlife species such as vernal pool fairy shrimp are associated with wetlands that have specific hydrologic characteristics. Changing the average duration of inundation in seasonal wetlands adjacent to developed areas may adversely impact these species.

Wetlands and other waters impacts and biological resources are reported in Tables 4.4-10 and 4.4-11.

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<tr>
<th>Table 4.4-10</th>
<th>Wetlands and Other Waters Impact Estimates</th>
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<td>Riverine Seasonal Marsh</td>
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### Table 4.4-11
**Biological Resources Impact Estimates**

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<th>Habitat Type</th>
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<th>Properties Requiring Additional Resource Identification</th>
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<td>Total Impact</td>
<td>Total Impact</td>
<td>Total</td>
<td>Impact</td>
</tr>
<tr>
<td>Wetlands</td>
<td>153.4</td>
<td>19.2</td>
<td>172.6</td>
<td>90.2</td>
</tr>
<tr>
<td>Riparian Habitat (Native)</td>
<td>42.0</td>
<td>0.0</td>
<td>42.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Riparian Habitat (Non-Native)</td>
<td>0.6</td>
<td>0.0</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Oak Woodland</td>
<td>44.2</td>
<td>0.0</td>
<td>44.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Oak Savannah</td>
<td>22.7</td>
<td>0.3</td>
<td>23.0</td>
<td>18.0</td>
</tr>
<tr>
<td>Grassland</td>
<td>2,339.2</td>
<td>1,133.6</td>
<td>3,472.9</td>
<td>2,053.2</td>
</tr>
<tr>
<td>Agricultural Land</td>
<td>1,372.3</td>
<td>75.3</td>
<td>1,447.7</td>
<td>1,210.7</td>
</tr>
<tr>
<td>Roads and Other Surfaces</td>
<td>16.9</td>
<td>10.4</td>
<td>27.3</td>
<td>14.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,991.4</strong></td>
<td><strong>1,238.9</strong></td>
<td><strong>5,230.3</strong></td>
<td><strong>3,395.8</strong></td>
</tr>
</tbody>
</table>


Current impact estimates and anticipated mitigation requirements (at typical mitigation bank ratios) for on and off-site aquatic resource impacts are reported in **Table 4.4-12**.

### Table 4.4-12
**Aquatic Resource Impact Estimates**

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Direct Impacts (on-site)</th>
<th>Direct Impacts (off-site)</th>
<th>Indirect Impacts (on-site)</th>
<th>Indirect Impacts (off-site)</th>
<th>Preservation¹</th>
<th>Creation/Restoration²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vernal Pool Complex Habitat</td>
<td>61</td>
<td>2</td>
<td>19</td>
<td>3</td>
<td>170</td>
<td>63</td>
</tr>
<tr>
<td>Other Wetlands/Waters</td>
<td>28</td>
<td>6</td>
<td>0</td>
<td>N/A</td>
<td>0</td>
<td>28</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>89</strong></td>
<td><strong>8</strong></td>
<td><strong>19</strong></td>
<td><strong>N/A</strong></td>
<td><strong>170</strong></td>
<td><strong>84</strong></td>
</tr>
</tbody>
</table>

Notes: ¹ 2:1 for direct and indirect impacts to Vernal Pool Habitat. ² 1:1 for direct impacts to other wetlands/waters. Additional restoration may be used in lieu of Preservation in circumstances deemed appropriate by the County Planning Director. N/A means no indirect effects to non-fairy shrimp habitat type wetlands have been estimated.


### Mitigation Measure

Implementation of the following mitigation measure would substantially lessen the impact of the loss of vernal pool habitat; however, the impact would remain *significant* after mitigation. To the extent that replacement, re-creation or restoration of vernal pools may be approved, this impact would be reduced; however, because the mitigation measure does not guarantee
preservation of the affected on-site vernal pools, the impact must remain significant and unavoidable.

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

4.4-3 Construction activities could remove habitat for valley elderberry longhorn beetle, a federally-listed species potentially occurring in the Specific Plan area.

Elderberry shrubs (the host plant for VELB) could occur on properties requiring more detailed resource identification. Therefore, development within these areas could remove potential habitat for this species. Removal of potential habitat for these species would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the loss or disturbance of VELB habitat to a less than significant level on properties requiring more detailed resource identification.

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

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

4.4-4 Construction activities could remove habitat for the western pond turtle, a special-status species potentially occurring in the Specific Plan area.

Potential habitat for western pond turtle likely occurs on the properties surveyed and could occur on properties requiring additional resource identification. Western pond turtle is a special-status species identified by the CDFG. Removal of potential habitat for this species could reduce their numbers, which would be considered a potentially significant impact.

Mitigation Measure
The following measure would reduce the loss of western pond turtle habitat to a less than significant level.

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

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

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

4.4-5 Construction activities could destroy active nests or disturb nesting burrowing owls, a California Species of Special Concern.

Burrowing owl has not been recorded within the properties surveyed, but potential foraging and nesting habitat for burrowing owls is present on properties surveyed and those requiring additional resource identification. Burrowing owl nests could be established in the future. Burrowing owls nest in burrows, so site preparation activities could destroy or damage a nest, or disturb nesting owls. All raptors are protected under the Migratory Bird Treaty Act (MBTA) and Section 3503.5 of the California Fish and Game Code, and destruction of active raptor nests, including owl burrows, is considered a violation of this code and the MBTA. The disruption of nesting burrowing owls would be considered a potentially significant impact.

Mitigation Measure

Implementation of the following mitigation measure would reduce impacts associated with disturbance of nesting burrowing owls to a less than significant level. If burrowing owls establish nests within the properties surveyed, nesting surveys will detect them. If present, the nesting owls would not be disturbed by construction activities, because no activity will be allowed within five hundred feet of a nest. Once the young have fledged, the nests can be removed, because the owls would then establish nests in a new area. Therefore, with implementation of this measure, the impact on nesting burrowing owls will be less than significant:

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

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

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

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.6 (9.75) acres per pair or single bird.

2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.

3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

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

Loss of burrowing owl foraging habitat is addressed in Impact 4.4-1.

4.4-6 Development could result in removal of nesting and foraging habitat for Swainson’s hawk, a state-listed species.

Agricultural land and non-native grassland habitats are considered potential foraging habitat for Swainson’s hawks. Swainson’s hawks are known to nest within ten miles of foraging habitat. Since the majority of the Specific Plan area would be considered potential foraging habitat, full buildout could remove up to 3,520 acres of foraging habitat. Currently, the CDFG considers the removal of five or more acres of Swainson’s hawk foraging habitat a potentially significant effect to this species.
Although no Swainson’s hawk nests have been observed within the Specific Plan area, they have been recorded in proximity (within one mile) to the Specific Plan area. There are trees within the Specific Plan area that are suitable nesting trees. The removal of such trees would reduce opportunities for Swainson’s hawks to nest in proximity to their foraging habitat.

For the reasons discussed above, removal of potential foraging habitat and nesting trees for Swainson’s hawk would be considered a significant impact.

Mitigation Measure

Implementation of the following mitigation measure will substantially lessen loss of Swainson’s hawk foraging habitat, but will not mitigate the impact to a less than significant level. Although the measure would ensure that similar foraging habitat is preserved elsewhere in the county, properties surveyed would still be converted to urban uses, so there would be a net reduction in available foraging habitat. It would not be feasible to restore or create new foraging habitat to completely offset the development.

Mitigation Measure 4.4-1 above requires preservation of off-site foraging habitat at ratios recommended by the CDFG: 1:1 for each acre lost within one mile of a nest, 0.75:1 for each acre lost within one to five miles of a nest, and 0.5:1 for each acre lost within five to ten miles of a nest. Because new nests could be established in closer proximity to surveyed properties surveyed, which would affect the amount of acreage that must be preserved, Mitigation Measure 4.4-1 would also require new nesting surveys as development proposals within surveyed properties surveyed are implemented.

Because Mitigation Measure 4.4-1 calls for preservation of open space at a 1:1 ratio, the highest ratio required for Swainson’s hawk mitigation, CDFG recommendations would likely be met entirely by Mitigation Measure 4.4-1.

Mitigation Measure 4.4-1 also requires that any Swainson’s hawk nesting trees that are removed be replaced at a 15:1 ratio in areas suitable for Swainson’s hawk foraging and nesting. This measure would ensure that there is “no net loss” of nesting trees over time. The impact due to loss of foraging habitat will remain significant and unavoidable; however, the impact to nests is less than significant:

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

See Impact 4.4-10 for impacts on oak trees. See Impact 4.4-8 for impacts on other nesting raptors.

4.4-7 Development could result in removal of nesting and foraging habitat for tricolored blackbird.
Tricolored blackbirds could nest and forage within sections of the Specific Plan area. Tricolored blackbirds are protected under the MBTA, and destruction of active nests is considered a violation of the MBTA. Consequently, impacts to nesting tricolored blackbirds would be considered potentially significant.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of tricolored blackbird nests to a less than significant level.

4.4-7 If construction activities are proposed during the tricolored blackbird breeding season (May to August), a focused survey for nesting colonies shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within five hundred feet of the nesting colony until the young have fledged. Vegetation that must be removed as a result of construction shall be removed during the non-breeding season (September to April). If no active nests are found during the focused survey, no further mitigation will be required.

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

4.4-8 Construction activities could destroy active nests or disturb nesting raptors.

Raptors, including red-tailed hawk and great horned owl, are likely to nest within the Specific Plan area. One potentially active raptor nest was found in a small tree along the seasonal marsh area in the south-central portion of the Specific Plan area. Other nests could be established over time. If an active nest is located in a tree slated for removal or pruning, the nest could be lost and the eggs and/or young could be destroyed. Specific Plan implementation could result in removal of nest trees. All raptors are protected under the MBTA and Section 3503.5 of the California Fish and Game Code, and destruction of active raptor nests is considered a violation of this code and the MBTA. In addition, construction activities near active nests could disturb nesting raptors, and even result in the abandonment of a nest. Consequently, construction near trees containing active nests would be considered a potentially significant impact.

Mitigation Measure

Implementation of the following mitigation measure would reduce the potential disturbance of nesting raptors to a less than significant level:

4.4-8 When construction is proposed during the raptor breeding season (March to early September), a focused survey for raptor nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active
nests on-site. If active nests are found, no construction activities shall take place within five hundred feet of the nest until the young have fledged. Trees containing nests shall be removed during the non-breeding season (late September to March). If no active nests are found during the focused survey, no further mitigation will be required. This measure will ensure that active nests are not moved or substantially disturbed during the breeding season, so that raptor eggs and young are not destroyed or abandoned as a result of construction.

Impact 4.4-1 addresses the loss of raptor foraging habitat. Impact 4.4-6 addresses impacts to Swainson’s hawk nests. Impact 4.4-10 addresses loss of Swainson’s hawk nesting habitat due to tree removal.

**4.4-9 Construction activities could destroy active roosts or disturb several species of bats.**

Several species of bats could occupy structures (such as bridges) located within the Specific Plan area. Construction activities could destroy roosting sites and/or disturb roosting bats, which would be considered a *potentially significant impact*.

**Mitigation Measure**

The following measure would reduce the destruction and/or disturbance of bat roosts to a *less than significant level*.

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

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

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

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

4.4-10 Development could result in removal of individual oak trees.

Approximately 44 acres of native oak trees (approximately 254 individual trees) and two stands of blue oak woodland are present within the Specific Plan area (see Figure 4.4-1 and Appendix F for Arborist Report). The California Department of Fish and Game classifies the term oak woodland as “a oak stand with a greater than 10% canopy cover or that may have historically supported greater than 10% canopy cover.” The two stands of blue oak woodland that would qualify as “oak woodland” under the above definition would be protected within open space preserved as part of the Specific Plan land use plan (Specific Plan Policy 7.18). Oak woodlands provide cover, foraging, and breeding habitat for numerous species of common resident and migratory wildlife, and the loss of these habitats is protected under Public Resources Code Section 21083.4. The Placer County General Plan recognizes the value of both individual trees (Policy 6.D.12) and groves of trees (Policies 6.D.4 and 6.D.8). Construction activities could damage trees that are intended to be preserved (e.g., by excavating within the root zone), resulting in additional losses. A significant number of individual oak trees occur along Watt Avenue and Dyer Lane. However, the Specific Plan provides a unique roadway design for Dyer Lane that preserves most of the existing oak trees. Due to existing roadway design constraints, oak trees will be lost along Watt Avenue. Because approximately 254 individual oak trees are scattered across the Specific Plan, some of which will be lost to development, the impact to individual oak trees is a significant impact.

Mitigation Measure

Implementation of the following mitigation measure would substantially lessen impacts associated with removal of oak trees; however, the impact would remain significant and unavoidable. For trees planted as mitigation, Mitigation Measure 4.4-1 requires replacement of any removed oak tree of greater than six inches in diameter at breast height (dbh) with one 15-gallon tree, one deepot-40 seedling for each inch of dbh and three 1-gallon shrubs. By replanting with several trees of various sizes and maturity, Mitigation Measure 4.4-1 would replace the individual trees that are lost. Although the monitoring requirement would ensure the long-term viability of the replacement trees, oak trees take many years to mature, so initially the mitigation area would not provide the same habitat value as the individual trees that are removed. Therefore, the impact is considered significant and unavoidable.
4.4-10a Implement Mitigation Measure 4.4-1 as it pertains to oak trees.

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

- Trees that are not proposed for removal and that are within two hundred feet of grading activities shall be protectively fenced five feet beyond the dripline and root zone of each oak tree (as determined by a certified arborist). This fence, which is meant to prevent activities that result in soil compaction beneath the canopies or over the root zone, shall be maintained until all construction activities are completed. No vehicles, construction equipment, mobile offices, or materials shall be placed within this fenced area.

- Grade changes shall be minimized to the extent feasible within or adjacent to the drip line of existing trees. No soil surface removal greater than one foot in depth shall occur within the drip lines of oak trees to be preserved. No cuts shall occur within five feet of their trunks. No earthen fill greater than one foot deep shall be placed within the drip lines of preserved oak trees, or within five feet of their trunks.

- Paving shall not be placed in the drip lines of oak trees to be preserved.

- Underground utility line trenching shall be not be placed within the drip lines of oak trees to be preserved. If it is absolutely necessary to install underground utilities within the drip lines of oak trees, the trench shall either be bored or drilled, but not within five feet of the trunk.

- For trees that will be removed, the project applicant shall submit a tree survey map of oaks to be removed or disturbed during project construction. Within these impact areas, an inventory of the location, number and health of oaks shall be prepared by a certified arborist. A certified arborist shall also prepare a monitoring and management plan for each project disturbing or removing oak trees. The plan shall address planting techniques, proposed mitigation sites, monitoring requirements, management recommendations, and minimization and avoidance measures.

- Annual monitoring shall be included to ensure that an 80% survival rate is achieved over a five-year period. During monitoring, the following information shall be evaluated: average tree height, percent canopy cover, and percent survival. An oak tree mitigation and monitoring plan shall be submitted that includes a description of irrigation methods that will be used to ensure that saplings survive the first several years of growth. During the revegetation process, tree survival shall be maximized by using gopher cages, deer screens, regular maintenance, and replanting as needed. Monitoring reports shall be submitted to Placer County on an annual basis.
4.4-II Development would fill jurisdictional and non-jurisdictional wetlands, and other jurisdictional waters of the U.S.

As discussed in Impact 4.4-2, development will result in the loss of vernal pool habitat. Other wetlands, including intermittent drainages, seasonal wetlands and seasonal marshes, would also be lost to development. The U.S. Army Corps of Engineers protects jurisdictional wetlands under the Clean Water Act. Federal policy calls for “no net loss” of jurisdictional wetlands. Wetlands that are not considered “jurisdictional” by the Corps could provide habitat for special-status species and/or meet the Placer County General Plan definition of “wetland.” The General Plan has identified wetland communities and related riparian areas as resources that should be protected (See, for example, Policies 6.B.1 and 6.B.2, which call for “no net loss” of jurisdictional and non-jurisdictional wetlands, 6.B.4, supporting preservation of upland areas, and 6.B.5, requiring development to avoid, minimize and/or compensate for impacts on wetlands). Therefore the loss of jurisdictional and non-jurisdictional wetlands would be considered significant.

Mitigation Measures

Implementation of the following mitigation measures would substantially lessen potential impacts on wetlands; however, the impact would remain significant after mitigation. To the extent that replacement, re-creation or restoration of wetlands may be approved, this impact would be reduced; however, because the mitigation measure does not guarantee preservation on-site within the Specific Plan area, this impact must remain significant.

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

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

Additional steps shall be taken for properties that require more detailed resource identification prior to development, including: wetlands delineated and submitted to the USACE, habitat types mapped, and special-status species determined to be or potentially be within the Specific Plan area with protocol surveys conducted if
4.4-12 Development could result in the loss of riparian habitat and disturbance of drainages.

Riparian habitat occurs along some minor drainages and along Dry Creek. Because the riparian habitat associated with Dry Creek, the riverine seasonal marsh/riparian system in the southern portion of the Specific Plan area (i.e., Ownership Unit #19), and the intermittent drainage/riparian unit between Ownership Units #4 and #7 will all be avoided, no direct adverse effects are anticipated within the Specific Plan area. Impacts could, however, occur in off-site infrastructure areas, including widening associated with the Watt Avenue bridge (for a discussion of off-site infrastructure impacts, see Impacts 4.4-27 and 4.4-30 below). Indirect impacts to riparian corridors could negatively affect species dependent on riparian habitat, even though riparian vegetation is not directly impacted; however, project setbacks and project design elements should reduce such impacts to a less than significant level. Nonetheless, riparian habitat could be adversely affected by the installation of offsite infrastructure. Furthermore, while some of these areas will remain undeveloped as open space, it may be necessary to construct roadway or utility lines across these drainages (e.g., widening of Watt Avenue Bridge at Dry Creek). Construction of these crossings could result in the disturbance of stream channels and loss of riparian habitat. Both the State of California (FGC 1601) and the Placer County General Plan have identified streams and riparian areas as important natural resources (see, for example, General Plan Policies 6.C.1, 6.C.5, 6.C.9, 6.D.3, 6.D.7, 6.D.14, 6.E.1, and 6.E.2, all of which support preservation and enhancement of riparian areas). This impact would be considered significant.

In addition, Placer County has recently commissioned a technical report entitled Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County (Jones and Stokes Associates 2005). This study calls for preservation of the “active floodplain” (functionally defined as the 2-10 year floodplain), associated riparian zones, and additional associated upland habitats (e.g., grasslands). In many cases, this strategy would result in even larger setbacks than those stipulated by the above-referenced policies. Briefly, the report recommends that the entirety of the active floodplain and an additional 30 m (98 feet) be preserved in order to prevent degradation of normal geomorphological processes and resultant decreases in water quality and flood storage and/or conveyance capacity. Further, the report recommends that an additional 70-120 m (230-394 feet) be preserved along third (and higher) order stream segments (such as the reach of Dry Creek adjacent to the Specific Plan area) in order to provide for wildlife habitat values. Thus, recommended setbacks in this area could be as much as 100-150 m (328-492 feet) from the “active floodplain.” Jones and Stokes (2005) estimates that these recommendations could result in setbacks of “over 150-200 m (492-656 feet) on higher order streams near Placer County’s western boundary.”

Buildout of the Specific Plan development footprint avoids impacts to Dry Creek riparian habitat by adjacent land use, and is consistent with the 100-foot setback from perennial streams (Curry Creek) required by the General Plan. In most places along the stream corridor, the setback is considerably wider. Jones and Stokes (2005) recognizes the ineffectiveness of these increased
setbacks in areas where land uses (i.e., agriculture and development) degrade habitat potential. Further, Jones and Stokes (2005) recognizes that …

Most wildlife habitat functions probably could be conserved in western Placer County by means of extensive sites with wider setbacks (>100 m [328 feet]) connected by stream corridors with narrower setbacks (e.g., 30 m [98 ft]).

The Specific Plan includes approximately 35 acres of oak woodland to be preserved at the upstream end of its frontage upon Dry Creek. This oak woodland would represent a wide node of high quality wildlife habitat in the Dry Creek corridor that would provide migratory linkage with other nodes, both upstream and downstream.

Further, given the topography of the streambanks along the reach of Dry Creek adjacent to the Specific Plan area, the majority of the “active floodplain”, upstream of Watt Avenue, lies on the opposite southeast (i.e., left) bank. Given these considerations, indirect impacts resulting from encroachment of Specific Plan development within the larger buffers recommended in Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County (Jones and Stokes Associates 2005), are considered less than significant.

Mitigation Measures

Implementation of the proposed Specific Plan would ensure that on-site riparian areas that are to be retained (such as streams) would be protected from damage or disturbance by construction and that there would be “no net loss” of riparian habitat within these areas. Although it is anticipated that jack and bore construction techniques will be utilized on-site and off-site, in the event a stream crossing cannot be avoided, implementation of the following mitigation measures would reduce potential impacts on streams and riparian habitat to a less than significant level:

4.4-12a Prior to the issuance of a grading permit, a Streambed Alteration Agreement shall be obtained from CDFG, pursuant to Section 1600 et seq. of the California Fish and Game Code, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of the stream. If required, the project applicant shall coordinate with CDFG in developing appropriate mitigation, and shall abide by the conditions of any executed agreements. All stream crossings shall be performed using a “jack and bore” construction technique, unless otherwise specified by CDFG. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction shall be included in all related construction contracts.

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

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

4.4-13 Development could result in removal of nesting and foraging habitat for Loggerhead shrike.

Tricolored blackbirds could nest and forage within sections of the Specific Plan area. Loggerhead shrike are a State species of concern, and destruction of active nests could have a detrimental impact on this species. Consequently, impacts to nesting Loggerhead shrike would be considered potentially significant.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of Loggerhead shrike to a less than significant level.

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

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

OFF-SITE INFRASTRUCTURE

The following discussion of impacts is based on the alignments of off-site infrastructure areas for the Specific Plan. As shown in Figures 3-5 through 3-8B of the Project Description, utilities and roadways needed to serve the Specific Plan area could be constructed in Sutter County, Sacramento County, and/or the City of Roseville, as well as Placer County. Construction of off-site infrastructure could affect resources that are not found in the Specific Plan area (see Figure 4.4-3 for wetland habitat within off-site infrastructure areas).

Following impacts of off-site infrastructure are impacts of the diversion of the proposed Specific Plan surface water supply, addressed in Impacts 4.4-30 through 4.4-55 and 4.4-57 through 4.4-69.
4.4-14  **Installation and maintenance of infrastructure within off-site infrastructure areas could result in removal/loss of open space.**

Agricultural (cultivated) land and uncultivated grasslands occur in the offsite infrastructure areas. This open space provides cover, foraging, and breeding habitat for numerous species of common resident and migratory wildlife. In many cases, installation would be in roadway rights-of-way. Where utility lines are extended through agricultural land or undeveloped open space, the lands, value as open space would be temporarily removed during construction. Once construction was complete, the land would be revegetated. Roadways would be widened in the case of Watt Avenue, Baseline Road and Riego Road; however widening would occur in an urbanized area, or in the case of Riego Road, it would occur on already established roadside shoulder areas where open space value is nominal. In the case of wastewater treatment plant improvements, all activity would occur within existing facility footprints and would not remove usable open space. Because the amount of acreage that would be disturbed would be small, and would only be removed from its open space condition temporarily, this impact is considered *less than significant*.

**Mitigation Measures**

No mitigation measures are required.

4.4-15  **Installation and maintenance of infrastructure within off-site infrastructure areas could remove habitat for special-status plant species potentially occurring there.**

Potential habitat for special-status plants occur in the off-site infrastructure areas, particularly vernal pool plants, such as dwarf downingia, Bogg’s Lake hedge hyssop, Red Bluff dwarf rush, Legenere, and Valley sagittaria. Other plants that could also occur in off-site infrastructure areas include Henderson’s bent grass, Ahart’s dwarf rush, Pincussion navarretia and Hartweg golden sunburst. Loss of habitat for these plants could reduce their numbers in the region. Therefore, removal of potential habitat for these species would be considered a *potentially significant impact*.

**Mitigation Measure**

The following measure would substantially lessen the loss or disturbance of special-status plant habitat; however, the impact would remain significant after mitigation. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. For this reason and because the mitigation does not guarantee preservation of habitat within Placer County, the potential impact on special-status plant habitat is considered *significant and unavoidable*. 
It should be noted, however, that special status plant species have certain State and federal protections, regardless of local jurisdiction. Further, the City of Roseville, Sacramento County, and Sutter County have policies calling for protecting wetlands, which provide habitat for the special-status plants species likely to be affected by off-site infrastructure (see, for example, Vegetation and Wildlife Policies 2, 3, 4 and 8 in the Roseville General Plan, Sacramento County General Plan Policies CO-78 through 102 and County of Sutter General Plan 2015 Policies 4.B-1 through 4.B-4), so it is likely that the following or similar measures would be required of any project-related infrastructure in those jurisdictions. At the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that such policies can and should be followed by other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

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

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

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

4.4-16 Installation and maintenance of infrastructure within off-site infrastructure areas could result in removal of habitat for listed vernal pool invertebrates potentially occurring there.

The vernal pools in the off-site infrastructure areas are considered potential habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and California linderiella, although many habitats
are degraded due to discing or road maintenance. Because these features could support these species, removal is likely to be regulated under the Endangered Species Act. The Placer County General Plan also supports protection of habitat for areas that support rare or endangered species (Policy 6.C.6). Removal of potential habitat for these species would be considered a **potentially significant impact**.

**Mitigation Measure**

The following measure would substantially lessen the loss or disturbance of habitat for listed vernal pool invertebrates; however, the impact would remain *significant* after mitigation. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. For this reason and because the mitigation does not guarantee preservation of habitat within Placer County, the potential impact on habitat for vernal pool invertebrates will have to be considered *significant and unavoidable*.

It should be noted, however, that the City of Roseville, Sacramento County and Sutter County have policies calling for protecting wetlands, including vernal pools (see, for example, Vegetation and Wildlife Policies 2, 3, 4 and 8 in the Roseville General Plan, and Sacramento County General Plan Policies CO-78 through CO-102, and County of Sutter General Plan 2015 Policies 4.B-1 through 4.B-4), so it is likely that the following or similar measures would be required of any project-related infrastructure in those jurisdictions. At the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that such policies can and should be followed by other jurisdictions (see CEQA Guidelines Section 15091(a)(2)). Furthermore, all projects would need to comply with federal regulations pertaining to jurisdictional wetlands, which would protect habitat for species occurring in those wetlands.

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

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

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

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

4.4-17 Installation and maintenance of infrastructure within off-site infrastructure areas could remove habitat for valley elderberry longhorn beetle, a federally-listed species.

Elderberry shrubs (the host plant for VELB) could occur in the off-site infrastructure areas. Therefore, development within these areas could remove potential habitat for this species. Removal of potential habitat for these species would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the loss or disturbance of VELB habitat to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on VELB habitat will have to be considered significant and unavoidable. It should be noted, however, that the project would need to comply with federal regulations and the Valley elderberry longhorn beetle is protected under federal law. Further, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

The replacement of elderberry shrubs required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for elderberry shrubs and VELB.
This measure would ensure “no net loss” of VELB habitat within Placer County. If elderberry shrubs are present in off-site infrastructure areas in Sutter County, Sacramento County, and/or the City of Roseville, these jurisdictions could also require measures to ensure “no net loss” of VELB habitat.

4.4-18 Installation and maintenance of infrastructure within off-site infrastructure areas could remove habitat for western pond turtle, a special-status species potentially occurring there.

Potential habitat for western pond turtle likely occurs in the off-site infrastructure areas. Western pond turtle is a special-status species identified by the CDFG. Removal of potential habitat for these species could reduce their numbers, which would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the loss or disturbance of western pond turtle habitat to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on western pond turtle will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

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

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

4.4-19 Installation and maintenance of infrastructure within off-site infrastructure areas could destroy active nests or disturb burrowing owls.

Burrowing owl (a California Species of Special Concern) could potentially nest in the off-site infrastructure areas, so project construction activities could destroy an active nest and/or disturb nesting owls. The destruction of active nests and/or the disturbance of nesting burrowing owls would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of burrowing owl nests to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on burrowing owl will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

4.4-20 Installation and maintenance of infrastructure within off-site infrastructure areas could remove habitat for Swainson’s hawk.

Agricultural land and non-native grassland habitats are considered potential foraging habitat for Swainson’s hawks, which are known to nest within ten miles of foraging habitat. Installation of infrastructure could temporarily remove some of this foraging habitat. However, after construction the off-site infrastructure areas would typically be revegetated, so impacts on foraging habitat would be temporary. Any impacts from roadway improvement would be extremely minor and would not occur in locations that would have high value for foraging. Therefore, removal of raptor foraging habitat would be considered a less than significant impact.
Mitigation Measure

No mitigation measures are required.

4.4-21 Installation and maintenance of infrastructure within off-site infrastructure areas could remove habitat for tricolored blackbird.

Tricolored blackbirds could nest within the off-site infrastructure areas. Tricolored blackbirds are protected under the MBTA, and destruction of active nests is considered a violation of the MBTA. Consequently, impacts to nesting tricolored blackbirds would be considered potentially significant.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of tricolored blackbird nests to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on nesting tricolored blackbirds will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

4.4-21 If installation of infrastructure is proposed during the tricolored blackbird breeding season (May to August), a focused survey for nesting colonies shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within five hundred feet of the nesting colony until the young have fledged. Vegetation that must be removed as a result of installation shall be removed during the non-breeding season (September to April). If no active nests are found during the focused survey, no further mitigation will be required.

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

4.4-22 Installation and maintenance of infrastructure within off-site infrastructure areas could destroy active raptor nests or disturb nesting raptors.
Raptors, including red-tailed hawk and great horned owl, could nest in the off-site infrastructure areas. Raptors are protected under the MBTA and Section 3503.5 of the California Fish and Game Code, and destruction of active raptor nests is considered a violation of this code and the MBTA. Consequently, impacts to nesting raptors and migratory birds would be considered potentially significant.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of raptor nests to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on nesting raptors will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

4.4-23 Installation and maintenance of infrastructure within off-site infrastructure areas could harm or destroy the California horned lizard.

Potential habitat for California horned lizard could occur in the off-site infrastructure areas. Removal of potential habitat for this species could reduce their numbers, which would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the harm to or destruction of California horned lizard to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on California horned lizard will have to be considered significant and unavoidable at the time of Specific Plan approval, should the Plan be approved.
However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

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

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

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

4.4-24 Installation and maintenance of infrastructure within off-site infrastructure areas could destroy active roosts or disturb several species of bats.

Several species of bats could occupy structures (such as bridges) located within the off-site infrastructure areas. Off-site infrastructure construction activities could destroy roosting sites and/or disturb roosting bats, which would be considered a potentially significant impact.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of bat roosts to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sacramento County and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on bat roosts will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that
the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

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

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

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

4.4-25 Installation and maintenance of infrastructure within off-site infrastructure areas could result in removal of oak trees.

Native oak trees are present in the off-site infrastructure areas. Oak woodlands provide cover, foraging, and breeding habitat for numerous species of common resident and migratory wildlife, and the loss of these habitats is protected under Public Resources Code Section 21083.4. However, with the exception of the widening of Watt Avenue south of the Specific Plan area and
expansion of the DCWWTP, it is not anticipated that off-site infrastructure will result in removal of a significant number of oak trees. Utility lines and appurtenant structures will primarily be located within existing roadways; however, construction in the vicinity of Dry Creek could affect individual oak trees and could damage trees by excavating within the root zone. Individual trees and oak woodland in Placer County are protected under both the Placer County General Plan and the Placer County Tree Ordinance. Oak trees that could be affected by the expansion of the DCWWTP could qualify as oak woodland under Public Resources Code Section 21083.4. However, this requirement applies only to counties and the trees that could be affected are within the City of Roseville. Therefore, there are no unique requirements that apply to this potential oak woodland. Impacts to oak trees in off-site infrastructure areas are considered potentially significant.

Mitigation Measure

Over the long-term, the following measure would reduce the loss or disturbance of oak trees to a less than significant level. However, in the short-term, the impact would remain significant and unavoidable because of the length of time it will take for newly planted oak trees to mature to the point of providing comparable habitat value to those trees that are removed. Furthermore, while Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County, the County cannot compel Sutter County, Sacramento County, and/or the City of Roseville to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential long-term impact on oak woodland and individual oak trees will also have to be considered significant and unavoidable.

It should be noted, however, that the City of Roseville and Sacramento County have policies and ordinances calling for the protection of oak trees, and the replacement of trees that are to be removed, so it is likely that these or similar measures would be required of any project-related infrastructure in those jurisdictions. While these measures could assist in reducing long-term impacts on oak trees to a less than significant level, the short-term impact would remain significant. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

4.4-25 Implement Mitigation Measures 4.4-10a and 4.4-10b. Mitigation Measure 4.4-10a requires implementation of Mitigation Measure 4.4-1 as it pertains to oak woodland communities and individual oak trees. The applicant is to provide a tree survey map of all trees that would be removed or disturbed during construction of the off-site infrastructure areas. These trees shall be replaced as specified in Mitigation Measure 4.4-1. Replacement trees shall be monitored annually to ensure that the new oaks and oak woodland are successful. Mitigation Measure 4.4-10b specifies measures to be taken to protect remaining trees from damage during construction. Similar measures could be implemented by Sutter County, Sacramento County, and/or the City of Roseville, if needed to protect oak woodland and individual trees.
4.4-26 Installation and maintenance of infrastructure within the off-site infrastructure areas could fill jurisdictional and non-jurisdictional wetlands and other jurisdictional waters of the U.S.

An estimated eight acres of potential jurisdictional waters of the U.S. have been mapped that could be filled as a result of infrastructure installation. Other wetlands could also be lost to off-site infrastructure areas, including intermittent drainages, seasonal wetlands and seasonal marshes. These areas are considered important biological resources by the U.S. Army Corps of Engineers and/or the County (depending on the type of wetland). Therefore, the loss of both jurisdictional and non-jurisdictional wetlands would be considered a significant impact.

Mitigation Measure

The following measure would substantially lessen the loss or disturbance of wetlands; however, the impact remains significant after mitigation. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. For this reason and because the mitigation does not guarantee preservation of jurisdictional waters within Placer County, the potential impact on wetlands will have to be considered significant and unavoidable.

It should be noted, that the City of Roseville, Sacramento County, and Sutter County have policies calling for protection of wetlands (see, for example, Vegetation and Wildlife Policy 8 in the Roseville General Plan, Sacramento County General Plan Policies CO-78 through CO-102 and County of Sutter General Plan 2015 Policies 4.B-1 through 4.B-4), so it is likely that the following or similar measures would be required of any project-related infrastructure in those jurisdictions. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

4.4-26 Infrastructure installations shall be redesigned to avoid impacts to wetlands, and other waters of the U.S., if feasible. If wetlands cannot be feasibly avoided, implement Mitigation Measures 4.4-2, which requires delineation of all wetlands that could not be avoided. Mitigation Measures 4.4-2 and 4.4-11 require preservation, re-creation, replacement and/or restoration of vernal pools and other wetlands that would be filled due to construction of off-site infrastructure areas. Successful restoration of vernal pools and other wetlands under Mitigation Measures 4.4-2 and 4.4-11 would result in more wetland acreage than would be lost to development. Sutter County, Sacramento County and/or the City of Roseville could require similar measures to ensure “no net loss” of wetlands.
The mitigation acreage required by these measures could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes vernal pools similar in type and equal or greater in habitat value to those pools lost to the off-site infrastructure areas.

4.4-27 Installation and maintenance of infrastructure within the off-site infrastructure areas could result in the loss of riparian habitat and disturbance of drainages.

Utility lines will cross streams or other drainages (e.g., Dry Creek); however, project proponents will use jack and bore construction techniques in order to avoid any direct impact to these features. Impacts would, however, occur due to widening associated with the Watt Avenue bridge, including disturbance of stream channels and loss of 0.54 acres of riparian habitat. This impact would be considered significant.

Mitigation Measure

The following measure would reduce the disturbance of riparian areas to a less than significant level. Implementation of the measure would ensure that riparian areas that are to be retained (such as streams) would be protected from damage or disturbance by construction and that there would be “no net loss” of riparian habitat due to construction and maintenance of off-site infrastructure areas. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on riparian areas will have to be considered significant and unavoidable.

It should be noted, however, that the City of Roseville, Sutter County and Sacramento County have policies calling for protecting riparian areas (see, for example, Vegetation and Wildlife Policy 2 in the Roseville General Plan, Sacramento County General Plan Policies CO-62, CO-65, and CO-70 and County of Sutter General Plan 2015 Policies 4.B-1 through 4.B-4), so it is likely that the following or similar measures would be required of any project-related infrastructure in those jurisdictions. At the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that such policies can and should be followed (see CEQA Guidelines Section 15091(a)(2)).

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

Also see Impact 4.4-30 and Mitigation 4.4-30.

4.4-28 **Installation of infrastructure within the Natomas Basin could affect Giant Garter snake habitat and/or individual snakes.**

Installation of infrastructure within the Natomas Basin area may disturb Giant Garter snake habitat and could harm individual snakes (see Figure 3-5, long-term surface water supply, and Figure 3-6, SRCSD Connection Alternative A). Most infrastructure installation would occur in roadways and other previously disturbed areas. Although infrastructure construction is temporary and surface conditions would generally be returned to their original condition (with the exception of points of access), construction could occur within and adjacent to habitat areas, including Steelhead Creek and ricelands, where snakes may be encountered. Consequently, impacts to this special-status species would be considered significant.

Mitigation Measure

The following measures derived from the approved **Natomas Basin Habitat Conservation Plan (NBHCP)** would reduce the disturbance of Giant Garter snake and Giant Garter snake habitat to a less than significant level. However, the affected infrastructure improvements would be located in and under the jurisdiction of Sutter County and Sacramento County and would be undertaken by PCWA, and potentially the SRCSD. Placer County cannot compel these jurisdictions and agencies to adopt or implement mitigation measures. However, because there is an approved and enforceable Habitat Conservation Plan that is applicable to the affected area, Sutter County may require that construction of the infrastructure improvements within its jurisdiction per subject to the NBHCP requirements because Sutter County is a permittee. Nonetheless, because PCWA, SRCSD, Sacramento County, and the Specific Plan applicants are not permittees under the NBHCP and the associated incidental take permits, Placer County cannot compel these agencies to adopt or implement the NBHCP conservation measures. Consequently, this impact is considered significant and unavoidable to the extent the NBHCP provisions are not implemented. These provisions include the following:

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

24-hours prior to construction activities, the project area shall be surveyed for Giant Garter snake. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during
construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any incidental take and any sightings shall be reported to the USFWS immediately.

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

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

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

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

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

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

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

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

4.4-29 Installation and maintenance of infrastructure within off-site infrastructure areas could remove nesting habitat for Loggerhead shrike.

Loggerhead shrike could nest within the off-site infrastructure areas. Loggerhead shrike are a State species of concern, and destruction of active nests could adversely affect the species. Consequently, impacts to nesting Loggerhead shrike would be considered potentially significant.

Mitigation Measure

The following measure would reduce the destruction and/or disturbance of Loggerhead shrike nests to a less than significant level. Placer County can and will require this measure of Specific Plan-related infrastructure within Placer County. However, some of the project infrastructure improvements would be located in and under the jurisdiction of Sutter County, Sacramento County, and/or the City of Roseville, and Placer County cannot compel these jurisdictions to adopt or implement mitigation measures. Therefore, for purposes of Placer County as the CEQA lead agency, the potential impact on nesting Loggerhead shrike will have to be considered significant and unavoidable. However, at the time of Specific Plan consideration, the Placer County Board of Supervisors will likely find that the following mitigation should be adopted by the other jurisdictions (see CEQA Guidelines Section 15091(a)(2)).

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

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

4.4-30 Installation and maintenance of infrastructure within and adjacent to Dry Creek could remove habitat for special-status fish species potentially occurring there.

Potential construction-related effects to Chinook salmon and steelhead include temporary modification of edgewater habitat associated with bridge-widening activities (installation of in-
channel footing) and removal of a low rock dam (see Impact 4.3.2 and Mitigation Measure 4.3.2-3f) in Dry Creek at the Watt Avenue crossing. Utility line crossings will be constructed using jack and bore construction techniques and will have no direct impact on edgewater habitat. Edgewater habitat is important to both upstream-migrating adults and downstream-migrating (i.e., emigrating) juvenile (“smolt”) Chinook salmon and steelhead as foraging habitat and cover (i.e., protection from predators). Modification to edgewater habitat may include localized loss of food-producing habitat and associated prey items. In addition, installation of bridge support piles will remove localized benthic resources associated with the river substrate. Potential long-term impacts to Chinook salmon and steelhead may include a localized degradation of edgewater habitat due to increased human-related activities, including streambed erosion. This is a potentially significant impact.

Mitigation Measure

Both construction-related and long-term impacts to Chinook salmon and steelhead populations are considered less than significant with mitigation, primarily because of the absence of spawning habitat. Juvenile and adult Chinook salmon and steelhead use available instream habitat adjacent to off-site infrastructure areas primarily as a migration corridor. Juveniles may use the edgewater habitat for feeding when migrating to the Pacific Ocean. However, the area of potential disturbance is small when compared to the abundance of existing edgewater habitat. Also, the addition of bridge support piles will provide cover for fishes, as well as increased structure as substrate for prey items. The piles will also result in localized riverflow divergence, creating habitat complexity, which may further increase fish cover.

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

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

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

INITIAL SURFACE WATER SUPPLY
An initial surface water supply is proposed to serve the Specific Plan area until a Sacramento River supply can be implemented. It consists of available water from PCWA’s unused American River water supply diverted at PCWA’s new permanent American River Pump Station, conveyed and treated at the existing Foothill Water Treatment Plant, and delivered through PCWA’s existing transmission pipeline system to the vicinity of Industrial Avenue (PCWA diversions from the Middle Fork Project at the American River Pump Station location were previously evaluated in the American River Pump Station Project Final EIS/EIR, American River Basin Cumulative Impact Report, 2001). A booster pump and storage tank currently under construction would allow PCWA to introduce its water into the City of Roseville pipeline system. Under an existing agreement with the City of Roseville, PCWA can convey 10 MGD through the City’s pipeline system to the Specific Plan area.

A secondary initial surface water supply could be made available if the Sacramento River project has not begun delivery of water when the available initial supply, as described above, has been fully used. The supply would be diverted from Folsom Lake, treated at Sidney N. Peterson Water Treatment Plant (owned and operated by the San Juan Water District), and conveyed to the Specific Plan area via a new pipeline extending from the Cooperative Transmission Pipeline that currently ends in Antelope Road near Walerga Road. This pipeline would be extended westerly along Antelope Road to Watt Avenue and then north to the Specific Plan area. Alternatively this supply could be conveyed in a pipeline constructed in PFE Road from Cook Riolo Road to Watt Avenue and northerly to the Specific Plan area.

For a more complete discussion of project water supply, see Sections 4.3.4 and 4.11.7 in this Revised Draft EIR.

**4.4-3I The Specific Plan could adversely affect vegetation associated with Folsom, Shasta, and Trinity reservoirs.**

Folsom, Shasta, and Trinity reservoirs have water levels that fluctuate frequently on an annual basis, thus non-native, disturbance-adapted (or weedy) vegetation typically becomes established in areas below the high water line during the growing season. The drawdown zone at each of these reservoirs is vegetated primarily with weedy herbaceous plants and scattered willow shrubs that do not form a contiguous riparian community, and thus is not considered to have high habitat value for typically associated wildlife species. This type of plant community structure in the drawdown zone is due to changing water levels; a continuous band of riparian vegetation can establish over time if water levels were maintained at a more constant elevation. However, because maintenance of a consistent water elevation is counter to inflow patterns and common flood control and water supply practices, water levels constantly fluctuate, and quality nearshore vegetation and the habitat it would provide rarely establish or persist.

Under the proposed Specific Plan initial surface water supply, there would be little to no change (two feet msl on average) in the long-term 70-year average monthly water surface elevation of Folsom, Shasta, and Trinity reservoirs, relative to the existing condition (Technical Appendices A-193 to A-204, A-181 to A-192, A-169 to A-180). Quality wildlife habitat rarely establishes in the drawdown zone under the existing condition; therefore, there would be no further contribution under the proposed Specific Plan initial surface water supply to preventing the
establishment of riparian vegetation. Thus, there would be no significant impact to the riparian and nearshore vegetation associated with Folsom, Shasta, or Trinity reservoirs under the proposed Specific Plan initial surface water supply, relative to the existing condition. Impacts to the vegetation communities associated with Folsom, Shasta, or Trinity reservoirs are therefore considered less than significant.

Mitigation Measure

No mitigation measures are required.

4.4-32 The Specific Plan could adversely affect riparian vegetation of the upper Sacramento River.

The peak growing season for riparian vegetation is typically March through July, with the remainder of the growing season spanning from August through October. The analysis of effects on riparian vegetation of the upper Sacramento River is based on changes in monthly mean river flows below Keswick Dam resulting from the implementation of the proposed Specific Plan initial surface water supply, relative to flows under the existing condition.

Under the proposed Specific Plan initial surface water supply, monthly mean flows would be reduced negligibly (i.e., by up to four cfs in April, up to three cfs in July, and would increase by one cfs to eight cfs throughout the other months of the growing season, with no detectable change to monthly mean flows in September), relative to the existing condition (Template Output B-110). In the context of riparian vegetation effects, such changes in monthly mean flows ranging from increases of eight cfs to reductions of four cfs would be small and imperceptible, considering modeled monthly flows of 6,387 cfs to 13,255 cfs during the months of the growing season. Such small differences are not of sufficient frequency or magnitude to adversely affect riparian vegetation along the river. Therefore, impacts would be considered less than significant.

Mitigation Measure

No mitigation measures are required.

4.4-33 The Specific Plan could adversely affect the lower Sacramento River and the Delta.

The analysis of potential effects on riparian vegetation of the lower Sacramento River and the Delta is based on changes in river flows below Freeport caused by the implementation of the proposed Specific Plan initial surface water supply, relative to flows under the existing condition. As discussed in Impact 4.4-32, the growing season for riparian vegetation is typically from March though October, with peak growing periods associated with the months of March through July. In addition to lower Sacramento River flows, the Delta wetlands are very sensitive to fluctuations in water salinity, which are determined by water flows into the Delta (San Francisco Estuary Project, 1993). The long-term position of X2 is also examined to assess any changes in salinity that could adversely affect Delta vegetation.
Vegetation Associated with the Lower Sacramento River and Delta. Under the proposed Specific Plan initial surface water supply, reductions in monthly mean flows at Freeport during the peak growing season would be negligible, ranging from one cfs to four cfs in June through July, with an increase of four cfs in May, relative to the existing condition (Template Output B-147). For the remainder of the growing season, monthly mean flows would not decrease and would experience similar negligible increases (i.e., up to five cfs), with the greatest increase in October relative to the existing condition (Template Output B-147). In the context of riparian vegetation effects, such changes in monthly mean flows would be small and imperceptible, considering modeled monthly flows of 12,046 cfs to 33,466 cfs during the months of the growing season, as well as the tidal influence at this stage of the river. These small differences in flows are not of sufficient frequency or magnitude to adversely affect riparian vegetation along the river or Delta, so impacts will be less than significant.

Delta Wetland and the Position of X2. Under the proposed Specific Plan initial surface water supply, there would be no shift in the position of X2 relative to the existing condition over the entire 70-year period of record (Template Output B-429). Changes in Sacramento River flows due to the implementation of the proposed Specific Plan initial surface water supply would not occur, thus there would be no shift in the long-term average X2 position. Implementation of the proposed Specific Plan initial surface water supply would not result in adverse effects to riparian vegetation of the Delta, and impacts will be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-34 The Specific Plan could have effects on Delta habitats of special-status species.

A number of special-status species included in Table 4.4-4 are known to occur in a range of Delta habitats. As discussed in Impact 4.4-33, there would be small, albeit immeasurable, changes in monthly mean flows in the lower Sacramento River during certain times of the year resulting from the implementation of the proposed Specific Plan initial surface water supply. These flows would not be expected to be reduced by any sufficient magnitude or frequency. Accordingly, they would not be expected to significantly alter habitats of special-status species dependent on the Delta. Furthermore, there would be no shift in the position of X2 under the proposed Specific Plan initial surface water supply, and hence no impacts anticipated due to changes in salinity (Template Output B-429). Thus, overall, there would be no impact to special-status species of the Delta resulting from reductions in flow of the lower Sacramento River or the position of X2 under the proposed Specific Plan initial surface water supply, relative to the existing condition. This impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.
Flows to Support Mature Cottonwood Radial Growth Maintenance - 1,765 cfs Index (March through October). Under the proposed Specific Plan initial surface water supply, monthly mean flows during the growing season months of March through October would not be significantly reduced below the 1,765 cfs index, the long-term flow value required for the maintenance of radial growth of mature cottonwoods relative to the existing condition. Under the existing condition, monthly mean flows below Nimbus Dam fall below 1,765 cfs in 128 months out of the 560 months included in the analysis. Under the proposed Specific Plan initial surface water supply, monthly mean flows below Nimbus Dam would fall below the 1,765 cfs index in an additional two months (Technical Appendix A-313 and A-318 to A-324). Lower American River flows simulated below the H Street Bridge under the existing condition fall below 1,765 cfs in 138 months of the 560 months included in the analysis. Under the proposed Specific Plan initial surface water supply, lower American River flows would fall below the 1,765 cfs index in an additional three months (Technical Appendix A-337 and A-342 to A-348). Overall, there would be no significant increase in the frequency with which monthly mean flows under the proposed Specific Plan initial surface water supply would be below the 1,765 cfs index, relative to the existing condition. Therefore, impacts to the maintenance of mature cottonwoods, relative to the existing condition, will be less than significant.

Flows to Support Some Cottonwood Growth - 2,000 cfs Index (March through October). Under the existing condition, flows below Nimbus Dam would be below 2,000 cfs, the long-term flow value required to support some growth of cottonwoods, in 140 of the 560 months included in the analysis. Under the proposed Specific Plan initial surface water supply, monthly mean flows below Nimbus Dam would fall below the 2,000 cfs index in three additional months (Technical Appendix A-313 and A-318 to A-324). The proposed Specific Plan initial surface water supply would, therefore, result in monthly mean flows below Nimbus Dam that would be below the maintenance index approximately 1.4% more often than under the existing condition. Monthly mean flows for the existing condition below the H Street Bridge would fall below the 2,000 cfs index in 176 of the 560 months included in the analysis. Under the proposed Specific Plan initial surface water supply, lower American River flows would fall below the 2,000 cfs index in one additional month (Technical Appendix A-337 and A-342 to A-348). The proposed Specific Plan initial surface water supply would, therefore, result in monthly mean flows below H Street Bridge that would be below the maintenance index approximately 0.6% more often than under the existing condition. Thus, overall, under the proposed Specific Plan initial surface water supply, the increase in the frequency with which monthly mean flows would fall below the 2,000 cfs index will be less than significant. Accordingly, no significant impact would be expected to occur to flows considered necessary to support some cottonwood growth, relative to the existing condition.

Flows to Support Reasonable to Maximum Cottonwood Growth Rates - 3,000 cfs Index (March through October). Under the proposed Specific Plan initial surface water supply, monthly mean flows would not be significantly reduced below the 3,000 cfs index, the long-term flow value required to support some growth of cottonwoods during the growing season months of March through October. Under the existing condition, monthly mean flows below Nimbus Dam would
Fall below the 3,000 cfs index 302 months out of the 560 months modeled for this period. The proposed Specific Plan initial surface water supply would result in no increase relative to the existing condition (Technical Appendix A-313 and A-318 to A-324). For flows below the H Street Bridge, monthly mean flows under the existing condition would fall below the 3,000 cfs index in 320 months of the 560 months modeled. The proposed Specific Plan initial surface water supply would result in one additional month relative to the existing condition (Technical Appendix A-337 and A-342 to A-348). Thus, under the proposed Specific Plan initial surface water supply, there would be no significant increase in the frequency with which monthly mean flows would fall below the 3,000 cfs index. Therefore, the effect on flows considered necessary to support reasonable to maximum cottonwood growth will be less than significant.

**Flows to Support Terrace Inundation for Cottonwood Germination - 5,000 cfs Index.** Implementation of the proposed Specific Plan initial surface water supply would result in a negligible reduction in the number of occurrences below Nimbus Dam or the H Street Bridge in which monthly mean peak flows would be above 5,000 cfs, the minimum flow considered appropriate for inundation of terraces essential for cottonwood germination during the seed release period of April through July (CCOMWP 1999). There would be no difference in the number of months above the 5,000 cfs index below Nimbus Dam under the proposed Specific Plan initial surface water supply, relative to the existing condition (Template Output B-87). At the H Street Bridge, lower American River flows are above the 5,000 cfs index 105 out of 840 months modeled, under the existing condition. The proposed Specific Plan initial surface water supply would result in 104 months above this index, equivalent to a decrease of less than 1%, relative to the existing condition (Template Output B-91). Thus, under the proposed Specific Plan initial surface water supply, there would be no significant decrease in the frequency of monthly mean flows above the 5,000 cfs index, therefore the effect on cottonwood germination relative to the existing condition will be less than significant.

**Mitigation Measures**

No mitigation measures are required.

**4.4-36 The Specific Plan could have effects on backwater recharge in the lower American River.**

**Flows to Support Adequate Recharge of the Ponds Closest to the Lower American River - 2,700 cfs Index.** Vegetation around backwater ponds closest to the river is typical of the riparian associations in the area and is composed of mixed-age willow, alder, and cottonwood. The water is slower moving and the ponds are isolated from human disturbances. These areas, as a result, tend to be of higher value to wildlife (Sands et al., 1985). Wildlife species that have been recorded in these areas include pied-billed grebe, American bittern, green heron, common merganser, white-tailed kite, wood duck, yellow warbler, warbling vireo, dusky-footed woodrat, western gray squirrel, Pacific tree frog, and western toad.

Under the proposed Specific Plan initial surface water supply, monthly mean flows would not be substantially reduced below the 2,700 cfs index. Under existing conditions, monthly mean flows below Nimbus Dam would fall below the 2,700 cfs threshold in 469 months out of the 840
months modeled. Under the proposed Specific Plan initial surface water supply, monthly mean flows would fall below this threshold 470 months, representing a 0.2% increase in frequency relative to the existing condition (Technical Appendix A-313 to A-324). For flows below the H Street Bridge, the long-term monthly mean flows below 2,700 cfs under the existing condition would occur in 492 months, with flows falling below this threshold in two additional months under the proposed Specific Plan initial surface water supply (Technical Appendix A-337 to A-348). This constitutes a 0.4% decrease in frequency relative to the existing condition. There would be no significant increase in the number of monthly occurrences below the 2,700 cfs threshold, consequently the impact to backwater recharge for ponds closest to the lower American River under the proposed Specific Plan initial surface water supply will be less than significant.

**Flows to Support Continued Recharge of Off-River Ponds - 4,000 cfs Index.** Vegetation associated with off-river ponds would be similar to vegetation for ponds closest to the river (discussed above). Under the proposed Specific Plan initial surface water supply, monthly mean flows would not be substantially reduced below the 4,000 cfs index, the reported long-term flow value required to provide continued recharge of off-river ponds relative to the existing condition. Under the existing condition, monthly mean flows below Nimbus Dam below 4,000 cfs would occur in 609 of the 840 months included in the analysis. Under the proposed Specific Plan initial surface water supply, monthly mean flows would fall below this threshold in two additional months, representing a 0.5% increase in frequency relative to the existing condition (Technical Appendix A-313 to A-324). For the lower American River at the H Street Bridge, monthly flows would fall below the 4,000 cfs index in 643 months out of 840 months modeled under the existing condition, with flows falling below this threshold in 627 months under the proposed Specific Plan initial surface water supply (Technical Appendix A-337 to A-348). This would represent a 2.5% decrease in frequency relative to the existing condition. As there would be no significant increase in the number of monthly occurrences below the 4,000 cfs threshold, the impact to backwater recharge for American River off-river ponds under the proposed Specific Plan initial surface water supply will be less than significant.

**Mitigation Measures**

No mitigation measures are required.

**4.4-37 The Specific Plan could have affects on special-status species dependent on lower American River riparian and open water habitats.**

Bald eagle, bank swallow, yellow warbler, yellow-breasted chat, river otter, and several other species are special status species known to occur, nest, or periodically forage in open water and cottonwood forest habitats along the lower American River. Thus, potential impacts to cottonwood forests are typically used to determine whether special-status species dependent on this habitat would be affected by the proposed Specific Plan initial surface water supply.

As discussed in Impact 4.4-36, there would be no significant impact to the maintenance, growth, and establishment of cottonwood forests along the lower American River under the proposed
Specific Plan initial surface water supply relative to the existing condition. The impacts to cottonwood radial growth maintenance, maximum growth, and establishment would be less than significant under the proposed Specific Plan initial surface water supply; therefore, impacts to special-status species associated with riparian and open water habitats would also be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-38 The Specific Plan could have affects on special-status species dependent on lower American River backwater pond/marsh habitats.

Sanford’s arrowhead, western pond turtle, valley elderberry shrubs, the VELB, and tricolored blackbirds are special-status species known to occur in backwater pond areas along the lower American River. Thus, potential impacts to backwater ponds are used to determine whether special-status species dependent on this habitat would be affected by the proposed Specific Plan initial surface water supply.

As discussed in Impact 4.4-36, there would be no significant impact to the recharge of backwater ponds along the lower American River under the proposed Specific Plan initial surface water supply relative to the existing condition. As the impacts to adjacent and off-river ponds would be less than significant, impacts to special-status species associated with backwater pond/marsh habitats would also be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-39 The Specific Plan could have effects on elderberry shrubs and VELB along the lower American River.

The USFWS has designated the American River Parkway as Critical Habitat for VELB, and this species has been recorded in elderberry shrubs near backwater ponds along the lower American River. Thus, potential impacts to backwater ponds are typically used to determine whether VELB would be affected by the proposed Specific Plan initial surface water supply.

As discussed in Impact 4.4-36, there would be no significant impact to the recharge of backwater ponds along the lower American River under the proposed Specific Plan initial surface water supply relative to the existing condition. As the impacts to adjacent and off-river ponds would be less than significant, impacts to elderberry shrubs and VELB would also be less than significant.

Mitigation Measures
No mitigation measures are required.

4.4-40 The Specific Plan could cause impacts to Shasta and Trinity reservoirs' warmwater fisheries.

**Shasta Reservoir.** Hydrologic conditions under the proposed Specific Plan initial surface water supply would result in no change in the long-term average end-of-month water surface elevation in Shasta Reservoir during the March through September period, when warmwater fish spawning and initial rearing may be expected (Template Output B-487). End-of-month elevation at Shasta Reservoir would be essentially equivalent to the existing condition in 486 of the 490 months included in the analysis (Technical Appendices A-186 to A-192). Reductions in average end-of-month elevation of up to two feet msl would, however, occur 0.8% of the time during the March through September period.

Such changes in water surface elevation in Shasta Reservoir during the March through September period would result in minimal changes in the availability of reservoir littoral habitat. The amount of littoral habitat potentially available to warmwater fish for spawning and/or rearing in Shasta Reservoir would remain, for the most part, unchanged. The greatest decrease in the long-term average number of acres of littoral habitat under the proposed Specific Plan initial surface water supply would be two acres during April, relative to the existing condition (Template Output B-494). With the small changes in the availability of littoral habitat under the proposed Specific Plan initial surface water supply, the long-term average initial year-class strength of warmwater fish populations would also remain unaffected. As littoral habitat availability would not change as a result of potentially changing water surface elevations, this would constitute a *less than significant impact* to Shasta Reservoir's warmwater fisheries under the proposed Specific Plan initial surface water supply, relative to the existing condition.

In addition, implementation of the proposed Specific Plan initial surface water supply could alter the rates by which water surface elevation in Shasta Reservoir change during each month of the primary warmwater fish-spawning period (March through July). The frequency with which potential nest-dewatering events would occur in Shasta Reservoir during the spawning period would not change relative to the existing condition, as shown in Table 4.4-13. Therefore, impacts to Shasta Reservoir's warmwater fisheries resulting from increases in nest-dewatering events, under the proposed Specific Plan initial surface water supply, would be *less than significant.*

<table>
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<th>Month</th>
<th>Average Reservoir Surface Elevation¹ (feet msl)</th>
<th>No. Years¹ w/Monthly Elevation Decrease During Month &gt; 9 ft</th>
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<td>Table 4.4-13 Long-term Average Surface Elevation and Number of Years with Elevation Decrease Greater than 9 feet msl in Shasta Reservoir Under Existing and Project Conditions</td>
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Placer Vineyards Specific Plan 4.4-145 Revised Draft EIR March, 2006
Trinity Reservoir. Hydrologic conditions under the proposed Specific Plan initial surface water supply would not result in substantial changes in the long-term average end-of-month water surface elevation in Trinity Reservoir during the March through September period (Template Output B-489). End-of-month elevation at Trinity Reservoir under the proposed Specific Plan initial surface water supply would be equivalent to the existing condition in all of the 490 months included in the analysis (Technical Appendices A-174 to A-180). Reductions in the long-term average amount of littoral habitat potentially available to warmwater fish for spawning and/or rearing in Trinity Reservoir under the proposed Specific Plan initial surface water supply would be within two acres from the existing condition during all months of the March through September period (Template Output B-495). The long-term average initial year-class strength of warmwater fish populations, relative to the existing condition, would not substantially change. Consequently, seasonal reductions in littoral habitat availability resulting from potential changes in reservoir water surface elevation would not be of sufficient frequency to adversely affect long-term population levels of warmwater fish and would constitute a less than significant impact to Trinity Reservoir’s warmwater fisheries.

In addition, the frequency with which potential nest-dewatering events could occur in Trinity Reservoir would not be increased under the proposed Specific Plan initial surface water supply, relative to the existing condition, during any month of the March through July spawning period (Technical Appendices A-174 to A-178). Overall, impacts to Trinity Reservoir’s warmwater fish populations would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-41 The Specific Plan could cause impacts to Shasta and Trinity reservoirs' coldwater fisheries.

Shasta Reservoir. Hydrologic conditions under the proposed Specific Plan initial surface water supply would not result in substantial changes in long-term average Shasta Reservoir storage during any month of the April through November period, relative to the existing condition. The greatest reduction in storage under the proposed Specific Plan initial surface water supply would be one TAF, relative to the existing condition (Template Output B-481). Shasta Reservoir end-of-month storage under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 558 of the 560 months included in the analysis. In individual years during the April through November period (when Shasta Reservoir thermally
stratifies), reductions in Shasta Reservoir end-of-month storage of more than 3% would not occur in any of the individual months (out of the 560 months included in the analysis) under the proposed Specific Plan initial surface water supply, relative to the existing condition (Technical Appendices A-103 to A-108 and A-97 to A-98). The largest individual storage reduction for any given month under the proposed Specific Plan initial surface water supply over the 70-year period of record for the April through November period would be 1.1%. Physical habitat availability, however, is not believed to be among the primary factors limiting coldwater fish populations within the reservoir, and anticipated changes in seasonal storage would not be expected to result in substantial adverse effects on the primary prey base used by the reservoir's coldwater fish populations; therefore, the infrequent and minimal seasonal reductions in storage that could occur under the proposed Specific Plan initial surface water supply would not be of sufficient magnitude to adversely affect long-term population levels of coldwater fish and would have less than significant impacts to Shasta Reservoir's coldwater fisheries.

Trinity Reservoir. Under the proposed Specific Plan initial surface water supply, the long-term average monthly storage in Trinity Reservoir would be essentially unchanged during all months of the April through November period (when Trinity Reservoir thermally stratifies). The greatest decrease in storage under the proposed Specific Plan initial surface water supply would be one TAF (0.1%) relative to the existing condition (Template Output B-482). For the proposed Specific Plan initial surface water supply, Trinity Reservoir storage would be essentially equivalent to the existing condition all months of the 560 months included in the analysis. Consequently, reductions of greater than 3% would not occur in any of the individual months (out of the 560 months included in the analysis). The maximum reduction in storage for any month out of the entire 70-year period of record would be 1.0%, relative to the existing condition (Technical Appendices A-85 to A-86 and A-91 to A-96). Similar to Shasta Reservoir, physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations within the reservoir, and anticipated changes in seasonal storage would not be expected to result in substantial adverse effects on the primary prey base used by the reservoir's coldwater fish populations. Therefore, the infrequent and minimal seasonal reductions in storage that could occur under the proposed Specific Plan initial surface water supply would not be of sufficient magnitude to adversely affect long-term population levels of coldwater fish and would have less than significant impacts to Trinity Reservoir's coldwater fisheries.

Mitigation Measures

No mitigation measures are required.

SACRAMENTO RIVER FISHERIES IMPACTS

Flow- and temperature-related impacts are discussed separately below by species and life stage. Organizationally, flow- and temperature-related impacts to winter-run, spring-run, fall-run, and late fall-run Chinook salmon and steelhead are discussed together, followed by impact discussions for splittail, American shad, and striped bass.
4.4-42 The Specific Plan could cause impacts to winter-run Chinook salmon in the Sacramento River.

Flow-Related Impacts to Winter-Run Chinook Salmon Adult Immigration (December through July). The long-term average flow in the Sacramento River below Keswick Dam differs by less than 0.2% under the Specific Plan initial surface water supply, compared to the existing condition, during all months of the adult immigration period (December through July). In fact, long-term average Sacramento River flow below Keswick Dam under the Specific Plan initial surface water supply would not differ by more than five cfs less than flows under the existing condition, during the December through July period (Template Output B-141). Further, in 554 out of 560 months simulated in this period, Sacramento River flow below Keswick Dam under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition (Technical Appendix A-351 to A-358).

The long-term average flow at Freeport in the Sacramento River differs by less than 0.1% between the Specific Plan initial surface water supply and existing condition, during December through July. The greatest decrease in flows simulated under the Specific Plan initial surface water supply would be eight cfs (in February) and would be approximately four cfs greater under the proposed Specific Plan initial surface water supply from March through May (Template Output B-147). Monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 557 out of 560 months simulated for the December through July period (Technical Appendix A-387 to A-394). The Specific Plan initial surface water supply would not result in any substantial reductions in long-term average flows in any month of the winter-run Chinook salmon adult immigration period, relative to the existing condition.

The minimum flow objective for Keswick Dam releases stipulated in the NOAA Biological Opinion (1993, as revised in 1995) for the protection of winter-run Chinook salmon rearing and downstream passage is 3,250 cfs between October 1 and March 31. The minimum flow objective is applicable from December through March of the adult immigration period. Modeling output shows that the Specific Plan initial surface water supply would not result in additional reductions below 3,250 cfs, relative to the existing condition, throughout the December through March period (Technical Appendix A-351 to A-354).

Overall, the increases in flow that would be expected to occur in the Sacramento River below Keswick Dam and at Freeport under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect attraction or passage of adults immigrating into the Sacramento River. Therefore, the Specific Plan initial surface water supply is not likely to adversely affect immigration of winter-run Chinook salmon in the Sacramento River and the impact would be less than significant, relative to the existing condition.

Temperature-Related Impacts to Winter-Run Chinook Salmon Adult Immigration (December through July). Long-term average water temperature in the Sacramento River at Bend Bridge would not differ by more than 0.1°F during any month of the December through July period, relative to the existing condition (Template Output B-307). Similarly, long-term average water
temperature in the Sacramento River at Jelly’s Ferry and Freeport would not differ during any month of the December through July period (Template Output B-314 and B-321).

The NOAA Biological Opinion (1993, as revised in 1995) for winter-run Chinook salmon provides temperature requirements for Bend Bridge and Jelly’s Ferry in the Sacramento River from April through October. The temperature criteria are applicable from April through July of the winter-run Chinook salmon adult immigration period (the most rigorous are maximum temperatures of 56°F from April through September and 60°F during October at Bend Bridge). As described above, the long-term average water temperatures in the Sacramento River modeled for the Specific Plan initial surface water supply would not differ from those under the existing condition at Jelly’s Ferry during all months of the April through July period. Monthly mean water temperatures in the Sacramento River at Bend Bridge under the Specific Plan initial surface water supply would remain essentially equivalent to or less than those under the existing condition in 276 out of 276 months included in the analysis (Technical Appendix A-47 to A-478). Similarly, water temperatures at Jelly’s Ferry during April though July under the Specific Plan initial surface water supply also would remain essentially equivalent to the existing condition in 276 of the 276 months included in the analysis (Technical Appendix A-463 to A-466). Further, temperatures at Bend Bridge would exceed 56°F in 30 out of 276 months modeled for the April through July period under the existing condition, and the Specific Plan initial surface water supply would not result in additional occurrences in which Sacramento River water temperatures at Bend Bridge would exceed 56°F (Technical Appendix A-471 to A-478).

Overall, changes in Sacramento River water temperatures throughout the December through July period under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in substantial temperature-related impacts to winter-run Chinook salmon adult immigration. Therefore, the Specific Plan initial surface water supply is not likely to adversely affect winter-run Chinook salmon adult immigration. Consequently, potential temperature-related impacts to winter-run Chinook salmon adult immigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Flow-Related Impacts to Winter-Run Chinook Salmon Spawning and Incubation (April through August).** The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would be within 0.1% of the flow under the existing condition during all months of the April through August period (Template Output B-141). In 348 of the 350 months simulated during this period, flow in the Sacramento River below Keswick Dam would be either essentially equivalent to or greater than flows under the existing condition (Technical Appendix A-355 to A-359).

The exceedance curves for the Sacramento River below Keswick Dam for the April through August period demonstrate that flows under the Specific Plan initial surface water supply during April through August would be nearly identical to those under the existing condition. Differences in flows in the lower flow ranges are more crucial for salmon survival. Reductions in flows in the lower flow ranges could reduce the amount of available Chinook salmon
spawning habitat, which could result in increased redd superimposition during years when adult
returns are high enough for spawning habitat to be limiting. However, there would be no
detectable reduction in simulated flows in any month of the April through August period,
relative to the existing condition (Template Output B-139 to B-140).

The long-term average flow in the Sacramento River at Freeport under the Specific Plan initial
surface water supply would not decrease more than four cfs relative to Sacramento River flows
under the existing condition (Template Output B-147). In 350 of the 350 months simulated
during the April through August period, flows at Freeport under the Specific Plan initial surface
water supply would be essentially equivalent to or greater than flows under the existing
condition (Technical Appendix A-391 to A-395). The exceedance curves for the Sacramento
River at Freeport for the April through August period demonstrate that flows under the Specific
Plan initial surface water supply would be nearly identical to those under the existing condition
in the April through August period (Template Output B-145 to B-146).

Overall, changes in Sacramento River flows under the Specific Plan initial surface water supply
would not be of sufficient frequency or magnitude to result in a reduction in winter-run Chinook
salmon spawning habitat. Such changes are not likely to have an adverse impact on long-term
initial year-class strength of Sacramento River winter-run Chinook salmon. Therefore, potential
flow-related impacts to winter-run Chinook salmon spawning and initial rearing under the
Specific Plan initial surface water supply would be less than significant, relative to the existing
condition.

**Temperature-Related Impacts to Winter-Run Chinook Salmon Spawning and Incubation (April
through August).** Under the Specific Plan initial surface water supply, the long-term average
water temperatures would not differ by more than 0.1°F from those under the existing condition
during the April through August period at Bend Bridge and at Jelly’s Ferry (Template Output B-
307 and B-314). In fact, in 345 out of the 345 months included in the analysis, the water
temperatures under the Specific Plan initial surface water supply at these locations would be
essentially equivalent to water temperatures under the existing condition (Technical Appendix
A-463 to A-467 and A-475 to A-479).

Throughout the April through August period, Sacramento River water temperatures would not
exceed NOAA temperature criteria more frequently under the Specific Plan initial surface water
supply than under the existing condition. Under the Specific Plan initial surface water supply,
there would not be any additional occurrences in which water temperatures at Bend Bridge in the
Sacramento River under the Specific Plan initial surface water supply would exceed 56°F,
relative to the existing condition (Technical Appendix A-475 to A-479).

The long-term average annual early lifestage survival for winter-run Chinook salmon in the
Sacramento River would be 96.0% under the existing condition and 95.9% under the Specific
Plan initial surface water supply (Template Output B-469). Substantial increases or decreases in
survival would not occur in any individual year of the 69-year simulation. In five years under
the Specific Plan initial surface water supply, there would be slight reductions (less than 1.8%) in
annual early lifestage survival for winter-run Chinook salmon in the Sacramento River.
However, the maximum relative reduction in annual early lifestage survival would be 2.4%, relative to the existing condition (Technical Appendix A-568).

Based on modeling results, small temperature changes in the Sacramento River resulting from the Specific Plan initial surface water supply during the April through August period are not of sufficient frequency or magnitude to result in adverse effects to spawning and incubation success of winter-run Chinook salmon, relative to the existing condition. Therefore, potential water temperature impacts to winter-run Chinook salmon spawning and incubation in the Sacramento River resulting from the implementation of the Specific Plan initial surface water supply would be *less than significant*, relative to the existing condition.

**Flow-Related Impacts to Winter-Run Chinook Salmon Juvenile Rearing and Emigration (August through December).** Under the Specific Plan initial surface water supply, the simulated long-term average flow below Keswick Dam would increase slightly, relative to the existing condition (Template Output B-141). Long-term average flows in the Sacramento River would increase by 0.1% (i.e., eight cfs) in August. In 348 out of the 350 months simulated for the Specific Plan initial surface water supply, Sacramento River flow below Keswick Dam would be essentially equivalent to flows simulated under the existing condition (Technical Appendix A-349 to A-360). In addition, flows would not be reduced below the 3,250 cfs flow criterion specified by the NOAA winter-run Chinook salmon Biological Opinion more frequently under the Specific Plan initial surface water supply compared to the existing condition during the October through December period in which flow requirements must be maintained (Technical Appendix A-349 to A-360). Although small flow reductions in Sacramento River flows below Keswick Dam would occur under the Specific Plan initial surface water supply in a few years during the August through December period, such changes would not be likely to result in measurable changes to winter-run Chinook salmon juvenile emigration.

Long-term average flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be increased (i.e., up to 7 cfs) from August through November, and would not differ substantially during December, relative to flows under the existing condition (Template Output B-147). In August through November, long-term average flows would increase by approximately one cfs to seven cfs. In 349 out of 350 months modeled, monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows simulated under the existing condition (Technical Appendix A-385 to A-396).

Overall, changes in Sacramento River flows would not be of sufficient frequency or magnitude to adversely affect the success of juvenile salmonid emigration. Therefore, impacts to juvenile winter-run Chinook salmon emigration under the Specific Plan initial surface water supply would be *less than significant*, relative to the existing condition.

**Temperature-Related Impacts to Winter-Run Chinook Salmon Juvenile Rearing and Emigration (August through December).** The long-term average water temperature in the Sacramento River at Bend Bridge and at Jelly’s Ferry during August through December under the Specific Plan initial surface water supply would not change substantially, relative to temperatures under the
existing condition (Template Output B-307 and B-314). In the 69-year simulation, monthly mean water temperature at Bend Bridge would increase more than 0.3°F in one year during September, and would not increase by more than 0.1°F in any year modeled for the remainder of the August through December period (Technical Appendix A-469 to A-480). At Jelly’s Ferry, monthly mean water temperature would increase more than 0.3°F in one year during September, and would not increase by more than 0.1°F (i.e., would remain essentially equivalent to the existing condition) in any year modeled for the remainder of the August through December period (Technical Appendix A-457 to A-468).

NOAA temperature criteria for winter-run Chinook salmon are applicable during August through October of the juvenile emigration period. Under the Specific Plan initial surface water supply, there would not be any additional occurrences during August, September, October and November in which simulated water temperatures in the Sacramento River at Bend Bridge would be above 56°F, relative to the existing condition (Technical Appendix A-469 to A-480). Similarly, at Jelly’s Ferry on the Sacramento River, there would not be any additional occurrences during October when water temperatures would be greater than 60°F (i.e., the temperature criterion for Jelly’s Ferry in October), relative to the existing condition (Technical Appendix A-457 to A-468). Further, water temperatures under the Specific Plan initial surface water supply throughout the August through December period would not exceed 65°F, the upper end of the suitable range of water temperatures for juvenile Chinook salmon, more frequently than under the existing condition at Bend Bridge or Jelly’s Ferry (Technical Appendix A-457 to A-468 and A-469 to A-480). In fact, water temperatures under the existing condition and Specific Plan initial surface water supply would remain below 65°F at Bend Bridge and Jelly’s Ferry in 342 and 343 of the 345 months modeled, respectively, for the August through December period (Technical Appendix A-457 to A-468 and A-469 to A-480).

Long-term average water temperatures in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not differ from water temperatures under the existing condition throughout the August through December period (Template Output B-321). Monthly mean water temperatures in the Sacramento River at Freeport would be essentially equivalent to or less than water temperatures under the existing condition in 345 out of 345 months modeled for the August through December period (Technical Appendix A-481 to A-492). Further, water temperatures under the Specific Plan initial surface water supply at this location would not exceed 65°F more frequently than under the existing condition (Technical Appendix A-481 to A-492).

Based on the results discussed above, potential water temperature changes resulting from the Specific Plan initial surface water supply are not of sufficient frequency or magnitude to adversely affect juvenile winter-run Chinook salmon emigration. Therefore, potential water temperature-related impacts to winter-run Chinook salmon emigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Mitigation Measure

No mitigation measures are required.
4.4-43 The Specific Plan could cause impacts to spring-run Chinook salmon in the Sacramento River.

Flow-Related Impacts to Spring-Run Chinook Salmon Adult Immigration and Holding (March through September). The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would be within 0.1% of flows under the existing condition, during all months of the adult immigration period (March through September) (Template Output B-141). In 487 out of 490 months simulated in this period, the flow in the Sacramento River below Keswick Dam would be essentially equivalent to or greater than flows under the existing condition (Technical Appendix A-349 to A-360).

Long-term average flow in the Sacramento River at Freeport under the Specific Plan initial surface water supply would decrease by approximately one cfs to four cfs from March through September, relative to the existing condition (Template Output B-147). Monthly mean flow in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 490 out of 490 months modeled for the March through September period (Technical Appendix A-390 to A-396).

The difference in Sacramento River flow below Keswick Dam and at Freeport that would occur under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to attraction of adult spring-run Chinook salmon immigrating into the Sacramento River. Therefore, potential changes in flows under the Specific Plan initial surface water supply would result in a less than significant impact to immigration of spring-run Chinook salmon immigration and holding.

Temperature-Related Impacts to Spring-Run Chinook Salmon Adult Immigration and Holding (March through September). The long-term average water temperatures in the Sacramento River modeled for the Specific Plan initial surface water supply would not differ by more than 0.1°F from those under the existing condition at the Bend Bridge and Jelly’s Ferry during all months of the March through September adult immigration period (Template Output B-307 and B-314). Moreover, under the Specific Plan initial surface water supply, water temperatures in the Sacramento River at Bend Bridge would remain essentially equivalent to those under the existing condition in 482 out of 483 months included in the analysis (Technical Appendix A-474 to A-480). Water temperatures at Jelly’s Ferry under the Specific Plan initial surface water supply would remain essentially equivalent to those simulated under the existing condition in 482 of the 483 months included in the analysis (Technical Appendix A-462 to A-468).

March through September long-term average water temperatures in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not differ from water temperatures under the existing condition (Template Output B-321). Further, water temperatures in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to water temperatures under the existing condition in 483 of the 483
months modeled for the March through September period (Technical Appendix A-486 to A-492).

Overall, changes in water temperatures in the Sacramento River under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to spring-run Chinook salmon adult immigration and holding. Therefore, impacts to spring-run Chinook salmon adult immigration and holding under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Flow-Related Impacts to Spring-Run Chinook Salmon Spawning and Incubation (August through January).** The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would be within 0.1% of the flow under the existing condition during all months of the August through January period (Template Output B-141). In 417 of the 420 months simulated during this period, Sacramento River flow below Keswick Dam would be essentially equivalent to flows under the existing condition (Technical Appendix A-349 to A-360).

The exceedance curves for the Sacramento River below Keswick Dam for the August through January period demonstrate that flows under the Specific Plan initial surface water supply would be similar to those under the existing condition at all flow ranges. Differences in flows in lower flow ranges would be more crucial for salmon survival. Reductions in flows in lower flow ranges could potentially reduce the amount of available spring-run Chinook salmon spawning habitat, which could result in increased redd superimposition during years when adult returns are high enough for spawning habitat to be limiting. However, the Specific Plan initial surface water supply would not result in any change in flows, relative to the existing condition (Template Output B-144 and B-146).

Long-term average flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition of the August through January spring-run Chinook salmon spawning and incubation period (Template Output B-147). In October and November, long-term average flows would increase by five cfs and seven cfs, respectively, relative to the existing condition (Template Output B-147). Throughout the August through January period, monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 418 out of 420 months modeled (Technical Appendix A-385 to A-396).

Overall, changes in flow in the Sacramento River would not be of sufficient frequency or magnitude to result in adverse impacts to long-term initial year-class strength of Sacramento River spring-run Chinook salmon. Thus, potential impacts to spring-run Chinook salmon in the Sacramento River under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Spring-Run Chinook Salmon Spawning and Incubation (August through January).** Under the Specific Plan initial surface water supply, long-term average water
temperatures would not differ from those modeled under the existing condition during the August through January period at Bend Bridge and Jelly’s Ferry (Template Output B-307 and B-314). In fact, in 413 months out of the 414 months included in the analysis, the water temperatures at Bend Bridge and Jelly’s Ferry would be essentially equivalent to or less than water temperatures under the existing condition (Technical Appendix A-469 to A-480 and A-457 to A-468). Further, there would not be any additional occurrences of water temperatures in the Sacramento River above 56°F under the Specific Plan initial surface water supply, relative to the existing condition, at either Bend Bridge or Jelly’s Ferry (Technical Appendix A-469 to A-480 and A-457 to A-468).

For spring-run Chinook salmon, the long-term average annual early lifestage survival in the Sacramento River would be 87.5% under the existing condition and 87.4% under the Specific Plan initial surface water supply (Template Output B-469). There would not be substantial decreases in absolute annual early-lifestage survival of spring-run Chinook salmon in any individual year of the 69-year period of record. The mean long-term average relative percent change in early-lifestage survival would only decrease by 0.6%, relative to early-lifestage survival under the existing condition. The long-term average relative percent change in early lifestage survival is primarily due to one individual year of the 69-year period of record included in the simulation. For the year 1933, the estimated absolute survival under the existing condition is 1.8% and under the proposed Specific Plan initial surface water supply is 1.1%. Therefore, the absolute difference between the proposed Specific Plan initial surface water supply and the existing condition is only 0.7%. However, because early-lifestage survival would be low under the existing condition for this particular year, the relatively small absolute change in early lifestage survival translates into a large (i.e., 38.9%) relative change in early lifestage survival. Excluding this year, there would be no change in mean long-term average relative percent change for the remaining 68 years included in the simulation.

Based on these modeling results, potential water temperature changes in the Sacramento River resulting from the implementation of the Specific Plan initial surface water supply are not of sufficient frequency or magnitude to adversely affect spring-run Chinook salmon spawning and incubation. Therefore, changes in Sacramento River water temperatures during August through January under the Specific Plan initial surface water supply would result in a less than significant impact to spawning and incubation success of spring-run Chinook salmon, relative to the existing condition.

Flow-Related Impacts to Spring-Run Chinook Salmon Juvenile Rearing and Emigration (December through April). Under the Specific Plan initial surface water supply, the long-term average flow in the Sacramento River below Keswick Dam would be within 0.1% of flows modeled under the existing condition during the December through April period (Template Output B-141). In 345 out of 350 months simulated, the flow below Keswick Dam under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition (Technical Appendix A-351 to A-355). Flow exceedance curves during the December through April period for the Sacramento River below Keswick Dam indicate that flows below Keswick Dam under the Specific Plan initial surface water supply would be nearly identical to flows under the existing condition. Therefore, flows modeled under the Specific Plan initial surface
Long-term average flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not differ from flows modeled under the existing condition throughout the December through April period (Template Output B-147). Monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 347 out of 350 months modeled for the December through April period (Technical Appendix A-387 to A-391).

Overall, flows in the Sacramento River below Keswick Dam and at Freeport would not differ substantially under the Specific Plan initial surface water supply, relative to the existing condition. Potential flow decreases, which could result in a reduction in juvenile spring-run Chinook salmon spawning habitat, would not be greater than 0.1 percent during the December through April period under the Specific Plan initial surface water supply. Slight increases in simulated flows under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to juvenile spring-run Chinook salmon emigration. Therefore, potential flow-related impacts to spring-run Chinook salmon juvenile rearing and emigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Spring-Run Chinook Salmon Juvenile Rearing and Emigration (December through April).** Modeling associated with the Specific Plan initial surface water supply indicates that the long-term average water temperature at Bend Bridge would not change during any month of the December through August period, compared to the existing condition (Template Output B-307). Monthly mean water temperature in the Sacramento River at Bend Bridge would not increase more than 0.1°F, relative to the existing condition, in any month of the December through April period (Technical Appendix A-471 to A-475). Further, the Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F for each month of the December through April period (Technical Appendix A-471 to A-475).

Long-term average water temperatures under the Specific Plan initial surface water supply at Jelly’s Ferry in the Sacramento River would not differ from those modeled under the existing condition throughout the December through April period (Template Output B-314). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in all 345 months modeled for the December through April period (Technical Appendix A-459 to A-463). Further, the Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F at Jelly’s Ferry in the Sacramento River, relative to the existing condition, for any month modeled throughout the juvenile rearing and emigration period (Technical Appendix A-459 to A-463).

Similarly, long-term average water temperatures under the Specific Plan initial surface water supply at Freeport in the Sacramento River would not differ from those under the existing condition, relative to the existing condition.
condition throughout the December through April period (Template Output B-321). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 345 out of 345 months modeled for the December through April period (Technical Appendix A-483 to A-487). Further, the Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F at Freeport in the Sacramento River, relative to the existing condition, for any month modeled throughout the juvenile rearing and emigration period (Technical Appendix A-483 to A-487).

Overall, the Specific Plan initial surface water supply would result in negligible changes in Sacramento River water temperatures at Bend Bridge, Jelly’s Ferry, and Freeport throughout the December through April period. Changes in water temperatures under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect spring-run Chinook salmon juvenile rearing or emigration. In addition, there would be no increase in the frequency in which water temperatures at Bend Bridge, Jelly’s Ferry, or Freeport would exceed the upper end of the suitable range of water temperatures for juvenile Chinook salmon rearing. Therefore, potential impacts to spring-run Chinook salmon juvenile rearing and emigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Mitigation Measure

No mitigation measures are required.

**4.4-44 The Specific Plan could cause impacts to fall-run Chinook salmon and steelhead in the Sacramento River.**

**Flow-Related Impacts to Fall-Run Chinook Salmon/Steelhead Adult Immigration (September through November).** The long-term average flow in the Sacramento River below Keswick Dam would increase by a maximum of 0.1% (i.e., 7 cfs) under the Specific Plan initial surface water supply, compared to the existing condition, during all months of the adult immigration period (September through November). Under the Specific Plan initial surface water supply, Sacramento River flows below Keswick Dam would be essentially equivalent to those under the existing condition in 209 out of 210 months simulated in this period (Technical Appendix A-349 to A-360).

Long-term average flow under the Specific Plan initial surface water supply in the Sacramento River at Freeport would not differ from flows modeled under the existing condition throughout the September through November period (Template Output B-147). Monthly mean flows under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 209 out of 210 months modeled for the September through November period (Technical Appendix A-385 to A-396).

Overall, potential changes in flows in the Sacramento River under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse
effects to fall-run Chinook salmon and steelhead adult immigration. Therefore, potential impacts to fall-run Chinook salmon and steelhead adult immigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Fall-Run Chinook Salmon/Steelhead Adult Immigration (September through November).** The long-term average water temperatures modeled for the Specific Plan initial surface water supply would not differ from those under the existing condition at Bend Bridge in the Sacramento River during all months of the September through November adult immigration period (Template Output B-307). Similarly, at Jelly’s Ferry, long-term average water temperatures in the Sacramento River would not differ between the Specific Plan initial surface water supply and existing condition during all months of the September through November period (Template Output B-314). Moreover, under the Specific Plan initial surface water supply, water temperatures in the Sacramento River at Bend Bridge would remain essentially equivalent to those under the existing condition in 206 of 207 months included in the analysis (Technical Appendix A-469 to A-480). Monthly mean water temperatures at Jelly’s Ferry under the Specific Plan initial surface water supply would remain essentially equivalent to the existing condition in 206 of the 207 months included in the analysis (Technical Appendix A-457 to A-468).

Long-term average water temperatures under the Specific Plan initial surface water supply at Freeport in the Sacramento River would not differ from those modeled under the existing condition throughout the September through November period (Template Output B-321). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 207 of 207 months modeled for the September through November period (Technical Appendix A-481 to A-492). The Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F at Freeport in the Sacramento River, relative to the existing condition, for any month modeled throughout the fall-run Chinook salmon and steelhead adult immigration period (Technical Appendix A-481 to A-492).

Overall, changes in Sacramento River water temperatures throughout the September through November period under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to fall-run Chinook salmon and steelhead adult immigration. Therefore, potential temperature-related impacts to fall-run Chinook salmon and steelhead adult immigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Flow-Related Impacts to Fall-Run Chinook Salmon Spawning and Incubation (October through February).** The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would differ by less than 0.1% from flows under the existing condition during all months of the October through February period (Template Output B-141). Monthly mean flows under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition in 346 of the 350 months simulated for the October through February period (Technical Appendix A-349 to A-353).
The exceedance curves demonstrate that flows under the Specific Plan initial surface water supply would be essentially identical to those under the existing condition (Template Output B-138 and B-139). Therefore, reductions in flow that could potentially reduce the amount of available Chinook salmon spawning habitat, which could result in increased redd superimposition during years when adult returns are high enough for spawning habitat to be limiting, would not be likely to occur under the Specific Plan initial surface water supply, relative to the existing condition.

The Specific Plan initial surface water supply would result in negligible changes in lower Sacramento River flows at Freeport during the October through February period. The greatest decrease in long-term average flow under the Specific Plan initial surface water supply in the Sacramento River at Freeport would be eight cfs, relative to flows under the existing condition from October through February (Template Output B-147). Monthly mean flows under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 346 out of 350 months modeled for the October through February period (Technical Appendix A-385 to A-389).

Overall, changes in Sacramento River flows below Keswick Dam and at Freeport under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse flow-related effects to fall-run Chinook salmon spawning and incubation. Therefore, potential flow-related impacts to fall-run Chinook salmon spawning under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Fall-Run Chinook Salmon Spawning and Incubation (October through February).** Under the Specific Plan initial surface water supply, the long-term average water temperatures would not differ from those modeled under the existing condition during the October through February period at Bend Bridge and Jelly’s Ferry (Template Output B-307 and B-314). In fact, in 345 out of the 345 months included in the analysis, the water temperatures at these locations under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition (Technical Appendix A-457 to A-461 and A-469 to A-473). At Freeport in the lower Sacramento River, long-term average water temperatures under the Specific Plan initial surface water supply would not differ from those water temperatures under the existing condition (Template Output B-321). Monthly mean water temperatures under the Specific Plan initial surface water supply at this location would be essentially equivalent to those under the existing condition in 345 months out of the 345 months modeled for the October through February period (Technical Appendix A-481 to A-485).

Under the Specific Plan initial surface water supply, there would not be any additional occurrences of water temperatures in the Sacramento River at Bend Bridge or Jelly’s Ferry above 56°F, relative to the existing condition, in any month of the October through February period (Technical Appendix A-457 to A-461 and A-469 to A-473). Further, water temperatures at Bend Bridge and Jelly’s Ferry during December, January, and February would be below 56°F in all 69 years modeled under both the Specific Plan initial surface water supply and existing
condition (Technical Appendix A-457 to A-461 and A-469 to A-473). Similarly, at Freeport in the lower Sacramento River, monthly mean water temperatures under the Specific Plan initial surface water supply would not exceed 56°F more frequently than under the existing condition (Technical Appendix A-481 to A-485).

The long-term average annual early lifestage survival for fall-run Chinook salmon in the Sacramento River would be 89.6% under the existing condition and 89.6% under the Specific Plan initial surface water supply (Template Output B-469). The annual survival estimates for each year of the 69 years modeled indicates substantial increases or decreases in survival would not occur in any individual year of the 69-year simulation. Reductions in annual early lifestage survival of 0.1% to 0.9%, relative to the existing condition, would occur in 12 years of the 69-year simulation. In 9 of these years, relative reductions in survival would be 0.1%, relative to the existing condition (Technical Appendix A-566).

Based on these modeling results, small temperature changes in the Sacramento River resulting from the implementation of the Specific Plan initial surface water supply during the October through February period would not be of sufficient frequency or magnitude to result in adverse effects to fall-run Chinook salmon spawning, incubation, and annual early lifestage survival. Therefore, potential water temperature changes in the Sacramento River resulting from the implementation of the Specific Plan initial surface water supply would result in less than significant impacts to fall-run Chinook salmon spawning and incubation, relative to the existing condition.

**Flow- and Temperature-related Impacts to Steelhead Adult Immigration, Spawning, and Incubation (December through March).** Monthly mean flows below Keswick Dam and at Freeport in the Sacramento River under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition for 276 and 277 months, respectively out of 280 months included in the analysis (Technical Appendix A-351 to A-354 and A-387 to A-390). Additionally, monthly mean water temperatures under the Specific Plan initial surface water supply at Bend Bridge and Jelly’s Ferry would be essentially equivalent to flows under the existing condition for 276 of the 276 months included in the analysis (Technical Appendix A-471 to A-474 and A-459 to A-462). Similarly, monthly mean water temperatures at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition in 276 of the 276 months included in the analysis (Technical Appendix A-483 to A-486).

Under the Specific Plan initial surface water supply, the frequency in which water temperatures at Bend Bridge or Jelly’s Ferry in the Sacramento River would exceed 56°F would not increase, relative to the existing condition, throughout the December through March period (Technical Appendix A-471 to A-474 and A-459 to A-462). Similarly, at Freeport, the Specific Plan initial surface water supply would not result in additional exceedances of 56°F in any month modeled for the December through March period (Technical Appendix A-483 to A-486).

Steelhead survival cannot be estimated under the Specific Plan initial surface water supply or existing condition, because a steelhead mortality model has not been developed for the
Sacramento River. For late fall-run Chinook salmon in the Sacramento River, the long-term average annual early lifestage survival would be 99.1% under both the existing condition and Specific Plan initial surface water supply (Template Output B-469). The annual survival estimates for late fall-run Chinook salmon in the Sacramento River for the 69 years modeled indicates substantial increases or decreases in survival would not occur in any individual year of the 69-year simulation, relative to the existing condition. In 67 out of the 69 years modeled, there would be no difference in annual early lifestage survival of late-fall-run Chinook salmon between the Specific Plan initial surface water supply and the existing condition. In 1 of the 69 years modeled, a relative decrease would occur in the Specific Plan initial surface water supply, relative to the existing condition, but would not be greater than 0.1% in any of the 69 years modeled. In 1 of the 69 years modeled, a relative increase would occur in the Specific Plan initial surface water supply, relative to the existing condition, but would not be greater than 0.1 percent in any of the 69 years modeled (Technical Appendix A-567). Thus, changes in late fall-run Chinook salmon survival under the Specific Plan initial surface water supply would be negligible, relative to the existing condition. Consequently, it is not anticipated that detectable decreases in average early lifestage steelhead survival would occur under the Specific Plan initial surface water supply.

Overall, there would be no detectable change to monthly mean flows or water temperatures in the upper or lower Sacramento River under the Specific Plan initial surface water supply, relative to the existing condition. Consequently, flow- and temperature-related changes under the Specific Plan initial surface water supply during the steelhead adult immigration, spawning, and incubation period represent a less than significant impact, relative to the existing condition.

**Flow-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing and Emigration (February through June).** Under the Specific Plan initial surface water supply, the long-term average flow below Keswick Dam would be within 0.1% of flows modeled under the existing condition during the February through June period (Template Output B-141). In 347 out of 350 months simulated, the monthly mean flow below Keswick Dam under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition (Technical Appendix A-353 to A-357). Flow exceedance curves for the Sacramento River below Keswick Dam during the February through June period indicate that flows in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would be nearly identical to flows under the existing condition (Template Output B-139 and B-140).

Long-term average flow under the Specific Plan initial surface water supply in the Sacramento River at Freeport would not differ substantially from flows under the existing condition during the February through June period (Template Output B-139 to B-140). Monthly mean flows under the Specific Plan initial surface water supply would be essentially equivalent to or less than flows under the existing condition in 348 out of 350 months modeled for the February through June period (Technical Appendix A-389 to A-393). Exceedance curves for the Sacramento River flows at Freeport indicate that flows under the Specific Plan initial surface water supply would be nearly identical to those under the existing condition, throughout the February through June period (Template Output B-145 to B-146).
Overall, the slight decreases in flow that would occur under the Specific Plan initial surface water supply would not occur with sufficient frequency or magnitude to result in adverse effects to long-term juvenile fall-run Chinook salmon or steelhead rearing success, and are not likely to result in adverse effects to juvenile emigration, relative to the existing condition. Therefore, the Specific Plan initial surface water supply would result in less than significant impacts to juvenile rearing and emigration of fall-run Chinook salmon and steelhead in the Sacramento River.

**Temperature-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing and Emigration (February through June).** Modeling associated with the Specific Plan initial surface water supply indicates that simulated long-term average water temperature at Bend Bridge would not change during any month of the February through June period, compared to the existing condition (Template Output B-307). Monthly mean water temperatures in the Sacramento River at Bend Bridge under the Specific Plan initial surface water supply would not increase in any of the 345 months simulated for the February through June period (Technical Appendix A-473 to A-477). Further, there would not be any additional occurrences under the Specific Plan initial surface water supply in which water temperatures would be above 65°F at Bend Bridge, relative to the existing condition (Technical Appendix A-473 to A-477).

Long-term average water temperatures under the Specific Plan initial surface water supply at Jelly’s Ferry in the Sacramento River would not differ from those under the existing condition throughout the February through June period (Template Output B-314). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 345 out of 345 months modeled for the February through June period (Technical Appendix A-461 to A-465). The Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F at Jelly’s Ferry in the Sacramento River, relative to the existing condition, for any month modeled throughout the juvenile rearing and emigration period (Technical Appendix A-461 to A-465).

Long-term average water temperatures under the Specific Plan initial surface water supply at Freeport in the Sacramento River would be nearly identical to those under the existing condition throughout the February through June period (Template Output B-321). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 345 out of 345 months modeled for the February through June period (Technical Appendix A-485 to A-489). Further, the Specific Plan initial surface water supply would result in no additional months in which monthly mean water temperatures would exceed 65°F at Freeport in the Sacramento River, relative to the existing condition, for all months simulated throughout the juvenile rearing and emigration period (Technical Appendix A-485 to A-489).

Overall, changes in Sacramento River water temperatures at Bend Bridge, Jelly’s Ferry, and Freeport under the Specific Plan initial surface water supply throughout the February through June period would be negligible, relative to the existing condition. Therefore, potential changes
to water temperatures under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect rearing and emigration and would result in less than significant impacts to fall-run Chinook salmon and steelhead juvenile rearing and emigration, relative to the existing condition.

**Flow-Related Impacts to Steelhead Juvenile Over-Summer Rearing (July through September).** Under the Specific Plan initial surface water supply, the long-term average flow in the Sacramento River below Keswick Dam would not decrease by more than three cfs for any month of the July through September period, relative to the existing condition (Template Output B-141). Monthly mean flows under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 209 out of 210 months simulated (Technical Appendix A-358 to A-360).

Long-term average flow under the Specific Plan initial surface water supply in the Sacramento River at Freeport would decrease by four cfs during July and increase by one to two cfs during the August and September period, relative to the existing condition (Template Output B-147). Monthly mean flows at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 210 out of 210 months modeled for the March through September period (Technical Appendix A-394 to A-396). Any changes in flows at Freeport would not be of sufficient magnitude to result in adverse effects to juvenile steelhead over-summering rearing.

Overall, changes in flows under the Specific Plan initial surface water supply at Keswick or Freeport would not be of sufficient frequency or magnitude to result in adverse effects to long-term juvenile rearing success of over-summering steelhead. Therefore, flow-related impacts to juvenile rearing under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Steelhead Over-Summer Rearing (July Through September).** The long-term average water temperature under the Specific Plan initial surface water supply at Bend Bridge, Jelly’s Ferry, and Freeport would be within 0.1°F of long-term average water temperatures under the existing condition during July, August, and September (Template Output B-307, B-314, and B-321, respectively). Water temperatures at Bend Bridge would be essentially equivalent to those under the existing condition in 206 out of the 207 months simulated in this three-month period (Technical Appendix A-478 to A-480). At Jelly’s Ferry, Sacramento River water temperatures under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 206 of the 207 months simulated for the July through September period (Technical Appendix A-466 to A-468). Monthly mean water temperatures at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 207 of 207 months simulated for the juvenile steelhead over-summer rearing period (Technical Appendix A-490 to A-492). The Specific Plan initial surface water supply would not result in additional occurrences of water temperatures exceeding 65°F during any month modeled for the July through September period at Bend Bridge, Jelly’s Ferry, or Freeport in the Sacramento River,
relative to the existing condition (Technical Appendix A-478 to A-480, A-466 to A-468, and A-490 to A-492).

Overall, potential changes in water temperature that may occur under the Specific Plan initial surface water supply would be negligible, relative to the existing condition. Therefore, potential changes in water temperatures would not be of sufficient frequency or magnitude to result in adverse effects to juvenile steelhead over-summer rearing. Consequently, potential impacts to juvenile steelhead over summer rearing under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Mitigation Measure**

No mitigation measures are required.

4.4-45 The Specific Plan could cause impacts to late fall-run Chinook salmon in the Sacramento River.

**Flow-Related Impacts to Late Fall-Run Chinook Salmon Adult Immigration and Holding (October through April).** The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would not differ by more than 0.1% from flows modeled under the existing condition, during all months of the adult immigration period (October through April) (Template Output B-141). In 484 of the 490 months simulated in this period, the flow in the Sacramento River below Keswick Dam would be essentially equivalent to flows under the existing condition (Technical Appendix A-349 to A-355).

Long-term average flow in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not substantially differ from flows under the existing condition during October through April (Template Output B-147). Monthly mean flow in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 486 out of 490 months modeled for the October through April period (Technical Appendix A-385 to A-391).

The difference in Sacramento River flow below Keswick Dam and at Freeport that would occur under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to attraction of adult late fall-run Chinook salmon immigrating into the Sacramento River. Therefore, potential changes in flows under the Specific Plan initial surface water supply would result in a less than significant impact to immigration of late fall-run Chinook salmon immigration and holding.

**Temperature-Related Impacts to Late Fall-Run Chinook Salmon Adult Immigration and Holding (October through April).** The long-term average water temperatures in the Sacramento River modeled for the Specific Plan initial surface water supply would not differ from those under the existing condition at the Bend Bridge and Jelly’s Ferry during all months of the October through April adult immigration period (Template Output B-307 and B-314). Moreover, under the Specific Plan initial surface water supply, water temperatures in the Sacramento River at Bend
Bridge would remain essentially equivalent to those under the existing condition in all 483 months included in the analysis (Technical Appendix A-469 to A-475). Water temperatures at Jelly’s Ferry under the Specific Plan initial surface water supply would remain essentially equivalent to those simulated under the existing condition in all 483 months included in the analysis (Technical Appendix A-457 to A-463).

October through April water temperatures in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not differ from those water temperatures modeled under the existing condition (Template Output B-321). Further, water temperatures in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to water temperatures under the existing condition in all of the 483 months modeled for the October through April period (Technical Appendix A-486 to A-492).

Overall, changes in water temperatures in the Sacramento River under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to late-fall-run Chinook salmon adult immigration and holding. Therefore, impacts to late-fall-run Chinook salmon adult immigration and holding under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Flow-Related Impacts to Late Fall-Run Chinook Salmon Spawning and Incubation (December through April). The long-term average flow in the Sacramento River below Keswick Dam under the Specific Plan initial surface water supply would be not differ by more than 0.1% from the flows under the existing condition during all months of the December through April period (Template Output B-141). In 345 out of 360 months simulated during this period, Sacramento River flow below Keswick Dam would be essentially equivalent to flows under the existing condition (Technical Appendix A-351 to A-355).

Exceedance curves for the Sacramento River below Keswick Dam for the December through April period demonstrate that flows under the Specific Plan initial surface water supply would be similar to those under the existing condition at all flow ranges (Template Output B-138 to B-139). Differences in flows in lower flow ranges would be more crucial for salmon survival. Reductions in flows in lower flow ranges could potentially reduce the amount of available late-fall-run Chinook salmon spawning habitat, which could result in increased redd superimposition during years when adult returns are high enough for spawning habitat to be limiting. However, the Specific Plan initial surface water supply would not likely result in reductions in flows during the December through April spawning period, relative to the existing condition.

Long-term average flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would not substantially differ to flows under the existing condition from December through April. (Template Output B-147). Throughout the December through April period, monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 347 out of 350 months modeled (Technical Appendix A-387 to A-391).
Overall, changes in flow in the Sacramento River would not be of sufficient frequency or magnitude to result in adverse impacts to long-term initial year-class strength of Sacramento River late-fall-run Chinook salmon. Thus, potential impacts to late fall-run Chinook salmon in the Sacramento River under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Late Fall-Run Chinook Salmon Spawning and Incubation (December through April).** Under the Specific Plan initial surface water supply, long-term average water temperatures would not differ from those under the existing condition during the December through April period at Bend Bridge and Jelly’s Ferry (Template Output B-307 and B-314). In fact, in 345 of the 345 months included in the analysis, the water temperatures at Bend Bridge and Jelly’s Ferry, respectively, would be essentially equivalent to water temperatures under the existing condition (Technical Appendix A-471 to A-475 and A-459 to A-463). Further, there would not be any additional occurrences of water temperatures in the Sacramento River above 56°F under the Specific Plan initial surface water supply, relative to the existing condition, at either Bend Bridge or Jelly’s Ferry (Technical Appendix A-471 to A-475 and A-459 to A-463).

The long-term average annual early lifestage survival for late fall-run Chinook salmon in the Sacramento River would be 99.1% under both the existing condition and Specific Plan initial surface water supply (Template Output B-469). The annual survival estimates for late fall-run Chinook salmon in the Sacramento River for the 69 years modeled indicates that substantial increases or decreases in survival would not occur in any individual year of the 69-year simulation, relative to the existing condition (Technical Appendix A-567). In 67 out of the 69 years modeled, there would be no difference in annual early lifestage survival of late fall-run Chinook salmon between the Specific Plan initial surface water supply and the existing condition. In 1 of the 69 years modeled, a relative decrease would occur in the Specific Plan initial surface water supply, relative to the existing condition, but would not be greater than 0.1% in any of the 69 years modeled (Technical Appendix A-567). Thus, decreases in late fall run Chinook salmon survival under the Specific Plan initial surface water supply would be negligible, relative to the existing condition.

Based on these modeling results, potential water temperature changes in the Sacramento River resulting from the implementation of the Specific Plan initial surface water supply are not of sufficient frequency or magnitude to adversely affect late fall-run Chinook salmon spawning and incubation. Therefore, changes in Sacramento River water temperatures during December through April under the Specific Plan initial surface water supply would result in a less than significant impact to spawning and incubation success of late fall-run Chinook salmon, relative to the existing condition.

**Flow-Related Impacts to Late Fall-Run Chinook Salmon Juvenile Rearing and Emigration (April through October).** Under the Specific Plan initial surface water supply, the long-term average flow in the Sacramento River below Keswick Dam would not differ by greater than 0.1% from flows modeled under the existing condition during the April through October period (Template Output B-141). In 487 out of 490 months simulated, the flow below Keswick Dam under the
Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition (Technical Appendix A-349 to A-360). Flow exceedance curves during the April through October period for the Sacramento River below Keswick Dam indicate that flows below Keswick Dam under the Specific Plan initial surface water supply would be nearly identical to flows under the existing condition (Template Output B-138 to B-140). Therefore, flows modeled under the Specific Plan initial surface water supply would not be likely to result in adverse effects to long-term juvenile late fall-run Chinook salmon rearing and emigration.

Long-term average flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent, relative to the existing condition. The greatest increase in flows under the Specific Plan initial surface water supply would be five cfs, relative to the existing condition during the April through October period (Template Output B-147). Monthly mean flows in the Sacramento River at Freeport under the Specific Plan initial surface water supply would be essentially equivalent to flows under the existing condition in 489 out of the 490 months modeled for the April through October period (Technical Appendix A-385 to A-396).

Overall, flows in the Sacramento River below Keswick Dam and at Freeport would not differ substantially under the Specific Plan initial surface water supply, relative to the existing condition. Potential flow decreases, which could result in a reduction in juvenile late-fall-run Chinook salmon spawning habitat, would not be greater than 0.1 percent during the April through October period under the Specific Plan initial surface water supply. Increases in simulated flows under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to juvenile late fall-run Chinook salmon emigration. Therefore, potential flow-related impacts to late fall-run Chinook salmon juvenile rearing and emigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

**Temperature-Related Impacts to Late Fall-Run Chinook Salmon Juvenile Rearing and Emigration (April through October).** Modeling associated with the Specific Plan initial surface water supply indicates that the long-term average water temperature at Bend Bridge would not change by greater than 0.1°F during any month of the April through October period, compared to the existing condition (Template Output B-307). Monthly mean water temperature in the Sacramento River at Bend Bridge would be essentially equivalent to those under the existing condition in 482 of the 483 months of the April through October period (Technical Appendix A-469 to A-480). Further, the Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F for each month of the April through October period (Technical Appendix A-469 to A-480).

Long-term average water temperatures under the Specific Plan initial surface water supply at Jelly’s Ferry in the Sacramento River would not change during any month, relative to the existing condition throughout the April through October period (Template Output B-314). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in 482 out of 483 months modeled for the April through October period (Technical Appendix A-457 to A-468).
Further, the Specific Plan initial surface water supply would not result in an increase in the frequency in which monthly mean water temperatures would exceed 65°F at Jelly’s Ferry in the Sacramento River, relative to the existing condition, for any month modeled throughout the juvenile rearing and emigration period (Technical Appendix A-457 to A-468).

Similarly, long-term average water temperatures under the Specific Plan initial surface water supply at Freeport in the Sacramento River would not change during any month, relative to the existing condition throughout the April through October period (Template Output B-321). Monthly mean water temperatures at this location under the Specific Plan initial surface water supply would be essentially equivalent to those under the existing condition in all 483 months modeled for the April through October period (Technical Appendix A-481 to A-492). Further, the Specific Plan initial surface water supply would not result in any additional occurrence in which monthly mean water temperatures would exceed 65°F at Freeport in the Sacramento River, relative to the existing condition (Technical Appendix A-481 to A-492).

Overall, the Specific Plan initial surface water supply would result in negligible changes in Sacramento River water temperatures at Bend Bridge, Jelly’s Ferry, and Freeport throughout the April through October late fall-run Chinook salmon juvenile rearing and emigration period. Changes in water temperatures under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect late fall-run Chinook salmon juvenile rearing or emigration. Therefore, potential impacts to late fall-run Chinook salmon juvenile rearing and emigration under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-46 The Specific Plan could cause impacts to splittail in the Sacramento River.

Under the Specific Plan initial surface water supply, the long-term average flow at Freeport during the period of February through May would be essentially equivalent to flows under the existing condition (Template Output B-147). In 278 of the 280 months simulated for this period, flows would be essentially equivalent to flows under the existing condition (Technical Appendix A-389 to A-392). Therefore, flow reductions that could potential reduce the availability of inundated habitat for splittail spawning would be unlikely to occur under the Specific Plan initial surface water supply.

During the February through May period, water temperatures at Freeport would not rise above 68°F, the upper end of the reported preferred range for splittail spawning, more frequently as a result of the Specific Plan initial surface water supply, relative to the existing condition (Technical Appendix A-485 to A-488). Overall, potential flow and water temperature changes resulting from the implementation of the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to splittail spawning. Therefore,
impacts to splittail in the Sacramento River under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-47 The Specific Plan could cause impacts to American shad in the Sacramento River.

The long-term average flow in the Sacramento River at Freeport would not differ substantially from long-term average flows under the existing condition in May and June (Template Output B-147). Similarly, monthly mean flows under the Specific Plan initial surface water supply during May and June would be essentially equivalent to those under the existing condition in all 140 months simulated for this period (Technical Appendix A-392 to A-393). While flow reductions could potentially reduce the number of adult shad attracted into the river, the Specific Plan initial surface water supply would not result in detectable reductions in flows during May or June, relative to the existing condition.

The number of years that monthly mean water temperatures at Freeport in May and June would be within the reported preferred range for American shad spawning of 60°F to 70°F would not differ under the Specific Plan initial surface water supply, relative to the existing condition (Technical Appendix A-488 to A-489). Therefore, the frequency with which suitable temperatures for American shad spawning would occur would not change under the Specific Plan initial surface water supply, relative to the existing condition.

Overall, changes in flows and water temperatures at Freeport in the lower Sacramento River would not be of sufficient frequency or magnitude to result in adverse effects to American shad spawning. Therefore, impacts to American shad in the Sacramento River would be less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-48 The Specific Plan could cause impacts to striped bass in the Sacramento River.

The long-term average flow in the Sacramento River at Freeport would not differ substantially from long-term average flows under the existing condition in the March through June period (Template Output B-147). Similarly, monthly mean flows under the Specific Plan initial surface water supply during May through June would be essentially equivalent to those under the existing condition in all 140 months simulated for this period (Technical Appendix A-392 to A-393).

The frequency that monthly mean water temperatures would be within the reported preferred range for striped bass spawning and initial rearing of 59°F to 68°F would not differ under the
Specific Plan initial surface water supply, relative to the existing condition, throughout the May through June period (Technical Appendix A-486 to A-489). Therefore, water temperatures in Sacramento River under the Specific Plan initial surface water supply would not adversely affect striped bass spawning and initial rearing, relative to the existing condition.

Overall, changes in flows and water temperatures at Freeport in the Sacramento River would not be of sufficient frequency or magnitude to result in adverse effects to striped bass spawning and initial rearing. Therefore, impacts to striped bass in the Sacramento River would be less than significant, relative to the existing condition.

**Mitigation Measures**

No mitigation measures are required.

**4.4-49 The Specific Plan could cause impacts to Oroville Reservoir’s warmwater fisheries.**

Hydrologic conditions under the Specific Plan initial surface water supply would result in a minimal difference in the long-term average end-of-month water surface elevation in Oroville Reservoir during the March through September period (when warmwater fish spawning and initial rearing occurs). The average end-of-month elevation would be the same in all months of the March through September period under the Specific Plan initial surface water supply and existing conditions (Technical Appendix A-585 to A-591). End-of-month water surface elevation at Oroville Reservoir would be essentially equivalent to the existing condition for 490 months of the 490 months included in the analysis (Technical Appendix A-585 to A-591).

Changes in water surface elevation in Oroville Reservoir during the March through September period would result in corresponding changes in the availability of reservoir littoral habitat containing inundated terrestrial vegetation (willows and button brush). Such shallow, nearshore waters containing physical structure are important to producing and maintaining strong year-classes of warmwater fish annually. However, the frequency of reductions in water surface elevation under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to result in reductions in the long-term availability of littoral habitat. Further, the small and infrequent reduction in the water surface elevation that would occur under the Specific Plan initial surface water supply would not be of sufficient magnitude to substantially reduce the amount of available littoral habitat and long-term, average initial year-class strength of the warmwater fish populations. Consequently, reductions in water surface elevation would constitute a less than significant impact to Oroville Reservoir warmwater fish rearing.

In addition, the Specific Plan initial surface water supply could alter the extent to which water surface elevations in Oroville Reservoir change during each month of the primary warmwater fish-spawning period (March through July). Adverse effects to spawning from nest-dewatering are assumed to have the potential to occur when reservoir elevation decreases by more than nine feet within a given month. Modeling results indicate that the frequency with which potential nest-dewatering events could occur in Oroville Reservoir would not increase under the Specific
Plan initial surface water supply, compared to the existing condition, during any month of the March through July spawning period (Technical Appendix A-585 to A-589). As the frequency with which potential nest-dewatering events could occur in Oroville Reservoir would not change during any month of the March through July warmwater fish-spawning period, effects to warmwater fish nesting success under the Specific Plan initial surface water supply would be considered less than significant.

In summary, the Specific Plan initial surface water supply is not likely to result in changes in the availability of littoral habitat at Oroville Reservoir, and is not likely to result in an increase in the frequency of potential nest-dewatering events. Therefore, overall, impacts to Oroville Reservoir warmwater fisheries would be considered less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-50 The Specific Plan could cause impacts to Oroville Reservoir’s coldwater fisheries.

Long-term average end-of-month storage under the Specific Plan initial surface water supply would not decrease detectably, relative to the existing condition, during the April through November period, when the reservoir thermally stratifies (Technical Appendix A-121 to A-122 and A-127 to A-132). Oroville Reservoir monthly mean end-of-month storage under the Specific Plan initial surface water supply would be essentially equivalent to the existing condition for 560 of the 560 months for the April through November period (Technical Appendix A-121 to A-122 and A-127 to A-132). On a monthly mean basis, the largest difference between end-of-month storage out of the 560 months simulated would be 4 TAF, a less than 0.2% difference (Technical Appendix A-121 to A-122 and A-127 to A-132). Anticipated reductions in reservoir storage that would occur under the Specific Plan initial surface water supply would not be of sufficient magnitude to adversely affect the reservoir's coldwater fisheries because coldwater habitat would remain available within the reservoir during all months of all years, physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations, and anticipated seasonal reductions in storage would not be expected to adversely affect the primary prey species used by coldwater fish. Therefore, potential impacts to Oroville Reservoir coldwater fisheries under the Specific Plan initial surface water supply would be less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-51 The Specific Plan could cause impacts to Delta fish populations.

Delta outflow is considered to have a substantial effect on a number of fish species relying on Delta habitats for one or more of their lifestages. Reductions in the long-term average Delta
outflow at a maximum of up to eight cfs for any given month could occur under the proposed Specific Plan initial surface water supply relative to the existing condition (Template Output B-413). Delta outflow during the period of February through June is believed to be of greatest concern for potential effects to spawning and rearing habitat and downstream transport flows for delta smelt, longfin smelt, splittail, striped bass, salmonids, and other aquatic species in the Delta. Throughout the entire 70-year period of record included in the analysis, Delta outflow reductions of more than 1.1% would not occur during any of the individual months (out of 350 months) under the proposed Specific Plan initial surface water supply, relative to the existing condition (Technical Appendices A-1 to A-12).

Under the proposed Specific Plan initial surface water supply, there would be no substantial shift in the long-term monthly average position of X2 in any given month, relative to the existing condition (Template Output B-429). Furthermore, during the February through June period, considered important for providing appropriate spawning and rearing conditions and downstream transport flows for various fish species, the maximum upstream shift for any individual month of any year in the position of X2 would be 0.1 km for the proposed Specific Plan initial surface water supply, relative to the existing condition (Technical Appendices A-13 to A-24).

The model simulations conducted for the proposed Specific Plan initial surface water supply included conformance with X2 requirements set forth in the SWRCB Interim Water Quality Control Plan. Also, the Delta export-to-inflow ratios under the proposed Specific Plan initial surface water supply would not exceed the maximum export ratio as set by the SWRCB Interim Water Quality Control Plan. In addition, the decreases in Delta outflow and the shifts in the position of X2 under the Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect Delta fish resources, relative to the existing condition. Overall, impacts to Delta fish populations would, therefore, be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-52 The Specific Plan could cause impacts to Folsom Reservoir’s warmwater fisheries.

Hydrologic conditions under the proposed Specific Plan initial surface water supply would result in almost no difference in the long-term average end-of-month water surface elevation in Folsom Reservoir during the March through September period (when warmwater fish spawning and initial rearing occurs) (Template Output B-485). End-of-month water surface elevation at Folsom Reservoir would be essentially equivalent to the existing condition for all months of the 490 months included in the analysis (Technical Appendices A-198 to A-204). For the entire 70-year period of record, the largest single difference in end-of-month water surface elevation (out of 490 months) during the March through September season would be a one-foot decrease, relative to the existing condition (Technical Appendices A-198 to A-204).

Changes in water surface elevation in Folsom Reservoir during the March through September period could result in measurable corresponding changes in the availability of reservoir littoral
habitat containing inundated terrestrial vegetation (willows and button brush). Such shallow, near shore waters containing physical structure are important to producing and maintaining strong year-classes of warmwater fish annually. However, the difference in the long-term monthly average amount of littoral habitat potentially available to warmwater fish for spawning and/or rearing in Folsom Reservoir during the March through September period attributable to the proposed Specific Plan initial surface water supply is estimated to be 0.6% or less, relative to the existing condition (Template Output B-493). Such reductions in littoral habitat availability would not be of sufficient magnitude to substantially reduce long-term, average initial year-class strength of the warmwater fish populations. Consequently, seasonal reductions in littoral habitat availability would constitute a less than significant impact to Folsom Reservoir's warmwater fisheries.

In addition, the proposed Specific Plan initial surface water supply could alter the extent to which water surface elevations in Folsom Reservoir change during each month of the primary warmwater fish-spawning period (March through July). As previously discussed, adverse impacts to spawning from nest-dewatering are assumed to have the potential to occur when reservoir elevation decreases by more than nine feet msl within a given month. Modeling results for the proposed Specific Plan initial surface water supply indicate that the frequency with which potential nest-dewatering events could occur in Folsom Reservoir would remain unchanged, relative to the existing condition, during the March through July spawning period (Template Output B-486). Consequently, impacts to Folsom Reservoir warm-water fisheries would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-53 The Specific Plan could cause impacts to Folsom Reservoir's coldwater fisheries.

Folsom Reservoir end-of-month storage under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 554 of the 560 months included in the analysis (i.e., April through November, when the reservoir stratifies) (Technical Appendices A-109 to A-120). The proposed Specific Plan initial surface water supply, relative to the existing condition, would result in small changes in Folsom Reservoir end-of-month storage during some years of the simulation for the April through November period. Long-term average end-of-month storage would remain unchanged under the proposed Specific Plan initial surface water supply, relative to the existing condition (Template Output B-480). For any given month, the largest difference between the proposed Specific Plan initial surface water supply and existing condition for long-term average end-of-month storage would be 13,000 TAF, a 4.0 difference. The largest reduction in Folsom Reservoir end-of-month storage would be 7,000 TAF, or 1.0 during April of the April through December period. Such anticipated reductions in reservoir storage would not be expected to adversely affect the reservoir's coldwater fisheries, since coldwater habitat would remain available within the reservoir during all months of all years. Physical habitat availability is not believed to be among the primary factors limiting coldwater fish populations, and anticipated seasonal reductions in storage would not be of
sufficient magnitude to adversely affect the primary prey species used by coldwater fish. Therefore, changes in Folsom Reservoir storage under the proposed Specific Plan initial surface water supply represent a less than significant impact on coldwater fish resources.

Mitigation Measures

No mitigation measures are required.

4.4-54 The Specific Plan could cause impacts to the Nimbus Fish Hatchery.

CVP operations of Folsom Dam and Reservoir associated with the proposed Specific Plan initial surface water supply would have very little effect on the temperature of water entering the Nimbus Fish Hatchery from Lake Natoma during the May through September period, relative to the existing condition. Under the proposed Specific Plan initial surface water supply, the long-term average temperature of water released from Nimbus Dam would not differ by more than a calculated 0.1°F, relative to the existing condition, during any month of the year, as shown in Table 4.4-14 (Template Output B-279). Furthermore, there would not be substantial differences in the frequency with which water temperatures exceed the water temperature indices of 60°F, 65°F and 68°F. Specifically, increases in the frequency of exceedance occur in one additional month and decreases in the frequency of exceedance would occur in one additional month during the May through September period, relative to the existing condition (Template Output B-282). These small and infrequent differences in water temperature which could occur during the May through September period (when hatchery temperatures reach annual highs) would not be of sufficient frequency or magnitude to affect hatchery operations and resultant fish production. Therefore, implementation of the proposed Specific Plan initial surface water supply would result in a less than significant impact.

Table 4.4-14
Long-term Average Water Temperature in the American River Below Nimbus Dam Under Existing and Project Conditions

<table>
<thead>
<tr>
<th>Month</th>
<th>Water Temperature¹ (°F)</th>
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<td>Existing</td>
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<td>Oct</td>
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<td>Nov</td>
<td>56.9</td>
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<td>Dec</td>
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<td>Jul</td>
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<tr>
<td>Aug</td>
<td>66.4</td>
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<tr>
<td>Sep</td>
<td>67.8</td>
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Table 4.4-14
Long-term Average Water Temperature in the American River Below Nimbus Dam Under Existing and Project Conditions

<table>
<thead>
<tr>
<th>Month</th>
<th>Water Temperature¹ (°F)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
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¹ Based on 69 years modeled.

Mitigation Measures

No mitigation measures are required.

LOWER AMERICAN RIVER FISHERIES IMPACTS

Flow- and temperature-related impacts are discussed separately below by species and lifestage. Organizationally, flow- and temperature-related impacts to fall-run Chinook salmon and steelhead are discussed together, followed by impact discussions for splittail, American shad, and striped bass.

4.4-55 The Specific Plan could cause impacts to fall-run Chinook salmon and steelhead in the lower American River.

Minimal potential differences in lower American River flows and water temperatures under the proposed Specific Plan initial surface water supply, relative to the existing condition, would not be expected to adversely affect fall-run Chinook salmon and steelhead immigration, spawning and incubation, or juvenile rearing and emigration.

Flow-Related Impacts to Fall-Run Chinook Salmon/Steelhead Adult Immigration (September through March). Even at current minimum flow requirements (i.e., 250 cfs under D-893), flow-related physical impediments to adult salmonid upstream passage are not known to occur. Therefore, flow-related impacts to Chinook salmon adult immigration would primarily be determined by flows at the mouth of the American River during the September through December period, when lower American River Chinook salmon adults immigrate through the Sacramento River in search of their natal stream to spawn. The same would be true for steelhead during the December through March period. Reduced flows at the mouth are of concern primarily due to the fact that less flow could result in insufficient olfactory cues for immigrating adult salmonids, thereby making it more difficult for them to "home" to the lower American River. Insufficient flow could result in higher rates of straying to other Central Valley rivers. Under the proposed Specific Plan initial surface water supply, the long-term average flow at the mouth differs by a maximum of 0.1% to 0.7% for all the months of the year, relative to the existing condition (Template Output B-135). These negligible differences in flows that could occur at the mouth, under the proposed Specific Plan initial surface water supply, would not be of sufficient magnitude to adversely affect the attraction of adults immigrating into the lower American River. Therefore, flow-related impacts to fall-run Chinook salmon/steelhead adult immigration are considered less than significant.
Temperature-Related Impacts to Fall-Run Chinook Salmon/Steelhead Adult Immigration (September through March). Reclamation's lower American River Temperature Model does not account for the influence of Sacramento River water intrusion on water temperatures at the mouth. Therefore, the remaining temperature assessments are based on temperatures modeled at the lower American River mouth and at Freeport on the Sacramento River. The long-term average water temperatures modeled for the proposed Specific Plan initial surface water supply would be within 0.1°F to those under the existing condition at the American River mouth and at Freeport on the Sacramento River during all months of the September through March adult immigration period (Template Output B-325). Under the proposed Specific Plan initial surface water supply, monthly mean water temperatures at the American River mouth would be essentially equivalent to the existing condition in 480 of the 483 months included in the analysis (Technical Appendices A-433 to A-444). Monthly mean water temperatures at Freeport on the Sacramento River would be essentially equivalent to the existing condition for all months of the 483 months included in the analysis (Technical Appendices A-481 to A-492). Therefore, changes in water temperature under the proposed Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect the attraction of fall-run Chinook salmon/steelhead adults and represents a less than significant impact to fall-run Chinook salmon/steelhead adult immigration.

Flow-Related Impacts to Fall-Run Chinook Salmon Spawning and Incubation (October Through February). All flow-related impact assessments regarding fall-run Chinook salmon spawning and incubation were based on flows below Nimbus Dam and at Watt Avenue, with a greater emphasis placed on flows below Nimbus Dam. Aerial redd surveys conducted by CDFG in recent years have shown that 98% of all spawning occurs upstream of Watt Avenue, and 88% of spawning occurs upstream of RM 17 (located just upstream of Ancil Hoffman Park). Hence, the majority of spawning occurs upstream of RM 17.

Monthly mean flows below Nimbus Dam and at Watt Avenue under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 326 of the 350 months included in the analysis (Technical Appendices A-313 to A-324 and A-325 to A-336). The long-term average flow below Nimbus Dam and at Watt Avenue would be within 0.3% of the flow under the existing condition during all months of the October through February period (Template Output B-117 and B-123).

Exceedance curves for the American River release from Nimbus Dam for the October through February period for the proposed Specific Plan initial surface water supply demonstrate that flows under the proposed Specific Plan initial surface water supply would be similar to those under the existing condition (Template Output B-114 and B-115). Differences in flows in the lower flow ranges are more crucial for salmon survival. Throughout the October through February period, the proposed Specific Plan initial surface water supply would not substantially reduce flows compared to the existing condition. These slight reductions in flow would not be expected to be of sufficient magnitude or occur with the necessary frequency to have a significant adverse effect on long-term initial year-class strength of lower American River fall-run Chinook salmon. This impact is therefore considered less than significant.
Temperature-Related Impacts to Fall-Run Chinook Salmon Spawning and Incubation (October Through February). Under the proposed Specific Plan initial surface water supply, the long-term average water temperatures would be equivalent to those under the existing condition during October at Watt Avenue, and during the November through February period below Nimbus Dam. Watt Avenue is the location of concern in October since air temperatures tend to warm the river as it moves downstream. Conversely, water temperatures below Nimbus Dam are usually warmer than water temperatures at Watt Avenue in the winter season (Template Output B-328).

The October water temperatures at Watt Avenue would be essentially equivalent to the existing condition in 68 of the 69 months included in the analysis (Technical Appendix A-421). The October water temperature at Watt Avenue would increase by more than 0.2°F in up to three months of the simulation, with the greatest increase of 0.7°F. The November through February monthly mean water temperatures below Nimbus Dam would be essentially equivalent to the existing condition in 274 of the 276 months included in the analysis (Technical Appendices A-409 to A-420). November water temperatures below Nimbus Dam would increase by more than 0.3°F in 2 years of the 69 years modeled. However, December, January and February water temperatures below Nimbus Dam would be below 56°F in all 69 years modeled under the proposed project. Under the proposed Specific Plan initial surface water supply there would be one additional occurrence where October water temperatures at Watt Avenue would be above 56°F, relative to the existing condition.

The long-term average annual early lifestage survival for fall-run Chinook salmon in the American River would be 84.9% under the existing condition and 85.0% under the proposed Specific Plan initial surface water supply. The largest relative decrease that would occur under the proposed initial surface water supply relative to the existing condition would be 1%, which would occur in only 1 year of the 69 years modeled. Substantial increases or decreases in survival would not occur in any individual year of the 69-year simulation (Template Output B-469).

Based on these modeling results, any small temperature changes in the lower American River resulting from the implementation of the proposed Specific Plan initial surface water supply during the October through February period would not be of sufficient frequency or magnitude to adversely affect spawning and incubation success of fall-run Chinook salmon. This impact is therefore considered less than significant.

Flow- and Temperature-Related Impacts to Steelhead Spawning and Incubation (December through March). Monthly mean flows below Nimbus Dam and at Watt Avenue associated with the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 261 of the 280 months included in the analysis (Technical Appendices A-315 to A-318 and A-327 to A-330). In addition, monthly mean water temperatures below Nimbus Dam and at Watt Avenue would be similar to the existing condition in 275 of the 276 months included in the analysis (Technical Appendices A-411 to A-414 and A-423 to A-426). Moreover, under the proposed Specific Plan initial surface water supply, water temperatures below Nimbus Dam would remain below 56°F for all months of the 69 years modeled for the
spawning and incubation period for steelhead. December, January, and February water temperatures at Watt Avenue under the proposed Specific Plan initial surface water supply would be below 56°F in all 69 years modeled (Technical Appendices A-411 to A-414 and A-423 to A-426). There would be no additional occurrences under the proposed Specific Plan initial surface water supply in which water temperatures at Watt Avenue would be greater than 56°F, relative to the existing condition. Therefore, no significant flow- or temperature-related impacts to steelhead spawning or incubation would be expected to occur under the proposed Specific Plan initial surface water supply. This impact is therefore considered less than significant.

Flow-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing (March Through June). The majority of juvenile salmonid rearing is believed to occur upstream of Watt Avenue. Moreover, depletions generally exceed tributary accretions to the river throughout the March through June period (generally resulting in lower flows at Watt Avenue than below Nimbus Dam). Accordingly, all flow-related impact assessments for fall-run Chinook salmon and steelhead rearing are based on flows at Watt Avenue.

Insignificant changes in monthly mean flows would be expected to occur at Watt Avenue under the proposed Specific Plan initial surface water supply, relative to the existing condition. Long-term average flows at Watt Avenue under the proposed Specific Plan initial surface water supply would be within 0.3% of the flow under the existing condition for any given month during the March through June period (Template Output B-123). Flow exceedance curves for March through June at Watt Avenue indicate that slight decreases in flow would occur under the proposed Specific Plan initial surface water supply during the March through June period, when flows under the existing condition are 2,000 cfs or less (Template Output B-121 to B-122). Such small differences in flow would not be of sufficient frequency or magnitude to adversely affect long-term juvenile fall-run Chinook salmon or steelhead rearing success. This impact is therefore considered less than significant.

Temperature-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing (March Through June). Modeling of the proposed Specific Plan initial surface water supply indicates that the long-term average water temperature at Watt Avenue would not change during any month of the March through June period, relative to the existing condition (Template Output B-286). Monthly mean water temperatures at Watt Avenue would be essentially equivalent to the existing condition in 275 of the 276 months included in the analysis (Technical Appendices A-426 to A-429). Moreover, under the proposed Specific Plan initial surface water supply, there would not be any additional occurrences in which water temperatures would be above 65°F, relative to the existing condition, for the entire March through June period (Technical Appendices A-426 to A-429). Consequently, with no temperature increases at Watt Avenue during the March through June period, the proposed Specific Plan initial surface water supply would not be expected to result in significant adverse affects to the success of juvenile salmon rearing. This impact is therefore considered less than significant.

Flow-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Emigration (February through June). The primary period of fall-run Chinook salmon juvenile emigration occurs from February to June, with the majority of juvenile steelhead emigration occurring during this same
period. Generally little, if any, emigration occurs during July and August. Flow-related impacts to salmonid immigration discussed above addressed flow changes in February and March. As previously concluded for adult immigration, potential changes in flows under the proposed Specific Plan initial surface water supply during February through March would not adversely affect juvenile fall-run Chinook salmon or steelhead rearing and, therefore, also would not adversely affect emigration. Hence, this discussion focuses primarily on the April through June period.

Monthly mean flows expected to occur at the American River mouth associated with implementation of the proposed Specific Plan initial surface water supply would be essentially equivalent or greater than flows under the existing condition in 200 of the 210 months included in the analysis (Technical Appendix A-367 to A-369). Under the proposed Specific Plan initial surface water supply, the simulated long-term average flow at the mouth would decrease slightly (i.e., less than 0.5%) in the April through June period (Template Output B-135). Juvenile salmonid emigration surveys conducted by CDFG have shown no direct relationship between peak emigration of juvenile Chinook salmon and peak spring flows (Snider et al. 1997). Moreover, emigrating fish are more likely to be adversely affected by events when flows are high, then ramp down quickly (resulting in isolation and stranding). Adverse changes in flow ramping rates would not be expected to occur under the proposed Specific Plan initial surface water supply. Consequently, although small flow reductions at the mouth (i.e., less than 0.5 percent) would occur in a few years during the April through June period, these flow reductions would not occur with sufficient frequency or magnitude to adversely affect the success of juvenile salmonid emigration. In addition, the resultant flows would not be expected to adversely affect the success of juvenile salmonid emigration. This impact is therefore considered less than significant.

**Temperature-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Emigration (February through June).** With the possible exception of a small percentage of fish that may rear near the mouth of the lower American River, impacts due to elevated water temperatures at the mouth to fall-run Chinook salmon and steelhead would, at worst, be limited to the several days that it takes emigrants to pass through the lower portion of the river and into the Sacramento River en route to the Delta. Water temperatures near the mouth during the primary emigration period (February into June) are often largely affected by intrusion of Sacramento River water, which is not accounted for by Reclamation's lower American River Temperature Model. Consequently, actual temperatures near the mouth would likely be somewhere between temperatures modeled for the mouth and temperatures modeled for the Sacramento River at Freeport (RM 46), located 14 miles downstream of the lower American River's confluence. For this reason, the long-term average temperatures are discussed for both of these locations.

Monthly mean temperatures at the American River mouth under the proposed Specific Plan initial surface water supply would be essentially equivalent to, or less than, the existing condition in 342 of the 345 months included in the analysis (Technical Appendices A-437 to A-441). Monthly mean temperatures at Freeport on the Sacramento River would be essentially equivalent to the existing condition for all months of the 345 months included in the analysis (Technical Appendices A-485 to A-489). The long-term average water temperature at the
American River mouth and on the Sacramento River at Freeport during February through June under the proposed Specific Plan initial surface water supply would be similar to temperatures under the existing condition (Template Output B-325). The largest difference in long-term average would be an increase of 0.1°F at the mouth during March. In the 69-year simulation under the proposed Specific Plan initial surface water supply, water temperature would increase 0.4°F or more at the mouth in only one year during March, May, and June. At Freeport on the Sacramento River, monthly mean temperature increases greater than 0.1°F in the months of February through June would not occur, relative to the existing condition (Technical Appendices A-485 to A-489). Moreover, under the proposed Specific Plan initial surface water supply, there would not be any additional occurrences throughout the February through June period in which temperatures at the mouth of the lower American River would be above 65°F, relative to the existing condition. In addition, under the proposed Specific Plan initial surface water supply, there would not be any additional occurrences throughout the February through June period in which water temperatures would be above 65°F at Freeport relative to the existing condition.

Based on the results discussed above, changes in water temperatures under the proposed Specific Plan initial surface water supply would not be of sufficient frequency or magnitude to adversely affect emigration during the February through June period, relative to the existing condition. This impact is therefore considered less than significant.

Flow-Related Impacts to Steelhead Rearing (July through September). Monthly mean flows below Nimbus Dam under the proposed Specific Plan initial surface water supply would be essentially equivalent to or greater than flows under the existing condition in 179 of the 210 months modeled (Technical Appendix A-322 to A-324). The long-term average flow below Nimbus Dam would decrease by less than 0.8% (17 cfs) compared to the existing condition for the July through September period. The difference in flow would be similar at Watt Avenue (Template Output B-117 and B-123).

Based on these findings, flow reductions under the proposed Specific Plan initial surface water supply are not expected to reduce juvenile steelhead rearing habitat. Further, steelhead populations in the lower American River are believed to be limited by instream temperature conditions during the July through September period, rather than by flows. Therefore, small and infrequent reductions in flow would not be of sufficient frequency or magnitude to adversely affect long-term rearing success of juvenile steelhead. This impact is therefore considered less than significant.

Temperature-Related Impacts to Steelhead Rearing (July through September). The long-term average water temperatures below Nimbus Dam, Watt Avenue, and the mouth would not substantially differ during July, August and September between the proposed Specific Plan initial surface water supply compared to the existing condition (Template Output B-279, B-286, and B-293). Monthly mean water temperatures below Nimbus Dam under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 203 of the 207 months included in the analysis (Technical Appendices A-418 to A-420). Monthly mean water temperatures at Watt Avenue under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 204 of the 207 months.
included in the analysis (Technical Appendices A-430 to A-432). Moreover, under the proposed Specific Plan initial surface water supply, there would be no increase in the number of occurrences in which water temperatures would be above 65°F during the July through September period at Watt Avenue, relative to the existing condition (Technical Appendices A-430 to A-432). Monthly mean water temperatures at the mouth of the American River under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 205 of the 207 months included in the analysis (Technical Appendices A-442 to A-444). Therefore, such small and infrequent increases in water temperature that would occur under the proposed Specific Plan initial surface water supply would not be of sufficient frequency to adversely affect long-term rearing success of juvenile steelhead. This impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-56 The Specific Plan could degrade habitat for splittail in the lower American River.

Monthly mean flows at Watt Avenue during February through May under the proposed Specific Plan initial surface water supply would be essentially equivalent to or greater than the existing condition in 270 of the 280 months included in the analysis (Technical Appendices A-329 to A-332). The long-term average flow at Watt Avenue during the period February through May would range between zero and 0.2% less than under the existing condition (Template Output B-123).

Using flows at Watt Avenue, the acreage of usable riparian vegetation inundated between RM 8 and RM 9 was used as an index of the relative amount of inundated riparian vegetation that would occur in the lower portion of the river for a given flow rate. The amount of riparian habitat inundated in this portion of the river under the proposed Specific Plan initial surface water supply would remain unchanged in 64 years of the 70 years modeled (91% of the time) during February, in 67 years (96% of the time) during March, in 64 years (91% of the time) during April, and in 65 years (93% of the time) during May (Template Output B-113). Therefore, sufficient change in the frequency of habitat reductions would not be expected to occur during February, March, April, or May of any year.

During the February through May splittail spawning period, the long-term average usable inundated riparian habitat between RM 8 and RM 9 under the proposed Specific Plan initial surface water supply would remain unchanged relative to the existing condition (Template Output B-113). In addition, flow changes under the proposed Specific Plan initial surface water supply would have little, if any, effect on the availability of in-channel spawning habitat availability, or the amount of potential spawning habitat available from the mouth up to RM 5, the reach of the river influenced by Sacramento River stage. Ultimately, these reductions in flow would not be expected to be of sufficient magnitude and/or to occur with enough frequency to have a significant adverse effect on the long-term population trends of lower American River splittail.
Monthly mean temperatures at Watt Avenue under the proposed Specific Plan initial surface water supply would be essentially equivalent to the existing condition in 275 of the 276 months included in the analysis (Technical Appendices A-425 to A-428). Over the 69-year period of simulation, February through April mean monthly water temperatures at Watt Avenue under the proposed Specific Plan initial surface water supply and existing condition would not exceed 68°F, the upper limit of the reported preferred range for splittail spawning, relative to the existing condition in any of the 69 years modeled (Technical Appendices A-425 to A-428). During May, there would be two occurrences under both the existing condition and proposed initial surface water supply that monthly mean water temperatures would exceed 68°F. Therefore, water temperature-related impacts to splittail spawning would be considered less than significant, since no sufficient change in the frequency of water temperature exceeding the reported preferred range for splittail spawning would occur under the proposed Specific Plan initial surface water supply and this condition would occur with or without the project.

Mitigation Measures

No mitigation measures are required.

4.4-57 The Specific Plan could cause impacts to American shad in the lower American River.

The long-term average flow at the American River mouth would be reduced by 0.4% or less during May and June under the proposed Specific Plan initial surface water supply, relative to the existing condition (Template Output B-135). Flow reductions in May and June under the proposed Specific Plan initial surface water supply could potentially reduce the number of adult shad attracted into the river during a few years. However, American shad spawn opportunistically where suitable conditions are found, so that production of American shad within the Sacramento River system would likely remain unaffected. Any flow-related impacts to American shad are considered to be less than significant. In addition, analysis was performed to determine the probability that lower American River flows at the mouth in May and June would be greater than 3,000 cfs, the flow level defined by CDFG as that which would be sufficient to maintain the sport fishery for American shad. The simulations showed no difference in the number of years that the flow at the mouth would be below 3,000 cfs in May and June (Technical Appendices A-368 to A-369).

The frequency with which monthly mean water temperatures in May and June below Nimbus Dam would be within the reported preferred range for American shad spawning of 60°F to 70°F would not change under the proposed Specific Plan initial surface water supply relative to the existing condition (Technical Appendices A-416 to A-417). Monthly mean water temperatures in May and June at the mouth of the lower American River would be within the reported preferred range for American shad spawning in one fewer year under the proposed Specific Plan initial surface water supply, relative to the existing condition (Technical Appendices A-440 to A-441). The frequency with which suitable temperatures for American shad spawning would not substantially differ infers that temperature-related impacts to American shad would be considered less than significant relative to the existing condition. Overall, the impacts
associated with implementation of the proposed Specific Plan initial surface water supply would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-58 The Specific Plan could cause impacts to striped bass in the lower American River.

The flow-related impact assessment conducted for fall-run Chinook salmon and steelhead addresses potential flow-related impacts to striped bass juvenile rearing, which occurs during the months of May and June. In addition, an analysis was performed to determine the probability that lower American River flows at the mouth would be below 1,500 cfs, the flow level defined by CDFG as that which would be sufficient to maintain the sport fishery for striped bass. Under the proposed Specific Plan initial surface water supply, monthly mean flows in the lower American River would be below the 1,500 cfs attraction flow index during May and June in 17 of the 140 years modeled (Technical Appendices A-368 to A-369). Moreover, flows at the mouth that are believed to be sufficient to maintain the striped bass fishery would be met or exceeded in most years during both May and June. Substantial changes in the strength of the striped bass fishery would not be expected to occur when May and/or June monthly mean flows fall below 1,500 cfs, and therefore, flow-related impacts to the striped bass fishery that could potentially occur under the proposed Specific Plan initial surface water supply would be less than significant.

The number of years that monthly mean water temperatures would be within the reported preferred range for striped bass spawning of 59°F to 68°F would not change during June below Nimbus Dam and at the mouth during May and June (Technical Appendices A-416 to A-417 and A-440 to A-441). Thus, the frequency of suitable temperatures for juvenile striped bass rearing in the lower American River would remain essentially unchanged, and therefore, temperature-related impacts to juvenile striped bass rearing are considered to be less than significant relative to the existing condition. Overall, potential impacts to striped bass under the proposed Specific Plan initial surface water supply would be less than significant.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

The cumulative impact discussed below is based on buildout of the Placer Vineyards Specific Plan and installation of off-site infrastructure.

4.4-59 Cumulative development would contribute to the ongoing loss of natural undisturbed open space in the region, increase human intrusion and activity levels in proximity to habitat
areas, and would remove potential habitat for federally and state listed and other special-status species.

The undeveloped portion of western Placer County provides habitat for a wide range of plant and animal species, including those discussed throughout this section. Over recent decades, development in the Cities of Lincoln, Roseville and Rocklin, as well as the unincorporated area, has converted thousands of acres of open space and natural habitat to urban uses. Thousands of additional acres are approved or proposed for development in Placer, Sacramento and Sutter counties as shown in Figure 4.1-2, including the Elverta Specific Plan, South Sutter County Industrial/Commercial Reserve, Curry Creek Community Plan, the Regional University and Community, West Roseville Specific Plan, Placer Ranch, Lincoln Crossing, Sierra Vista Specific Plan, Creekview Specific Plan, Riolo Vineyards, Silver Creek, Lincoln 270, and Morgan Place. Such development would result in the loss, degradation, and fragmentation of functional wildlife habitat and the removal of native vegetation. Additionally, road construction, site grading, infrastructure installation, and construction of residential, commercial, and public facilities uses would result in the direct loss of wildlife habitat as well as special-status species and sensitive habitats. Most of the land that has been or is planned for development in western Placer County and the surrounding region is made up of habitat similar to the Placer Vineyards Specific Plan area, including grasslands, agricultural land, vernal pools, other wetlands, oak woodlands, riparian areas and streams and drainages. As proposed, the Specific Plan would contribute considerably to the ongoing loss of natural, undisturbed open space in the region, resulting in a decline of biological resources and species diversity. Specific Plan development would also contribute considerably to cumulative increases in traffic and human disturbance in proximity to habitat areas and wildlife habitat. For these reasons, this impact is considered a cumulatively considerable significant impact.

Mitigation Measure

Implementation of the following measure would substantially lessen the severity of the Specific Plan contribution to the cumulative loss of open space, but not to a less than significant level. Therefore, the impact would remain significant and unavoidable, and the project’s incremental contribution to this impact would itself be cumulatively considerable (i.e., significant).

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

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

4.4-60 Increased flows from Dry Creek Wastewater Treatment Plant (DCWWTP) and Sacramento Regional Wastewater Treatment Plant (SRWTP) could adversely affect riparian and aquatic resources in Dry Creek and the Sacramento River.

Merritt Smith Consulting has prepared a Technical Memorandum to evaluate cumulative impacts to water quality and aquatic biological resources in Dry Creek due to the prospect of treating and discharging greater amounts of wastewater from the DCWWTP. Water quality related impacts are addressed in Section 4.3.4 in this Revised Draft EIR.

Merritt Smith found that increasing the flows in Dry Creek through the discharge of additional treated effluent will result in channel conveyance of higher flow volumes with associated higher water velocities which could cause additional bed scour and bank erosion. Bed scour and bank erosion, if it occurs as a result of the incremental flows, would increase water column turbidity and altering substrate composition downstream of the DCWWTP outfall.

Appendix A of the technical memorandum (Appendix Q of this Revised Draft EIR) describes the effect of the proposed discharge on Dry Creek water surface elevation under typical dry season conditions. The impact is estimated to be less than 0.2 feet. The Dry Creek riparian zone is characterized by a bank that extends typically two to five feet above the low water elevation. Assuming groundwater elevation is directly affected by surface water elevation, the project would reduce the depth of the unsaturated zone depth by less than 10%. Since riparian vegetation is adapted to saturated soils in proximity to the root zone (and some species require saturated soil conditions), a change in the water surface elevation of 0.2 feet during the dry season is not expected to adversely affect Dry Creek riparian vegetation. Thus, the impact on riparian vegetation is considered less than significant. Changes that could affect aquatic resources are addressed in the water quality discussion contained in Impact 4.3.4-9, in Section 4.3.4 of this Revised Draft EIR and are found to be less than significant.

The Sacramento Regional Wastewater Treatment Plant 2020 Master Plan EIR identifies the following impacts to aquatic biology in the Sacramento River from SRWTP effluent discharges and constituent loading: 1) Potential for thermal plume below the diffuser to block or substantially delay the upstream spawning migrations of fishes; 2) Thermal effects on fish and benthic macroinvertebrates exposed to the plume for short periods of time while moving downstream past the diffuser; and 3) Population- or community-level effects to fish or macroinvertebrates from the incremental increase in downstream water temperatures (Fully Mixed Condition).

This Revised Draft EIR found all impacts to be less than significant to aquatic biology.

Mitigation Measure
No additional mitigation measures are required. See Mitigation Measures 4.3.4-9a, 4.3.4-9b, and 4.3.4-9c.

**LONG-TERM SURFACE WATER SUPPLY**

A water supply of 11,500 AFA will be required to meet the needs of the Specific Plan buildout. This 11,500 AFA is part of the PCWA’s pending amendatory CVP contract with the Reclamation for 35,000 AFA. This water would be diverted from the Sacramento River, which has an annual runoff of approximately 18 million AF (PCWA 2001). The entire 35,000 AFA of the PCWA CVP contract water was used for the project’s incremental contribution analysis (for further description of the cumulative analysis, see Section 4.3.4 in this Revised Draft EIR). The full CVP contract amount of 35,000 AFA (long-term surface water supply) was evaluated based on the premise that this higher diversion amount provides a conservative representation of potential impacts associated with increased diversions from the Sacramento River to meet the proposed Specific Plan.

The following consists of two parts: (1) an analysis to determine the effect of the proposed Specific Plan long-term surface water supply project in combination with all past, present, and reasonably foreseeable future projects (cumulative analysis); and (2) if a significant cumulative impact was found, an analysis to determine the incremental contribution of the long-term surface water supply to the cumulative impact. If the modeling results indicated that potentially significant or significant impacts would occur under the full (35,000 AFA) long-term surface water supply, then further evaluation was performed to evaluate more closely the future Specific Plan long-term surface water supply project’s 11,500 AFA diversion potential to affect environmental resources.

**Terrestrial Resources**

*4.4-61 The Specific Plan could contribute to cumulative effects on lower American River riparian vegetation and Special-Status Species dependent upon riparian and open water habitats.*

Changes in lower American River flows would result in more frequent reductions of flows below the indices for cottonwood growth and terrace inundation. Flows would be below that considered necessary for radial growth maintenance up to 7% more frequently and below the index required for some growth by up to approximately 6% more frequently than under the existing condition. Reduced flows under the cumulative condition would result in six to seven more occurrences of two or more consecutive months in which flows would be below the radial growth maintenance index at both Nimbus Dam and the H Street Bridge, respectively, and four to five additional occurrences of two or more consecutive months below the same growth index required for some growth at the H Street Bridge and Nimbus Dam, respectively. However, none of the consecutive flow reductions would occur during the critical growing period of April through July. Because these consecutive flow reductions would not occur during the critical growing period of April through July, and the minimal percent of time that the mean monthly flows fall below the growth thresholds, such flow reductions are not considered to be of sufficient magnitude and/or frequency to have long-term effects on the population and growth of
cottonwoods/riparian vegetation, relative to the existing condition. Furthermore, given that flow reductions would not result in long-term adverse effects on cottonwoods or riparian vegetation, future impacts to special-status species that depend on lower American River riparian vegetation would also be less than significant, relative to the existing condition.

Mitigation Measures

No mitigation measures are required.

4.4-62 The Specific Plan could contribute to cumulative effects on lower American River backwater ponds and Special-Status Species dependent on backwater pond/marsh habitats (including elderberry shrubs and VELB).

Modeling results indicate that recharge of lower American River backwater ponds would not be significantly altered under the cumulative condition, relative to the existing condition. Monthly long-term average reductions in the frequency of flows above 2,700 cfs, the minimum flow required for recharge of ponds closest to the river, would range from 1% to 14%. Reductions in long-term average flows above 4,000 cfs, the flow value required for recharge of off-river ponds, would range from 1% to 20%, relative to the existing condition. Adequate recharge of both adjacent and off-river ponds would still occur under the cumulative condition given the magnitude of future changes in flows. Consequently, such reductions were considered less than significant, relative to the existing condition. Furthermore, special-status species dependent upon recharge of backwater pond/marsh habitats, including elderberry shrubs and VELB, would not be adversely affected by future reductions in flow that would occur under the cumulative condition, and consequently, impacts to these special-status species would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-63 The Specific Plan could contribute to cumulative effects on Folsom, Trinity, and Shasta Reservoir vegetation.

Long-term average end-of-month water surface elevations for Folsom, Trinity, and Shasta reservoirs would be reduced, relative to the existing condition, with reductions ranging from 2 to 11 feet msl during growing season months of March through September. Weedy vegetation, rather than vegetation that would provide quality wildlife habitat, establishes in the drawdown zone under existing conditions, due to constant changes in reservoir elevation that result from reservoir drawdown patterns. Consequently, reductions in reservoir elevations that would occur under the cumulative condition would not affect areas of high and consistent habitat value that are available for species associated with the reservoir under the existing condition, and impacts would be less than significant.

Mitigation Measures
4.4-64 The Specific Plan could contribute to cumulative effects on upper Sacramento River riparian vegetation.

Under the cumulative condition, upper Sacramento River long-term average flows during the March through October growing season would be reduced, relative to the existing condition. Such decreases would range from approximately 80 to 825 cfs, relative to the existing condition. However, such decreases would be small, considering the monthly mean flow range under the existing condition of over 5,000 to over 13,000 cfs. Thus, anticipated flow reductions that would occur under the cumulative condition would not be of sufficient magnitude and/or frequency to significantly alter upper Sacramento River riparian vegetation and related species, relative to the existing condition, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-65 The Specific Plan could contribute to cumulative effects on lower Sacramento River riparian vegetation.

Modeled reductions in long-term average flows of the lower Sacramento River under the cumulative condition would range from 399 to 828 cfs during most months, with increases ranging from 36 to 466 cfs in early spring and mid-summer months, relative to the existing condition. However, the greatest reduction in long-term average flow under the cumulative condition would be less than 5% of existing flows for any month of the growing season, relative to the existing condition. Furthermore, the frequency and magnitude of flow reductions that would occur under the cumulative condition would be small, considering the existing monthly mean flow range of over 11,000 to over 33,000 cfs during the growing season months. Because the flow reductions that occur under the cumulative condition would not be of sufficient frequency or magnitude to significantly alter existing riparian habitats along the river, adverse effects to riparian habitats of the lower Sacramento River would not be expected under the cumulative condition, relative to the existing condition, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-66 The Specific Plan could contribute to a cumulative effect on Delta riparian vegetation and special-status species.

Long-term average reductions in lower Sacramento River flow would not be expected to alter the riparian habitat of the Delta. Potential shifts in the long-term average position of X2 of up to 0.7
km would occur under the cumulative condition, relative to the existing condition. Such shifts would be considered minor in the context of Delta riparian vegetation and would not adversely affect Delta vegetation (which is adapted to changes in salinity) or special-status species dependent upon Delta habitats.

In summary, there would be no potentially significant impact to terrestrial resources and vegetation associated with the implementation of future actions, including the proposed long-term surface water supply, under the cumulative condition relative to the existing condition. As no significant impacts are anticipated to terrestrial resources under the cumulative condition, the proposed Specific Plan long-term surface water supply would have no cumulatively considerable incremental contribution to future impacts to riparian resources that occur under the cumulative condition, and therefore the impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

**Fisheries and Aquatic Habitat**

The Cumulative Report evaluated the potential for future impacts to fisheries and aquatic habitat associated with the lower American River, Sacramento River, and Sacramento-San Joaquin Delta, as well as the fisheries resources of Folsom, Shasta and Trinity reservoirs. The results of this analysis indicated there would be no significant adverse cumulative effects to the following resources (for additional descriptions of these resources please refer to the *PCWA American River Pump Station Project Final EIS/EIR* [PCWA and Reclamation 2001]):

- Folsom Reservoir Coldwater Fisheries
- Nimbus Fish Hatchery Operations and Fish Production
- Lower American River American Shad
- Lower American River Striped Bass
- Lower American River Splittail (temperature-related)
- Shasta Reservoir Coldwater Fisheries
- Trinity Reservoir Coldwater Fisheries
- Trinity Reservoir Warmwater Fisheries
- Upper Sacramento River Fisheries (flow-related)
- Lower Sacramento River Fisheries (flow-related)

The Cumulative Report, however, identified potentially significant cumulative impacts on the fisheries and aquatic habitat resources listed below:

- Folsom Reservoir Warmwater Fisheries
- Lower American River Fall-Run Chinook Salmon and Steelhead
- Lower American River Splittail (flow-related)
- Shasta Reservoir Warmwater Fisheries
• Upper Sacramento River Fisheries (temperature-related)
• Lower Sacramento River Fisheries (temperature-related)
• Delta Fish Populations

These potentially significant cumulative impacts identified in the Cumulative Report are summarized below. Each discussion is followed by an evaluation of the potential for the proposed Specific Plan long-term surface water supply to result in a significant contribution to the identified cumulative impact.

4.4-67 The Specific Plan could contribute to cumulative effects on Folsom Reservoir warmwater fisheries.

Under the cumulative condition, long-term average end-of-month water surface elevation would be reduced in Folsom Reservoir by up to eight feet msl, relative to the existing condition, during the March through September period, when warmwater fish spawning and initial rearing occur. On a monthly basis, reservoir elevations would be reduced by 2 to 36 ft msl in 272 months of the 490 months included throughout the March through September period. Future changes in water surface elevation would result in a reduction in the long-term average amount of available littoral habitat of 5% to 31% (59 to 323 acres) during March through September, with reductions in individual months of up to 1,897 acres, relative to the existing condition. Such reductions in habitat availability could, in turn, lead to increased predation on young-of-the-year warmwater fish, thereby reducing the long-term initial year-class strength of the population. Unless willows and other near-shore vegetation, in response to seasonal reductions in water levels, become established at lower reservoir elevations in the future, long-term year-class production of warmwater fisheries could be reduced. Consequently, seasonal reductions in littoral habitat availability represent a potentially significant cumulative impact to Folsom Reservoir warmwater fisheries.

Increases in the frequency of potential nest-dewatering events could occur in Folsom Reservoir under the cumulative condition, relative to the existing condition. Modeling results indicate that the greatest increase would occur in June, with 10 more nest-dewatering events, relative to the existing condition. The frequency with which potential nest-dewatering events could occur in Folsom Reservoir would increase in the months of the March through July warmwater fish-spawning period, and consequently, may be a potentially significant cumulative impact to warmwater fish nesting success.

Incremental Contribution of the Long-Term Surface Water Supply. The proposed Specific Plan long-term surface water supply would not contribute substantially to reductions in reservoir end of month elevation and acres of littoral habitat under the cumulative condition. The proposed long-term surface water supply would contribute 2 months of the 272 months with reductions in Folsom Reservoir elevation, or 0.7% of the total cumulative impact (Technical Appendix G-193 to G-204). Furthermore, the proposed long-term surface water supply would have no cumulatively considerable contributions to reductions in the amount of Folsom Reservoir littoral habitat. During April through September, the proposed long-term surface water supply would contribute a minor benefit to the long-term average amount of littoral habitat, with increases of
up to four acres (Template Output H-493). In individual months, the proposed long-term surface water supply would result in both increases and decreases in the amount of littoral habitat, with reductions up to 108 acres (Technical Appendix G-277 to G-288). Such reductions would not occur with sufficient frequency or magnitude to contribute to significant reductions in littoral habitat availability that would occur under the cumulative condition.

The proposed long-term surface water supply also would not contribute substantially to increases in the frequency of potential nest-dewatering events in any month during March through July (Template Output H-486). During May, there would be one additional occurrence under the proposed long-term surface water supply, that monthly elevation would decrease more than nine feet. However, this additional occurrence would not be of sufficient magnitude or frequency to adversely affect the availability of warmwater fish nests. Therefore, the proposed long-term surface water supply would have no cumulatively considerable contribution to future adverse effects to warmwater fish nests that occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Impacts would therefore be considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-68 The Specific Plan would contribute to cumulative effects on lower American River fall-run Chinook salmon and steelhead.

Flow-Related Impacts to Fall-Run Chinook Salmon Spawning and Incubation (October Through February). All flow-related impact assessments regarding fall-run Chinook salmon spawning and incubation were based on flows below Nimbus Dam and at Watt Avenue, with a greater emphasis placed on flows below Nimbus Dam, as 98% of all spawning occurs upstream of Watt Avenue.

The modeled long-term average flow below Nimbus Dam under the cumulative condition would be up to 13.6% less (292 cfs, October) than the flow under the existing condition during all months of the October through February fall-run Chinook salmon spawning and incubation period. Similarly, modeled changes in long-term average flows at Watt Avenue would be up to 14.3% less (300 cfs, October) during the October through February period (See Tables C-3.419 and –20 in the Cumulative Report for additional information). Differences in flows in the lower flow ranges are of particular concern. In October, November and December, when the existing condition flow would be 2,500 cfs or less, the cumulative condition would result in flow reductions of up to 750 cfs nearly 50% of the time, while effects on flow during January and February would be minor.

Such reductions in flows would reduce the amount of available Chinook salmon spawning habitat, which could result in increased redds superimposition during years when adult returns are high enough for spawning habitat to be limiting. These reductions in flow are of sufficient
magnitude and occur with enough frequency to represent a **potentially significant cumulative impact** to long-term initial year-class strength of lower American River fall-run Chinook salmon.

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to future lower American River flow reductions at either Nimbus Dam or Watt Avenue during October through February. The maximum simulated reduction in long-term average flow would be four cfs at either of the locations, or 1.3% to 1.4% of the total cumulative reduction in flows (Template Output H-117 and H-123). Furthermore, the proposed long-term surface water supply would contribute 6 months to the 185 and 186 months in which flows would reduce 1% or more under the cumulative condition below Nimbus and at Watt Avenue, respectively. Thus, the proposed long-term surface water supply would not provide a substantial contribution to reductions in lower American River flows that would occur under the cumulative condition. Consequently, the proposed long-term surface water supply would have no cumulatively considerable contribution to significant impacts to fall-run Chinook salmon and steelhead spawning and incubation under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impact that occur under the cumulative condition. Impacts would therefore be considered **less than significant.**

**Flow-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing (March through June).** The majority of juvenile salmonid rearing is believed to occur upstream of Watt Avenue. Furthermore, diversions generally exceed tributary accretions to the river throughout the March through June period, resulting in lower flows at Watt Avenue than below Nimbus Dam. Therefore, all flow-related impact assessments for fall-run Chinook salmon and steelhead rearing are based on flows at Watt Avenue.

Relatively small differences in long-term average flows would occur between the cumulative condition and the existing condition during the March through June juvenile fall-run Chinook salmon and steelhead rearing period, with the largest reduction at Watt Avenue of 6.3%, relative to the existing condition (247 cfs, May). However, flows in individual months would be reduced from 3% to 71%, relative to the existing condition, in 174 of the 280 months included in the analyses throughout the March through June rearing period. These differences in flow may adversely affect long-term juvenile fall-run Chinook salmon or steelhead rearing habitat availability, and therefore represent a **potentially significant cumulative impact.**

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to cumulative lower American River flow reductions that would occur during the March through June rearing period. This long-term surface water supply would contribute up to four cfs (April), or 7%, to reductions in the long-term average flow at Watt Avenue, with no contribution to flow reductions in May, the month in which cumulative flow reductions would be greatest (Template Output H-123). Furthermore, the proposed long-term surface water supply would contribute six months, or 3%, to the 174 months in which flows would be reduced under the cumulative condition (Technical Appendix G-330 to G-333). Therefore, the proposed long-term surface
Temperature-Related Impacts to Fall-Run Chinook Salmon and Steelhead Juvenile Rearing (March through June). Under the cumulative condition, there would be two more occurrences during the March through June period in which water temperatures at Watt Avenue would be above 65°F, relative to the existing condition, although long-term average water temperature at Watt Avenue would not change by more than 0.3°F during any month of the March through June period, relative to the existing condition. Under the cumulative condition, water temperature increases of greater than 0.3°F, relative to the existing condition, would occur during the March through June period in 50 of the 276 months modeled. Such frequent increases in water temperature represent a potentially significant cumulative impact to fall-run Chinook salmon and steelhead juvenile rearing.

Incremental Contribution of the Long-Term Surface Water Supply. The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to potentially significant impacts to fall-run Chinook salmon and steelhead juvenile rearing. This long-term surface water supply would not contribute to the 50 occurrences of temperature increases of 0.3°F or more at Watt Avenue that would occur under the cumulative condition (Technical Appendix G-426 to G-429). Furthermore, the proposed long-term surface water supply would not contribute to the frequency in which temperatures would be above 65°F under the cumulative condition (Template Output H-289), and would not contribute to increases in the long-term average temperatures at Watt Avenue (Template Output H-286). Thus, the proposed long-term surface water supply would not contribute significantly to increases in lower American River water temperatures at Watt Avenue that occur under the cumulative condition, and consequently, would have no cumulatively considerable contribution to potentially significant impacts to fall-run Chinook salmon and steelhead juvenile rearing. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Impacts would therefore be less than significant.

Flow-Related Impacts to Steelhead Rearing (July through September). Under the cumulative condition, the long-term average monthly flow below Nimbus Dam would decrease by approximately 7% to 15% (up to 370 cfs) throughout the July through September period, relative to the existing condition. At Watt Avenue, the long-term average monthly flow would decrease by approximately 8% to 16% (up to 383 cfs), relative to the existing condition. In addition, flows below Nimbus Dam under the cumulative condition would be reduced by 1% to 73% in 142 months of the 210 individual months included in the analysis. For Watt Avenue, flows under the cumulative condition would be reduced by 1% to 79% in 147 months of the 210
individual months included in the analysis. The flow reductions that would occur under the cumulative condition are of sufficient magnitude and frequency to reduce juvenile steelhead summer rearing habitat, relative to the amount available under the existing condition. Consequently, reductions in flow associated with the cumulative condition may adversely affect long-term rearing success of juvenile steelhead, and therefore represent a potentially significant cumulative impact.

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to the substantial flow reductions that would occur under the cumulative condition. For flows below Nimbus Dam, the proposed long-term surface water supply would contribute four months, or 3 percent of the total 142 months where reductions occur under the cumulative condition (Technical Appendix G-322 to G-324). Similarly, the proposed long-term surface water supply would contribute four months of reductions at Watt Avenue, or three percent of the total 147 months where reductions occur under the cumulative condition (Technical Appendix G-334 to G-336). The greatest flow reductions that the proposed long-term surface water supply would contribute to the cumulative condition during these four months at Nimbus Dam and Watt Avenue would be 5.7 percent and 7.5 percent, respectively. These flow reductions would occur during a critical water year, when existing flows would be relatively low. Flow reductions would not occur with sufficient magnitude or frequency to result in a significant contribution to changes in long-term average flows at either Nimbus Dam or Watt Avenue under the cumulative condition. Therefore, the proposed long-term surface water supply would have no cumulatively considerable contribution to potential impacts to steelhead rearing that would occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Impacts would therefore be less than significant.

**Temperature-Related Impacts to Steelhead Rearing (July through September).** Temperature modeling indicates that the long-term average water temperature at Watt Avenue would increase slightly each month during July through September under the cumulative condition, relative to the existing condition, with no increases (but several decreases) in the frequency in which water temperatures at Watt Avenue would be above 65°F.

During the July through September steelhead rearing period, water temperatures under the cumulative condition would be higher than those under the existing condition when water temperatures would already be relatively warm. In 41 months of the 207 months included in the analysis, water temperatures would increase by more than 0.3°F, relative to the existing condition, with increases up to 4.1°F when water temperatures under the existing condition are at 70°F or greater. Such water temperature increases represent a potentially significant cumulative impact to juvenile steelhead summer rearing.

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to substantial water temperature increases that would occur under the cumulative condition. This
long-term surface water supply would not result in any substantial increases in the frequency in which water temperatures at Watt Avenue would be above 65°F in any month of the July through September period (i.e., one additional occurrence in September) (Template Output H-289). Furthermore, the proposed long-term surface water supply would not contribute to the long-term average water temperature increases that would occur under the cumulative condition, and would only contribute one month, or 2%, to the number of months in which water temperatures under the cumulative condition would increase by greater than 0.3°F (Template Output H-286 and Technical Appendix G-430 to G-432). Thus, the proposed long-term surface water supply would not result in substantial increases in lower American River water temperatures at Watt Avenue during July through September, and consequently, would have no cumulatively considerable contribution to the potentially significant temperature-related impacts to steelhead rearing that would occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact would therefore be \textit{less than significant}.

\textbf{Mitigation Measures}

No mitigation measures are required.

\textbf{4.4-69 The Specific Plan could contribute to cumulative effects on lower American River splittail.}

Under the cumulative condition, the modeled long-term average flow at Watt Avenue during February through May would decrease by 1.6% to 6.3%, relative to the existing condition. These flow reductions correspond to reductions in usable habitat of up to 3.9 acres, and in one year a 100% reduction, of the habitat available in individual years under the existing condition. While in many years, riparian vegetation would not be inundated throughout this period under either the cumulative or existing condition, reductions in inundated riparian habitat would occur virtually every month during the February through May period in those years when habitat would be inundated under the existing condition. However, relatively little splittail habitat is available under either the cumulative or existing condition. Given the uncertainty regarding the magnitude and extent of splittail spawning habitat in the lower American River, and the actual amount of potential spawning habitat available at specific flow rates throughout the river, the effects of flow reductions during the February through May period are also uncertain, and therefore, represent a \textit{potentially significant cumulative impact} to this federally threatened species.

\textbf{Incremental Contribution of the Long-Term Surface Water Supply.} The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to potential cumulative impacts to lower American River splittail. The proposed long-term surface water supply would not result in changes in the long-term average amount of habitat available under the existing condition. Specifically, the proposed long-term surface water supply would result in changes (one increase of 0.2 acres, one decrease of 0.3 acres) in the amount of habitat in 2 months of the 280 months included in the analysis throughout the February through May period (Technical Appendix G-558 to G-561). Thus, the proposed long-term surface water
supply would not contribute significantly to reductions in splittail habitat under the cumulative condition, and therefore, would have no cumulatively considerable contribution to future potential impacts to lower American River splittail. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-70 The Specific Plan could contribute to cumulative effects on Shasta Reservoir warmwater fisheries.

Hydrologic conditions under the cumulative condition would result in a decline in the long-term average end-of-month water surface elevation in Shasta Reservoir during the March through September period when warmwater fish spawning and initial rearing may be expected. In 275 months of the 490 months included in the analysis, the water surface elevation of Shasta Reservoir during the spawning and rearing period would be reduced by 2 to 54 feet msl, relative to the existing condition. Long-term average water surface elevation levels would be reduced up to 11 feet msl, relative to the existing condition. In addition, the long-term average amount of littoral habitat potentially available to warmwater fish for spawning and/or rearing under the cumulative condition would decrease by approximately 6% to 23% over the March through September period, relative to the existing condition. Reductions in the availability of littoral habitat under the cumulative condition may be of sufficient magnitude to substantially reduce long-term average initial year-class strength of warmwater fish populations. While the relative frequency of potential nest dewatering events under the cumulative condition would not change substantially, relative to the existing condition, overall potential impacts to Shasta Reservoir warmwater fisheries due to reductions in reservoir water surface elevation and decreases in littoral habitat under the cumulative condition represent a potentially significant cumulative impact.

Incremental Contribution of the Long-Term Surface Water Supply. The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to future impacts to Shasta Reservoir warmwater fisheries. This long-term surface water supply would not contribute to reductions in long-term average water surface reservoir elevation, and would only contribute to elevation decreases in four months of the 490 months included in the analysis (Template Output H-487 and Technical Appendix G-186 to G-192). Furthermore, the proposed long-term surface water supply would not result in future increases in the frequency of potential nest-dewatering events, and would result in reductions in littoral habitat of up to three acres, or up to 1.6% of the total cumulative reduction in habitat (Template Output H-488 and H-494). Thus, the proposed long-term surface water supply would not contribute to significant reductions in reservoir water surface elevation or available littoral habitat, or increases in potential nest-dewatering events under the cumulative condition. Consequently, the proposed long-term surface water supply would have no cumulatively considerable contribution to future significant impacts to Shasta Reservoir warmwater fisheries under the cumulative condition. As the long-
term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Impacts would therefore be considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-71 The Specific Plan could contribute to cumulative effects on upper Sacramento River fisheries (temperature-related).

The cumulative condition would result in changes in long-term average water temperature (both increases and decreases) at Keswick Dam and Bend Bridge, relative to the existing condition. There would also be several additional months in the simulation in which water temperatures would exceed 56°F or 60°F at either Keswick Dam or Bend Bridge. For example, there would be 22 additional occurrences where the 56°F index would be exceeded, and eight more occurrences where the 60°F index would be exceeded at Keswick Dam, relative to the existing condition. At Bend Bridge, there would be 31 additional occurrences where the 56°F index would be exceeded and seven more occurrences where the 60°F index would be exceeded, relative to the existing condition. Thus, the cumulative condition would result in a significant increase in the frequency of exceedance of temperature criteria identified in the NOAA Biological Opinion for winter-run Chinook salmon.

Early lifestage survival also was examined for winter-run, spring-run, fall-run and late fall-run Chinook salmon in the Sacramento River. Winter-run Chinook salmon long-term average early-lifestage survival would be 93.4% under the cumulative condition compared to 96% under the existing condition. Winter-run Chinook salmon, absolute long-term average early-lifestage survival would decrease more than 10% in 4 of the 69 years studied relative to the existing condition. Winter-run Chinook salmon relative long-term average early lifestage survival would decrease more than 10% in 5 of the 69 years studied. For fall-run Chinook salmon, long-term average early-lifestage survival would be 86.2% under the cumulative condition compared to 89.6% under the existing condition. Absolute and relative long-term average early lifestage survival of fall-run Chinook salmon would decrease more than 10% in 11 of the 69 years studied compared to the existing conditions. Spring-run Chinook salmon long-term average early-lifestage survival would be 81.7% under the cumulative condition compared to 87.5% under the existing condition. Absolute long-term average early-lifestage survival for spring-run Chinook salmon would decrease more than 10% in 8 of the 69 years studied. The long-term average relative percent change in early lifestage survival for spring-run Chinook salmon would decrease by approximately 6.2% compared to the existing condition. Relative long-term average early-lifestage survival would decrease more than 10% in 10 of the 69 years studied. The long-term average early-lifestage survival for late fall-run Chinook salmon would be 98.7% under the cumulative condition compared to 99.1% under the existing conditions. No decreases of more than 10% in absolute or relative long-term average early-lifestage survival are expected for late fall-run Chinook salmon.
Based on the increased number of exceedances of the temperature criteria identified in the NOAA Biological Opinion for winter-run Chinook salmon, and decreases in absolute and relative long-term early lifestage survival of fall-run, winter-run and spring-run Chinook salmon, water temperature-related impacts to upper Sacramento River fisheries under the cumulative condition would represent a potentially significant cumulative impact.

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to significant upper Sacramento River water temperature-related fisheries impacts that would occur under the cumulative condition. For water temperatures below Keswick Dam and Bend Bridge, the proposed long-term surface water supply would have no cumulatively considerable contribution to increases in long-term average water temperatures under the cumulative condition as shown in Tables 4.4-15 and 4.4-16 (Template Output H-300 and H-307). Similarly, there would be no cumulatively considerable contribution to the increase in the frequency of exceedance of the 56°F and 60°F temperature criteria at either Keswick Dam or Bend Bridge (Template Output H-303 and H-310).

<table>
<thead>
<tr>
<th>Table 4.4-15</th>
<th>Long-Term Average Water Temperature in the Sacramento River Below Keswick Dam Under Future NP and Cumulative Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Month</strong></td>
<td><strong>Water Temperature</strong> (°F)</td>
</tr>
<tr>
<td>Oct</td>
<td>53.6</td>
</tr>
<tr>
<td>Nov</td>
<td>53.0</td>
</tr>
<tr>
<td>Dec</td>
<td>48.9</td>
</tr>
<tr>
<td>Jan</td>
<td>45.3</td>
</tr>
<tr>
<td>Feb</td>
<td>47.3</td>
</tr>
<tr>
<td>Mar</td>
<td>51.0</td>
</tr>
<tr>
<td>Apr</td>
<td>51.1</td>
</tr>
<tr>
<td>May</td>
<td>48.0</td>
</tr>
<tr>
<td>Jun</td>
<td>47.5</td>
</tr>
<tr>
<td>Jul</td>
<td>48.8</td>
</tr>
<tr>
<td>Aug</td>
<td>51.2</td>
</tr>
<tr>
<td>Sep</td>
<td>51.5</td>
</tr>
</tbody>
</table>

1. Based on 69 Years Modeled


<table>
<thead>
<tr>
<th>Table 4.4-16</th>
<th>Long-Term Average Water Temperature in the Sacramento River at Bend Bridge Under Future NP and Cumulative Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Month</strong></td>
<td><strong>Water Temperature</strong> (°F)</td>
</tr>
<tr>
<td>Oct</td>
<td>55.7</td>
</tr>
<tr>
<td>Nov</td>
<td>52.2</td>
</tr>
<tr>
<td>Dec</td>
<td>47.2</td>
</tr>
</tbody>
</table>
Table 4.4-16
Long-Term Average Water Temperature in the Sacramento River at Bend Bridge Under Future NP and Cumulative Conditions

<table>
<thead>
<tr>
<th>Month</th>
<th>Future NP</th>
<th>Cumulative</th>
<th>Difference (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>44.9</td>
<td>44.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Feb</td>
<td>48.0</td>
<td>48.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mar</td>
<td>52.0</td>
<td>52.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Apr</td>
<td>54.7</td>
<td>54.7</td>
<td>0.0</td>
</tr>
<tr>
<td>May</td>
<td>54.8</td>
<td>54.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Jun</td>
<td>54.5</td>
<td>54.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Jul</td>
<td>54.7</td>
<td>54.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Aug</td>
<td>56.1</td>
<td>56.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Sep</td>
<td>56.8</td>
<td>56.8</td>
<td>0.0</td>
</tr>
</tbody>
</table>

1 Based on 69 Years Modeled

In addition, there would not be substantial decreases in absolute or relative annual early-lifestage survival of fall-run and late fall-run Chinook salmon in any individual year under the proposed long-term surface water supply relative to the cumulative condition (Technical Appendices H-566 to H-569). For winter-run Chinook salmon, the long-term average early-lifestage survival would be 93.4% for both the proposed long-term surface water supply and the cumulative conditions. There would not be substantial decreases in absolute annual early-lifestage survival of winter-run Chinook salmon in any individual year of the 69-year period of record. The long-term surface water supply would not result in a change in mean long-term average relative percent in early-lifestage survival, relative to early-lifestage survival under the cumulative condition. In 2 of the 69 years modeled, early-lifestage survival would decrease relative to the cumulative condition. In these two years, winter-run Chinook salmon absolute and relative long-term average early lifestage survival would not decrease by more than 10%. The largest relative decrease that would occur would be 5.7%, though this individual year’s reduction in early lifestage winter-run Chinook salmon survival would not change the mean long-term average survival.

For spring-run Chinook salmon, the long-term average early-lifestage survival would be 81.7% under the proposed long-term surface water supply and 81.7% under the cumulative condition. There would be no substantial decreases in absolute annual early-lifestage survival of spring-run Chinook salmon in any individual year of the 69-year period of record. There would not be a change in mean long-term average relative percent in early-lifestage survival, relative to early-lifestage survival under the cumulative condition. In 4 of the 69 years modeled, early-lifestage survival would decrease relative to the cumulative condition. In these four years, spring-run Chinook salmon absolute and relative long-term early-lifestage survival would not decrease by more than 10%. The largest relative decrease that would occur would be 5.9%, though this individual year’s reduction in early-lifestage spring-run Chinook salmon survival would not change the mean long-term average survival.
Therefore, the proposed long-term surface water supply would have no cumulatively considerable contribution to the potentially significant temperature-related impacts to fisheries of the upper Sacramento River that would occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. Impacts would therefore be considered less than significant.

Mitigation Measures

No mitigation measures are required.

4.4-72 The Specific Plan could contribute to cumulative effects on lower Sacramento River fisheries (temperature related).

Under the cumulative condition, the long-term average water temperature at Freeport on the lower Sacramento River would not change more than 0.3°F during any month of the year, relative to the existing condition. However, the number of years that water temperatures at this location would exceed 56°F, 60°F, and 70°F would be greater (i.e., 2 more occurrences for the 56°F index, 11 more occurrences for the 60°F index, and 9 more occurrences for the 70°F index), relative to the existing condition, during the March through November period. In addition, water temperature at Freeport would increase by 0.3°F or more, relative to the existing condition, in 178 of the 828 months included in the analysis. Based on these findings, potential temperature-related impacts to fish species within the lower Sacramento River represent a potentially significant cumulative impact.

Incremental Contribution of the Long-Term Surface Water Supply. The proposed Specific Plan long-term surface water supply would have no cumulatively considerable contribution to the frequent water temperature increases that would occur under the cumulative condition. This long-term surface water supply would not contribute to increases in long-term average water temperatures at Freeport on the lower Sacramento River, and would not contribute to increases in the frequency of water temperature criteria exceedance that would occur under the cumulative condition, as shown in Tables 4.4-17 and 4.4-18 (Template Output H-321 and H-324). Furthermore, the proposed long-term surface water supply would not contribute to increases in water temperature of 0.3°F or more in any month of the 828 months included in the analysis (Technical Appendix G-481 to G-492). Therefore, the proposed long-term surface water supply would not contribute to future significant water temperature increases on the lower Sacramento River, and consequently, would have no cumulatively considerable contribution to temperature-related impacts to lower Sacramento River fisheries that occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.
### Table 4.4-17

**Long-Term Average Water Temperature in the Sacramento River at Freeport Under Future NP and Cumulative Conditions**

<table>
<thead>
<tr>
<th>Month</th>
<th>Future NP</th>
<th>Cumulative</th>
<th>Difference (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct</td>
<td>60.8</td>
<td>60.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Nov</td>
<td>52.6</td>
<td>52.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Dec</td>
<td>45.9</td>
<td>45.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Jan</td>
<td>44.8</td>
<td>44.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Feb</td>
<td>49.1</td>
<td>49.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Mar</td>
<td>53.9</td>
<td>53.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Apr</td>
<td>59.9</td>
<td>59.9</td>
<td>0.0</td>
</tr>
<tr>
<td>May</td>
<td>65.4</td>
<td>65.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Jun</td>
<td>69.8</td>
<td>69.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Jul</td>
<td>72.8</td>
<td>72.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Aug</td>
<td>72.0</td>
<td>72.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sep</td>
<td>68.6</td>
<td>68.6</td>
<td>0.0</td>
</tr>
</tbody>
</table>

1 Based on 69 Years Modeled  

### Table 4.4-18

**Water Temperature Exceeding Index Temperatures in the Sacramento River at Freeport Under Future NP and Cumulative Conditions**

<table>
<thead>
<tr>
<th>Index:</th>
<th>56°F</th>
<th>60°F</th>
<th>65°F</th>
<th>68°F</th>
<th>70°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct</td>
<td>69(60.8°)</td>
<td>69(60.8°)</td>
<td>45(61.7°)</td>
<td>45(61.7°)</td>
<td>1(65.1°)</td>
</tr>
<tr>
<td>Nov</td>
<td>1(56.4°)</td>
<td>1(56.4°)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dec</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jan</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Feb</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mar</td>
<td>9(57.2°)</td>
<td>9(57.2°)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Apr</td>
<td>66(60.1°)</td>
<td>66(60.1°)</td>
<td>35(61.8°)</td>
<td>35(61.8°)</td>
<td>1(65.1°)</td>
</tr>
<tr>
<td>May</td>
<td>69(65.4°)</td>
<td>69(65.4°)</td>
<td>69(65.4°)</td>
<td>69(65.4°)</td>
<td>39(66.8°)</td>
</tr>
<tr>
<td>Jun</td>
<td>69(69.8°)</td>
<td>69(69.8°)</td>
<td>69(69.8°)</td>
<td>69(69.8°)</td>
<td>69(69.8°)</td>
</tr>
<tr>
<td>Jul</td>
<td>69(72.8°)</td>
<td>69(72.8°)</td>
<td>69(72.8°)</td>
<td>69(72.8°)</td>
<td>69(72.8°)</td>
</tr>
<tr>
<td>Aug</td>
<td>69(72°)</td>
<td>69(72°)</td>
<td>69(72°)</td>
<td>69(72°)</td>
<td>69(72°)</td>
</tr>
<tr>
<td>Sep</td>
<td>69(68.6°)</td>
<td>69(68.6°)</td>
<td>69(68.6°)</td>
<td>69(68.6°)</td>
<td>69(68.7°)</td>
</tr>
</tbody>
</table>

1 Based on 69 Years Modeled  

**Mitigation Measures**

No mitigation measures are required.

**4.4-73 The Specific Plan could contribute to cumulative effects on Delta fish populations.**
Delta outflow during the period of February through June is believed to be of greatest concern for potential effects to spawning and rearing habitat and downstream transport flows for delta smelt, longfin smelt, splittail, striped bass, salmonids, and other aquatic species in the Delta. In 38 of the 350 months modeled throughout the February through June period, Delta outflow would decrease by 10% or more, relative to the existing condition, with the greatest long-term reduction in long-term average Delta outflow at 4.5% (June).

Under the cumulative condition, the long-term average position of X2 would move upstream less than one km, relative to the existing condition, in any given month of the year. However, during the February through June period considered important for providing appropriate spawning and rearing conditions and downstream transport flows for various fish species, the upstream shift in the position of X2 under the cumulative condition would change 12% of the time (for 42 of the 350 months included in the analysis), relative to the existing condition.

The model simulations conducted for the cumulative condition included conformance with X2 requirements set forth in the SWRCB Interim Water Quality Control Plan. Furthermore, Delta export-to-inflow ratios under the cumulative condition would not exceed the maximum export ratio as set by the SWRCB Interim Water Quality Control Plan. Although the cumulative condition would not cause X2 or Delta outflow standards to be violated, there would be a decrease in long-term average outflow and an upstream shift in the position of X2, relative to the existing condition. Such changes to the Delta system would be considered to result in potentially significant cumulative impacts to Delta fisheries.

**Incremental Contribution of the Long-Term Surface Water Supply.** The proposed Specific Plan long-term surface water supply would not result in a significant contribution to Delta fisheries impacts under the cumulative condition. The proposed long-term surface water supply would not contribute to increases of Delta outflow of 10% or more; in fact, the greatest single reduction, at 357 cfs (May 1937), which would result in only a 1.9% decrease relative to the cumulative condition (Technical Appendix G-5 to G-9).

Furthermore, the proposed long-term surface water supply would not contribute to future shifts in the long-term average position of X2 (Template Output H-429). Based on the 350 months modeled throughout the February though June period, the proposed long-term surface water supply would result in shifts in the position of X2 of up to 0.2 km in 13 months (Technical Appendix G-17 to G-21). Thus, the proposed long-term surface water supply would not contribute significantly to future reductions in Delta outflow or shifts in the position of X2 that would occur under the cumulative condition, and consequently, would have no cumulatively considerable contribution to potentially significant impacts to Delta fish species that occur under the cumulative condition. As the long-term surface water supply would not contribute to the impacts that occur under the cumulative condition, it would also have no cumulatively considerable contribution to the impacts that occur under the cumulative condition. This impact is therefore considered less than significant.

**Mitigation Measures**
No mitigation measures are required.
ENDNOTES


U.S. Army Corps of Engineers Regulatory Guidance Letter (“RGL”) 01-1, Guidance for
Establishment and Maintenance of Compensatory Mitigation Projects Under the Corps Regulatory Program.

U.S. Army Corps of Engineers RGL 01.

U.S. Bureau of Reclamation, Mid-Pacific Region. 2004. Long-Term Central Valley Project and State Water Project Operations Criteria and Plan Biological Assessment. Sacramento, CA:


4.5 GEOL OGY AND SOILS

4.5.1 INTRODUCTION

This section presents an overview of the geologic and seismic setting of the Specific Plan area. This section evaluates the existing geologic conditions and geotechnical problems that could be encountered within the Specific Plan area. Existing characteristics of the soils, geology, and seismicity of the region have been examined in order to evaluate project-related potential impacts and to propose mitigation measures for impacts considered potentially significant.

This section includes a discussion of existing conditions, environmental impacts, mitigation measures, and levels of significance after mitigation for the project. The discussion below is drawn from an assessment of soils and geology, as well as Phase I and focused Phase II Environmental Site Assessments (ESA) prepared for the Specific Plan area by Carlton Engineering. General resources used are identified in the Endnotes to this section. The Phase I and II ESAs are included as Appendix L of this Revised Draft EIR.

4.5.2 ENVIRONMENTAL SETTING

The Specific Plan area is located in the central portion of the Great Valley geomorphic province (Sacramento Valley). The Sacramento Valley extends from Red Bluff in the north to the Sacramento-San Joaquin Delta Region in the south. At the latitude of the Specific Plan area, the valley is approximately 50 miles (80 kilometers) wide.

TOPOGRAPHY

The Specific Plan area is located within the Central Sacramento Valley north of Sacramento and west of the City of Roseville. The Specific Plan area lies within the geomorphic unit referred to as "Dissected Alluvial Plains." This unit is characterized by rolling topography and rounded knolls and ridges that are separated by intermittent streams. The entire region slopes gently westward toward the Sacramento River. Several streams, with narrow floodplains entrenched 10 to 15 feet below the surrounding topography, drain the area flowing east to west. The elevation of the Specific Plan area ranges from approximately 50 feet above mean sea level (msl) in the western portion of the Specific Plan area to approximately 100 feet above msl in the eastern portion.

REGIONAL GEOLOGY

The Sacramento Valley is formed by the Great Valley geocl ine, which is a large, elongate, northwest-trending asymmetric structural trough. It is bordered by the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Sierra Nevada range to the east. The trough continues southward from the Sacramento-San Joaquin Delta Region, where it is called the San Joaquin Valley. The Central Valley is composed of alluvial deposits from the adjoining Sierra Nevada.
LOCAL GEOLOGY

The geology in the vicinity of the Specific Plan area consists of transitional formations between the alluvial deposits of the Valley and granitic material characteristic of the Sierra Nevada range. The Roseville area is principally underlain by relatively recent Plio-Pleistocene non-marine sedimentary deposits formed during the Cenozoic period.

Sedimentary units that are exposed within Specific Plan area or are present at shallow depth are listed from youngest to oldest, as follows:

- Quaternary Period Alluvium (Holocene Epoch)
- Quaternary Period Modesto Formation, lower member (Pleistocene Epoch)
- Quaternary Period Riverbank Formation, lower member (Pleistocene Epoch)
- Quaternary Period Turlock Lake Formation (Pleistocene Epoch)

Quaternary Period Alluvium is described as undifferentiated basin and stream channel alluvium consisting of unweathered, unconsolidated silt, sand and gravel. This unit is exposed along Dry Creek.

The Quaternary Period Modesto Formation consists of arkosic alluvium, and is associated with Riverbank Formation sediments.

The Quaternary Period Riverbank Formation consists of weathered reddish gravel, sand and silt formed from mafic (primarily dark mineral) igneous rock fragments. This unit forms clearly recognizable alluvial terraces and fans. The alluvial component of this unit was likely derived from the Sierra Nevada and was deposited by the ancestral American and other rivers.

The Quaternary Period Turlock Lake Formation is generally characterized by partially consolidated gravel, sand and silt. The surface soil typically contains zones of cemented sand and silt (hardpan). This formation consists of eroded alluvial fans derived primarily from plutonic rocks of the Sierra Nevada. A principal constraint associated with the Turlock Formation is the relative impermeability and limited water holding capability of the material.

The Tertiary Period Mehrten Formation (Miocene-Pliocene Epochs) is not exposed within the Specific Plan area, but has been encountered in shallow drilling in the vicinity. The geologic units located in the Specific Plan area are illustrated in Figure 4.5-1.

SEISMICITY

The evaluation of faults, for the purpose of this Revised Draft EIR, has been conducted with the realization that most, but not all, active faults can be identified. According to California State Mining and Geology Board Guidelines, an active fault is defined by surface displacement within Holocene time; and potentially active faults show evidence of Quaternary age movement. However, faults that do not show evidence of recent movement are not necessarily inactive. With this in mind, if a fault has not had displacement activity during late Quaternary time, it is
not considered likely to be a significant earthquake source. If a fault has had significant activity during the late Quaternary, it could be considered a source for a future earthquake. Fault names used in this Revised Draft EIR were taken from Jennings (1994) and Mualchin and Jones (1992).

The northwest structural trends of the Coast Range, Great Valley and Sierra Nevada have resulted from an initial tectonic regime of accretion of oceanic plate rocks at the western margin of the continental plate during the Mesozoic era. During late Cenozoic time, tectonic activity at the Pacific and North American plate margin shifted from a convergent regime to a transform regime, as is now occurring along the San Andreas system. A component of compressional stress is also included in the current regime.

REGIONAL FAULTING

The fault zones within 60 miles (100 kilometers) of the Specific Plan area that are currently zoned active by the California Division of Mines and Geology (DMG) under the Alquist-Priolo Special Studies Zone Act (Hart, 1997), include the Cleveland Hill Fault (42 miles or 70 kilometers north-northeast of the Specific Plan area), the Green Valley Fault (54 miles or 90 kilometers southwest), the Antioch Fault (54 miles or 90 kilometers south-southwest), and the Hunting Creek Fault (54 miles or 90 kilometers west). See Figure 4.5-2.

A review of the map Earthquakes in California and Nevada (Goter and others, 1994) reveals numerous epicenters within 60 miles (100 kilometers) of the Specific Plan area. These epicenters are generally located southwest of the Specific Plan area in the eastern Coast Ranges, and to the east and north in the Sierra Nevada and central area of the Sacramento Valley. The historical pattern of seismic activity in Placer, Sacramento and Sutter counties has generally been characterized as a scattering of small magnitude (<5.5) earthquakes generally located near concealed and mapped faults east and west of the Specific Plan area. Three seismic events are recorded within 100 kilometers of the Specific Plan area, two in the Vacaville to Vallejo area as being greater than Richter Magnitude 6.5 (1892 and 1898), and one in the Oroville area (Cleveland Hill, 1975) and Sierra Nevada northeast of Nevada City between Richter Magnitude 5.5 to 6.4.

The most recent seismic event with an intensity of 4.0 or greater measured on the Richter Scale was recorded in the Specific Plan area occurred in 1908. The epicenter of this event was located on a north/south line between Folsom and Auburn and on an east/west line between Placerville and Roseville. There have been several less severe events since 1908.

The DMG has classified the South Placer area as a low severity earthquake zone. The maximum expected intensity in a zone of this classification would range between VI and VII on the Modified Mercalli Scale (5.0 to 5.9 in magnitude on the Richter Scale). Events of this intensity level would include cracks in weak masonry and chimneys, shaking or rustling of trees and bushes, furniture movement, and breaking of glassware.
LOCAL FAULTS

The Foothills Fault Zone is located approximately 15 miles (25 kilometers) east and northeast of the Specific Plan area. This zone includes primarily the Spenceville, Swain Ravine, Maidu, Dewitt, Bear Mountains and Melones Faults. The Dunnigan Hills Fault is located approximately 20 miles (33 kilometers) to the west of the Specific Plan area. The Vaca Fault is located approximately 36 miles (60 kilometers), the Cordelia Fault approximately 45 miles (75 kilometers), and the West Napa Fault and the Soda Creek Fault approximately 54 miles (90 kilometers), all southwest of the Specific Plan area. The Willows Fault is located approximately 2 miles (3 kilometers) west of the Specific Plan area. The Willows Fault is inferred from drilling records or earthquake focal mechanism studies, and no traces are reported at the ground surface.

The Coast Range Sierra Block boundary zone (CRSB) is shown on regional maps to be located approximately 25 miles (40 kilometers) west of the Specific Plan area (Mualchin and Jones, 1992). The CRSB is concealed at the surface and underlies the western Great Valley geomorphic province near its western margin along the general trend of Interstate 5. Faults within this boundary zone are considered to be potentially active blind thrust faults, some of which have been responsible for recent earthquakes (1983 Mw 6.5 Coalinga, and 1985 Mw 6.1 Kettleman Hills events) and historic events (1892 approximately Mw 6.8 Vacaville-Winters sequence).

SURFACE FAULT RUPTURE

Review of available information indicates that no faults with a surface expression have been mapped in the Specific Plan area. The latest revision of DMG Special Publication 42 (Fault-Rupture Hazard Zones in California, revised 1997) indicates that fault zones previously mapped in the Specific Plan area are not included in a fault-rupture hazard zone (Alquist-Priolo Earthquake Fault Zones). The zoned fault nearest to the study area is the Cleveland Hill Fault, approximately 42 miles (70 kilometers) to the north, which was the source of a magnitude 5.7 earthquake in 1975.

GROUND ACCELERATION

Seismic hazard maps have been prepared by the U.S. Geological Survey (USGS) for the coterminous United States as part of the National Seismic Hazards Mapping Project. The reference site condition is the boundary between National Earthquake Hazards Reduction Program (NEHRP) classes B and C. The reference condition represents a site with an average shear wave velocity of 760 meters per second in the top 30 meters. Frankel and others (1996) refer to this as a “firm rock” site, differentiating it from “hard rock” with shear wave velocities near 3,000 meters per second at the surface. Information developed by the U.S. Geological Survey for the National Seismic Hazard Mapping Project indicates that the horizontal peak ground acceleration (PGA) in the Specific Plan area is estimated as follows: for schools and hospitals and other essential service facilities subject to California Code of Regulations (CCR) Title 24, the Upper Bounds Event (UBE, 5% probability of occurrence in 50 years - 0.15g); for other residential and commercial development, the Maximum Probable Event (MPE, 10%
probability in 50 years) is 0.12 g. The Specific Plan area is shown to be within Seismic Zone 3 (Figure 16A-2 of the California Building Code), which correlates to a site Seismic Zone Factor, Z, of 3.

**LIQUEFACTION**

Liquefaction is the transformation of saturated granular material from a solid to a liquid caused by a rapid increase in liquid pore pressure brought about by ground shaking. Various investigations have shown that the liquefaction potential of a soil deposit depends on the characteristics of the soil and its age, the initial stresses acting on the soil, and the traits of the earthquake. In general, considering that most of the undisturbed firm native surficial material present in the Specific Plan area is mapped as geologic units that are older than the Holocene Epoch, and recent (since approximately 1964) reported depth to groundwater is greater than 50 feet below ground surface (bgs) (depth to groundwater reported as shallow as 25 to 30 feet bgs around 1950), the Specific Plan area should not be susceptible to liquefaction under the current groundwater regime.

**MASS MOVEMENT**

Mass movement or landslide refers to the downward movement of rock and soil due to gravity once they have been displaced from their normal positions. The topography of the Specific Plan area is gentle to moderate. No indications were observed during site reconnaissance to suggest the potential for significant landslides, mudflows, or slope instability. Due to the topography and the relative strength of the soil and rock units present on the site, the likelihood of natural slope failures is considered to be low. The likelihood of natural slope failures induced by seismic forces is also considered to be low.

**SEISMIC SETTLEMENT AND DIFFERENTIAL COMPACTION**

Fine-grained soil and clay are subject to seismic settlement and differential compaction. Areas underlain by low-density silts and clays associated with fluvial depositional environments are susceptible to seismically-induced settlement. The potential for differential compaction is highest and occurs over the largest areas during “great” earthquakes, which are magnitude 8.0 or greater, and are not reported for design events at this site. Localized soil slumps could be induced with increased pore pressures or loss of shear strength due to shaking; however, the susceptibility is considered low for the Specific Plan area.

The firm native near-surface material is not considered susceptible to seismic settlement. However, if Specific Plan improvements are founded on materials of differing strength, such as hardpan, rock formations or dense soil, and compacted fill materials, foundations could be susceptible to settling.
COLLAPSIBLE SOILS

Collapsible silt and expansive clay soils often can be found within areas with a fluvial depositional history. Based on literature research and on-site reconnaissance, the soils within the Specific Plan area do not appear to have collapsible characteristics. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service mapping information indicates that the Alamo, Cometa and Fiddymen t soil mapping units in the Specific Plan area have high expansion potentials. (See Figure 4.1-5 in Section 4.1 of this Revised Draft EIR.)

SUBSIDENCE

Subsidence is the sinking of the ground surface usually resulting from groundwater withdrawal or other subsurface collapse or extraction. The vicinity around the Specific Plan area is not known to have experienced significant subsidence or subsequent constraints to development due to subsidence. Based on current conditions, land subsidence within the Specific Plan area is considered unlikely.

MINERAL RESOURCES

The California Department of Conservation, Division of Mines and Geology (DMG) is responsible under the California Surface Mining and Reclamation Act of 1975 (SMARA) for the classification and designation of areas that contain, or could contain, significant mineral resources. Land in the Specific Plan area is classified by Loyd, 1995 (CDMG Open File Report 95-10) as Mineral Resource Zone 4 (MRZ-4). MRZ-4 is defined as areas of no known mineral occurrence where geologic information does not rule out either the presence or absence of significant mineral resources. No mineral extraction operations are reported to exist within the Specific Plan area.

No oil or natural gas fields are known to exist within the Specific Plan area (Munger Map Book of California-Alaska Oil and Gas Fields, Munger, 1992 and the book of California Oil & Gas Fields, Northern California, California Division of Oil and Gas, 1982).

OTHER GEOLOGIC HAZARDS

SEICHE

A seiche is a wave motion in an inland body of water generated by sustained ground shaking from an earthquake. The wave motion can increase in intensity with prolonged shaking until it reaches the natural period of the body of water. These periods usually are a few minutes long resulting from major and great earthquakes. Losses due to flooding or dam failure from seiche are possible with extended duration of ground shaking at a frequency constructive with the period of the body of water. There is no potential for on-site seiche-induced impacts because no large water bodies are located in or upgradient of the Specific Plan area and its vicinity.
VOLCANIC HAZARDS

Volcanic flow and surge phenomena from active California volcanic zones are not anticipated to have an impact on the Specific Plan area. Although it is not possible to accurately predict the area of influence for ash fall deposits, based on the distance from the Specific Plan area to the nearest active volcanic zone, it is unlikely that the impact of ash fall deposits on the Specific Plan area would be significant. Damage as a result of volcanic hazards in California is most likely to occur in the vicinity of Mount Shasta, Lassen Peak, Medicine Lake Highland, or Long Valley Caldera at Mono Lake.

INUNDATION HAZARD

Inundation maps on file with the California Office of Emergency Services for the Oroville and Shasta dams indicate that inundation hazards exist northwest and west of Pleasant Grove and west of the Sacramento River, respectively, for those facilities. No impact to the Specific Plan area is anticipated.

TSUNAMIS

The elevation of the Specific Plan area ranges from approximately 50 feet above msl in the western portion of the Specific Plan area to approximately 100 feet above msl in the eastern portion. The Specific Plan area is approximately one hundred miles from any coastal water body. Considering the location of the site in relation to the Pacific Ocean (see Figure 3-1 in Chapter Three of this Revised Draft EIR) and other large bodies of water, impacts from tsunamis are not anticipated in the Specific Plan area.

SOILS AND HYDROGEOLOGY

SOILS

The soils in the Specific Plan area generally consist of 12 soil mapping units, as indicated on the “Soil Survey of Placer County California, Western Part” (Rogers, 1980 - USDA Soil Conservation Service [currently named Natural Resources Conservation Service, NRCS]), (see Figure 4.1-5 in Section 4.1 of this Revised Draft EIR). The soils belong to complexes of related units and individual units, and include: the Alamo-Fiddyment complex; Cometa sandy loam; Cometa-Fiddyment complex; Cometa-Ramona sandy loam; Fiddyment loams; Fiddyment-Kaseberg loams; Ramona sandy loam; San Joaquin-Cometa sandy loams; and Xerofluvents. In general, the soils consist of clays, loams and sandy loams that formed primarily on low terraces and on alluvial bottoms. The Xerofluvents soils are found adjacent to Dry Creek and Curry Creek in the eastern portions of the Specific Plan area, and are gravelly loams and sands. The mapped soils are well to poorly drained, have moderately slow to very slow permeability, medium to slow runoff, moderate to slight erosion potential (only the Xerofluvents are described with high erosion potential), and pose low to high risks of corrosion to steel and concrete. Hardpan layers are reported to be found at depths ranging from 16 inches to 35 inches below the surface, and a high shrink-swell potential is reported for Alamo, Cometa and Fiddyment soils.
GROUNDWATER

The history of depth to groundwater has been surveyed and recorded by the California Department of Water Resources throughout the state. A review of hydrographs available for ten wells in the Specific Plan area indicates that the depth to groundwater during the middle to late 1990s varied from approximately 55 feet below the surface in the western portion of the Specific Plan area, to approximately 125 feet below the surface in the northeastern portion of the Specific Plan area. The available information also indicates that the general groundwater gradient direction is westerly to northwesterly in the Specific Plan area. Groundwater pumping for agricultural use was observed on properties in the Specific Plan area during the field studies conducted for this Revised Draft EIR. (See Figure 4.5-3.)

4.5.3 REGULATORY SETTING

FEDERAL AND STATE

U.S. Uniform Building Code (UBC) has design criteria for excavations and structures under static and dynamic loading conditions. The California Building Code is based on the UBC. Geologic resources and hazards are under the jurisdiction of the DMG.

Earthwork and construction issues of soil erosion and water quality protection are regulated by the 1972 Federal Water Pollution Control Act (Clean Water Act - CWA). Amendments to the CWA in 1987 added Section 402(p), which established a framework for regulating storm water discharges under the National Pollutant Discharge Elimination System (NPDES). Construction excavation safety issues are regulated by the Federal Occupational Safety and Health Administration (OSHA).

LOCAL

The Placer County Building Department and the Department of Public Works regulate construction at the local level. The locally administered Building Code provides design criteria for geologically induced loading. The Code also provides calculation methods to assist in the design process. The Placer County General Plan contains policies regarding seismic and geological issues as they relate to public health and safety and natural resources. Relevant General Plan goals and policies include:

PLACER COUNTY GENERAL PLAN

Goal: To minimize the loss of life, injury, and property damage due to seismic and geological hazards.
Policies:

8.A.1. The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., ground shaking, landslides, liquefaction, critically expansive soils, avalanche).

8.A.2. The County shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.

8.A.3. The County shall prohibit the placement of habitable structures or individual sewage disposal systems on or in critically expansive soils unless suitable mitigation measures are incorporated to prevent the potential risks of these conditions.

8.A.4. The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.

8.A.5. In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.

8.A.6. The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.

8.A.7. In areas subject to severe ground shaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.

8.A.8. The County shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe ground shaking, avalanche potential, and other hazardous conditions in Placer County.

8.A.9. The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.

8.A.10. The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.

8.A.11. The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.
Implementation Programs:

8.1. The County shall continue to enforce provisions of the Uniform Building Code which address seismic concerns, including masonry building design requirements.

8.2. The County shall assess the need for an ordinance requiring evaluation of un-reinforced masonry structures and the repair or replacement of identified hazardous structures.

PLACER COUNTY DEPARTMENT OF PUBLIC WORKS/ENVIRONMENTAL HEALTH DIVISION

The Placer County Department of Public Works maintains policies and guidelines regarding grading, erosion control, storm water design, inspection, and permitting. The Environmental Health Division has permitting authority for well installation/destruction. Permits related to earthwork and well installation/destruction that may be required within this Specific Plan area include:

- Grading permits,
- Construction permits,
- Well drilling/destruction permits,
- U.S. Army Corps of Engineers Nationwide Permit 12, for utility line backfill and bedding,
- California Department of Fish and Game Streambed Alteration Agreement, and
- California State Water Resources Control Board General Construction Activity Discharge of Storm Water Permits (NPDES).

4.5.4 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines provides examples of impacts that could be considered significant for geology and soils. Based on these examples, Placer County has determined that a project could result in a significant impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
  - Strong seismic ground shaking,
  - Seismic-related ground failure including liquefaction, or
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil.

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

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

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

- Result in the loss of, or loss of access to, mineral resources identified in a Mineral Resource Zone by DMG.

- Result in inundation by seiche, tsunami or mudflow.

The following impact analysis is based on a review of geologic and soils data prepared by DMG, USGS, and USDA Natural Resources Conservation Service (Unified Soil Classification System and tables summarizing the Engineering Properties and the Physical and Chemical Properties of mapped soils) that is pertinent to the Specific Plan area. Seismic hazard impacts were analyzed according to published and unpublished data, and conclusions formed from the scientific community’s current understanding of local and regional features. The analysis is also based on review of aerial photographs, consultation with local agency representatives, review of agency files, and site visits where surface features were generally observed and mapped. Site-specific geotechnical reports have not yet been prepared for Specific Plan area properties. Per Placer County General Plan policy 8.A.2, a preliminary soils report will be required to accompany each future tentative map submittal. As specified in the Specific Plan and in mitigation measures below, a complete geotechnical report will be required to be submitted and accepted by the Public Works Department prior to the approval of improvement plans.

4.5-I Construction on soils with low strength, high shrink-swell potential, and corrosive characteristics could result in damage to structures, foundations, and roadways.

Expansive soils increase in volume when they absorb water and decrease in volume when they are dry. The location and thickness of expansive clay is predictable by visual observation of desiccation cracks and by performing laboratory tests. Structural limitations are imposed by the high shrink-swell potential and limited load-bearing strength of Alamo, Cometa, and Fiddyment soils as indicated in tables prepared by the USDA Natural Resources Conservation Service summarizing the Engineering Properties and the Physical and Chemical Properties of the mapped soils. These soils are found throughout the Specific Plan area and cover the majority of the project site. Development of structures or roadways on expansive soils could result in soil volume changes, cracking, and deterioration of structures and roadway pavement. Based on the
above-mentioned standards of significance, this is considered a potentially significant impact. Corrosive characteristics for concrete and uncoated steel are also reported for some of the above described soils. This condition can result in a potentially significant impact to foundation strength due to long-term exposure to corrosive soils.

Mitigation Measures

The following mitigation measures would reduce these soil impacts to a less than significant level:

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

- Road, pavement, and parking area design,
- Structural foundations, including retaining wall design (if applicable),
- Grading practices,
- Erosion/winterization,
- Special problems discovered on-site (i.e., groundwater, corrosiveness, expansive/unstable soils), and
- Slope stability.

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

4.5-1b For non-pad graded lots, prior to approval of improvement plans, a soil investigation of each lot in the subdivision produced by a California Registered Civil or Geotechnical Engineer shall be submitted to the Department of Public Works for review and approval (Sections 17953-17955 of the California Government Code). For pad-graded lots, prior to final acceptance of project improvements or consideration of early building permits, and after completion of pad grading for all lots, a soil investigation of each lot produced by a California Registered Civil or Geotechnical Engineer shall be submitted to the Department of Public Works for review and approval (Sections 17953-17955 of the Government Code).
The soil investigations shall include recommended corrective action to prevent structural damage to each proposed dwelling. In addition, any soil problems encountered on each specific lot, as well as the recommended corrective actions, shall be included in a Development Notebook.

4.5-2 Potential ground shaking could damage structures during strong earthquakes generated along faults in the region.

Strong earthquakes generated along a fault system generally create ground shaking, which lessens with distance from the fault. In general, the area affected by ground shaking will depend upon the characteristics and magnitude of the earthquake. As determined by the USGS National Seismic Hazard Mapping Project, the horizontal peak ground acceleration in the Specific Plan area is estimated as follows: schools and hospitals and other essential service facilities subject to CCR Title 24, the Upper Bounds Event (UBE), 5% probability of occurrence in 50 years) - 0.15g; for other residential and commercial development, the Maximum Probable Event (MPE), 10% probability in 50 years) is 0.12g. The California Health and Safety Code requires that buildings be designed to resist stresses developed by earthquakes. The Uniform Building Code (California Building Code) classifies the Specific Plan area as being within seismic Zone 3. Minimum ground accelerations of 0.3g are used for structure design within this region. Accepted seismic design criteria are presented in the Uniform Building Code, Chapter 16. Because existing regulations provide adequate mitigation of structurally-related groundshaking hazard, this impact is considered to be less than significant.

Mitigation Measure

No mitigation measures are required.

4.5-3 There is a potential for surface ground rupture to occur.

The active fault closest to the Specific Plan area is located approximately 42 miles (70 kilometers) to the north. No active fault traces or Alquist-Priolo Earthquake Fault Zones are reported beneath the Specific Plan area. Therefore, the probability of surface ground rupture is negligible. Thus, no impact associated with the potential for surface rupture in the Specific Plan area would occur.

Mitigation Measures

No mitigation measures are required.

4.5-4 Construction activities resulting in ground disturbance (topographic alteration) could create a moderate potential for ground instability and erosion.

Earthwork/grading for structure placement, transportation system development, and overall site improvements would be required during development within the Specific Plan area. In general, grading activities, such as those anticipated during development, can create the potential for
ground instability and erosion. Some gentle slopes are present in the Specific Plan area. The anticipated construction activities will likely include shallow cut and fill slopes for site buildings, and associated trench excavation. Subsurface conditions could be somewhat variable, ranging from competent to weak. According to information developed by the USDA Natural Resources Conservation Service, weaker soils can be expected in some near-surface zones, within a few feet of the ground surface. The potential for differential settlement exists where structures may be constructed across boundaries between the in-place hardpan, rock formations or dense soil, and engineered fill.

Although no areas of suspected or potential ground instability were reported or noted during research, construction activities involving ground disturbance could result in a small potential for ground instability. Erosion is anticipated to occur in disturbed soil areas. Soil stockpiles could be susceptible to erosion and soil loss. These impacts are considered to be potentially significant.

Mitigation Measures

The following mitigation measures will reduce the magnitude of topographic alteration impacts to a less than significant level:

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

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

Uncemented silty soils are prone to erosion. According to requirements, as set forth in Section 402 (p) of the Clean Water Act as amended in 1987, and as administered by the SWRCB, erosion control measures (appropriate Best Management Practices) shall be implemented during construction which conform to the National Pollutant Discharge Elimination System, Storm Drain Standards, and local standards, consistent with Best Management Practices contained in the California Stormwater Quality Association Stormwater Best Management Practices Handbook for Construction and New Development/Redevelopment (or other similar source).
4.5-4c The applicant shall prepare and submit improvement plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the Department of Public Works for review and approval for each new development phase within the Specific Plan. The plans shall show all conditions for each phase, as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, that could be affected by planned construction, shall be shown in the plans. All landscaping and irrigation facilities within sight distance areas at intersections, shall be included in the improvement plans. The applicant shall pay plan check and inspection fees. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It shall be the applicant’s responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Design Review Committee review is required as a condition of approval for the project, said review process shall be completed prior to submittal of improvement plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant’s expense and shall be submitted to the Department of Public Works prior to acceptance by the County of site improvements.

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

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

A letter of credit or cash deposit shall be submitted to the Department of Public Works in the amount of 110% of an approved engineer’s estimate for winterization and permanent erosion control work prior to improvement plan approval to guarantee protection against erosion and improper grading practices. Upon the County’s acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.
If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the improvement plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the Design Review Committee/Department of Public Works for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the Design Review Committee/Department of Public Works to make a determination of substantial conformance may serve as grounds for appropriate punitive action by the appropriate hearing body, including the revocation of a site-specific project approval in extreme circumstances. In determining what constitutes appropriate punitive action in this context, the hearing body shall be guided by the penalty options set forth in Article 15.48 and Article 17.62 of the Placer County Code.

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

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

OFF-SITE INFRASTRUCTURE

4.5-5 Construction activities related to off-site infrastructure resulting in ground disturbance (topographic alteration) could create a potential for ground instability and soil erosion.

Impacts related to ground disturbance that could result from trench/pipeline construction within the off-site utility corridors, roadway widening, or expansion of wastewater treatment plant-related facilities are similar to those for proposed utility improvements and construction within the Specific Plan area. Those impacts include earthwork/grading or topographic alteration, and soil erosion, which are addressed under Impact 4.5-4 and Mitigation Measures 4.5-4a-f. Although some of the specific soils to be affected and the nature of construction are not yet known, Mitigation Measures 4.5-4a-f can reduce any potentially significant effects to a less than significant level. However, some of the project infrastructure would be located in another jurisdiction and not subject to Placer County oversight.

Trenching and pipeline construction are temporary in nature. Once the utility is installed the surface is typically returned to its original condition. Most off-site utility lines will be placed in already disturbed roadway easements. Further, any construction will be subject to NPDES requirements, including submission of a SWPP, as administered by the State Water Resources Control Board (SWRCB). In addition, any construction will be under the oversight of another public agency, and ultimate owner of the improvements (e.g., the Sacramento Suburban Water
District, Placer County Water Agency, City of Roseville, and Sacramento Regional County Sanitation District). Each of these agencies has similar construction protocols to those administered by Placer County, and similar responsibilities and obligations under NPDES, and other provisions of the Clean Water Act (CWA). Based on these regulatory and institutional safeguards, any potentially significant geology and soils-related impacts that could occur within other jurisdictions from utility line and roadway construction would be less than significant.

Although expansion of wastewater treatment plant-related facilities is permanent, any geology and soils-related impacts pertaining to expansion of the DCWWTP will be the same as those analyzed and described in the Roseville Regional Wastewater Treatment Service Area Master Plan EIR. Relevant impacts that were identified include Soil Disturbance, Erosion and Sedimentation, Topographic Alteration, Soil Instability and Seismic Hazards. These impacts were found to be less than significant with proposed mitigation. Mitigation measures included “Restore ground surface and topography” (Mitigation Measure 5-1), “Require soil stockpiling and disposal standards” (Mitigation Measure 5-3), “Prepare erosion and sedimentation control plan” (Mitigation Measure 5-5), and “Implement recommendations of geotechnical report” (Mitigation Measure 5-6). Additionally, the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan EIR identified exposure to hazards from abandoned natural gas well plugs from the former Freeport gas field as relevant to topographic alteration. The EIR identified “Consultation of Division of Oil and Gas records prior to excavation for excavation depths greater than five feet below the surface” as the appropriate mitigation to reduce the impact to a less than significant level (for additional discussion of the two wastewater treatment plants, see Section 4.1 of this Revised Draft EIR).

Because geology and soils mitigation measures have already been adopted by the City of Roseville and the SRCSD for wastewater treatment facility construction, and because those measures are similar and equivalent to those identified by Placer County for the Specific Plan area, potentially-significant geology and soils impacts related to expansion of wastewater treatment plant-related facilities are less than significant.

Mitigation Measures

Implementation of Mitigation Measure 4.5-4a-f above, and compliance with the following mitigation measures described in the Roseville Regional Wastewater Treatment Service Area Master Plan EIR and the Sacramento Regional Wastewater Treatment Plant 2020 Master Plan EIR will reduce impacts to a less than significant level.

4.5-5a Restore ground surface and topography.

4.5-5b Require soil stockpiling and disposal standards.

4.5-5c Prepare erosion and sedimentation control plan.

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

**CUMULATIVE IMPACTS AND MITIGATION MEASURES**

4.5-6 Cumulative impacts from soil erosion/loss and off-site sedimentation could occur from this project and surrounding projects involving earthwork activities or topographic alteration.

Geology and soils impacts are considered for the most part to be effects that the environment could have on proposed development within the Specific Plan area, exposing people or structures to substantial adverse effects. Compliance with the requirements of the Uniform Building Code, which are designed to make individual structures safe, avoids the creation of additive effects amongst various development projects occurring within the surrounding region. The exception to this consideration would be potential soil erosion/loss and off-site sedimentation impacts related to earthwork and development.

Mitigation Measure 4.5-4a-f includes procedures and actions designed to reduce the impacts from earthwork or topographic alteration related to the project to less than significant levels. Many of the procedures and actions described in Mitigation Measure 4.5-4a-f are statewide in their application, including requirements for SWPPs and compliance with similar NPDES programs. These programs are applicable throughout the surrounding region. The application and effectiveness of these programs when combined with Mitigation Measure 4.5-4a-f for the Specific Plan area would result in a less than cumulatively considerable (i.e., less than significant) impact from soil erosion, loss, and off-site sedimentation.

**Mitigation Measures**

Implementation of Mitigation Measure 4.5-4a-f above will reduce cumulative impacts from soil erosion/loss and off-site sedimentation to a less than cumulatively considerable (i.e., less than significant) level.
ENDNOTES


Cartwright Aerial Surveys. 1971. *Flight 3069 – Photographs 3-62, 3-63, 3-76, 3-77, 3-78, 3-182, 3-184 4-52, 4-54, 4-63, 4-64, 4-66, 4-177, 4-178*. Flown March 20, 1971.


Soil Conservation Service. 1993. *Black and White Aerial Photograph Nos. NAPP-6353 123R (A20), 122R (A19), 72L (B20), 72R (C20), 73L (B19), 73R (C19), 98L (C19), and 99L (D20).* United States Department of Agriculture. Flight date not marked on photo. 1993.