Central Amador Water Project (CAWP)
Water Right Application
Environmental Impact Report

FINAL
SCH #2016092008

Lead Agency:
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Prepared By:

September 2017
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### Table of Contents

**Executive Summary** ................................................................. ES-1
- ES-1 Introduction .............................................................................. ES-1
- ES-2 Project Location ........................................................................ ES-2
- ES-3 Purpose and Need ...................................................................... ES-2
- ES-4 CEQA Objectives ..................................................................... ES-2
- ES-5 Summary of Impacts ................................................................. ES-2

**Chapter 1 Introduction** ............................................................ 1-1
1.1 Introduction ..................................................................................... 1-1
1.2 Compliance with CEQA ................................................................. 1-1
1.2.1 State Requirements ................................................................. 1-1
1.2.2 CEQA EIR Process .................................................................... 1-2
1.2.3 Action on the Project ................................................................. 1-4
1.2.4 Mitigation Monitoring and Reporting ....................................... 1-5
1.3 Organization of this EIR ............................................................... 1-5

**Chapter 2 Proposed Project** ..................................................... 2-1
2.1 Introduction ..................................................................................... 2-1
2.2 Project Location ............................................................................. 2-1
2.3 Background ..................................................................................... 2-1
2.3.1 Water Rights .............................................................................. 2-4
2.4 Project Description ......................................................................... 2-5
2.4.1 Purpose and Need ....................................................................... 2-5
2.4.2 Project Objectives ....................................................................... 2-5
2.4.3 Project Description ................................................................. 2-5
2.4.4 Management Practices for CAWP Water Supply .................. 2-6
2.4.5 Existing Facilities and Operational Requirements ............... 2-8
2.4.6 Required Permit ....................................................................... 2-98
2.5 References ...................................................................................... 2-98

**Chapter 3 Setting, Impacts, and Mitigation** ............................... 3.0-1
3.0 Introduction to Environmental Analysis ...................................... 3.0-1
3.0.1 Organization of Chapter 3 ....................................................... 3.0-1
3.0.2 Organization of Discussion of Environmental Issue Areas .... 3.0-1
3.0.3 Approach to Analysis of Cumulative Impacts ....................... 3.0-2
3.0.4 References .................................................................................. 3.0-4

3.1 Hydrology ..................................................................................... 3.1-1
3.1.1 Environmental Setting ............................................................ 3.1-1
3.1.2 Regulatory Framework .......................................................... 3.1-1
3.1.3 Impact Analysis ....................................................................... 3.1-2
3.1.4 References .................................................................................. 3.1-7
3.2 Biological Resources................................................................................ 3.2-1
3.2.1 Environmental Setting ......................................................................... 3.2-1
3.2.2 Regulatory Framework ......................................................................... 3.2-2
3.2.3 Impact Analysis .................................................................................... 3.2-2
3.2.4 References ......................................................................................... 3.2-5

3.3 Growth Inducement ............................................................................... 3.3-1
3.3.1 Consideration of Growth Inducement under CEQA ......................... 3.3-1
3.3.2 Growth Inducement ........................................................................... 3.3-1
3.3.3 Constraints to Growth ........................................................................ 3.3-2
3.3.4 Projected Extent of Growth in CAWP Service Area ......................... 3.3-3
3.3.5 Indirect Impacts Associated with Growth ......................................... 3.3-6
3.3.4 References ....................................................................................... 3.3-11

Chapter 4 Other CEQA Considerations ......................................................... 4-1
4.1 Significant and Unavoidable Impacts ................................................... 4-1
4.2 Significant Irreversible Environmental Changes ...................................
4.3 Effects Not Found to be Significant ..................................................... 4-1
4.4 Cumulative Impacts ............................................................................. 4-1
4.5 Alternatives Evaluation ........................................................................ 4-1
4.5.1 Methodology ..................................................................................... 4-1
4.5.2 Reduced Growth Alternative ............................................................ 4-2
4.5.3 No Project Alternative ........................................................................ 4-3
4.5.4 Comparison of Alternatives ............................................................... 4-3
4.5.5 Environmentally Superior Alternative ............................................. 4-3
4.6 References ......................................................................................... 4-4

Chapter 5 Report Preparers .......................................................................... 5-1
5.1 Amador Water Agency ........................................................................ 5-1
5.2 RMC Water and Environment ............................................................... 5-1
5.3 AD Consultants ................................................................................... 5-1
5.4 Hanson Environmental, Inc. ................................................................. 5-1

Chapter 6 Response to Comments ............................................................... 6-1
6.0 Introduction ......................................................................................... 6-1
6.1 Comment Letter 1 – Caltrans District 10, Michele Demetras, Associate
  Transportation Planner ................................................................................ 6-2
6.2 Comment Letter 2 – United Auburn Indian Community, Gene Whitehouse, Chairman
  ........................................................................................................ 6-2
6.3 Comment Letter 3 – East Bay Municipal Utility District, Lena L. Tam,
  Manager Water Resources Planning ........................................................ 6-2
6.4 Comment Letter 4 – Foothill Conservancy, Thomas P. Infusino ............ 6-5
6.5 Comment Letter 5 – Ratepayer Protection Association, Ken Berry ........ 6-19
6.6 Comment Letter 6 – State of California, Governor’s Office of Planning and Research, State Clearinghouse and Planning Unit, Scott Morgan, Director ..................................................................................................... 6-23

Chapter 7 Comment Letters ........................................................................................................ 7-1

List of Tables

Table ES-1 Summary of Potential Project Impacts......................................................... ES-4
Table 1-1: Parties that Submitted Comments during the Scoping Period............... 1-2
Table 3.0-1: List of Cumulative Projects.............................................................................. 3.0-4
Table 3.1-1: Diversion Scenarios......................................................................................... 3.1-3
Table 3.1-2: Average Annual Flow in cfs by Year Type for Maximum Diversion Pre-Project ......................................................................................... 3.1-4
Table 3.1-3: Change in Average Flow from Pre-Project to Post-Project by Year Type (in cfs and %) .......................................................................................... 3.1-6
Table 3.3-1: Estimated Population and Water Demand in CAWP Service Area – Existing and Build-out ................................................................................... 3.3-45
Table 4-1: Comparison of Alternatives ........................................................................... 4-3
Table 6-1: List of Commenters ......................................................................................... 6-1
Table 6-2: Past Water Demand in CAWP Service Area ................................................. 6-21

List of Figures

Figure ES-1: Project Vicinity.............................................................................................. ES-3
Figure 2-1: Vicinity Map ................................................................................................. 2-2
Figure 2-2: AWA Current Area Served and CAWP Place of Use ................................ 2-3
Figure 2-3: Diversion Locations for Water Right Application 5647X03 – Proposed Project ................................................................................................................. 2-7
Figure 3.3-1: Current Parcels Served and Anticipated Parcels Served at Build-out 3.3-5

Appendices

Appendix A: Notice of Preparation and Initial Study
Appendix B: Public Comments Received on the NOP
Appendix C: Summary of MOCASIM Modeling Results to Support Hydrology Impact Analysis
Appendix D: Summary of Project Effects on Fisheries and Aquatic Habitat
Appendix E: AWA Land Use Based Water Demand Projections
Appendix F: Agreement between PG&E and AWA
Abbreviations

AF    acre-feet
AFY   acre-feet per year
AWA   Amador Water Agency
AWS   Amador Water System
CAWP  Central Amador Water Project
CCR   California Code of Regulations
CCWD  Calaveras County Water District
CDFW  California Department of Fish and Wildlife
CEQA  California Environmental Quality Act
cfs   cubic feet per second
CPUD  Calaveras Public Utility District
DWR   Department of Water Resources
EBMUD East Bay Municipal Utility District
EIR   Environmental Impact Report
FERC  Federal Energy Regulatory Commission
GPCD  Gallons per capita per day
IRWMP Integrated Regional Water Management Plan
JVID  Jackson Valley Irrigation District
LOS   Level of Service
MAC   Mokelumne-Amador-Calaveras
MOCASIM Mokelumne Calaveras Amador Simulation (Model)
MRW&PA Mokelumne River Water and Power Authority
NOC   Notice of Completion
NOP   Notice of Preparation
NSJWCD North San Joaquin Water Conservation District
PG&E  Pacific Gas & Electric
RMC   RMC Water and Environment
RPC   Regional Participants Committee
RPU   Reduced Place of Use
RWS   Reduced Water Supply
SR    State Route
SWRCB State Water Resources Control Board
UMWRA Upper Mokelumne River Watershed Authority
WID   Woodbridge Irrigation District
WTP   Water Treatment Plant
Executive Summary

ES-1 Introduction

The Amador Water Agency (AWA) has filed water right Application 5647X03 (Project) with the State Water Resources Control Board, Division of Water Rights (SWRCB), requesting approval to directly divert up to 1,050 acre-feet per year (AFY) of water from Bear River and North Fork Mokelumne River and store up to 1,400 AFY in Lower Bear River Reservoir in connection with AWA’s Central Amador Water Project (CAWP). The amount taken by direct diversion and rediversion from storage for consumptive uses within the CAWP service area would not exceed 1,050 AFY.

The water rights process involves water right Permit 12167 (Application 5648B) of Jackson Valley Irrigation District (JVID). Currently, JVID is authorized to directly divert 3,850 acre-feet of water from March through October of each year for irrigation purposes, and throughout the year for incidental domestic and stock watering purposes. JVID’s point of diversion is at Pardee Reservoir. JVID’s permit includes provisions for the reversion of up to 2,200 acre-feet to upstream diverters within Amador County. In 1978, AWA obtained a reversion of 1,150 acre-feet for CAWP, leaving an additional potential reversion of 1,050 acre-feet. The reversion causes a subtraction from what JVID may divert and an addition to what AWA may divert so that there is no net increase in direct diversions from the Mokelumne River. Concurrent with the filing of Application 5647X03, AWA submitted a petition requesting the reversion of the remaining 1,050 acre-feet. AWA’s proposed direct diversion and storage may reduce water flow along the Mokelumne River between the AWA’s points of diversion and Pardee Reservoir. However, there would be no net change in water flow downstream of Pardee Dam. The proposed diversions and storage would be accomplished using existing infrastructure, and no construction of new water facility infrastructure would be required.

JVID and AWA have agreed that the reversion would occur incrementally year-by-year based on projected annual increases in demand in the CAWP service area. AWA would thus not have access to the full additional 1,050 AFY upon approval of the water right, but would have to apply to the SWRCB for an appropriate quantity every year, based on expected demand.

AWA prepared an Initial Study (IS) to provide the public and Responsible and Trustee Agencies reviewing the proposed Project with information about the Project’s potential impacts on the environment. The IS evaluated the Project relative to various environmental resource areas and identified potentially significant impacts to several resource areas that require further study to determine whether such impacts are significant, and if so, whether they can be mitigated to less than significant levels. These include the Project’s potential direct impacts on aquatic biological resources and hydrology, and potential indirect impacts associated with land development and population growth that could be accommodated by the Project. These environmental topics are addressed in detail in this Draft Environmental Impact Report (Draft EIR).

AWA is the Lead Agency for compliance with the California Environmental Quality Act (CEQA) environmental review process for the Project.

The Draft EIR considers the proposed Project, as described above. In addition, the Draft EIR considers the following alternatives:

- Reduced Growth Alternative: This alternative would reduce either size of the service area or the quantity of the water that could be beneficially used under Application 5647X03, whether by direct diversion or rediversion of water released from storage, so as to reduce to some uncertain extent the Project’s potential to contribute to secondary growth inducing impacts.
No Project Alternative: This alternative assumes that the water supply sought pursuant to Application 5647X03 is not obtained, which could require AWA to obtain other sources of water to ensure adequate water supply capacity and reliability for the CAWP service area.

ES-2 Project Location

The proposed Project would serve an area in the Sierra foothills of Amador County as shown in Figure ES-1 (Project Vicinity), which is generally located along the California State Route 88 (SR 88) corridor, encompassing the communities of Pine Grove, Pine Acres, Pioneer, Ranch House Estates, Mace Meadows, and surrounding areas. Project facilities already exist and are generally located in open space and agricultural areas, with some portions of the existing water conveyance system extending through residential suburban areas.

ES-3 Purpose and Need

AWA expects water use in the CAWP service area to increase in the future beyond the amount allowed in its existing water right Permit 17579 (Application 5647B), and for that reason, filed Application 5647X03, along with the above-referenced reversion request. AWA’s existing Permit 17579 allows the direct diversion of 1,150 AFY and the storage of 1,600 AFY at Lower Bear River Reservoir, with the total taken for consumptive use by direct diversion and rediversion from storage not to exceed 1,150 AFY. In 2006, AWA’s annual diversion for the CAWP service area was 1,149.7 AF, which was very close to the amount of water allowed under the permit. Although water use declined during the recession and was further reduced due to conservation during the multi-year drought that extended through 2015, AWA has projected that the need for water has not decreased and will likely increase in the future. Water would be diverted only as needed, and pursuant to an agreement with JVID, the reversion of the 1,050 acre-feet would occur over time commensurate with AWA’s increase in demand. JVID would retain the right to divert the non-reverted portion of the 1,050 AFY until such time as it is needed by AWA.

ES-4 CEQA Objectives

The specific objectives of the proposed Project are as follows:

- Augment existing water supply to meet the needs of existing customers and accommodate future planned growth; and
- Increase supply resiliency for current and future customers in central Amador County.

ES-5 Summary of Impacts

Table ES-1 below provides a summary of potential Project impacts by environmental resource topic area.
Figure ES-1: Project Vicinity
### Table ES-1: Summary of Potential Project Impacts

<table>
<thead>
<tr>
<th>Impact Statement</th>
<th>Level of Significance</th>
<th>Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proposed Project</td>
<td>Reduced Growth Alternative</td>
</tr>
<tr>
<td>Hydrology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HYD-1: Potential to substantially alter existing drainage pattern of Project site or area</td>
<td>LTS</td>
<td>PS</td>
</tr>
<tr>
<td>Substantially deplete groundwater supplies</td>
<td>NI</td>
<td>PS</td>
</tr>
<tr>
<td>Biological Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1: Potential to affect species identified as candidate, sensitive, or special-status</td>
<td>LTS</td>
<td>LTS</td>
</tr>
<tr>
<td>BIO-2: Potential to affect riparian habitat or other sensitive natural community</td>
<td>LTS</td>
<td>LTS</td>
</tr>
<tr>
<td>BIO-3: Potential to interfere substantially with movement of any native resident or migratory fish or wildlife species or with movement corridors, or nursery sites</td>
<td>LTS</td>
<td>LTS</td>
</tr>
<tr>
<td>Growth Inducement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRO-1: Potential to directly or indirectly induce population growth or development of the built environment.</td>
<td>SU</td>
<td>SU</td>
</tr>
</tbody>
</table>

Notes: NI= No Impact, LTS= Less than Significant, SU= Significant and Unavoidable. PS = Potentially Significant
Chapter 1  Introduction

1.1 Introduction

The Amador Water Agency (AWA) has filed water right Application 5647X03 (Project) with the State Water Resources Control Board, Division of Water Rights (SWRCB), requesting approval to directly divert up to 1,050 acre-feet per year (AFY) of water from Bear River and North Fork Mokelumne River and store up to 1,400 AFY in Lower Bear River Reservoir in connection with AWA’s Central Amador Water Project (CAWP). The amount taken by direct diversion and rediversion from storage for consumptive uses within the CAWP service area would not exceed 1,050 AFY.

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JVID and AWA have agreed that the reversion would occur incrementally year-by-year based on projected annual increases in demand in the CAWP service area. AWA would thus not have access to the full additional 1,050 AFY upon approval of the water right, but would have to apply to the SWRCB for an appropriate quantity every year, based on expected demand.

AWA prepared an Initial Study (IS) to provide the public and Responsible and Trustee Agencies reviewing the proposed Project with information about the Project’s potential impacts on the environment. The IS evaluated the Project relative to various environmental resource areas and identified potentially significant impacts to several resource areas that require further study to determine whether such impacts are significant, and if so, whether or not they can be mitigated to less than significant levels. These include the Project’s potential direct impacts on aquatic biological resources and hydrology, and potential indirect impacts associated with land development and population growth that could be accommodated by the Project. These environmental topics will be addressed in detail in this Draft Environmental Impact Report (Draft EIR). Figure 2-1 (in the Project Description chapter) shows an overview of the Study Area.

The AWA is the Lead Agency for compliance with the California Environmental Quality Act (CEQA) environmental review process for the Project.

1.2 Compliance with CEQA

1.2.1 State Requirements

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking an action that has the potential to affect the environment. In conformance with CEQA (California Public Resources Code, Section 21000 et seq.), and CEQA Guidelines (CCR Title 14 Section 15000 et seq.), AWA has conducted the CEQA process,
including the preparation and circulation of this Draft EIR, to provide to the public and Responsible and Trustee Agencies reviewing this Project with information about the Project’s potential effects on the local and regional environment. The Draft EIR was prepared in compliance with Section 15121 of the State CEQA Guidelines, which states that the purpose of an EIR is to serve as an informational document that:

“...will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project...”

1.2.2 CEQA EIR Process

Notice of Preparation

In accordance with Sections 15082(a), 15103, and 15375 of the CEQA Guidelines, AWA prepared a Notice of Preparation (NOP) for this Draft EIR (see Appendix A). The NOP was circulated to local and state agencies and other interested parties for 30 days, beginning on September 2, 2016, and ending on October 3, 2016. An advertisement stating that the NOP would be available on September 2, 2016 was published in the Amador Ledger on September 2, 2016. The NOP was also posted on the AWA website in advance of the publication date. The NOP provides a Project description, maps and location, along with a brief description of the Project’s potential environmental effects.

Scoping – Areas of Known Controversy

Following noticing in the local newspaper and on the AWA website, one public scoping meeting for the EIR was held at the Board of Supervisors Chambers at the Amador County Government Center at 810 Court Street, Jackson, California on September 21, 2016. The purpose of the meeting was to describe the proposed Project and CEQA requirements to interested parties and to solicit their input about issues and concerns that are relevant to the scope and content of this Draft EIR. Table 1-1 lists the names of parties who submitted comments during the 30-day public scoping period, while Appendix B includes the text of the comments received during the public scoping period.

Comments received during the public scoping period addressed impacts related to potential growth-inducing impacts of the Project. The areas of controversy identified during the scoping process were all associated with the growth-inducing impacts of a new water supply. Growth inducing impacts have been evaluated in this Draft EIR. However, there was a request that AWA send out a revised “environmental transmittal” (presumably the Notice of Preparation) mentioning all of the indirect impacts that the EIR will address. Because the Notice of Preparation identified the fact that the EIR will address the “potential for growth inducement and associated indirect impacts” AWA determined that it was not necessary to recirculate the Notice of Preparation. The same comment letter requested that AWA work with the County to mitigate secondary impacts. AWA would provide water to only those projects that are approved by Amador County, after they have undergone environmental review and have obtained appropriate land use entitlements consistent with the adopted General Plan. It is outside the scope of AWA’s legal authority to develop or implement mitigation for secondary impacts such as traffic.

Table 1-1: Parties that Submitted Comments during the Scoping Period

<table>
<thead>
<tr>
<th>Number</th>
<th>Comment Author, Title and Affiliation</th>
<th>Comment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cecily Smith, Foothill Conservancy</td>
<td>9/21/2016</td>
</tr>
<tr>
<td>2</td>
<td>Gene Whitehouse, Chairman, United Auburn Indian Community</td>
<td>9/14/2016</td>
</tr>
<tr>
<td>3</td>
<td>Lena Tam, Manager Water Resources Planning, East Bay Municipal Utility District</td>
<td>10/3/2016</td>
</tr>
<tr>
<td>4</td>
<td>Thomas P. Infusino, Foothill Conservancy</td>
<td>10/3/2016</td>
</tr>
</tbody>
</table>
Draft EIR

This document constitutes the Draft EIR for the Project (water right Application 5647X03). It contains a description of the Project, description of the environmental setting, identification of potential Project impacts, mitigation measures for impacts found to be potentially significant, and an identification and analysis of Project alternatives. Impacts analyzed in this Draft EIR, including those determined to be less than significant, are summarized in Table ES-1 in the Executive Summary of this document.

Public Review of Draft EIR

Upon completion of the Draft EIR, AWA will file a Notice of Completion (NOC) with the State Office of Planning and Research to begin the 45-day public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR will be distributed to Responsible and Trustee agencies, other affected agencies, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR is available in print for review at:

- Amador Water Agency
  12800 Ridge Road
  Sutter Creek, CA 95685

- Amador County Main Library
  530 Sutter Street
  Jackson, CA 95642

or online at:

http://www.amadorwater.org/

Agencies, organizations, and interested parties, including those not previously contacted, or who did not respond to the NOP, have the opportunity to comment on the Draft EIR during the public review period.

Written comments on this Draft EIR should be addressed to:

Mr. Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685
Phone: 209.223.3018
Email: gmancebo@amadorwater.org

During the 45-day public review period, AWA will conduct a public meeting at their office on May 25, 2017, to answer questions about, and to receive oral comments on, the Draft EIR.

Final EIR and Certification

This document is being issued by AWA as the Final EIR for the proposed Project. Upon completion of the public review period, comments received will be addressed and responses are included in this in a Response to Comments Document, which together with the Draft EIR will constitute the Final EIR. A public meeting on certification of the Final EIR for the Project will be held by the AWA Board of Directors (Board). Public comments on the Draft EIR received during the public review period, as well as responses to the comments, will be included as part of the record for consideration by the AWA Board. The Final EIR will be made available for review at least 10 days before the public meeting by the Board. As the CEQA Lead Agency, AWA will consider certifying the EIR as complete under CEQA Guidelines Section 15090.
CEQA Requirements for Final EIR

AWA has prepared this document pursuant to Section 15132 of the CEQA Guidelines, which specifies that ‘The final EIR shall consist of:

a) The Draft EIR or a revision of the draft.
b) Comments and recommendations received on the Draft EIR either verbatim or in summary.
c) A list of persons, organizations, and public agencies commenting on the Draft EIR.
d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.
e) Any other information added by the lead agency.”

In accordance with these requirements, AWA is publishing a revised version of the Draft EIR, with the addition of the comments made during the public review period and responses to those comments. Changes to the Draft EIR text are noted in each section in revision mode with new text underlined and deleted text shown in strikeout.

Consideration of Recirculation

If significant new information is added to an EIR after public review, the lead agency is required to recirculate the revised document (CEQA Guidelines Section 15088.5). Significant new information includes, for example, a new significant environmental impact or a substantial increase in the severity of an impact. New information is not considered significant unless the document is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or comment on a feasible mitigation measure that the proponent has declined to implement. No new impacts or substantial increases in the severity of impacts have been identified as a result of information brought forward in the comments on the Draft EIR. Recirculation of the Draft EIR therefore is not necessary.

Requirements for Certification and Future Steps in Project Approval

The Draft EIR was circulated for review, and opportunities for public and agency review and comment were made available in accordance with CEQA. Consistent with Sections 15088 (b) and 15089 of the CEQA Guidelines, the Final EIR is being made available to commenters for a minimum 10-day period before its consideration for certification.

The AWA Board of Directors will consider certification of the Final EIR at one of their regular Board meetings, which are held the second and fourth Thursday of the month at the AWA office at 12800 Ridge Road, Sutter Creek, CA 95685. To certify the Final EIR, AWA must find that:

• The Final EIR has been completed in compliance with CEQA;
• The Final EIR was presented to the decision-making body of the lead agency and that the decision-making body reviewed and considered the information contained in the Final EIR prior to approving the Project; and
• The Final EIR reflects the lead agency’s independent judgment and analysis (CEQA Guidelines, Section 15090 (a)).

1.2.3 Action on the Project

If the AWA Board of Directors certifies the EIR, it may proceed at the same meeting to consider approval of the proposed Project, although it is possible that the AWA Board could schedule a Project approval meeting for a later date. If the AWA Board approves the proposed Project, it will need to make findings
consistent with CEQA Guidelines Section 15091. Project approval would require that AWA make written findings with respect to any significant environmental effects identified in the EIR that are relevant to implementation of the Project. In making its decision about the proposed Project, the AWA Board will consider the environmental impacts and required mitigation measures, make findings regarding any identified significant impacts, and if necessary, adopt a statement of overriding considerations regarding any significant unavoidable impacts.

1.2.4 Mitigation Monitoring and Reporting

CEQA Section 21081.6(a) requires lead agencies to “adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment.” The mitigation monitoring and reporting program (Monitoring Program) required by CEQA need not be included in an EIR. This Draft EIR has not identified any mitigation measures that are within AWA’s legal authority to require or implement, and thus a Monitoring Program is not required.

1.3 Organization of this EIR

This Draft Final EIR is organized into the following main chapters:

- **Executive Summary.** This chapter includes a summary of the proposed Project evaluated in this Draft EIR and a table that summarizes the impacts and level of impact significance. In addition, the Executive Summary provides a brief discussion of the Project alternatives considered, the areas of controversy, and issues to be resolved.

- **Chapter 1: Introduction.** This chapter (presented here) provides an introduction, a discussion of CEQA compliance, and a brief description of the Draft EIR document’s organization.

- **Chapter 2: Project Description.** This chapter includes a detailed description of the proposed Project.

- **Chapter 3: Environmental Analysis.** This chapter includes a description of the existing environmental setting, environmental analysis methodology, impact thresholds of significance, potential Project impacts, and impact levels of significance.

- **Chapter 4: Other CEQA Considerations.** This chapter presents alternatives to the proposed Project, including the No Project Alternative. The alternatives analysis provides a comparison of the impacts of the proposed Project with other alternatives considered by AWA and presents the environmentally superior alternative. In addition, this chapter summarizes the evaluation of cumulative impacts associated with the Project, any significant unavoidable impacts, and any irreversible and irretrievable commitment of resources.

- **Chapter 5: References and Document Preparation.** This chapter lists reference materials used during preparation of the Draft EIR, and identifies the authors involved in Draft EIR preparation.

- **Chapter 6: Responses to Comments.** This chapter provides responses to each comment on the Draft EIR.

- **Chapter 7: Comment Letters.** This chapter includes each comment received during the public review period.
Appendices. This section includes all notices, public comment letters received on the NOP, as well as all technical material prepared to support the analysis. The list of appendices is as follows:

- Appendix A: Notice of Preparation and Initial Study
- Appendix B: Public Comments Received on the NOP
- Appendix C: Summary of MOCASIM Modeling Results to Support Hydrology Impact Analysis
- Appendix D: Summary of Project Effects on Fisheries and Aquatic Habitat
- Appendix E: AWA Land Use Based Water Demand Projections
- Appendix F: Agreement between PG&E and AWA
Chapter 2  Project Description

2.1 Introduction

This section includes information related to the location of the Project, background information, purpose and need for the Project, Project description, existing facilities and operational requirements, and also identifies Responsible Agencies, required permits and approvals.

2.2 Project Location

The proposed Project would serve an area in the Sierra foothills of Amador County as shown in Figure 2-1 (Project Vicinity), which is generally located along the California State Route 88 (SR 88) corridor, encompassing the communities of Pine Grove, Pioneer, Ranch House Estates, Mace Meadows, and surrounding areas. Project facilities already exist and are generally located in open space and agricultural areas, with some portions of the existing water conveyance system extending through residential suburban areas.

2.3 Background

CAWP was constructed in the late 1970s to provide surface water to communities in central Amador County hard hit by the multi-year drought being experienced in the area at that time. CAWP currently draws raw water via the Gravity Supply Pipeline from PG&E’s Tiger Creek Regulator Reservoir to the Buckhorn Water Treatment Plant (WTP) in Pioneer. The Buckhorn WTP currently provides treated water on a wholesale basis to two retail water purveyors, and provides treated water for direct retail sale to customers. There are currently about 3,500 parcels actively using water. Most water services are for residential use, though some services are for commercial use. Over the last 5 years, the total annual water use under AWA's existing water right permit (Permit 17579) has ranged from about 777 AF to about 952 AF. Figure 2-2 shows the service area authorized by Permit 17579 (also referred to as place of use) and the areas within that place of use which are presently being served. The proposed Project does not seek to increase the currently authorized place of use.

The sources of supply for CAWP are the North Fork Mokelumne River (North Fork) and Bear River (tributary to the North Fork). Water rediverted by AWA at PG&E’s Tiger Creek Regulator Reservoir may be comprised of natural flow or stored Bear River water released from Pacific Gas & Electric Company’s (PG&E) Lower Bear River Reservoir. PG&E delivers water to its Tiger Creek Regulator Reservoir by way of facilities owned and operated by it in connection with its Mokelumne Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 137). Use of the PG&E facilities by AWA is per an agreement between the two parties, most recently amended in 2012. PG&E's facilities used by AWA consist of the following: Lower Bear River Reservoir; Bear River Tunnel and Penstock; Salt Springs Reservoir and Powerhouse; Tiger Creek Conduit; Tiger Creek Regulator Reservoir; and Tiger Creek Forebay, Powerhouse and Afterbay. Tiger Creek Afterbay serves as a standby point of direct diversion of natural flow and rediversion of water released from storage in Lower Bear River Reservoir in the event that AWA is unable to divert from the Tiger Creek Regulator Reservoir.
Figure 2-1: Vicinity Map
Figure 2-2: AWA Current Area Served and CAWP Place of Use
2.3.1 Water Rights

In 1927, the Department of Water Resources filed two state applications (Application 5647 and 5648) for the appropriation of unappropriated waters of the Mokelumne River. The applications were made for the purpose of ensuring adequate water supply for counties in the mountain and foothill areas, including Amador County. In 1959, the Department of Water Resources executed a release from priority of Applications 5647 and 5648 in favor of East Bay Municipal Utility District’s Camanche Reservoir Project, pursuant to which the Department reserved water for direct diversion and storage from the Mokelumne River for use in Amador County under State Applications 5647 and 5648 which, when combined with diversions then and thereafter made through the Amador Canal, would produce an annual safe yield of 20,000 AF and would have priority over the Camanche Project.

On August 29, 1959, the predecessor of the State Water Resources Control Board (SWRCB) issued water right Permit 12167 to JVID, assigning a portion of Application 5648 to JVID and authorizing it to directly divert 5,000 AF from Pardee Reservoir at a rate not to exceed 50 cubic feet per second (cfs) from March 1 through October 31 of each year for irrigation purposes, and throughout the year for incidental domestic and stock watering purposes. The permit was made subject to a condition that up to 2,200 of the 5,000 AF could revert to water users within Amador County, such as AWA, upstream of JVID’s diversion point (Pardee Reservoir). A reversion is allowed only after a determination is made by the State indicating that the reverted water is needed by the upstream water user requesting the reversion. The reversion causes a subtraction from what JVID may divert and an addition to what AWA may divert so that there is no net increase in direct diversions from the Mokelumne River.

In 1979, the SWRCB issued Permit 17579 to AWA as a result of Decision 1490. As part of the Decision, the SWRCB approved the reversion of 1,150 AF from JVID’s permit. Permit 17579 has a 1927 priority based on an assignment of a portion of State-filed Application 5647 to AWA pursuant to procedures set forth in California Water Code (Water Code) sections 10500-10506. Permit 17579 authorizes a year-round direct diversion of 1,150 AF at a rate not to exceed 3 cfs and the storage of 1,600 AFY in Lower Bear River Reservoir with the limitation that the total that can be taken from the sources for consumptive use in the CAWP service area whether by direct diversion or rediversion of water released from storage is 1,150 AFY.

AWA has submitted Application 5647X03 to the SWRCB, and if approved, JVID's Permit 12167 would be further reduced by 1,050 AFY in favor of AWA. Together with the previous reversion amount of 1,150 AFY, this would bring the total amount of reversion to 2,200 AFY. Relative to the Agency's existing water right Permit 17579, the new permit would effectively:

- Increase the maximum rates of direct diversion allowed from the Bear River and North Fork Mokelumne River from 3 cfs to 5 cfs, with the combined rate between these sources not to exceed 5 cfs.
- Increase the amount of water that may be diverted into storage annually at Lower Bear River Reservoir from 1,600 AF to 3,000 AF.
- Increase the amount of water that may be beneficially used annually, whether by direct diversion or re-diversion of water released from storage, from 1,150 AF to 2,200 AF.
- The authorized CAWP place of use (service area) would not change from that which presently exists.

The new permit also would have a 1927 priority as the Agency, in conjunction with the filing of Application 5647X03, submitted a petition for partial assignment of State Application 5647 pursuant to Water Code sections 10500-10506. The current application is thus part of the annual safe yield of 20,000 AF which was reserved for use in Amador County in 1959.
2.4 Project Description

2.4.1 Purpose and Need

AWA expects water use in the CAWP service area to increase in the future beyond the amount allowed in its existing water right Permit 17579, and for that reason, filed Application 5647X03, along with the above-referenced reversion request. AWA’s existing Permit 17579 allows the direct diversion of 1,150 AFY and the storage of 1,600 AFY at Lower Bear River Reservoir, with the total taken for consumptive use by direct diversion and rediversion from storage not to exceed 1,150 AFY. In 2006, AWA’s annual diversion for the CAWP service area was 1,149.7 AF, which was very close to the amount of water allowed under the permit. Although water use declined during the recession and was further reduced due to conservation during the multi-year drought that extended through 2015, AWA has projected that the need for water has not decreased and will likely increase in the future.

2.4.2 Project Objectives

The objectives of the proposed Project are:

- Augment existing water supply to meet the needs of existing customers and accommodate future planned growth; and
- Increase supply resiliency for current and future customers in central Amador County.

AWA is statutorily authorized to provide water service to all territory in Amador County. (West’s Ann. Water Code App., Secs. 95-1 and 95-4.) AWA’s statutory authorization to provide public water service also imposes a “duty to serve” upon AWA. (Maddow, The Role of Water Agencies in Land Use Planning (March 1992) California Water Law and Policy Reporter, at p.105.) The duty to serve requires public utilities, such as AWA, “to provide adequate and reasonably efficient service in an impartial manner, without unjust discrimination, to those within the agency’s service area who comply with its rules and regulations and pay its rates and charges.” (Id.)

Accordingly, AWA “must hold itself out as ready to serve” and must provide water service to its service area without discrimination or preferences, unless differences in the services provided are justified by differences in cost of service. (Butte County Water Users’ Association v. Railroad Commission (1921) 185 Cal. 218, 224-225.) Furthermore, AWA has an obligation to “exert every reasonable effort” to augment and expand its supplies and facilities to meet increasing demands for service within the county. (Swanson v. Marin Municipal Water District (1976) 56 Cal. App. 3d 512, 524.)

2.4.3 Project Description

AWA has filed a water right application (Application 5647X03) requesting year-round direct diversion of up to 1,050 AF from Bear River and the North Fork Mokelumne River and the annual storage of up to 1,400 AF in Lower Bear River Reservoir during the period of October 1 to July 15. The total amount to be directly diverted and redverted from storage for consumptive uses in the CAWP service area on an annual basis would not exceed 1,050 AF. To achieve the direct diversion of 1,050 AF annually, the application is coupled with a request that of JVID’s currently authorized direct diversion right of 3,850 AF pursuant to its Permit 12167, 1,050 AF revert to AWA as contemplated in that permit. Under AWA’s application, water would either be diverted or re-diverted from the Bear River and North Fork of the Mokelumne River at four different locations, which are shown in Figure 2-3:

- Bear River at Lower Bear River Reservoir Dam
- North Fork Mokelumne River at Salt Springs Reservoir Dam
- North Fork Mokelumne River at Tiger Creek Afterbay Dam
- Tiger Creek at Tiger Creek Regulator Dam
The additional 1,400 AF of storage in Lower Bear River Reservoir would provide additional dry-year reliability to AWA customers in the CAWP service area. During times when AWA’s CAWP direct diversion rights are curtailed, as was the case during portions of the 2012-2015 drought, AWA would have additional stored water available to meet demands. The water right application defines the proposed service area or place of use, which is shown in Figure 2-3. It is the same as what presently exists for the CAWP service area under Permit 17579.

AWA’s proposed points of diversion and rediversion are upstream from JVID’s current point of diversion at Pardee Reservoir. Water would be diverted, stored, and conveyed to the Buckhorn WTP for delivery within AWA’s CAWP service area. There may be an incremental reduction in flows at times in the North Fork Mokelumne River and Bear River between the AWA diversion points and the existing JVID diversion at Pardee Reservoir. PG&E would still maintain minimum flows in these streams, but flows may be reduced by up to 2 cfs during periods when flows are above those minimums. There would be no net change in flow downstream of Pardee Dam.

AWA’s pending water right application for the Project does not require the development or construction of any new water supply infrastructure, as existing facilities owned by AWA and PG&E would be used to store and convey the water.

2.4.4 Management Practices for CAWP Water Supply

**Diversion on As-Needed Basis**

Under the proposed Project water would be diverted only as needed and, pursuant to an agreement with JVID, the reversion of 1,050 acre-feet from JVID’s right would occur over time commensurate with AWA’s increase in demand. On an annual basis, AWA would notify the SWRCB and JVID how much water should revert for the forthcoming year to meet the projected increase in demand for that year. JVID would retain the right to divert the non-reverted portion of the 1,050 AFY until such time as it is needed by AWA.

**County Process for Approval of Development Projects**

Amador County’s process for review of discretionary projects, including new developments that would require water supply, includes review by the County’s technical advisory committee. The technical advisory committee is composed of the County public works director, planning director, building official, environmental health director and director of solid waste, with nonvoting representatives from AWA, Amador Fire Protection District and Central Sierra Resource Conservation District. In accordance with Amador County Code Section 2.94, the technical advisory committee reviews projects before they are heard and decided by the planning commission, board of supervisors or other hearing and decision-making body. The committee makes findings, recommendations and comments to the decision-making body, which considers the committee’s input in deciding whether to approve a project, and if approved, what conditions to place upon the approval. AWA provides input to the technical advisory committee regarding the availability of water supply to serve new developments and informs the committee what conditions would need to be met in order for water service to be provided. Conditions could include construction of infrastructure to convey water. AWA’s fee structure already requires applicants who request a water service connection to pay the actual costs of such installation of connecting to the mainline and installing meters and related appurtenances.
Figure 2-3: Diversion Locations for Water Right Application 5647X03 – Proposed Project
AWA Policies

In addition, AWA intends to implement the following policies:

- AWA will only provide water service to developments that are approved by Amador County consistent with their adopted General Plan, and that have obtained appropriate land use entitlements.
- The cost of water infrastructure expansion or improvements will be borne by those who will benefit from and use the infrastructure.
- The cost of water infrastructure expansions that are needed solely to accommodate new development will not be borne by existing water utility ratepayers.
- Water infrastructure planning will be done within an open, inclusive process that actively involves all affected stakeholders and the public, using methods that will ensure broad public participation.
- Water infrastructure facilities will not be extended into undeveloped areas with the intent to provide those areas service unless those areas are approved for development after any required environmental review and consistent with the County General Plan.
- AWA will employ reasonable demand-side water management techniques, including conservation and efficiency, before taking on expensive expansion projects.
- Water infrastructure will be developed in a way that works with natural systems and minimizes damage to the natural and built environment to the extent reasonably possible.

2.4.5 Existing Facilities and Operational Requirements

The Project would use existing facilities of AWA and PG&E, which have ample capacity for the increased diversion rates and storage amounts. Lower Bear River Reservoir has a total storage capacity of about 51,400 AF. AWA leases storage capacity in the reservoir under an existing agreement with PG&E that allows for increasing AWA's storage allocation from 1,600 AF to 3,000 AF with a pre-condition of compliance with CEQA, which will be provided by this document.

PG&E is required to maintain certain minimum flows for streams affected by PG&E's hydroelectric operations within the Mokelumne River system, including the North Fork Mokelumne River, Bear River, and Tiger Creek. Minimum flow criteria are set forth in Appendix A to PG&E's Relicensing Settlement Agreement for its Mokelumne River Project (FERC No. 137) dated July 21, 2000. Under the terms of AWA's agreement with PG&E, PG&E is solely responsible for providing and maintaining the specified minimum flows, notwithstanding AWA's diversions under its existing and future appropriative water rights.

Under the terms of its agreement with PG&E, AWA’s storage of water in Lower Bear River Reservoir is tracked in a water account that is maintained by PG&E using a set of rules established in the Fourth Amended Contract between Pacific Gas and Electric Company and Amador Water Agency (PG&E and AWA 2012). The agreement also specifies a schedule of payments from AWA to PG&E for the right to store water, and to compensate PG&E for lost power generation revenues resulting from diversion of water by AWA.

As mentioned above and as part of AWA’s pending Application 5647X03, AWA is requesting that of JVID’s current direct diversion right of 3,850 AF, 1,050 AF revert to the state, and then be assigned to AWA. AWA and JVID have entered into an arrangement which provides that the entire 1,050 AF would not revert initially upon approval of the application. Rather, before the beginning of each calendar year, AWA would notify the SWRCB and JVID how much water it would need in the forthcoming year to meet increasing demands. The requested amount then would revert to the state and then be assigned to AWA. This annual process would continue until the entire 1,050 reverts and is assigned.
2.4.6 Required Permit
The Project would require a water right permit from the SWRCB Division of Water Rights.

2.5 References

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Chapter 3 Setting, Impacts, and Mitigation

3.0 Introduction to Environmental Analysis

3.0.1 Organization of Chapter 3

Chapter 3 includes evaluation of each impact for which the Initial Study identified a potentially significant effect, and is organized by environmental resource area, as follows:

- 3.1 Hydrology
- 3.2 Biological Resource
- 3.3 Growth Inducement

3.0.2 Organization of Discussion of Environmental Issue Areas

For each resource area, this Draft EIR evaluates the environmental impacts of the proposed Project. Sections 3.1 through 3.3 discuss the environmental impacts that may result with approval and implementation of the proposed Project. The Initial Study, which is included in Appendix A, includes a discussion of all of the other environmental resources and explains why the Project would have no impact on those resources. Each environmental resource section contains the following components:

1. **Environmental Setting** describes the setting as it relates to the specific resource topic. The setting information covers the areas affected by the proposed Project: CAWP service area, Bear River below Lower Bear River Reservoir, the North Fork Mokelumne River downstream of Salt Springs Reservoir, and the Mokelumne River from the confluence with the North Fork to JVID’s point of diversion in Pardee Reservoir.

2. **Regulatory Framework** provides an overview of relevant Federal, State, and local laws, regulations, and ordinances applicable to each resource area.

3. **Impact Analysis** includes the following subsections:
   - **Methodology for Analysis**, which describes the approach used in analyzing the potential impacts;
   - **Thresholds of Significance** or the CEQA significance criteria are based on those identified in the Initial Study Checklist in Appendix G of the CEQA Guidelines, but are modified or supplemented as appropriate to address the proposed Project impacts; and
   - **Impacts and Mitigation Measures** provides an evaluation of impacts and identification of mitigation measures, if needed. The impact analysis is presented by a numbered impact summary statement that corresponds to the resource area. Because the Project would not require any construction, the evaluation of impacts is limited to the effects of operating the Project.

The end of each impact statement includes a determination of the level of significance before and after any identified mitigation measures are implemented. Impacts that exceed identified threshold levels of significance would be considered significant. In describing the significance of impacts, the following categories of significance are used:

- **Significant and Unavoidable**. Adverse environmental consequences that exceed the threshold criteria identified for the resource, even after feasible mitigation strategies are applied and/or an adverse effect that could be significant and for which no feasible mitigation has been identified.
• **Less than Significant with Implementation of Mitigation Measures.** Adverse environmental consequences with the potential to be significant, but can be reduced to less than significant levels through the application of identified mitigation strategies for the relevant alternative.

• **Less than Significant.** Potential adverse environmental consequences have been identified. However, they are not so adverse as to meet the significance threshold criteria for a resource. Therefore, no mitigation measures are required.

• **No Impact.** No adverse environmental consequences have been identified for the resource, or the consequences are negligible or undetectable. Therefore, no mitigation measures are required.

### 3.0.3 Approach to Analysis of Cumulative Impacts

#### CEQA Requirements

CEQA requires consideration of cumulative impacts. A cumulative impact is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, or reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in Section 15130 of the CEQA Guidelines, and included below:

- An EIR shall discuss cumulative impacts of a project when the project’s incremental effect is “cumulatively considerable” (i.e., the incremental effects of an individual project are considerable when viewed in connection with effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).

- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.

- The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not be as detailed as it is for the effects attributable to the project alone.

- A project’s contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

The cumulative impact analysis for each individual resource topic is described at the end of each resource section in this Chapter.

#### Approach to Analysis

For evaluation of cumulative impacts, this EIR uses a list-based approach, and evaluates the potential for past, present, and probable future projects in the Project area to result in cumulative impacts. Because direct effects of the Project are limited to operational impacts on the hydrology of the Mokelumne River watershed and the resultant effects on aquatic biological resources, the geographic scope of potential cumulative operational impacts is the Bear River and upper Mokelumne River system between the existing and proposed points of diversion. Evaluation of Project hydrologic impacts used the MOCASIM reservoir operations model, which is designed to simulate water storage and diversion operations on the upper Mokelumne River system and considers the operation of PG&E facilities on the North Fork Mokelumne River, incorporating requirements of the Federal Energy Regulatory Commission in accordance with the
Lodi Decree, which mandates monthly outflows from storage. Flow data from the hydrologic model was used to evaluate potential impacts on aquatic biota using information on the stage-discharge relationship from U.S. Geological Survey gage calibration measurements for the North Fork Mokelumne River below Salt Springs Dam to estimate the magnitude in change in water depth that would result from proposed diversions. That information was used to evaluate whether proposed diversions would result in an adverse effect on water velocity, channel depth, channel wetted width or water temperature at Mokelumne Hill and resultant effects on aquatic biota.

The MOCASIM model considers water rights and agreements associated with existing water users on the Mokelumne River, and thus considers Project impacts in the context of ongoing operations of other projects that divert water from the upper Mokelumne River watershed. Modeling has thus already considered cumulative hydrologic effects on the upper Mokelumne River system. Because the MOCASIM model does not consider the effects of unapproved or pending water right applications that might result in additional future diversions, the evaluation of cumulative impacts also included a review of other water right applications that could affect the Mokelumne River watershed, based on information available on the State Water Resources Control Board, Division of Water Rights web page (SWRCB 2016).

Table 3.0-1 contains a list of diverters that either currently operate in the Project area and which are included in the MOCASIM modeling, or for which there are pending water right applications, and identifies those projects that have a potential nexus with the proposed Project (i.e. there is a possibility that the proposed Project could contribute to incremental effects on the upper Mokelumne River system). None of the pending water right applications propose diversions in the portion of the Mokelumne River watershed that could be affected by the proposed Project. Therefore, there are no incremental effects associated with implementation of the proposed Project and the pending water right applications.

Because the only potential direct impacts associated with the Project are due to changes in hydrology, there would be no physical impacts on environmental resources other than potential impacts on hydrology and aquatic biological resources. There is thus no potential for cumulative impacts to other environmental resources, so the list of projects considered for the cumulative analysis is limited to those projects that directly affect the same portion of the watershed through diversion of water.
### Table 3.0-1: List of Cumulative Projects

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<th>Diverter</th>
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<tr>
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<td>Mokelumne River Water &amp; Power Authority³</td>
<td>544,000</td>
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<td>Steffan Ranch (two registrations)</td>
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<td>Murphy Creek, downstream of Pardee</td>
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<td>Upper Jackson Creek</td>
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</tbody>
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Source: RMC Water and Environment 2016

### 3.0.4 References


State Water Resources Control Board (SWRCB). 2016. Water Rights web page, accessed October 6, 2016 available at: [http://ciwqs.waterboards.ca.gov/ciwqs/ewrims/EWServlet?Page_From=EWWaterRightPublicSearch.jsp&Redirect_Page=EWWaterRightPublicSearchResults.jsp&Object_Expected=EwrimsSearchResult&Object_Created=EwrimsSearch&Object_Criteria=&Purpose=&subTypeCourtAdjSpec=&subTypeOtherSpec=&status=1&appNumber=&permitNumber=&licenseNumber=&countyTypeIDs=3&countyTypeIDs=5&countyTypeIDs=39&waterHolderName=&source=&hucNumber=&watershed=](http://ciwqs.waterboards.ca.gov/ciwqs/ewrims/EWServlet?Page_From=EWWaterRightPublicSearch.jsp&Redirect_Page=EWWaterRightPublicSearchResults.jsp&Object_Expected=EwrimsSearchResult&Object_Created=EwrimsSearch&Object_Criteria=&Purpose=&subTypeCourtAdjSpec=&subTypeOtherSpec=&status=1&appNumber=&permitNumber=&licenseNumber=&countyTypeIDs=3&countyTypeIDs=5&countyTypeIDs=39&waterHolderName=&source=&hucNumber=&watershed=)

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¹ Includes the proposed Project
² Will be reduced to 2,800 AFY if Project is approved.
³ Water right application was filed in 1990, and as no current information about status was available it is uncertain whether the application is likely to move forward. Project may have been abandoned.
3.1 Hydrology

This section describes the existing river system in the Project area, and an evaluation of how the proposed Project would directly affect hydrology. Water quality impacts were evaluated in the Initial Study, which is included in Appendix A, and were found not to be significant. Indirect effects that might result from growth that could be accommodated by additional water supply are not addressed in this section, but are discussed in Section 3.3, Growth Inducement.

3.1.1 Environmental Setting

The Mokelumne River extends 96 miles from the central Sierra Nevada to the Sacramento-San Joaquin Delta (Delta). In Amador County, the river is the source of 98 percent of the total water supply provided by AWA. The North Fork Mokelumne River is 62 miles (100 km) long, originating at Highland Lakes (elevation 8,584 feet). The upper 8.7 miles (14 km) of the North Fork Mokelumne River are characterized as a meadow stream flowing through a wide glaciated valley with sub-alpine and riparian vegetation (Hanson Environmental 2016). The river then flows 18 miles (29 km) through the Mokelumne Wilderness Area, which includes a deeply incised canyon with bedrock pools, boulder clusters, and waterfalls. Access to the canyon reach is limited by steep side slopes. Exiting the canyon reach, the river flows into Salt Springs Reservoir, which was constructed and operated by PG&E for hydroelectric power generation. The Bear River enters the North Fork Mokelumne River downstream of Salt Springs Reservoir, and then the North Fork passes downstream through Tiger Creek Reservoir before joining the Middle Fork, southeast of Pine Grove. The mainstem Mokelumne River flows past Mokelumne Hill before discharging into East Bay Municipal Utility District’s Pardee Reservoir. The discharge from Pardee Reservoir flows directly into Camanche Reservoir, which then discharges into the lower Mokelumne River, which meanders 34 miles (55 km) downstream into the Sacramento-San Joaquin River Delta where it joins the lower San Joaquin River. The lower reaches of the river are characterized by a lower gradient when compared to the canyon reach, substrate becomes finer, and water temperatures during the summer increase as the river flows downstream into Pardee Reservoir and the lower Mokelumne River (Hanson Environmental 2016).

3.1.2 Regulatory Framework

State/Federal

The proposed Project would be subject to terms and conditions of any water right permit issued by the SWRCB on AWA’s Application 5647X03. No other state or federal approval for the Project is needed. As mentioned earlier, no new construction would be required to implement the Project.

Regional/Local

Integrated Regional Water Management Plan (IRWMP)

The Mokelumne-Amador-Calaveras (MAC) IRWMP effort is a cooperative effort by AWA, Calaveras County Water District, Amador County, City of Jackson, City of Sutter Creek, City of Plymouth, Amador Regional Sanitation Authority, and East Bay Municipal Utility District (EBMUD). These entities operate under a Memorandum of Understanding to coordinate water resources planning and implementation activities, and formed the official MAC Regional Water Management Group. In 2009 the Upper Mokelumne River Watershed Authority (UMRWA) became the lead agency for updating the MAC IRWMP. UMRWA includes the original members of the MAC IRWMP, plus Alpine County and the Jackson Valley Irrigation District. In fulfilling this role UMRWA established the Regional Participants Committee (RPC). The RPC is a committee of city, county, special district, non-governmental organizations, and federal agency stakeholders, which provided essential input and guidance to the development of the 2012 MAC Plan Update and 2015 MAC IRWM Addendum. The RPC has a continuing
role in both maintaining the Plan’s list of implementation projects and programs, and in future Plan updates whenever such updates are determined necessary and appropriate. The 2015 MAC IRWM Addendum identifies a number of AWA projects, including the ongoing Long Term Water Needs Study, which identifies the need for the proposed Project.

Amador County Erosion Control Ordinance

Because the Project would not require any new construction, there are no activities that would be subject to the County’s erosion control ordinance.

3.1.3 Impact Analysis

Methodology for Analysis

The proposed Project would not require construction of new water conveyance or water storage infrastructure, nor construction of any kind. Therefore, evaluation of the Project’s potential impacts to hydrology was limited to potential operational effects of the Project on changes in water flow in the North Fork Mokelumne River and Bear River upstream from the Pardee Reservoir and downstream from the proposed AWA diversion points. To that end, the Mokelumne Calaveras Amador Simulation (MOCASIM) Model was used to identify projected changes in river flow as a result of AWA increasing its water diversion. A technical memorandum was prepared to summarize the proposed Project’s effect on flows in these waterways (RMC Water and Environment 2016).

MOCASIM is a reservoir operations model designed to simulate water storage and diversion operations on the Mokelumne River. MOCASIM is capable of analyzing various operating strategies of Pardee and Camanche reservoirs on the Mokelumne River, assessing water availability to serve Mokelumne River water users; and then simulating newly proposed storage and diversion alternatives for beneficial use.

MOCASIM is a mass-balance simulation model. It uses either a monthly or a daily time-step (depending on the geographical area) for the hydrologic period from 1953 through 2010. Senior appropriations, fishery flows, and hydropower releases are based on historical and/or future levels of development in the basin, water rights and agreements, and reservoir operating rules. The model is being used to evaluate potential changes in Mokelumne River flow as a result of the proposed Project, which would allow additional direct diversion of up to 1,050 AFY (with actual amounts determined by demand) and annual storage of up to 1,400 AF in Lower Bear River Reservoir.

Four separate scenarios were considered to determine Project impacts:

- **Current Diversion (without proposed Project).** The first baseline case was based on current level of diversions, which was assumed to be 2010 (demand in 2015 was artificially low due to the drought and the Governor’s conservation mandates). Demand in the year 2010 was selected to represent current diversion levels as it most likely reflects current non-drought water requirements.

- **Current Diversion (with proposed Project).** This scenario is based on current level of diversions for all diverters, except for AWA, where full use of the proposed water right is assumed. However, this scenario is not realistic, as demand for full utilization of the requested water right does not presently exist. Instead, AWA diversions under the requested water right would increase over time until the maximum diversion amount is needed.

- **Maximum Diversions (without proposed Project).** The second baseline case assumed maximum diversions without Project implementation.

- **Maximum Diversions (with proposed Project).** The third case assumed maximum diversions with full Project implementation.
In both maximum diversion level cases, all agencies were assumed to divert their full Mokelumne River water right, except for EBMUD. EBMUD’s maximum diversion levels were assumed to be 2040 projected demand from EBMUD’s 2015 Urban Water Management Plan. EBMUD does not have projections beyond 2040. Table 3.1-1 indicates the diversion amounts for all four scenarios.

### Table 3.1-1 Diversion Scenarios

<table>
<thead>
<tr>
<th>Diverter</th>
<th>Current Diversions (AFY)</th>
<th>Maximum Diversions&lt;sup&gt;a&lt;/sup&gt; (AFY)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without Project</td>
<td>With Project</td>
</tr>
<tr>
<td>AWA CAWP</td>
<td>938&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2,200&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>AWA AWS</td>
<td>7,160&lt;sup&gt;b&lt;/sup&gt;</td>
<td>7,160&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>CCWD&lt;sup&gt;d&lt;/sup&gt;</td>
<td>159</td>
<td>159</td>
</tr>
<tr>
<td>CPUD</td>
<td>1,299</td>
<td>1,299</td>
</tr>
<tr>
<td>EBMUD&lt;sup&gt;f&lt;/sup&gt;</td>
<td>241,920</td>
<td>241,920</td>
</tr>
<tr>
<td>JVID</td>
<td>3,850</td>
<td>2,800</td>
</tr>
<tr>
<td>NSJWCD</td>
<td>3,021</td>
<td>3,021</td>
</tr>
<tr>
<td>WID</td>
<td>72,000</td>
<td>72,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>330,347</strong></td>
<td><strong>330,559</strong></td>
</tr>
</tbody>
</table>

**Notes:**

a. Aside from EBMUD, all maximum diversions assume full utilization of the associated Mokelumne River water right.

b. From AWA data for 2010.

c. Direct diversion to CAWP. Water right would also allow an increase of diversion to storage of 1,400 AFY; total diversion to storage would be 3,000 AFY. Point of diversion to Lower Bear River Reservoir would not change and total storage capacity of reservoir would not change.

d. From CCWD’s 2010 UWMP, page 3-15; maximum diversion includes 1,830 AFY Bear Creek right plus 200 AFY from CPUD.

e. Total right is 2,130 AFY; this is reduced by 200 AFY, which is applied to CCWD’s total per CCWD-CPUD agreement.

f. Current diversions as used in Mokelumne Watershed Interregional Sustainability Evaluation (MokeWISE). Maximum diversions represent 2040 projected demand from EBMUD 2015 draft UWMP, page 56.

As shown in Table 3.1-1, AWA is assumed to ultimately use the full amount authorized under existing Permit 17579 (1,150 AFY) and the full amount requested under Application 5647X03 (1,050 AFY). If current diversions without the Project are compared to current total diversions with Project, with AWA using a total of 2,200 AFY, this would result in an increase in total diversions of 212 AFY, an increase of 0.06% (or an average of 0.3 cubic feet per second [cfs]). Any flow change less than 1 cfs is not considered measurable in the environment or substantially different between scenarios (RMC 2016).

However, actual impacts of the Project are more accurately evaluated by considering the effect of the Project when all diverters are using their maximum allocation. Accordingly, a more detailed evaluation of changes in flow was performed to determine the impact of the Project when all diverters are using their maximum allocations.

To determine changes in flow, modeling was performed to compare flows at various locations (termed Control Points) for the maximum diversion scenario without the Project (Pre-Project) and the maximum diversion scenario with the Project (Post-Project). However, flow in the Mokelumne River varies greatly...
from year to year and largely depends on the year type. To account for natural differences in hydrology, the average flow in wet, above normal, below normal, dry, and critically dry years was calculated at five different locations, including:

1. Mokelumne Hill (Pardee Inflow)
2. North Fork below Electra Diversion (Control Point 1)
3. North Fork below Tiger Creek Afterbay Dam (Control Point 2)
4. North Fork below Salt Springs Reservoir (Control Point 4)
5. Bear River below Lower Bear River Reservoir (Control Point 5)

These average flows for the Pre-Project scenario are shown in Table 3.1-2 below.

**Table 3.1-2: Average Annual Flow in cfs by Year Type for Maximum Diversion Pre-Project**

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>1,594</td>
<td>472</td>
<td>641</td>
<td>429</td>
<td>241</td>
</tr>
<tr>
<td>Above Normal</td>
<td>1,130</td>
<td>226</td>
<td>329</td>
<td>232</td>
<td>203</td>
</tr>
<tr>
<td>Below Normal</td>
<td>826</td>
<td>131</td>
<td>186</td>
<td>156</td>
<td>169</td>
</tr>
<tr>
<td>Dry</td>
<td>611</td>
<td>50</td>
<td>60</td>
<td>56</td>
<td>128</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>442</td>
<td>37</td>
<td>45</td>
<td>44</td>
<td>104</td>
</tr>
</tbody>
</table>

**Thresholds of Significance**

Consistent with Appendix G of the *CEQA Guidelines* an impact would be considered significant if the Project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- 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 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 which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
• 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 which 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; or
• Be susceptible to inundation by seiche, tsunami, or mudflow.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

• Violate any water quality standards or waste discharge requirements: The Project requires no new construction and does not include any discharge to surface waters and thus would not violate any water quality standards or waste discharge requirements. No further evaluation is required.
• Substantially deplete groundwater supplies or interfere substantially with groundwater recharge: The Project would not involve groundwater extraction nor would it interfere with groundwater recharge because no new impervious surfaces would be created. No further evaluation is required.
• Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff: The Project would not require new construction, and therefore would not be a source of storm water runoff. No further evaluation is required.
• Substantially degrade water quality: The Project does not include new construction or new discharge to surface waters, and therefore would not degrade water quality. No further evaluation is required.
• Place housing within a 100-year flood hazard area: The Project would not place housing within a 100-year flood hazard area. No further evaluation is required.
• Place within a 100-year flood hazard area structures which would impede or redirect flood flows: The Project would not place structures in flood hazard areas and thus would not impede or redirect flood flows. No further evaluation is required.
• Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam: The Project does not include new structures and thus would not expose people or structures to flooding. No further evaluation is required.
• Be susceptible to inundation by seiche, tsunami, or mudflow: The Project does not include new structures that would be susceptible to inundation by seiche, tsunami or mudflow. No further evaluation is required.

Impacts and Mitigation Measures

Impact HYD-1  Potential to Substantially Alter the Existing Drainage Pattern of the Project Site or Area

The proposed Project has the potential to alter the existing flow of the Mokelumne River. However, results from the MOCASIM model, described above, indicate minimal changes in flow as a result of the proposed Project.

Table 3.1-3 below shows the change in average flow from Pre-Project to Post-Project conditions in cfs and as a percent change in average baseflow. As shown, average flow does not decrease by more than 2 cfs in
any year type at any control point. At Control Points 1, 4, and 5, the percentage reduction in average base flows was less than 0.1% in every year type. Pardee Inflow and Control Point 2 saw higher changes (0.22%) than the other Control Points. However, regardless of year type or location, all changes in flow are less than 0.3% of average baseflow. Given the small change in flow, the proposed Project has a less than significant impact on the existing drainage pattern of the Project area.

### Table 3.1-3: Change in Average Flow from Pre-Project to Post-Project by Year Type (in cfs and %)

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>-1.6 cfs</td>
<td>-0.4 cfs</td>
<td>-0.9 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
</tr>
<tr>
<td></td>
<td>0.10%</td>
<td>0.08%</td>
<td>0.14%</td>
<td>0%</td>
<td>0.04%</td>
</tr>
<tr>
<td>Above Normal</td>
<td>-1.4 cfs</td>
<td>-0.2 cfs</td>
<td>-0.6 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.12%</td>
<td>0.09%</td>
<td>0.18%</td>
<td>0.04%</td>
<td>0%</td>
</tr>
<tr>
<td>Below Normal</td>
<td>-1.5 cfs</td>
<td>-0.1 cfs</td>
<td>-0.4 cfs</td>
<td>0.0 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.18%</td>
<td>0.08%</td>
<td>0.22%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Dry</td>
<td>-1.1 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
<td>0.1 cfs</td>
</tr>
<tr>
<td></td>
<td>0.18%</td>
<td>0%</td>
<td>0.17%</td>
<td>0%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>-1.3 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.29%</td>
<td>0%</td>
<td>0.22%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Significance Determination before Mitigation**

Less than significant.

**Mitigation Measures**

No mitigation required.

**Cumulative Impacts**

The geographic scope of potential cumulative operational impacts is the Bear River and upper Mokelumne River system between the existing and proposed points of diversion. Evaluation of Project impacts used the MOCASIM reservoir operations model, which is designed to simulate water storage and diversion operations on the Mokelumne River. The model simulates operations of the upper Mokelumne River System and considers the operation of PG&E facilities on the North Fork Mokelumne River, incorporating requirements of the Federal Energy Regulatory Commission in accordance with the Lodi Decree, which mandates monthly outflows from storage. The model considers water rights and agreements associated with existing water users on the Mokelumne River, and thus considers Project impacts in the context of ongoing operations of other projects that divert water from the upper Mokelumne River system. Modeling has thus already considered cumulative hydrologic effects on the upper Mokelumne River system. Because the MOCASIM model does not consider the effects of unapproved or pending water right applications that
might result in additional future diversions, the evaluation of cumulative impacts also included a review of other water right applications that could affect the Mokelumne River watershed, based on information available on the State Water Resources Control Board, Division of Water Rights web page (SWRCB 2016). There are no pending applications that would affect the Bear River or upper Mokelumne River system between the existing and proposed points of diversion. There are four pending applications/registrations for water rights in the Mokelumne River watershed, three of which are for small amounts of water for stock ponds. Only one project, the MORE WATER project, which is proposed by the Mokelumne River Water and Power Authority, would divert substantial amounts of water, and that project would divert water from the lower Mokelumne River, where flows would not be affected by AWA’s Project. Therefore, based on the above evaluation, potential cumulative impacts on hydrology are determined to be less than significant.

3.1.4 References:


State Water Resources Control Board (SWRCB). 2016. Water Rights web page, accessed October 6, 2016 available at: http://ciwqs.waterboards.ca.gov/ciwqs/ewrms/EWServlet?Page_From=EWWaterRightPublicSearch.jsp&Redirect_Page=EWWaterRightPublicSearchResults.jsp&Object_Expected=EwrimsSearchResult&Object_Created=EwrimsSearch&Criteria=&Purpose=&subTypeCourtAdjSpec=&subTypeOtherSpec=&status=1&appNumber=&permitNumber=&licenseNumber=&countyTypeIDs=3&countyTypeIDs=5&countyTypeIDs=39&waterHolderName=&source=&hucNumber=&watershed=
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3.2 Biological Resources

This section contains a description of the existing biological resources in the Project area, and an evaluation of how implementation of the proposed Project would directly affect biological resources. Indirect effects on biological resources that might result from growth that could be accommodated by additional water supply are not addressed in this section, but are discussed in Section 3.3, Growth Inducement.

3.2.1 Environmental Setting

The Project area is located in central Amador County, on the western slope of the Sierra Nevada mountains. Elevation in the county ranges from just under 200 feet at the edge of the Central Valley floor to 9,334 feet at Mokelumne Peak. This broad range of elevation and topography results in a rich diversity of biological resources in the county. The Project area is characterized by rolling hills covered with oak woodland, grassland, and chaparral, as well as multiple creeks and rivers that meander through the area.

Aquatic Biological Resources

Information on aquatic resources in the Project area was developed as part of a Technical Memorandum on Fisheries and Aquatic Habitat that was prepared by Hanson Environmental, Inc. (2016).

The Bear River and North Fork Mokelumne River provide habitat for populations of resident fish and other aquatic species, and support recreational fishing in the area. The fish community inhabiting the upper reaches of the watershed includes both native wild and hatchery produced rainbow trout, non-native brown trout, dace, and hitch in the riverine reaches; while kokanee primarily reside in the reservoirs. Aquatic insect production in the upper watershed provides a food resource for resident fish. The rainbow and brown trout support an active recreational fishery.

Further downstream in the reach between West Point Diversion Dam and Electra Powerhouse, as well as in Pardee and Camanche Reservoirs, water temperatures generally increase and there is a shift in species dominance from a cold water trout community to a greater number of warm water fish species including largemouth bass.

Recently, there has been growing interest in evaluating the feasibility of reintroducing anadromous fall-run Chinook salmon into the upper reaches of the watershed. A collaborative effort, known as MokeWISE, has begun with participation from a number of governmental agencies, local non-governmental organizations, EBMUD, California Sportfishing Protection Alliance, Trout Unlimited, and others to provide a forum for discussing future actions that could potentially be implemented in the upper watershed. As part of the process, a draft proposal has been developed to conduct a pilot level study of salmon reintroduction. The pilot study would include collection of adult fall-run Chinook salmon from the Mokelumne River Fish Hatchery, located downstream of Camanche Dam, so that fish can be trucked and released upstream of Pardee Reservoir. Spawning site selection, hatching success, juvenile rearing, and the ability to effectively capture juvenile salmon that could then be transported and released into the lower river are all proposed elements of the pilot study. Habitat mapping and a suitability assessment of the upper watershed have also been discussed.

The lower Mokelumne River, downstream of Camanche Dam, supports a diverse community of resident and migratory fish. Camanche Dam is a complete barrier to upstream migration by anadromous fish. The lower river provides habitat for approximately 35 species of fish, including fall-run Chinook salmon, steelhead, resident rainbow trout, prickly sculpin, and Sacramento sucker. The lower river is also habitat for a number of non-native fish, including mosquitofish, largemouth bass, bluegill, and striped bass (Hanson Environmental 2016).
3.2.2 Regulatory Framework

State/Federal

The proposed Project would be subject to terms and conditions of any water right permit issued by the SWRCB on AWA’s Application 5647X03. No other state or federal approval for the Project is needed. As mentioned earlier, no new construction would be required to implement the Project.

Regional/Local

There are no regional or local regulations that would apply to the proposed Project.

3.2.3 Impact Analysis

Methodology for Analysis

The proposed Project would not require construction of new water conveyance or water storage infrastructure, or construction of any kind. Therefore, evaluation of the Project’s potential impacts to biological resources was limited to potential operational effects of the Project on fisheries and aquatic habitat. Because the Project may have a small occasional effect on flows in the North Fork Mokelumne River and Bear River, it could have the potential to affect aquatic species of concern. Potential effects of changes in instream flows on aquatic species were evaluated by conducting hydrologic modeling simulations (RMC 2016). As described in Section 3.1, Hydrology, flows at various control points in the upper watershed were evaluated with and without the Project for five water year types: wet, above normal, below normal, dry and critically dry. Hanson Environmental used information on the stage-discharge relationship from U.S. Geological Survey gage calibration measurements for the North Fork Mokelumne River below Salt Springs Dam to estimate the magnitude in change in water depth that would result from proposed diversions. The percentage reduction in average flow by water-year was calculated and that information was used to evaluate whether proposed diversions would result in an adverse effect on water velocity, channel depth, channel wetted width or water temperature at Mokelumne Hill.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines an impact would 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, or by the California Department of Fish and Wildlife 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, and regulations or by the California Department of Fish and Wildlife 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, coastal, etc.) 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; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means:** The Project requires no new construction and thus would not involve direct removal, filling or hydrological interruption of any federally protected wetlands as defined by Section 404 of the Clean Water Act. No further evaluation is required.

- **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance:** Because the Project would not require construction of new facilities, there would be no need for tree removal. Because there are no effects on terrestrial biological resources, there would be no conflicts with policies protecting those biological resources. No further evaluation is required.

- **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan:** There are no Habitat Conservation Plans or Natural Community Conservation Plans that cover the Project area. No further evaluation is required.

Impacts and Mitigation Measures

**Impact BIO-1 Potential to Affect Species Identified as Candidate, Sensitive, Or Special Status**

Because there would be no construction of new facilities, the Project would have no potential to affect special-status terrestrial species. Therefore, potential effects on aquatic species of concern would be limited to operational impacts associated with the small reductions in flow that would result from proposed diversions. As described in Section 3.1 Hydrology, flow reductions on the Mokelumne and Bear Rivers would range from 0 to 1.6 cfs, and from 0% to 0.29% (see Table 3.1-3), with the largest reduction in cfs occurring in wet years, when reductions in flows are not biologically meaningful. Reductions of this magnitude are within the range of natural variability in the watershed and would not be expected to have a detectable effect on quality or availability of suitable habitat for trout or other fish. PG&E would continue to manage its operations to maintain minimum bypass flows and to maintain water temperatures of less than 20°Celsius within designated river reaches to provide suitable habitat for cold water fish such as rainbow trout. No adverse effects on any native fish, including special-status species, would result from the proposed diversions. The reduction in flows would not be expected to result in a detectable change or significant reduction in aquatic habitat quality or availability, water velocities, channel depth, channel wetted width, or adversely affect seasonal water temperatures. No change in the volume of water entering Camanche Reservoir from Pardee Reservoir would occur, and thus the Project would have no effect on aquatic habitat in Camanche Reservoir or on streamflow releases and water temperature management for salmonids in the lower Mokelumne River (Hanson Environmental 2016). Impacts to special-status aquatic species would be less than significant.

**Significance Determination before Mitigation**

Less than significant.

**Mitigation Measures**

No mitigation is necessary.
Impact BIO-2  Potential to Affect Riparian Habitat or Other Sensitive Natural Community

The effect of Project diversions on riparian habitat was evaluated by determining whether the Project would result in a change in water depth, which would have the potential to adversely affect riparian habitat. As described in Section 3.1, Hydrology, for the North Fork Mokelumne River (Control Points 1, 2 and 4, below the Electra Diversion, below Tiger Creek Afterbay, and below Salt Springs Reservoir, respectively), and for Bear River (Control Point 5, below Lower Bear River Reservoir), for all hydrologic modeling scenarios, the reduction in average base flows was less than 1 cfs. This is a reduction of less than 0.1 percent for Control Points 1, 4, and 5, and a maximum 0.29 percent reduction at Control Point 2. Sensitivity analysis showed that a change in stream flows of 1 cfs did not result in a detectable change in predicted water depth (Hanson Environmental 2016). Flow reductions were greater at the Mokelumne Hill location just upstream of Pardee Reservoir, but reductions in all year types were less than 2 cfs and percentage reductions ranged from 0.1 to 0.29 percent. Given that average base flow at Mokelumne Hill ranges from 442 cfs in critically dry years to 1,594 cfs in wet years, changes in quality or availability of river habitat would not be detectable (Hanson Environmental 2016).

The Project would not affect riparian habitat downstream of Pardee Reservoir. As discussed in Section 3.1, Hydrology, there would be very minor changes in the amount of water flowing into Pardee Reservoir. The volume of water entering Pardee Reservoir at Mokelumne Hill would be reduced by only 0.1 percent in a wet year, and 0.29 percent in a critically dry year. These changes are sufficiently small that they would not be expected to materially affect the quantities of water that are released from Pardee Reservoir. Because the Project would not be expected to require changes in operations of Pardee Reservoir there would be no effect on the annual volume of water entering Camanche Reservoir from Pardee Reservoir, and thus no effect on downstream riparian habitat. Therefore, impacts would be less than significant.

Significance Determination before Mitigation
Less than significant.

Mitigation Measures
No mitigation is necessary.

Impact BIO-3  Potential to Interfere Substantially with Movement of Any Native Resident or Migratory Fish or Wildlife Species or with Movement Corridors or Nursery Sites

Although anadromous fish historically occurred in the Project area, the portions of the Mokelumne River and its tributaries above Pardee Reservoir that would be affected are no longer accessible to migratory fish. The Project would thus not interfere with fish migration but could affect resident fish. Because no new facilities would be constructed, there is no possibility that the Project would interfere with migration of terrestrial wildlife species, terrestrial movement corridors or nursery sites.

Appendix D provides a detailed evaluation of Project effects on fisheries and aquatic habitat. To evaluate effects of flow changes in the upper watershed on aquatic habitat, USGS data on the relationship between flow and water level at the Salt Springs gage site was used. The magnitude of the predicted reduction in average instream flows in the upper watershed (all control points except Mokelumne Hill) is less than 1 cfs, and no detectable change in water depths at the Salt Springs gage site is expected. Reductions in flow at Mokelumne Hill range from 1.1 to 1.6 cfs, but are still not projected to result in a detectable change in the quality or availability of river habitat for resident fish. The proposed Project diversions are therefore not estimated to have a significant impact on river habitat for resident fish such as rainbow trout (Hanson Environmental 2016). Impacts on movement of species, movement corridors, and nursery sites would be less than significant.
Significance Determination before Mitigation
Less than significant.

Mitigation Measures

No mitigation is necessary.

Cumulative Impacts

The geographic scope of the Project’s potential operational impacts is the Bear River and upper Mokelumne River system between the existing and proposed points of diversion. As discussed in Section 3.1, Hydrology, modeling of Project effects has considered Project impacts in the context of ongoing operations of all other projects that divert water from the upper Mokelumne River system. The evaluation presented above demonstrates that Project operations, combined with the operation of other ongoing projects on the upper Mokelumne River system, would not have a cumulative adverse effect on fisheries.

3.2.4 References:


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3.3 Growth Inducement

This section defines the concept of growth inducement in terms of how a project could directly or indirectly result in population growth or development of the built environment. The section also discusses the context within which growth inducement is evaluated under CEQA, and evaluates whether the proposed Project would induce growth and any corresponding environmental effects thereof.

3.3.1 Consideration of Growth Inducement under CEQA

CEQA requires the Lead Agency to evaluate whether a proposed project would directly or indirectly induce growth of population, economic development, or housing construction. Specifically, CEQA Guidelines Section 15126.2(d) states the need to evaluate the potential for a proposed project to “foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas).”

Directly induced growth is associated with residential or commercial development projects that would result in a population increase or in an increase in the number of employees. Indirectly induced growth is associated with reducing or removing barriers to growth, or creating a condition that encourages additional population or economic activity. Ultimately, both types of growth inducement result in population increase, which “may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects” (CEQA Guidelines Section 15126.2[d]). Other potential environmental impacts related to growth include increased traffic, air emissions, and noise; degradation of water quality; loss of sensitive biological and cultural resources; increased demand on public services and infrastructure; and changes in land use and conversion of agricultural or open space to accommodate development.

Under CEQA, growth is not considered necessarily detrimental, beneficial, or of little significance to the environment.

Projects are considered to have growth inducing implications when economic, housing, or population growth occur either directly or indirectly. Local land use plans (e.g., general plans) provide for development patterns and growth policies that allow for the planned and orderly expansion of urban development (i.e., residential, commercial and industrial uses) supported by adequate urban public services (e.g., water supply, wastewater treatment, solid waste service disposal capacity, police and fire services). A project that would induce unplanned growth (i.e., conflict with local land use plans) could indirectly cause adverse environmental impacts not previously envisioned. Thus, to assess whether a project has the potential to induce growth and result in adverse secondary effects beyond what is anticipated by the local jurisdiction, it is important to assess the degree to which the growth associated with a project would or would not be consistent with the applicable land use plan.

3.3.2 Growth Inducement

Implementation of the proposed Project would not directly induce population growth, as the Project is not tied directly to any new residential or commercial development. The Project would augment existing water supply and increase supply resiliency within the CAWP service area, but it does not involve the construction of new water conveyance infrastructure to extend service to areas within the CAWP service area not currently served by AWA. Application 5647X03 provides a defined place of use, which is shown in Figure 2-3 in the Project Description and is exactly the same as the existing place of use allowed by AWA’s currently held water right Permit 17579 (CAWP service area). Thus, the Project proposes no increase in
the existing CAWP service area. Under water rights law, water cannot be legally used outside a place of use or service area without the SWRCB’s approval of a water right petition for a change in place of use.

Though the recently updated Amador County General Plan allows for future development of residential, commercial, and industrial uses throughout the County’s planning area, it is the County’s intent to focus new growth in existing unincorporated communities, primarily through the development of a Regional Service Center in the community of Martell, and Town Centers in the communities of Pine Grove, Buckhorn and River Pines. These areas slated for future development are located in key locations within the county, each of which has unique future development objectives that respond to priorities established in the General Plan. The communities of Pine Grove and Buckhorn are located within the CAWP service area.

The proposed Project would not directly generate new development in areas of the CAWP service area where water service is currently not being provided, but the Project would remove a constraint to development by augmenting the existing water supply. However, new development projects within the CAWP service area would be required to go through the customary environmental review process, which would involve an evaluation of a project’s environmental impacts, including impacts related to the provision of utility services such as potable water. Additionally, JVID and AWA have agreed that the reversion would occur incrementally year-by-year based on projected annual increases in demand in the CAWP service area. AWA would thus not have access to the full additional 1,050 AFY upon approval of the water right, but would have to apply to the SWRCB for an appropriate quantity every year, based on expected demand.

### 3.3.3 Constraints to Growth

While the lack of water supply availability is a constraint to growth, there are a number of other constraints that limit the potential for growth in the CAWP service area. Constraints to growth are identified in Section 4.15 of the Amador County General Plan Final EIR (Amador County 2016), which projects that full build-out of the land use designations in the General Plan is not likely to occur because of the following constraints:

- **Physical constraints on development**, including areas with existing development that are unlikely to be replaced with new development at maximum possible density, and the large areas of the county which have steep slopes.
- **Water supply constraints**, including parcel size minimums where no public water supply is available, the amount of available water rights, limitations on treatment and conveyance infrastructure, and unpredictable groundwater availability on many parcels (emphasis added).
- **Economic conditions and market demand**, including the very low likelihood for a great increase in population growth compared to historic growth rates.
- **Property owners deciding not to develop their property based on any one of a number of factors, including lack of demand for dwellings or non-residential buildings or financial feasibility.**

In addition to the constraints identified in the General Plan EIR, the lack of wastewater treatment capacity limits the potential for new development. The majority of the CAWP service area is without wastewater collection and treatment systems.

Approval of AWA’s Application 5647X03 would thus remove one constraint to growth, but growth could not occur until other obstacles are also removed. In addition to the items listed above, individual development proposals would need to be reviewed (including completion of CEQA documentation) and approved, and in most cases, facilities to convey (and possibly treat) the water would need to be developed.
3.3.4 Projected Extent of Growth in CAWP Service Area

To assess the potential extent of growth in the CAWP service area, population numbers and water demand were estimated for existing conditions and potential build-out.

**Existing Population and Demand**

Existing levels of development were estimated using AWA residential connection data and persons per household derived from 2010 census block group data. The existing population and demand are defined as the average population and demand between 2008 and 2013. This date range was chosen to show typical demand served by AWA under pre-drought conditions. More recent demand from 2014 through 2016 was altered due to drought restrictions and thus is not representative of average water use. From 2008 through 2013, AWA served an average of 2,545 retail residential customer connections and 852 wholesale residential customer connections in the CAWP service area. 2010 Census data showed that the average persons per household in the CAWP service area is 2.23. Multiplying this persons-per-household factor by the total number of residential connections served by AWA yields a population served of 7,575. The average demand served by AWA to retail and wholesale customers in the CAWP service area between 2008 and 2013 was 95,869 AFY.

**Build-out Population and Demand**

AWA is in the process of evaluating long-term water demands and total population in the CAWP service area at build-out as part of AWA’s Long-Term Water Needs Study (Study) process. The build-out population and demand projections developed in this Study for the CAWP service area are based on Amador County’s recently updated General Plan (County of Amador, 2014). Because the General Plan does not include population estimates specifically for the CAWP service area, population was estimated using the General Plan land use designations for the area. The Study process has yielded an estimated population of 22,961 at build-out of the CAWP service area using the maximum number of dwelling units per acre for all residential land use types and persons per household information from the 2010 Census. Appendix E of this EIR, entitled AWA Land Use Based Water Demand Projections, (RMC 2017a), describes the methodology for estimating buildout population of the CAWP service area. The complete study is available on the AWA website (http://www.amadorwater.org/PDFdocs/Reports/LTWNS%20Final%20072117.pdf, RMC 2017b).

The County General Plan EIR estimates a county-wide population of 86,752 at buildout, but provides several caveats regarding the buildout estimate:

"The theoretical buildout scenario was prepared solely for the purposes of the General Plan Environmental Impact Report and should not be used for any other long range planning purpose. Buildout scenario refers to the theoretical maximum buildout of all lands within the planning area in accordance with assigned land use designations. Theoretical buildout scenario assumes full development of all residentially designated land and mixed-use designated land in the planning area at the maximum allowable General Plan density (units per acre). Theoretical buildout scenario for non-residential square feet assumes the full utilization of the allowable floor area ratio (FAR) for land that is designated for retail, office, and industrial uses within the Draft General Plan. Although theoretically possible based only on the allowable maximum density or floor area ratio, there could be constraints in place that would limit or reduce the feasibility of additional residential units or non-residential square footage, including physical constraints, regulatory constraints, or market conditions." (Amador County General Plan EIR, Section 4.15)

Because the buildout estimate for the CAWP service area is based on the same information from the General Plan that is described above for the General Plan EIR county-wide buildout estimate, the same limitations apply to the estimate for the CAWP service area.
The demand projection assumes that AWA will serve all demands at build-out within the CAWP service area except most agriculture and some industrial demands. The majority of the projected increased demand is residential and commercial, with only a small amount of agricultural land served by AWA. AWA is not expected to serve 10,000 of the 10,300 acres of agricultural land within the CAWP service area anticipated in the General Plan. Additionally, AWA is not expected to serve 90 percent of the potential industrial demand from the designated mineral resource zone in the CAWP service area. Figure 3.3-1 shows which parcels in the CAWP service area AWA is expected to serve at build-out. Because build-out is expected to occur far into the future, climate change impacts have been incorporated into the demand projection. The anticipated increase in temperature and shifts in precipitation patterns are expected to increase demand by 3 to 16 percent. This increase in demand due to climate change has been incorporated into the projection so that the total anticipated demand served by AWA in the CAWP service area at build-out is 5,036 AFY. The population and demand at build-out, along with existing population and demand, are summarized in Table 3.3-1.

Under the proposed Project, approval of the water right application would increase the amount of water that could be taken by direct diversion and rediversion from storage for consumptive uses within the CAWP service area to a total of 2,200 AFY, which is less than half of the potential 5,036 AFY demand at buildout that is projected based on land uses defined in the General Plan. The proposed Project would thus provide water supply for only a portion of the growth that might be expected in the CAWP service area. Amador County has not defined a projected timeframe at which buildout might occur, and it is possible that complete buildout would never occur. The proposed Project would provide the next increment of water supply to meet demands of future development in the CAWP service area, and future water supply projects would be needed when growth results in a demand that exceeds the total 2,200 AFY supply that is proposed under the current water right application.

### Table 3.3-1: Estimated Population and Water Demand in CAWP Service Area - Existing and Build-out

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Population Estimate</th>
<th>Water Demand (AFY)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td>7,575²</td>
<td>958</td>
</tr>
<tr>
<td></td>
<td></td>
<td>969</td>
</tr>
<tr>
<td>Buildout</td>
<td>22,961²</td>
<td>5,036³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,189</td>
</tr>
</tbody>
</table>

¹ Demand includes residential, commercial and a small portion of agricultural and industrial demand
² Buildout population based on County General Plan land use designations and maximum buildout of all lands within the planning area in accordance with assigned land use designations, and assuming full development of all residentially designated land and mixed-use designated land in the planning area at the maximum allowable General Plan density (units per acre).
³ Water demand numbers were refined after publication of the Draft EIR, to more accurately separate demand for various land use categories, resulting in a slightly lower demand estimate for buildout. Appendix E provides information on the methodology for estimating water demand. Existing demand numbers were updated to be consistent with AWAs Long-Term Water Needs Study, which was published in July 2017. The updated existing population and demand numbers reflect the average population and demand between 2008 and 2013, whereas the data in the Draft EIR reflected population and demand between 2008 and 2012.
Figure 3.3-1: Current Parcels Served and Anticipated Parcels Served at Build-out
3.3.5 Indirect Impacts Associated with Growth

The recent Amador County General Plan EIR identified various resources which could be impacted by future development and growth within the County associated with build-out under the updated General Plan. The following is a discussion of environmental impacts identified in that General Plan EIR that are associated with growth that could be accommodated by the additional water supply that would be provided with approval of Application 5647X03. The General Plan EIR specifically took Application 5647X03 into account and considered it within the context of the various resource areas that would be potentially affected by implementation of the updated General Plan. The General Plan EIR evaluates impacts of projected development through 2030 and at build-out, and those impacts are summarized here.

**Agricultural and Forest Resources**

Section 4.2 of the General Plan EIR addresses impacts to agricultural and forest resources, and includes mapping of important farmland (Prime Farmland, Farmland of Statewide Importance and Unique Farmland). There is no important farmland within the CAWP service area, so there would be no adverse indirect effects associated with conversion of important farmland. However, there are areas in the vicinity of both Pine Grove and Buckhorn where existing agricultural uses are adjacent to areas that could be developed in the future, and land use conflicts with existing agricultural uses were identified in the General Plan EIR as a significant unavoidable impact.

The General Plan EIR also provides mapping of Timberland Production Zones, and there is an area east of Buckhorn that is designated for timber production. Although growth in the CAWP service area would not be permitted within designated Timberland Production Zones, the General Plan EIR identifies the fact that new development could result in the conversion of forestland to non-forest use both directly and through construction of roadways, utilities, and other improvements associated with new development.

There would be less than significant impacts related to conflicts with existing Williamson Act contracts, and under the updated General Plan, proposed land use designations would not conflict with zoning districts permitting forest and timber uses.

Growth within the CAWP service area through 2030 would thus result in potential impacts associated with conflicts with existing agricultural uses and conversion of forestland, and Section 4.15 of the General Plan EIR predicts that those impacts would be even greater at build-out. The proposed Project accommodates growth that could potentially result in secondary impacts within the CAWP service area.

**Air Quality**

Air quality impacts associated with the updated General Plan were evaluated in Section 4.3 of the General Plan EIR. The EIR determined that development consistent with the General Plan would result in short term (construction related) and long term emissions of criteria air pollutants that could violate or contribute substantially to an existing or projected air quality violation, result in a cumulatively considerable net increase in non-attainment criteria pollutants, and/or expose sensitive receptors to substantial pollutant concentrations. This impact would result from new buildings, structures, paved areas, roadways, utilities and other improvements associated with future new development in the General Plan area. Though mitigation measures were outlined for this impact in the General Plan EIR, the EIR determined that it would not be reduced to a level of less than significant because project level mitigation cannot be guaranteed to be effective for all projects. Therefore, according to the General Plan EIR, the impact of growth through 2030 would remain significant and unavoidable. Section 4.15 of the General Plan EIR predicts that those impacts would be even greater at build-out.

The General Plan EIR determined that development consistent with the updated General Plan would not result in significant impacts related to carbon emissions, but it would result in exposure of sensitive receptors to short and long term emissions of toxic air contaminants, which would be significant and
unavoidable even after implementation of mitigation measures. The General Plan EIR found that exposure of sensitive receptors to construction generated emissions of naturally occurring asbestos and odors would be less than significant after implementation of mitigation measures.

Because air quality impacts are experienced across the entire air basin, it is expected that growth within the CAWP service area would contribute to air quality impacts. The significance of the contribution is not possible to ascertain at this time. The proposed Project accommodates growth that therefore could potentially result in secondary air quality impacts within the service area.

**Biological Resources**

As discussed in Section 4.4 of the General Plan EIR, development consistent with the updated General Plan would have a significant and unavoidable impact on special-status species that inhabit future growth areas in the County, as well as areas that contain lone chaparral. Complete avoidance of these impacts would not be possible because these sensitive resources occur on land which would transition to developed land uses under the General Plan. Areas of lone chaparral occur in the western part of Amador County and would not be affected by development within the CAWP service area. However, there are identified occurrences of sensitive species such as foothill yellow-legged frog and prairie wedge grass in the vicinity of Pine Grove, and Red Hills soaproot populations have been identified in the vicinity of both Pine Grove and Buckhorn. Although the General Plan EIR includes mitigation to protect sensitive species, it concludes that complete avoidance of all impacts would not be possible because special-status species would occur on land that would transition to developed land uses under the updated General Plan. Impacts of growth through 2030 were considered to be significant and unavoidable, and Section 4.15 of the General Plan EIR predicts that those impacts would be even greater at build-out. The proposed Project accommodates growth that therefore could potentially result in secondary impacts to sensitive species within the CAWP service area, although the extent of any such impacts is not possible to forecast now without knowing how and where the growth will actually occur in the CAWP service area.

The General Plan EIR determined that the updated General Plan would result in less than significant impacts to riparian habitat, oak woodland, wetland areas and to the movement of wildlife, which would be accomplished through the implementation of mitigation measures and avoidance of sensitive areas.

**Public Services and Utilities**

Impact 4.13-1 (Increased Demand for Water Supplies), on page 4.13-32 of the General Plan EIR’s Public Services and Utilities section, states that AWA’s planned water supplies would be adequate to meet 2030 water demands within its service areas, including water demands for new development identified in the updated General Plan, though the availability of the additional surface water rights for CAWP is uncertain. The County’s land use permitting process requires project applicants to demonstrate the availability of water supplies to meet proposed project demands. However, due to uncertainties regarding the availability of long-term water supplies needed to serve new development, the EIR identifies this as a significant and unavoidable impact. If approved, the proposed Project would eliminate this impact relative to the CAWP service area.

Impact 4.13-2 (Increased Demand for Water Conveyance and Treatment Facilities), on page 4.13-35 of the General Plan EIR, also found that a potential increased demand for potable water and wastewater conveyance and treatment facilities would be a significant and unavoidable impact due to uncertainties associated with potential future conveyance and treatment capacity in certain locations, and because project-specific mitigation of the impacts of specific water supply facilities cannot be guaranteed. Section 4.15 of the General Plan EIR predicts that those impacts would be substantially greater at build-out. The proposed Project would address the matter of water supply uncertainty for the CAWP service area, but it does not include construction of facilities to convey water to new users. As noted in the General Plan EIR, impacts of new or expanded water supply facilities would be evaluated and mitigated through project-
specific CEQA review, and construction of new facilities could result in significant impacts unless mitigated.

The General Plan EIR concludes that expansion of wastewater facilities to accommodate growth also could result in significant unavoidable impacts, and Section 4.15 of the General Plan EIR predicts that those impacts would be even greater at build-out. Existing wastewater treatment systems for Pine Grove, Buckhorn, and vicinities, which are within the CAWP service area, are subject to limited capacity for expansion, and many of the small, local sewer systems in the County do not permit or greatly restrict new connections based on lack of capacity. As with water supply infrastructure, impacts of new or expanded wastewater facilities would be evaluated and mitigated through project-specific CEQA review, but could result in significant impacts unless mitigated.

The General Plan EIR also addresses other public services such as storm drainage facilities, increased generation of solid waste, increased demand for fire and police protection, and public schools, park services and facilities. Generation of solid waste, demand for school facilities and park impacts were determined to be less than significant, both at the 2030 projected level of development and at build-out (see page 4.15-6 in Section 4.15 of the General Plan EIR). Environmental impacts related to increased demand for fire and law enforcement services and storm drainage were determined to be less than significant with mitigation, both in 2030 and at build-out, given that development impact fees would ensure that additional service facilities and service levels would be provided as needed to keep pace with future development. As noted on page 4.15-6 of the General Plan EIR: “…buildout mitigation measures would identify service standards and require fees to be paid to support continued public service provision.”

Although the proposed Project would remove uncertainties regarding water supply for the CAWP service area, the additional water supply would accommodate growth that would also place demand on other services, especially wastewater services. The proposed Project thus accommodates growth that could potentially result in secondary impacts regarding construction of new water and wastewater infrastructure unless mitigated.

Transportation

Section 4.14 of the General Plan EIR addresses the Project’s potential transportation related impacts. The EIR concludes that development consistent with the updated General Plan would result in increases in traffic levels on State Highways within the County that would operate below Caltrans Level of Service (LOS) thresholds. Mitigation measures were identified requiring that projects under the General Plan provide their fair share of funding for future transportation improvements. However, in the case of certain highway segments, improvements that would reduce highway LOS impacts would not reduce these to less than significant levels, and impacts would remain significant and unavoidable. Within the CAWP service area, several segments of SR 88 are projected to experience unacceptable LOS. The General Plan EIR projects that highway conditions would degrade to LOS E or F in the vicinity of both Pine Grove and Buckhorn, with the following areas listed as experiencing significant reductions in LOS:

- SR 88 west of Ridge Road (Pine Grove) is projected to degrade from LOS D to LOS F;
- SR 88 east of Ridge Road (Pine Grove) LOS F is projected to degrade further with traffic volumes more than doubling;
- SR 88 west of Tiger Creek Road near Buckhorn is projected to degrade from LOS C to LOS F; and
- SR 88 West of Inspiration Drive near Buckhorn is projected to degrade from LOS B to LOS E.

The General Plan EIR identifies mitigation for this increased congestion. Mitigation Measure 4.14-1c: Implement State Highway Roadway Improvements, states that “The County will work with Caltrans and ACTC (Amador County Transportation Commission) to implement roadway improvements required to
meet Caltrans LOS standards.” For SR 88 this would include widening the highway to four lanes throughout Amador County. However, the General Plan EIR finds that, “Even with widening to four lanes, some of the urban portions of SR 88 in … Pine Grove could still experience LOS E or F conditions.” The General Plan EIR also recognizes that some portions of SR 88 may remain at two lanes, and could thus be significantly affected by increased traffic resulting from new development. Growth in Pine Grove and Buckhorn could thus result in significant unavoidable impacts on highway traffic on SR 88.

The EIR also indicates that development associated with the updated General Plan would result in increased traffic levels that could produce unacceptable LOS conditions on some surface roadway segments in the CAWP service area. In the Pine Grove area, Ridge Road would experience LOS degradation, with the following areas listed as experiencing unacceptable LOS:

- Ridge Road west of Climax Road degrades from LOS D to LOS F;
- Ridge Road east of Climax Road degrades from LOS C to LOS E; and
- Ridge Road west of SR 88 degrades from LOS C to LOS E.

The General Plan EIR states that given the lack of funding for roadway improvements that are already needed under baseline conditions, and uncertainty related to the timing of future projects, funding might not be in place and all improvements might not be feasible prior to increases in traffic that would result in inadequate LOS on the roadways identified in the EIR. Because of these uncertainties related to the timing and availability of funding for improvements, the EIR concludes that impacts of increased congestion due to growth through 2030 would be significant and unavoidable. Section 4.15 of the General Plan EIR predicts that those impacts would be even greater at build-out.

The EIR found that the updated General Plan would have less than significant impacts related to air traffic patterns, design hazards, non-motorized transportation and transit both in 2030 and at build-out.

The proposed Project thus accommodates growth that could result in secondary impacts related to roadway and highway transportation within the CAWP service area.

**Land Use and Planning**

Section 4.10 of the General Plan EIR addresses land use and planning impacts associated with the updated General Plan, which addresses development through 2030. The EIR concludes that no new infrastructure improvements with the potential to divide existing communities are proposed as part of the General Plan, and that the General Plan would not conflict with other applicable land use plans, policies or regulations.

For areas designated as Rural Residential (RR), the updated General Plan specifies that “One-acre net minimum lot sizes are acceptable in areas served by public water. Five-acre minimum lot sizes are required in areas lacking public water service”. The proposed Project provides additional water supply, but because the Project does not include construction of new infrastructure, it does not provide public water to areas that are not already served by AWA, and is thus not expected to directly result in a change in the density of land use in areas that are not served by the existing water distribution system. The General Plan EIR projects that land use impacts of development through 2030 would be less than significant, but the evaluation of build-out impacts in Section 4.15 of the General Plan EIR assumes that for build-out to occur “existing housing and structures, which are at a lower density or intensity than would be permitted under the General Plan, would be replaced with new development at the maximum intensity permitted, disrupting and potentially dividing existing communities. This would be a new significant and unavoidable impact” (see page 4.15-5 of the General Plan EIR). To the extent that additional water supply might accommodate higher density development in the existing service area, this impact would be considered significant.
Population and Housing

Section 4.12 of the General Plan EIR addresses impacts related to population and housing. The EIR concludes that development through 2030 consistent with the updated General Plan would result in substantial population growth through future development of residential, commercial and industrial uses throughout the planning area. The updated General Plan intends to reduce impacts associated with population and housing growth in the planning area by accommodating this growth in an orderly fashion. As noted on page 4.12-1 of the General Plan EIR, the purpose of the updated General Plan “is to accommodate the most recent population growth, housing, and employment projections in an orderly manner.” Because the purpose of the General Plan is to accommodate growth, no feasible mitigation measures are available to reduce the potential for population growth to a less than significant level. Furthermore, the County cannot meet its economic development and housing needs without accommodating additional residents and workers. Because there are no feasible mitigation measures, the General Plan EIR states that this impact would remain significant and unavoidable, both for development through 2030 and for build-out.

The proposed Project may result in secondary growth inducement impacts in that an additional water supply could accommodate an increase in the County’s population.

To address the potential that the Project would contribute to impacts associated with population and housing growth, the infrastructure planning and development policies listed in the Project Description (Section 2.4.4) would provide guidance when new development projects are being considered and/or constructed. Adherence to these policies would help to minimize the Project’s potential indirect growth inducing impacts.

Infrastructure Planning and Development Policies

AWA is committed to providing water to its service areas consistent with its Mission Statement: “To enhance the quality of life in Amador County by providing safe, reliable water, waste-water, conservation and reclamation services. We will accomplish this as a professional team dedicated to public transparency, community partnerships and excellent customer service.” In keeping with this mission, AWA will implement the policies identified in the Project Description (see Section 2.4.4, Management Practices for CAWP Water Supply).

Summary

Section 15126.2 (d) of the CEQA Guidelines notes that “It must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment.” Potential effects of growth in the CAWP service area have been identified above. Implementation of the proposed Project would not directly induce population growth, as the Project is not tied directly to any new residential or commercial development. The Project would augment existing water supply and increase supply resiliency within the CAWP service area. It does not involve the construction of new water conveyance infrastructure to extend service to areas not currently served by AWA. Any proposed new development projects would be required to go through the customary environmental review process, which would involve an evaluation of a project’s environmental impacts, including impacts related to the provision of utility services such as potable water. As described in Section 2.4.4 of Chapter 2, Project Description, Amador County’s process for review of new development projects includes evaluation by a technical advisory committee, which considers input from AWA regarding availability of water supply.

In conclusion, the Project would accommodate growth that could result in some indirect impacts, as follows:

- Conflicts with existing agricultural uses and conversion of forestland;
- Exposure to toxic air contaminants;
• Impacts to sensitive species;
• Impacts associated with construction of new water and wastewater infrastructure;
• Reduction in Levels of Service on roadways and highways within the CAWP service area;
• Disruption of existing communities through new development; and
• Accommodation of population growth.

All of these impacts would be significant and unavoidable as identified in the Amador County General Plan EIR. AWA will implement policies to encourage orderly development. AWA would also implement mitigation for construction of any new water infrastructure, with the aim of avoiding any significant impacts on the environment. However, AWA does not have the legal authority to require that development projects provide for mitigation of any of the significant effects identified above to which they contribute, except for the impacts associated with the water and wastewater infrastructure needed to serve such projects. Additionally, CEQA does not require an EIR to anticipate and mitigate the effects of the Project’s growth. It is not feasible or necessary to identify measures to mitigate impacts of development projects that have not yet been proposed. That process is best reserved until such time as a particular development project is proposed.

3.3.6 References
RMC Water and Environment. 2017a. AWA Land Use Based Water Demand Projections.
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Chapter 4  Other CEQA Considerations

4.1 Significant and Unavoidable Impacts

As described in Chapter 3, the proposed Project would accommodate growth, which could result in some significant and unavoidable indirect impacts. AWA will be required to adopt Findings as part of its EIR certification process, and will prepare a Statement of Overriding Considerations for those unavoidable significant impacts.

4.2 Significant Irreversible Environmental Changes

Because no construction activity would be required to implement the Project, no commitment of resources such as construction materials, labor, or energy for construction would be required. In terms of Project operation and maintenance, both AWA and JVID primarily use gravity to move water from their diversion/rendiversion points and thus the reversion of the water right from JVID to AWA would not have a substantial effect on energy required for diversion. AWA would use a small amount of pumping energy to treat raw water for potable use, but the net increase in energy use during the operations phase of the Project is expected to be minimal.

However, Project implementation could indirectly result in some irreversible environmental changes related to growth inducement as discussed in Section 3.3. The proposed Project could accommodate population growth, economic development and housing construction, which could irreversibly change the environment as explained in Section 3.3.

4.3 Effects Not Found to be Significant

The Initial Study for the Project is included in Appendix A of this EIR. The Initial Study found that the Project had no direct impacts on aesthetics, agriculture and forestry resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, land use and planning, mineral resources, noise, public services, transportation/traffic, or utilities and service systems.

4.4 Cumulative Impacts

The cumulative impact analysis for each individual resource topic is included in each of the resource sections.

4.5 Alternatives Evaluation

4.5.1 Methodology

CEQA Guidelines Section 15126.6 requires that “An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible.” The Project has no direct significant environmental impacts. It would have the indirect effect of inducing growth in the CAWP service area, which could lead to some significant adverse environmental effects as identified in Section 3.3. CEQA thus requires that the evaluation of alternatives be focused on reducing the potential to accommodate growth, which creates an inherent conflict in that the Project’s purpose is to accommodate growth. The information below describes two alternatives to the proposed Project, including the Reduced Growth Alternative and the No Project Alternative. As will be
discussed below, neither alternative is found to be feasible, and therefore, consistent with CEQA, the consideration of them is not detailed.

**4.5.2 Reduced Growth Alternative**

AWA has considered two potential options to reduce the amount of growth that could be accommodated by the Project 1) the Reduced Water Supply (RWS) Alternative and 2) the Reduced Place of Use (RPU) Alternative.

**Reduced Water Supply Alternative:** Under the RWS Alternative, the amount of water that could be put to beneficial use under Application 5647X03, whether by direct diversion or rediversion of releases from storage, would be reduced so as to reduce to some uncertain extent the Project’s potential to contribute to secondary growth inducing impacts.

**Reduced Place of Use Alternative:** Under the RPU Alternative, the geographic extent of the CAWP service area as shown in Figure 2-2 (Project Description Chapter) would be reduced in size from its current authorized configuration. Reducing the size of the service area is another means by which it might be possible to limit the potential for growth that could be served by an additional water supply.

Both options would limit the potential additional development that AWA could serve in the future, thus reducing the Project’s potential to contribute to secondary growth inducing impacts. A reduction in water supply under the RWS Alternative or a reduction in the area served under the RPU Alternative could limit potential future residential and commercial development and thus reduce the secondary impacts associated with that growth, including effects on agriculture and forest resources, air quality, biological resources, public services and utilities, transportation, land use and planning and population and housing. It is, however, uncertain whether growth could be reduced to an extent that impacts would be considered less than significant. It is also possible that either Reduced Growth Alternative could result in environmental consequences associated with the development of alternative sources of water supply if water is not available from AWA to users within the CAWP service area. Users who cannot be supplied with water from AWA might attempt to meet their water demands with groundwater, or by diversions from other surface waters. Groundwater basins and aquifers in the CAWP area are not well defined; most groundwater is transient and found in fractured rock. Because there is no defined basin in the area, groundwater use in the CAWP area would not be regulated by the Sustainable Groundwater Management Act. There is thus the possibility that unmanaged use of local groundwater resources could result in adverse effects on groundwater levels, and use of other surface water could affect local streams other than the Mokelumne River. These effects could potentially be significant.

The recently published Amador County General Plan EIR identified potential environmental impacts related to growth in the County as a whole. Given the broad-based nature of the discussion of these impacts in that EIR, it would be highly speculative to assess the specific extent to which growth in the CAWP service area would contribute to the totality of growth related significant impacts in the County that were identified in the General Plan EIR. Therefore, it is difficult to conclude to what extent the Reduced Growth Alternative would result in less overall growth related environmental impacts in the County compared to the proposed Project. Additionally, AWA does not have the authority to refuse service to future development approved by Amador County assuming it has a water supply available to serve it and the development complies with AWA’s rules and regulations concerning service. As noted in the Project Description, AWA is authorized to provide water service to all territory in Amador County, and thus has a duty to serve, which requires AWA “to provide adequate and reasonably efficient service in an impartial manner, without unjust discrimination, to those within the agency’s service area who comply with its rules and regulations and pay its rates and charges” (Maddow 1992). A reduction in the size of the water supply under the RWS Alternative or a reduction in service area under the RPU Alternative would for all intents and purposes be a mechanism through which AWA would be precluded from providing water service to areas of the County for which it is obligated to serve.
The Reduced Growth Alternative thus would not meet the Project’s most basic objectives, which are to augment existing water supply to meet the needs of existing customers and accommodate future growth, and increase supply resiliency for current and future customers in the CAWP service area. This alternative is thus not considered feasible.

4.5.3 No Project Alternative

CEQA requires the evaluation of a No Project Alternative. Under the No Project Alternative, existing conditions as of the Notice of Preparation publication date would continue indefinitely. No additional water would be diverted from the Bear River or the North Fork Mokelumne River, nor would additional diverted water be stored in Lower Bear River Reservoir. The augmented water supply capacity and increased reliability of water supply to serve existing and future residents in the CAWP service area associated with the proposed Project would not occur, and thus the No Project Alternative would not meet the most basic objectives of the Project. AWA could potentially look for other sources of water to ensure adequate water supply capacity and reliability. Potential sources of water could include groundwater (although groundwater is not a reliable source of supply in the CAWP service area), or other surface water sources, and use of those other sources could have significant adverse effects on the groundwater levels or on local streams other than the Mokelume River. In the absence of the Project, growth might still occur in the CAWP service area, and although the extent of growth might be reduced, it is not certain that any secondary effects of growth in the service area would be reduced to less than significant. Even without the Project there could be significant impacts associated with the secondary effects of growth in the service area.

4.5.4 Comparison of Alternatives

Table 4-1 provides a comparison of the environmental impacts that could result from implementation of the proposed Project, the Reduced Growth Alternative and the No Project Alternative.

<table>
<thead>
<tr>
<th>Impact Statement</th>
<th>Proposed Project</th>
<th>Reduced Growth Alternative</th>
<th>No Project Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYD-1: Potential to substantially alter existing drainage pattern of Project site or area.</td>
<td>LTS</td>
<td>PS</td>
<td>PS</td>
</tr>
<tr>
<td>Substantially deplete groundwater supplies</td>
<td>NI</td>
<td>PS</td>
<td>PS</td>
</tr>
<tr>
<td>BIO-1: Potential to affect species identified as candidate, sensitive, or special-status.</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
</tr>
<tr>
<td>BIO-2: Potential to affect riparian habitat or other sensitive natural community.</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
</tr>
<tr>
<td>BIO-3: Potential to interfere substantially with movement of native resident or migratory fish or wildlife species, with movement corridors or nursery sites.</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
</tr>
<tr>
<td>GRO-1: Potential to directly or indirectly induce population growth or development of the built environment.</td>
<td>SU</td>
<td>SU</td>
<td>PS</td>
</tr>
</tbody>
</table>

Notes: NI = No Impact, LTS = Less than Significant, SU = Significant and Unavoidable, PS = Potentially Significant

4.5.5 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires that an environmentally superior alternative be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative which would result in the least adverse environmental impacts to the Project site and surrounding...
area. It still needs to attain the Project’s most basic objectives. If the No Project Alternative is found to be the environmentally superior alternative, the environmental document must identify an environmentally superior alternative among the other alternatives.

The No Project Alternative might reduce secondary environmental impacts associated with growth as compared to the proposed Project. However, the No Project Alternative could result in physical impacts to the environment associated with developing alternative water supplies, and it would fail to meet the basic objectives of the Project. The No Project Alternative would not augment existing water supply to meet the needs of existing customers and accommodate future growth, and would not increase supply resiliency for current and future customers in the CAWP service area. Therefore, the No Project Alternative does not meet the basic objectives of the Project. Over the long term, the No Project Alternative would not be considered an environmentally superior alternative.

The proposed Project would result in less than significant impacts to hydrology and biological resources. However, the proposed Project may result, to an extent difficult to forecast, in greater impacts related to indirect growth inducement, because the water supply would be larger under the proposed Project compared to the reduced water supply under the Reduced Growth Alternative. The proposed Project is the only alternative that would meet the Project’s most basic objectives, but it could result in more secondary impacts associated with growth than the Reduced Growth Alternative.

As shown in Table 4-1, implementation of the Reduced Growth Alternative would result in less than significant impacts to biological resources in the Project area, as is the case with the proposed Project, but has the potential to result in environmental effects on groundwater and surface water hydrology. Given that under the Reduced Growth Alternative the water supply would be reduced compared to the proposed Project, indirect growth inducement impacts could be less under the Reduced Growth Alternative compared to growth inducement impacts under the proposed Project, but still may be significant. The Reduced Growth Alternative also would fail to meet the Project’s basic objectives (meeting demands of growth and providing water supply resiliency in the CAWP service area). Because of the uncertainty of the direct hydrological environmental effects of the Reduced Growth Alternative relative to the less-than-significant impacts of the proposed Project and because its effects associated with growth may still be significant, the Reduced Growth Alternative is not considered to be environmentally superior. Thus, on the basis of the above analysis, the proposed Project is considered to be the Environmentally Superior Alternative.

4.6 References


Chapter 5  Report Preparers

5.1 Amador Water Agency
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Rachel Gross, Water Resources Engineer
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Avry Dotan, Hydrological Modeling

5.4 Hanson Environmental, Inc.
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Chapter 6  Response to Comments

6.0 Introduction

This chapter contains responses to each letter or email commenting on the Draft EIR. Revisions to text of the Draft EIR based on comments are included in these responses and those same changes have been made to the text of the preceding chapters. Text revisions in the responses in this chapter and in the preceding chapters are formatted in revision mode for ease of reference: strikeouts indicate removed text and underlines indicate new text. AWA received five (5) comments on the Draft EIR during the 45-day public review period. AWA also received correspondence from the State Clearinghouse documenting the completion of the public review period for the Draft EIR. There were no verbal comments made at the meeting held during the public review period, but the AWA Board Members requested some clarifications to the Draft EIR to explain that estimates of future buildout in the CAWP service area are based on land use designations made by Amador County. Changes to text to provide additional information about future buildout are included in the preceding chapters and are shown in revision mode. AWA did not receive any comments from either the state or federal fish and wildlife agency, the local Regional Water Quality Control Board, the State Water Resources Control Board, Amador County, the local air quality management district, the local fire prevention agencies, water purveyors along the Mokelumne River (except East Bay Municipal Utility District), the local school districts, or any environmental organization (other than the Foothill Conservancy).

Each comment letter received is listed in Table 6-1 and identified by number, comment author and date. The full text of all written comments is included in Chapter 7, following the response to comments. Each letter is identified by a number (as shown in Table 6-1) and each comment is identified by a comment number in the margin; responses use the same numbering system. For example, Comment Letter 1 in Letter 1 is designated Comment 1-1. In addition to facilitate reading the Responses to Comments, a summary of each comment is inserted in italics just prior to each response. This summary does not substitute for the actual comment; the reader is urged to read the full original text of all comments, which can be found in Chapter 7. The responses are prepared in answer to the full text of the original comment, and not to the abbreviated summary.

Table 6-1: List of Commenters

<table>
<thead>
<tr>
<th>Letter #</th>
<th>Comment Author</th>
<th>Comment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Caltrans District 10, Michele Demetras, Associate Transportation Planner</td>
<td>5/5/17</td>
</tr>
<tr>
<td>2</td>
<td>United Auburn Indian Community, Gene Whitehouse, Chairman</td>
<td>5/18/17</td>
</tr>
<tr>
<td>3</td>
<td>East Bay Municipal Utility District, Lena L. Tam, Manager Water Resources Planning</td>
<td>6/16/17</td>
</tr>
<tr>
<td>4</td>
<td>Foothill Conservancy, Thomas P. Infusino</td>
<td>6/15/17</td>
</tr>
<tr>
<td>5</td>
<td>Ratepayer Protection Association, Ken Berry</td>
<td>6/16/17</td>
</tr>
<tr>
<td>6</td>
<td>State of California, Governor’s Office of Planning and Research, State Clearinghouse and Planning Unit, Scott Morgan, Director</td>
<td>6/16/17</td>
</tr>
</tbody>
</table>
6.1 Comment Letter 1 – Caltrans District 10, Michele Demetras, Associate Transportation Planner

6.1.1 Response to Comment 1-1

Comment Summary: The comment indicates agreement that transportation impacts would be mitigated through the Amador County General Plan, or any subsequent changes to that Plan, and states that there are otherwise no comments on the Draft EIR.

AWA appreciates Caltrans’ review of the Draft EIR, and concurrence with the EIR’s conclusions regarding transportation impacts.

6.2 Comment Letter 2 – United Auburn Indian Community, Gene Whitehouse, Chairman

6.2.1 Response to Comment 2-1

Comment Summary: The comment requests information about the Project’s potential to affect cultural resources including copies of archaeological reports and environmental documents, and recommends that a tribal monitor be present during ground disturbing activities.

As noted in previous communications with the United Auburn Indian Community (UAIC), the water rights application does not involve any new construction. The entire purpose of the project is to obtain approval to divert a small amount of additional water through existing diversion facilities on the Mokelumne River. There would be no ground disturbing activities that have the potential to affect cultural resources, and thus no need for a monitor. All of the infrastructure to deliver additional water to AWA is already in place so the environmental review process did not include any cultural resource assessments, records searches or pedestrian surveys. There are thus no archaeological reports that can be provided to the UAIC. The Draft EIR was published on May 2, and a Notice of Availability was provided to the UAIC on that same date, providing a link to the AWA website, where the Draft EIR is available to download. The UAIC has thus been provided with access to all relevant environmental documents for the Project.

6.3 Comment Letter 3 – East Bay Municipal Utility District, Lena L. Tam, Manager Water Resources Planning

6.3.1 Response to Comment 3-1

Comment Summary: The comment expresses appreciation that AWA addressed scoping comments from the East Bay Municipal Utility District (EBMUD) and included clarification in the Draft EIR that AWA’s water rights application is part of the 20 TAF State Filings reserved for use within Amador County per the 1959 Release from priority.

AWA welcomes EBMUD’s review of the Draft EIR, and has worked to provide the information requested by EBMUD in their scoping comments.

6.3.2 Response to Comment 3-2

Comment Summary: The comment concurs that the proposed project is expected to have less than significant impacts on flow into Pardee Reservoir, but expresses concern regarding assumptions used in hydrologic modeling using the MOCASIM model.

AWA appreciates EBMUD’s agreement with the conclusion that the proposed Project would have minimal effects on inflows to Pardee Reservoir. Detailed responses to questions about modeling assumptions are provided below in Responses to Comments 3-3 through 3-8.
6.3.3 Response to Comment 3-3

Comment Summary: The comment asserts that, despite the expansion of the MOCASIM model in 2012, the reliance on the model for the analysis is problematic.

With the expanded capabilities of the MOCASIM model, AWA is confident that the model provides sufficiently robust results to make a determination about the proposed Project’s potentially significant impacts.

6.3.4 Response to Comment 3-4

Comment Summary: The comment states that no verification runs to validate model accuracy were presented as part of the DEIR. The comment suggests that, at a minimum, a comparison of the daily simulated flows and actual recorded flows at the Mokelumne Hill gage should be performed, and to note if this validation has already occurred.

The primary source of flow hydrologic data used in the MOCASIM model is the recorded flow at the Mokelumne Hill gage (USGS #11319500), immediately upstream of Pardee Reservoir. Thus, daily flows at the Mokelumne Hill gage are actual recorded flows and are not simulated. Use of actual flow data renders calibration of the model at the Mokelumne Hill gage unnecessary. As part of the Mokelumne Watershed Interregional Sustainability Evaluation, in which EBMUD participated, a test run was conducted as part of the model extension to the Upper Mokelumne River in June 2012 (RMC 2015). The test run was performed to evaluate how well the model simulates the operation of the Upper Mokelumne River system, specifically related to power plant energy production. Results demonstrate that MOCASIM models power plant energy production within a 98 percent level of accuracy for the entire system as compared to actual generation. Power and energy are functions of flow and head, which are driven by hydrology and reservoir operations. As such, AWA believes that the model, because it accurately estimates energy production, is also able to accurately estimate flow.

6.3.5 Response to Comment 3-5

Comment Summary: The comment questions the rationale behind presenting results on an annual basis and asserts that the analysis should be done on a daily or monthly basis to adequately analyze potential environmental impacts.

The analysis was performed on a daily basis, but results were summarized by hydrologic year type as defined by the San Joaquin Index. The full analysis can be found in Table 7-3 through Table 7-7 in Appendix C of the DEIR.

6.3.6 Response to Comment 3-6

Comment Summary: The comment states that the agreement between EBMUD and Woodbridge Irrigation District (WID) requires EBMUD to provide 60 thousand acre-feet per year (TAFY), not the 72 TAFY listed in the DEIR.

As noted in the comment, Woodbridge Irrigation District can take 60 TAF when Pardee inflow is greater than 375 TAF, per an agreement with EBMUD. WID also can take spill, which is used for irrigation. The spill is obtainable under WID's pre-1914 water rights (1886), in which it is entitled to take 414 cfs from the river, and additionally under WID’s water right Licenses 5945 and 8214 (Applications 5807 and

10240, respectively), which are subsequent to EBMUD's Pardee filings but prior to EBMUD’s Camanche filings. The licenses combined with the pre-1914 rights limit WID’s diversions to 414 cfs. The 72 TAF is based on historical use by WID. Additionally, the number used for WID’s diversion was vetted by Mokelumne Collaborative Group (MCG) as part of the Mokelumne Watershed Inter-Regional Sustainability Evaluation (MokeWISE) Project, and was subsequently used in the analysis for that project in 2014/2015. This analysis is not intended to support WID water rights, but simply to address the potential impacts of AWA’s proposed Project based on what is happening in the Mokelumne River using operational models, calibrated with actual operating data.

6.3.7 Response to Comment 3-7

Comment Summary: The comment asserts that the assumption used in MOCASIM regarding the Lodi Decrees appears to be an arbitrary interpretation of court decrees.

As mentioned in Appendix C of the Draft EIR, the Lodi Decree is quite complex from an interpretation and implementation point of view. The Decree is essentially a culmination of several court rulings. In total, there are five components to the Lodi Decree: (1) Case No. 1950 (EBMUD v. PG&E), (2) Case No. 22415 (Lodi v. EBMUD, PG&E), (3) stipulation modifying judgment, (4) order modifying judgment, and (5) letter dated June 21, 1972 modifying judgment. The logic in MOCASIM was developed in consultation with PG&E’s Project 137 operators and was based on PG&E’s interpretation and implementation of the various components of the Decree.

As noted correctly in the comment, one component of the Lodi Decree also discusses the minimum flow as a function of precipitation. However, PG&E has indicated that in wet years, high levels of precipitation usually coincide with elevated storage levels in Salt Springs and Lower Bear River reservoirs, while in dry years, minimum required releases are usually governed by the provision that PG&E need not reduce aggregate storage below specific limits. The logic in MOCASIM was therefore developed by consolidating all of the storage triggers in the Decree. The logic was presented to PG&E and was approved.

Finally, it should be emphasized that the underlying concept employed in this type of modeling is that it is comparing pre- with post-Project conditions. Therefore, any imperfections in the assumptions with regard to the logic in the model for the Lodi Decree are consistent under both pre- and post-Project conditions and therefore should not affect the model’s ability to assess the relative change in the flow regime in the basin.

6.3.8 Response to Comment 3-8

Comment Summary: The comment asserts that there are numerous other assumptions made in the MOCASIM model that could have potentially significant implications and/or impacts.

AWA is comfortable with the assumptions made in the MOCASIM model and maintains that MOCASIM adequately models the potential impacts of the proposed Project. AWA has responded to specific concerns outlined in prior comments. Because this comment does not specify any specific assumptions that are of concern, AWA is unable to provide a more specific response.

6.3.9 Response to Comment 3-9

Comment Summary: The comment requests a more robust discussion of the Lodi Decrees and agreements between AWA, PG&E and EBMUD to ensure that the proposed project will be implemented consistent with those agreements.

Section 2.4.4 of the Draft EIR describes the agreement between AWA and PG&E (PG&E and AWA 2012) regarding AWA’s use of PG&E facilities for implementation of the proposed Project. It is attached to this Final EIR as Appendix F. The pertinent agreement affecting the water right relationship between AWA and EBMUD is the 1958 agreement between EBMUD and Amador County. AWA is not a party to the referenced Lodi Decree. It fully expects that PG&E will meet its obligations under the Lodi Decree in
operating consistent with PG&E and AWA 2012. There is no provision in that agreement that would preclude PG&E from doing otherwise. Further information on PG&E’s compliance with the Lodi Decree would be available from PG&E.

### 6.4 Comment Letter 4 – Foothill Conservancy, Thomas P. Infusino

#### 6.4.1 Response to Comment 4-1

**Comment Summary:** The comment provides background information regarding the Foothill Conservancy, and asserts that AWA did not address comments submitted by Foothill Conservancy during scoping and has not resolved their environmental concerns. The comment also suggests that there are many flaws in the Draft EIR.

The scoping comments from the Foothill Conservancy were addressed appropriately; and AWA has addressed each of the Conservancy’s comments on the Draft EIR below in Responses to Comments 4-2 through 4-40.

#### 6.4.2 Response to Comment 4-2

**Comment Summary:** The comment claims that the Draft EIR should have evaluated the impacts of future phases of the project, such as expanding and extending water service and wastewater infrastructure.

The proposed Project does not include the expansion of any infrastructure. It is not possible to determine the possible impacts of any future extension of any water and wastewater service to unspecified areas in the CAWP service area until specific development projects are proposed. Any such discussion would necessitate speculation. As noted on page 3.3-1 of the Draft EIR: “The Project would augment existing water supply and increase supply resiliency within the CAWP service area, but it does not involve the construction of new water conveyance infrastructure to extend service to areas within the CAWP service area not currently served by AWA.” The expansion of wastewater facilities also is not contemplated as part of the proposed Project. The proposed Project, as defined, only entails securing a right to divert and store additional water as needed to meet projected increasing demands within the existing CAWP service area. The additional amount of water that AWA could divert would be established on an annual basis to meet the anticipated demand for that year. As of 2017, no additional infrastructure needs have been defined: and construction of new infrastructure, if needed in the future, would be subject to appropriate CEQA review.

#### 6.4.3 Response to Comment 4-3

**Comment Summary:** The comment claims that the Draft EIR should have identified mitigation measures for secondary project impacts of development in the CAWP service area.

The Draft EIR at Section 3.3.2 acknowledges that the proposed Project would remove a constraint on growth in the CAWP service area, discusses the potential growth at Section 3.3.4, and evaluates the possible secondary or indirect impacts associated with such growth at Section 3.3.5. For purposes of the proposed Project, the required extent of such discussion and evaluation is explained in *Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal. App. 4th 342, 369, where the court stated:

> It does not follow, however, that an EIR is required to make a detailed analysis of the impacts of a project on housing and growth. Nothing in the Guidelines, or in the cases, requires more than a general analysis of projected growth. The detail required in any particular case necessarily depends on a multitude of factors, including, but not limited to, the nature of the project, the directness or indirectness of the contemplated impact and the ability to forecast the actual effects the project will have on the physical environment. In addition, it is relevant, although by no means determinative, that future effects will themselves require analysis under CEQA.
Section 3.3.5’s discussion and evaluation of possible secondary impacts associated with growth in the CAWP service area drew significantly from or tiered off of the recent County General Plan EIR. Even though that EIR may be in litigation, AWA may assume that it remains valid. (Public Resources Code section 21167.3.) It is permissible for AWA to rely on the County General Plan and its EIR for its analysis of the consequences of growth. (Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal. App. 4th 859, 877.) The potential secondary impacts evaluated in the County General Plan EIR stemming from growth inducement are addressed in Section 3.3.5 as they relate to the CAWP service area. For the impacts analyzed, the County General Plan EIR presented possible mitigation measures and indicated where mitigation was not feasible. This is all discussed in Section 3.3.5. None of the mitigation measures identified are within the legal authority of AWA to implement or require.

The court in Napa Citizens for Honest Government v. Napa County Board of Supervisors provided this additional guidance, which is relevant to this discussion at page 371 of its opinion;

Neither CEQA itself, nor the cases that have interpreted it, require an EIR to anticipate and mitigate the effects of a particular project on growth on other areas. In circumstances such as these, we think that it is enough that the FSEIR warns interested persons and governing bodies of the probability that additional housing will be needed so that they can take steps to prepare for or address that probability. The FSEIR need not forecast the impact that the housing will have on as yet unidentified areas and propose measures to mitigate that impact. That process is best reserved until such time as a particular housing project is proposed.

The Draft EIR in Section 3.3 followed the court’s guidance and direction.

6.4.4 Response to Comment 4-4

Comment Summary: The comment contends that the planning policies identified in the Project Description of the Draft EIR (Section 2.4.4 on page 2-6), are “vague and unenforceable” and that mitigation measures should be included as conditions of approval of the water right.

See Response to Comment 4-3. The policies that the comment claims are vague and unenforceable are specifically based on the scoping comments provided by the Foothill Conservancy. The policies are based on the Foothill Conservancy’s Infrastructure Planning and Development Principles, which were initially conveyed to AWA in a letter commenting on the Gravity Supply Pipeline Initial Study, and were attached to the scoping comment letter for the proposed Project. In that letter, the Foothill Conservancy stated: “We encourage you to follow these principles as you continue this project planning process.” AWA has responded by incorporating policies based on those suggestions to the extent feasible. Additionally, in that scoping letter, the Foothill Conservancy specifically commended the adoption of policies to address growth inducing impacts: “There is at least one local agency that adopted policies to mitigate the growth inducing impacts of an infrastructure project (Kirkwood Meadows Public Utilities District).” The incorporation of the policies for management of the CAWP water supply is reasonable and appropriate.

6.4.5 Response to Comment 4-5

Comment Summary: The comment claims that the Draft EIR misleads readers with unsubstantiated assumptions regarding impacts of growth in the CAWP service area.

The Draft EIR clearly identifies that “The build-out population and demand projections … are based on Amador County’s recently updated General Plan” (page 3.3-3 of the Draft EIR). Page 3.3-5 of the Draft EIR also identifies the fact that the discussion of indirect impacts associated with growth is based on the “environmental impacts identified in the General Plan EIR that are associated with growth that could be accommodated by the additional water supply that would be provided with approval of Application 5647X03” (the proposed Project). AWA’s assumptions regarding growth therefore are substantiated.
6.4.6 Response to Comment 4-6

Comment Summary: The comment asserts that the Draft EIR fails in not including development forecasts other than the one calculated maximum.

The comment is correct that the Draft EIR includes estimates of population and water demand for existing conditions and for buildout. The analysis of growth-inducing impacts addresses impacts at buildout consistent with the Amador County General Plan, because full use of the additional 1,050 acre-feet requested in the water right application is not expected to occur until well after 2030, which is the planning horizon considered in the General Plan. Because there are substantial uncertainties regarding the rate at which growth will occur in the CAWP service area, the Draft EIR has not attempted to project population at specific time periods. It also is highly speculative to guess when the projected indirect impacts of growth would reach the threshold at which they would be considered significant. Use of buildout projections thus provides a conservative assessment of the ultimate impacts of growth in the CAWP service area, even though the current proposed Project would not fully provide a sufficient water supply to meet projected demands at buildout.

As noted on page 3.3-3 of the Draft EIR, population and water demands in the CAWP service area are being evaluated “as part of AWA’s Long-Term Water Needs Study (Study) Process.” As part of that Study, AWA has prepared an assessment of Land Use Based Water Demand Projections, which is included as Appendix E of this Final EIR. While acknowledging uncertainties regarding the rate of growth in the CAWP service area, the Study does provide an estimate of water demands in 2016 and at five-year increments starting with 2020 and ending with 2100. Demand estimates are provided both for the portion of the CAWP service area that is currently served (Table 14 of Appendix E) and for the area within the existing CAWP service area boundary that is outside the area currently served (Table 18 of Appendix E).

6.4.7 Response to Comment 4-7

Comment Summary: The comment criticizes the use of information from the Amador County General Plan EIR and suggests that the Draft EIR should have included an independent analysis of secondary project impacts.

See Response to Comment 4-3 relative to the propriety of AWA’s reliance on the County General Plan EIR and its analysis of the consequences of growth. AWA reviewed the analysis of secondary impacts associated with growth inducement as presented in the Amador County General Plan EIR and found the analysis of such impacts to be reasonable and appropriate. The General Plan EIR identified potential significant impacts to a number of resource areas, including agricultural and forest resources, air quality, biological resources, public services and utilities, transportation, land use and planning, and population and housing. AWA finds that these secondary impacts are significant and unavoidable and presented those conclusions in Section 3.3 of the Draft EIR.

6.4.8 Response to Comment 4-8

Comment Summary: The comment asserts that the Draft EIR should have evaluated feasible alternatives focused on reducing the impacts of future growth in the CAWP service area rather than evaluating alternatives that would reduce the extent to which the project would accommodate growth.

The alternatives analysis in Chapter 4 of the Draft EIR complies with the requirements of CEQA and its Guidelines. As will be discussed in Responses to Comments 4-9 through 4-11, the “feasible alternatives” suggested by the commenter are actually mitigation measures. As noted on page 3.3-9 of the Draft EIR: “the infrastructure planning and development policies listed in the Project Description (Section 2.4.4) would provide guidance when new development projects are being considered and/or constructed. Adherence to these policies would help to minimize the Project’s potential indirect growth inducing impacts.” Thus, AWA has already included policies to reduce impacts of future growth as part of the Project Description. See also Response to Comment 4-3.
6.4.9 Response to Comment 4-9

Comment Summary: The comment recommends that AWA should only provide water service to county-approved projects that fully mitigate their impacts.

Page 2-6 of the Draft EIR includes AWA’s commitment to implement policies regarding management of the CAWP water supply, which include a policy that, “AWA will only provide water service to developments that are approved by Amador County consistent with their adopted General Plan, and that have obtained appropriate land use entitlement.” It will be the responsibility of Amador County in its environmental review process to develop and require mitigation for impacts associated with specific development projects as they arise. Please also refer to Response to Comment 4-3.

6.4.10 Response to Comment 4-10

Comment Summary: The comment recommends that AWA should not expand its water distribution system to undeveloped areas outside Town Centers if parcels would be developed at a density greater than one home per five acres or if parcels greater than 20 acres in size would be subdivided.

As noted in Response to Comment 4-9, AWA will provide water service only to developments that are approved by Amador County consistent with their adopted General Plan. The CAWP service area includes areas that are designated as Residential-Rural, which allows one-acre minimum lot sizes where public water is available and five-acre minimum lot sizes where public water service is lacking. It appears that the Foothill Conservancy is requesting that AWA make land use decisions that are outside its authority by suggesting that AWA withhold water service to approved developments so as to constrain the allowable density of development and prevent the subdivision of parcels. AWA does not have the authority to deny service if the development is environmentally reviewed and approved by the County, and if the conditions for service are met. The following text is added to page 2-6 of the Draft EIR to clarify the process for approval of development projects.

**County Process for Approval of Development Projects**

Amador County’s process for review of discretionary projects, including new developments that would require water supply, includes review by the County’s technical advisory committee. The technical advisory committee is composed of the County public works director, planning director, building official, environmental health director and director of solid waste, with nonvoting representatives from AWA, Amador Fire Protection District and Central Sierra Resource Conservation District. In accordance with Amador County Code Section 2.94, the technical advisory committee reviews projects before they are heard and decided by the planning commission, board of supervisors or other hearing and decision-making body. The committee makes findings, recommendations and comments to the decision-making body, which considers the committee’s input in deciding whether to approve a project, and if approved, what conditions to place upon the approval. AWA provides input to the technical advisory committee regarding the availability of water supply to serve new developments and informs the committee what conditions would need to be met in order for water service to be provided. Conditions could include construction of infrastructure to convey water. AWA’s fee structure already requires applicants who request a water service connection to pay the actual costs of such installation of connecting to the mainline and installing meters and related appurtenances.

6.4.11 Response to Comment 4-11

Comment Summary: The comment recommends that AWA not expand the CAWP water distribution system outside the existing CAWP boundary or connect the CAWP water system with other distribution system without new CEQA review that fully analyzes impacts.

The boundaries of the existing CAWP service area are depicted in Figures 2-1, 2-2, and 2-3 in the Draft EIR. The proposed Project does not seek to alter those existing boundaries. Any proposed future
alteration of the existing service area could not occur without appropriate CEQA review. As stated on page 2-6 of the Draft EIR: “The water right application defines the proposed service area or place of use, which is shown in Figure 2-3.” The process for changing the place of use would require additional CEQA documentation, and approval by the State Water Resources Control Board (SWRCB), which is explained on page 3.3-2 of the Draft EIR: “Under water rights law, water cannot be legally used outside a place of use or service area without the SWRCB’s approval of a water right petition for a change in place of use.”

6.4.12 Response to Comment 4-12

Comment Summary: The comment provides a detailed discussion of the basic premises of CEQA as a preface to comments that present alleged flaws in the Draft EIR.

AWA prepared the Draft EIR for the proposed Project in a manner consistent with the CEQA requirements cited in the comment, and the specific responses below provide substantiation regarding the adequacy of the analysis of impacts presented in the Draft EIR.

6.4.13 Response to Comment 4-13

Comment Summary: The comment requests additional information regarding the process for annual water right adjustments, expresses concern about the process for forecasting demand, and requests information on how demand would be demonstrated, what public review process would be available, and what environmental review process will be used.

The approval of the proposed Project (Application 5647X03) is a discretionary action and is subject to CEQA review, which is provided in this EIR. No additional environmental review will be required to carry out the proposed Project, if approved. Per its agreement with JVID, each year AWA, based on its demand forecast for the upcoming year, would notify the SWRCB and JVID regarding how much of the 1,050 acre-feet of water it would need in the forthcoming year. The SWRCB then would subtract that amount from JVID’s allocation and add it to AWA’s allocation. This process is part of the Project Description as discussed in Section 2.4.4 of the Draft EIR. The SWRCB has not objected to this process and in fact, dismissed JVID’s protest to Application 5647X03 on the basis that the above-described process will be included in any water right permit issued on the application. AWA acknowledges that the Foothill Conservancy has previously expressed concerns regarding the procedures for forecasting population growth and demand as expressed in the 61-page Attachment 1 to the Foothill Conservancy comment letter; however, the comment has not highlighted any specific issues, so it is not clear how this pertains to the contents of the Draft EIR, and no additional response is possible.

6.4.14 Response to Comment 4-14

Comment Summary: The comment suggests that the agreement with JVID regarding annual assignment is a project-related agreement that should have undergone environmental review before AWA entered into the agreement.

The agreement with JVID is an element of the proposed Project operations and would not take effect unless the proposed Project is approved. The agreement does not foreclose consideration of alternatives or mitigation measures that would ordinarily be part of the CEQA review of the proposed Project. As the comment does not provide any specifics regarding what “mitigation ramifications” the agreement with JVID might have, a more specific response is not possible.

6.4.15 Response to Comment 4-15

Comment Summary: The comment claims that the Draft EIR does not consider future phases of the project and asks if approval of the water right would trigger expansion of infrastructure to parcels currently served and extension of water supply to parcels not currently served; the comment asks the Final EIR note that additional facilities may be needed to deliver water.
For parcels that are currently served by AWA, additional infrastructure to serve them would not be needed as a result of approval of the proposed Project. Approval of the water right application (Application 5647X03) would not, by itself, trigger extension of water supply infrastructure to parcels that are not currently served. As noted on page 3.3-2 of the Draft EIR, “The proposed Project would not directly generate new development in the areas of the CAWP service area where water service is currently not being provided, but the Project would remove a constraint to development by augmenting the existing water supply. … Individual development proposals would need to be reviewed (including completion of CEQA documentation) and approved, and in most cases, facilities to convey (and possibly treat) the water would need to be developed.” The Draft EIR thus already notes that additional facilities may be needed in the future to deliver water; however, these facilities are not part of the proposed Project and are unknown at this time.

6.4.16 Response to Comment 4-16
Comment Summary: The comment requests that the Draft EIR refer to “future forecasted growth” instead of “future planned growth.”

As noted in Response to Comment 4-3, AWA acknowledges that the Foothill Conservancy has challenged the certification of the Amador County General Plan EIR (as documented in Attachment 2 to the Foothill Conservancy comment letter). AWA’s forecasted demand is based on the County General Plan. AWA does not see a need to change its nomenclature.

6.4.17 Response to Comment 4-17
Comment Summary: The comment asks if the Draft EIR was circulated to state, regional and local agencies with jurisdiction over resources that could be affected by secondary impacts of growth.

The Draft EIR was directly distributed to the following agencies:
- U.S. Bureau of Reclamation, Mid-Pacific Regional Office
- California Department of Fish and Wildlife, Region 2
- California Department of Water Resources
- California Natural Resources Agency
- California Department of Parks and Recreation
- California Highway Patrol
- California Department of Transportation (Caltrans), District 10
- State Water Resources Control Board, Division of Water Rights
- Regional Water Quality Control Board, Region 5
- Native American Heritage Commission
- Amador County Planning Department
- Jackson Valley Irrigation District
- East Bay Municipal Utility District
- PG&E
- United Auburn Indian Community of the Auburn Rancheria

AWA complied with CEQA’s requirements on the public review period for, and the public noticing of, the Draft EIR. As noted in the Introduction of this Chapter 6, all but three of the above-mentioned entities did not comment on the Draft EIR.

6.4.18 Response to Comment 4-18
Comment Summary: The comment requests identification of the local, regional, state, and federal agencies to which AWA sent the Notice of Preparation (NOP).

The NOP was circulated to the following agencies:
AWA complied with the NOP requirements in CEQA for notification and consultation.

6.4.19 Response to Comment 4-19

Comment Summary: The comment claims that the Draft EIR is incorrect in stating that it is outside AWA’s legal authority to develop or implement mitigation for secondary impacts such as traffic, and suggests that the water right project is one of a sequence of approvals for the same project. The comment states that: 1) CEQA requires that sister agencies integrate their environmental review; 2) lead agencies are required to identify mitigation measures that can and should be adopted by a sister agency; 3) water agencies seeking funding through the Integrated Regional Water Management process must communicate and collaborate with land use planning efforts; and 4) the SWRCB has the authority to deny AWA’s water right application if the water is not used in the public interest.

There are several responses to Comment 4-19. First, as noted earlier in Response to Comment 4-3, AWA did integrate its environmental review of the proposed Project with Amador County’s General Plan and drew significantly from the County’s EIR for that General Plan in evaluating the secondary effects of future growth in the CAWP service area.

Second, in Response to Comment 4-3, AWA did discuss the matter of mitigation measures as it relates to the secondary impacts of growth again drawing from the County’s discussion of that issue in its General Plan EIR.

Third, AWA acknowledges the Foothill Conservancy’s comments regarding the Integrated Regional Water Management (IRWM) process, but notes that this comment, and the comments on the IRWM Plan that are included in Attachment 1 to the Foothill Conservancy comment letter, do not pertain specifically to the contents of the Draft EIR for the proposed Project. AWA also acknowledges the Foothill Conservancy’s suggestion that AWA should improve its public interest profile (as recommended in Attachment 3 to the Foothill Conservancy comment letter), but again this does not pertain specifically to the contents of the Draft EIR for the proposed Project.

Finally, AWA has demonstrated a need within the CAWP service area for the additional water supply provided by the proposed Project. This is more particularly set out in Section 3.3.4 of the Draft EIR. Further, as noted on page 2-5 of the Draft EIR, AWA has an obligation to “exert every reasonable effort” to augment and expand its supplies and facilities to meet increasing demands for service within the county. (Swanson v. Marin Municipal Water District (1976) 56 Cal. App. 3d 512, 524.).
6.4.20 Response to Comment 4-20
Comment Summary: The comment emphasizes that AWA must provide adequate responses to each substantive comment on the Draft EIR.

This Chapter 6 of the Final EIR includes complete and adequate responses to each substantive comment submitted during the public review period.

6.4.21 Response to Comment 4-21
Comment Summary: The comment stresses that all feasible mitigation must be adopted and other mitigation found infeasible before a lead agency can make a statement of overriding considerations and claims that the benefits associated with a reliable water supply could occur in other locations besides Amador County.

AWA acknowledges the comment, and does not dispute that reliable water supplies could benefit other locations. See Response to Comment 4-3. As far as what “other locations” have done “to reduce development impacts,” no information is provided to enable AWA to provide a response.

6.4.22 Response to Comment 4-22
Comment Summary: The comment asks if the proposed Project anticipates that water will be used outside the CAWP service area.

See Response to Comment 4-11. The Mokelumne-Amador-Calaveras (MAC) Integrated Regional Water Management Plan (IRWMP) identifies a potential intertie between the CAWP system and Amador Water System (AWS) that could provide redundancy and emergency backup supplies for both systems. However, the CAWP and AWS systems are separated physically. The CAWP and AWS treated water systems are about two miles apart. AWA has no plans to construct a connection between the two systems; and no funding is available for construction of such a connection. The noted project therefore is not reasonably foreseeable.

6.4.23 Response to Comment 4-23
Comment Summary: The comment objects to the fact that the project description in the Draft EIR includes policies based on the Foothill Conservancy’s adopted principles, contending that the principles were developed before adoption of the Amador County General Plan, which the Foothill Conservancy asserts will have devastating impacts on the environment. The comment further suggests that the policies need to be made enforceable conditions or mitigation measures.

The policies included in the Project Description in the Draft EIR at page 2-6 are indeed based on the Foothill Conservancy principles, which were included in the scoping comment letter from the Foothill Conservancy, dated October 3, 2016. Amador County certified the General Plan EIR and adopted the General Plan on October 4, 2016. Given the Foothill Conservancy’s obvious interest in the General Plan process, which began ten years earlier in 2006, and the extensive comments on the General Plan EIR that were submitted by the Foothill Conservancy, it is unlikely that the Conservancy was unaware of the contents of the General Plan or the conclusions of the General Plan EIR regarding significant, unavoidable impacts of growth in the County at the time that it submitted its comment letter on the Draft EIR. With respect to the potential secondary impacts of future growth in the CAWP service area, please see Response to Comment 4-3 and Section 3.3.5 of the Draft EIR. The Foothill Conservancy has not provided other policy recommendations or elaborated on the “needed details” that they suggest should be added to the existing policies. AWA is committed to the implementation of the policies described on page 2-6 of the Draft EIR as part of the proposed Project and its management practices for the CAWP water supply.
6.4.24 Response to Comment 4-24

Comment Summary: The comment exhorts AWA to include mitigation that would limit water service only to approved developments that fully mitigate and pay for their impacts on other services.

See Responses to Comments 4-9 and 4-10.

6.4.25 Response to Comment 4-25

Comment Summary: The comment urges that AWA not expand its water distribution system to undeveloped parcels where this would allow an increase in density or facilitate subdivision of existing parcels greater than 20 acres.

See Responses to Comments 4-9 and 4-10.

6.4.26 Response to Comment 4-26

Comment Summary: The comment states that AWA should not expand the CAWP water distribution system outside the existing CAWP boundary or connect the CAWP system with other water systems without new CEQA review.

See Response to Comment 4-11.

6.4.27 Response to Comment 4-27

Comment Summary: The comment suggests that there is a “land use-water disconnect” between the County and AWA and urges that AWA and Amador County reform their water availability accounting procedures so that development approvals are predicated on an actual water supply.

The County and AWA do coordinate their respective land use and water service responsibilities. As noted in Response to Comment 4-10, AWA participates in the Amador County Technical Advisory Committee (TAC) which receives input from a number of utility companies, Caltrans, fire protection agencies, parks and recreation, and others early in the subdivision process to provide information to the applicant as well as County staff prior to considering tentative map conditions and usually prior to environmental review. This process allows AWA to communicate potential water capacity shortfalls or significant improvements that may be necessary prior to being able to provide water service. The County will not approve a tentative subdivision map unless AWA has issued a will serve commitment to the project.

In the past, AWA and the County have also participated in a Joint Water Committee which included two supervisors and two AWA board members, plus staff. The committee reviewed a broad range of water and wastewater issues, including anticipated subdivision projects, water improvement projects, water rights, proposed legislation, water capacity concerns, and other related issues. The committee has not met following the downturn in the economy, but recently there have been discussions about starting to meet again. This committee has helped to keep the elected officials informed of water related issues.

The TAC and Joint Water Committee, if reinstated, provide two mechanisms whereby AWA and Amador County interact regarding water supply and development issues, which can help avoid the concern raised in the comment.

6.4.28 Response to Comment 4-28

Comment Summary: The comment suggests that AWA should reconsider its approach to evaluating cumulative impacts.

The secondary or indirect effects to which the comment refers arise in the context of the growth inducing effects that may occur due to the proposed Project’s removal of one obstacle to growth in the CAWP service area. The proposed Project’s growth inducing effects and the potential secondary impacts associated with that growth are fully presented and evaluated at Section 3.3 of the Draft EIR.
provides the appropriate analysis of the subject secondary impacts and is consistent with the guidance provided in the court opinions referenced in Response to Comment 4-3.

6.4.29 Response to Comment 4-29

Comment Summary: The comment cites CEQA case law regarding evaluation of growth-inducing impacts and claims that the Draft EIR includes misleading and unsubstantiated assumptions that understate the impacts of development in the CAWP service area. The comment specifically objects to a general statement that “Local land use plans (e.g. general plans) provide for development patterns and growth policies that allow for the planned and orderly expansion of urban development ...”

As mentioned in the preceding response, the subject of the growth inducing effects of the proposed Project is fully discussed and evaluated in Section 3.3 of the Draft EIR. Although the comment appears to recognize that the text on page 3.3-1 of the Draft EIR is intended as a general statement regarding the purpose of local land use plans, the comment goes on to suggest that the language mischaracterizes the Amador County General Plan, which is inaccurate. The language quoted in the comment is in Section 3.3.1, Consideration of Growth Inducement under CEQA, which explains the basic requirements for evaluation of impacts associated with growth that could be accommodated by the proposed Project. Section 3.3.5 identifies and evaluates those impacts.

6.4.30 Response to Comment 4-30

Comment Summary: The comment contends that the Draft EIR needs to consider the extension of infrastructure to parcels not currently served by AWA and refers to mitigation that has been suggested in previous comments.

See Responses to Comments 4-2, 4-10, 4-11, and 4-24 through 4-26.

6.4.31 Response to Comment 4-31

Comment Summary: The comment suggests that because rural parcels can be subdivided if the parcels are served by public water or an on-site wastewater treatment system, development can occur throughout the CAWP service, regardless of the lack of a sewer system, and states that the Draft EIR should be corrected to reflect this.

The comment is not correct that development can occur anywhere in the CAWP service area (or in fact, anywhere in Amador County), whether or not a public sewer system is available. While it is correct that development can occur in areas without a centralized wastewater collection and treatment system, many portions of the CAWP service area have limited capability to support on-site wastewater treatment. The land inventory in Appendix C of the Amador County Housing Element Update identifies hundreds of parcels that have “poor soils for septic.” To ensure that development is not permitted without provisions for adequate wastewater treatment, the Amador County Zoning Code, Section 14.12.130, Land Divisions, establishes requirements that determine whether an adequate on-site wastewater treatment system (OWTS) can be provided for proposed subdivisions. Relevant restrictions, which are enforced by the Amador County Environmental Health Department (department), include:

B. The department shall not recommend for approval any subdivision which proposes OWTS unless supported by substantial evidence that discharge of waste from such disposal systems will not result in violation of water quality objectives, impair present or future beneficial uses of water, cause pollution, nuisance, or contamination, and will not unreasonably degrade the quality of any waters of the state.

C. The department shall not recommend for approval any subdivision creating a parcel density less than five acres unless an evaluation by a qualified professional demonstrates that wastewater loading shall not conflict with the Central Valley Salt and Nutrient Management Plan.
D. The department shall not recommend for approval any change to the Amador County general plan enabling an increased housing density to less than five acres unless an evaluation by a qualified professional demonstrates that wastewater loading shall not conflict with the Central Valley Salt and Nutrient Management Plan.

E. No parcel less than five acres in size shall be recommended for approval if said parcel is to be served by an alternative system. Approved alternative systems for land divisions shall include mounds and those systems which include supplemental treatment and discharge to pressure-dosed trenches.

F. Subdivisions proposing density averaging may not result in any parcels less than two acres in size to be served by private wells and on-site sewage systems. No subdivision shall be recommended for approval if such land division or subdivision would create any parcel of less than forty thousand square feet in size, unless each such parcel is served by a sanitary sewer.

G. The department shall not recommend for approval a proposed lot at least forty thousand square feet but less than five acres in size unless the lot:
   1. May legally be served by a sanitary sewer and a public water system; or
   2. May legally be served by a sanitary sewer and an individual water supply well; or
   3. May be served by a conventional or modified conventional OWTS and a public water system.

H. The department shall not recommend for approval a proposed lot five acres or more in size unless the lot:
   1. May legally be served by a sanitary sewer and a public water system; or
   2. May legally be served by a sanitary sewer and an individual water supply well; or
   3. May be served by a conventional, modified conventional, or an alternative OWTS approved for land division and a public water system; or
   4. May be served by a conventional, modified conventional, or an alternative OWTS approved for land division and an individual water supply well.

I. For every lot proposed to be created by a subdivision which is not required to connect to a sanitary sewer, sufficient information shall be provided to the department by the subdivider to demonstrate that the lot includes sufficient area containing soil conditions compatible with siting and design criteria for OWTS designs authorized for the type of development proposed.

Given these limitations and the existing requirements for demonstrating adequate wastewater treatment, it is not correct that “development can sprawl throughout the CAWP service area, regardless of the lack of a sewer system.”

6.4.32 Response to Comment 4-32

Comment Summary: The comment objects to the identification of obstacles to growth that are not permanent government-imposed obstacles.

Section 4.15 of the Amador County General Plan Final EIR addresses obstacles to growth in the County. The quote from Section 3.3.2 of the Draft EIR cited in the comment is intended to provide context regarding factors that affect growth in the CAWP service area. The constraints include permanent constraints such as topography, and potentially short-term constraints such as economic conditions and market demand. As this information is correctly drawn from the General Plan EIR, it would not be appropriate to modify the language, as is suggested in the comment. Page 3.3-2 of the Draft EIR
specifically acknowledges that “the lack of water supply availability is a constraint to growth.” AWA maintains that no additional clarification is necessary.

### 6.4.33 Response to Comment 4-33

**Comment Summary:** The comment essentially requests that AWA add a statement in the Final EIR that Amador County fails to comply with CEQA in approving development projects.

See Response to Comment 4-28 relative to the adequacy of the Draft EIR’s discussion of the proposed Project’s growth inducing effects. It is appropriate for AWA to assume that the County will comply with CEQA in approving development projects. Please refer to Responses to Comments 4-24 through 4-26 regarding the mitigation measures suggested by the Foothill Conservancy.

### 6.4.34 Response to Comment 4-34

**Comment Summary:** The comment criticizes the Draft EIR for using the maximum number of dwelling units per acre to estimate projected future water demands.

Because of the considerable time involved in the acquisition of water supplies caused by planning, environmental review, permitting, and in many cases property acquisition, financing and construction, it is not feasible to use the relatively short planning horizons that appear to be suggested by the comment. In addition, the Draft EIR uses maximum buildout to ensure that the assessment of impacts associated with potential future growth in the CAWP service area is conservative and to avoid underestimating secondary impacts of development that could be accommodated by the additional water supply. Table 3.3-1 on page 3.3-5 of the Draft EIR includes both the estimated maximum buildout population, and the expected water demand associated with that population. Since publication of the Draft EIR, the demand estimates have been refined and Table 3.3-1 has been revised as shown below. Additional explanation has been added on page 3.3-5 to clarify that the proposed Project actually would not provide sufficient water supply to meet the demands at buildout, and that complete buildout may never occur. The following revisions have been made to the Draft EIR:

Under the proposed Project, approval of the water right application would increase the amount of water that could be taken by direct diversion and rediversion from storage for consumptive uses within the CAWP service area to a total of 2,200 AFY, which is less than half of the potential 5,036 AFY demand at buildout that is projected based on land uses defined in the General Plan. The proposed Project would thus provide water supply for only a portion of the growth that might be expected in the CAWP service area. Amador County has not defined a projected timeframe at which buildout might occur, and it is possible that complete buildout would never occur. The proposed Project would provide the next increment of water supply to meet demands of development in the CAWP service area, and future water supply projects would be needed when growth results in a demand that exceeds the total 2,200 AFY supply that is proposed under the current water right application.

<table>
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<th>Water Demand (AFY)</th>
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<td></td>
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</tr>
<tr>
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<td>5,036 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,189</td>
</tr>
</tbody>
</table>

1 Demand includes residential, commercial and a small portion of agricultural and industrial demand
2 Buildout population based on County General Plan land use designations and maximum buildout of all lands within the planning area in accordance with assigned land use designations, and assuming full
development of all residentially designated land and mixed-use designated land in the planning area at the maximum allowable General Plan density (units per acre).

Water demand numbers were refined after publication of the Draft EIR, to more accurately separate demand for various land use categories, resulting in a slightly lower demand estimate for buildout. Appendix E provides information on the methodology for estimating water demand. Existing demand numbers were updated to be consistent with AWA’s Long-Term Water Needs Study, which was published in July 2017. The updated existing population and demand numbers reflect the average population and demand between 2008 and 2013, whereas the data in the Draft EIR reflected population and demand between 2008 and 2012.

Please also refer to Response to Comment 4-6, which provides additional information about growth projections, including information from AWA’s Long-Term Water Needs Study (Study). The Study includes an assessment of Land Use Based Water Demand Projections, which is included as Appendix E of this Final EIR. While acknowledging uncertainties regarding the rate of growth in the CAWP service area, the Study does provide an estimate of water demands in 2016 and at five-year increments starting with 2020 and ending with 2100. Demand estimates are provided both for the portion of the CAWP service area that is currently served (Table 14 of Appendix E) and for the area within the existing CAWP service area boundary that is outside the area currently served (Table 18 of Appendix E).

6.4.35 Response to Comment 4-35

Comment Summary: The comment objects to the use of the Amador County General Plan EIR for information regarding secondary project impacts of development in the CAWP service area.

Please refer to Responses to Comments 4-3 and 4-7 regarding the Draft EIR’s use of the Amador County General Plan EIR. Please see Responses to Comments 4-24 through 4-26 concerning the mitigation measures suggested by the Foothill Conservancy.

6.4.36 Response to Comment 4-36

Comment Summary: The comment disapproves of the text in page 4-1 of the Draft EIR in the discussion of “Effects Not Found to be Significant”, which cites the Initial Study included in Appendix A of the Draft EIR.

Because the text on page 4-1 clearly states that, “The Initial Study found that the project had no direct impacts (emphasis added),” the statement is not misleading. It also would be inappropriate to identify any significant indirect impacts in the referenced subsection of Chapter 4, which is clearly labeled with the heading, “Effects Not Found to be Significant.” On the same page of the Draft EIR, there is a section titled “Significant and Unavoidable Impacts,” which states that “the proposed Project would accommodate growth, which could result in some potential significant and unavoidable indirect impacts.” As noted in the comment, the Draft EIR includes a listing of potential significant indirect impacts on page 3.3-10.

6.4.37 Response to Comment 4-37

Comment Summary: The comment requests that the Draft EIR identify when growth facilitated by the proposed project would also contribute to cumulative significant impacts as indicated in the Amador County General Plan EIR.

As explained in Response to Comment 4-28, the potential cumulative impacts of development or growth in the CAWP service area are considered in the evaluation of growth inducement in Section 3.3 of the Draft EIR, which provides the appropriate context for the evaluation of such impacts. The impacts analysis is based in part on projections contained in the County General Plan, and thus is consistent with the “summary of projections” found in CEQA Guidelines Section 15130 (b)(1)(B).
6.4.38 Response to Comment 4-38

Comment Summary: The comment suggests that rather than seeking to reduce growth, the Draft EIR should have identified alternatives that would reduce the effects of growth, and recommends an alternative that includes improvements to public transportation, pedestrian and bicycle facilities; land use patterns with more community centered development, transfer of development rights, financial incentives for conservation easements, and requirements for habitat conservation.

Please refer to Responses to Comments 4-3 and 4-8. The comment has not offered a potential additional project alternative for evaluation, but in actuality has provided a list of mitigation measures to address the potential indirect impacts of growth. According to CEQA Guidelines Section 15126.6 (a), an EIR needs to “… describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project …” (Emphasis added.) The basic objective of the proposed Project is securing an additional water supply for the CAWP service area. None of the comment’s listed measures have anything to do with attaining an additional water supply for the CAWP service area. Additionally, all of the listed measures are outside of AWA’s jurisdiction. For the CAWP service area, they are all properly within the purview of the County.

6.4.39 Response to Comment 4-39

Comment Summary: The comment suggests that additional mitigation measures (included as Attachment 4 to the Foothill Conservancy comment letter) be used to form an alternative that would reduce impacts of development, requests quantitative comparison of the impacts of the recommended alternative to the impacts of development facilitated by the proposed Project, and encourages AWA to work with Amador County to secure adoption of the alternative.

See Response to Comment 4-38. Once again, the measures suggested by the comment do not represent a new project alternative, but rather represent possible mitigation measures to address the indirect effects caused by growth. Second, AWA reviewed the mitigation measures in Attachment 4 to the Foothill Conservancy comment letter, which were submitted by the Foothill Conservancy to Amador County on January 30, 2015 as part of their comments on the Amador County General Plan EIR. The recommendations include modifications and enhancements to mitigation measures in the General Plan EIR to address the impacts of future development in Amador County, including the following:

- Modifications to the County’s Scenic Highway Ordinance and General Plan visual policies;
- Modifications to the County’s Agricultural Conservation Easement Program and addition of new programs for preservation of agriculture and forestland to the General Plan;
- New programs in the General Plan to encourage habitat preservation and avoid impacts to special status species, including establishment of a resource mitigation overlay district;
- Modifications to the County’s GHG Reduction Plan and new policies to encourage reductions in Vehicle Miles Traveled and implement California energy efficiency codes;
- New policies and programs to limit development in areas of high fire hazard;
- New policies to require fiscal analysis for development proposals over 10 units and requirements for public services to be in place before consideration of new development; and
- New transportation fee program.

The list presented above is a general summary and does not include all of the specific recommendations, but does illustrate that the recommended mitigation measures are programs and policies that would need to be implemented by Amador County, and are outside AWA’s authority to implement. See also Response to Comment 4-27. With respect to the matter of AWA and Amador County working together on interrelated water supply and land use decisions, please see Response to Comment 4-27.
6.4.40 Response to Comment 4-40

Comment Summary: The comment asserts that AWA can refuse to provide water service if, based on independent CEQA review of the impacts of expanding water or wastewater infrastructure, AWA determines that there are significant unavoidable impacts associated with infrastructure expansion for which there are not sufficient benefits to warrant adoption of a statement of overriding considerations.

AWA will comply with CEQA when making discretionary decisions to approve new or expanded water and wastewater infrastructure.

6.4.41 Response to Comment 4-41

Comment Summary: The comment consists of 4 attachments to the comment letter.

The attachments are included in support of comments presented above, and each comment above has been addressed. Because the attachments do not include any specific comments on the adequacy of the Draft EIR, no further response is possible. Attachment 1 is addressed in Responses to Comments 4-13 and 4-19. Attachment 2 is addressed in Responses to Comments 4-16 and 4-24. Attachment 3 is addressed in Response to Comment 4-19. Recommendations in Attachment 4 are addressed in Response to Comment 4-39.

6.5 Comment Letter 5 – Ratepayer Protection Association, Ken Berry

6.5.1 Response to Comment 5-1

Comment Summary: The comment asserts that the scope of the project is misidentified, the need for the project is not adequately identified and feasible mitigation is not imposed, and suggests that there are ways to reduce or eliminate the need for the project.

The introductory comment summarizes detailed comments regarding several issues, which are addressed below in Responses to Comments 5-2 through 5-9.

6.5.2 Response to Comment 5-2

Comment Summary: The comment claims that AWA plans to connect the CAWP system to AWA’s Amador Water System (AWS), and thus the Draft EIR should have evaluated impacts in the entire area served by AWA.

The comment is incorrect in its assertion that AWA plans to connect the CAWP and AWS water systems. The proposed water right would not allow for expansion of the existing CAWP service area. As noted on page 2-4 of the Draft EIR (last bullet): “The authorized CAWP place of use (service area) would not change from that which presently exists.” As stated on page 2-6 of the Draft EIR: “The water right application defines the proposed service area or place of use, which is shown in Figure 2-3.” The process for changing the place of use would require additional CEQA documentation, and approval by the State Water Resources Control Board (SWRCB), which is explained on page 3.3-2 of the Draft EIR: “Under water rights law, water cannot be legally used outside a place of use or service area without the SWRCB’s approval of a water right petition for a change in place of use.” The City of Jackson, Shenandoah Valley and Ione regions are all outside the CAWP service area and could not be served by the proposed Project.

The comment is correct that the CAWP and AWS systems are separated physically; the CAWP and AWS treated water systems are about two miles apart. AWA has no plan to construct a connection between the two systems. The comment refers to the need to provide treated water to customers on the Amador Ditch, which is part of the AWS water system, and while connection to the CAWP system could potentially be used to accomplish that, AWA has no plans to move forward with a project to construct that connection. There is no funding for construction of the connection, and while the concept of a possible connection has been discussed, there is substantial public opposition to that option for providing treated water to the Amador Ditch customers. AWA is considering other options for providing treated water, including
construction of a small treatment plant at the head of the ditch, and extending treated water service from
the AWS. The latter option already has been used to provide treated water to some of the Amador Ditch
customers.

Thus, there is no “planned connection between the CAWP and AWS systems.” See also Response to
Comment 4-22.

6.5.3 Response to Comment 5-3

Comment Summary: The comment asserts that the proposed Project is not based on any quantified need
because conservation measures have reduced demand, and requests disclosure of water use in the AWA
service area, and consideration of other possible mitigation for a water shortage instead of approval of
the water right request.

The comment is correct that 1,149.7 acre-feet (AF) of water were diverted in 2006, but although the
recession and conservation during the recent drought temporarily reduced demand, the need for water will
likely increase in the future. With a current maximum approved diversion of 1,150 AF for the CAWP
service area, in 2006 AWA was within 0.3 AF (i.e. less than 100,000 gallons) of exceeding its allowable
diversion. As noted in the Draft EIR on page ES-2, “AWA has projected that the need for water has not
decreased and will likely increase in the future.” Given that demand in the recent past has very nearly
exceeded supply it would not be prudent for AWA to neglect to secure an additional water supply to meet
future demands. Recognizing that water will not be needed immediately, the proposed Project is designed
to divert water only as needed. As stated on page ES-2 of the Draft EIR: “Water would be diverted only
as needed, and pursuant to an agreement with JVID, the reversion of the 1,050 acre-feet would occur over
time commensurate with AWA’s increase in demand.”

AWA has documented the projected future need for water. As noted on page 3.3-3 of the Draft EIR,
population and water demands in the CAWP service area are being evaluated “as part of AWA’s Long-
Term Water Needs Study (Study) Process.” As part of that Study, AWA has prepared an assessment of
Land Use Based Water Demand Projections, which is included as Appendix E to this Final EIR. Those
projections include annual water demand information for the entire AWA service area and specifically for
the CAWP service area. Response to Comment 4-34 includes an update to projected annual water demand
at buildout; and the Study includes data regarding existing (2016) water demand, which is estimated at
958 AF for the CAWP area, based on water use from a baseline period from 2008 to 2013. The period
from 2008 to 2013 was used as a baseline because it includes pre-drought conditions, and demand during
the drought was determined to be artificially low because mandatory conservation measures were in place
until 2016. Table 14 in Appendix E shows both the 2016 demand, and demand projections for the CAWP
service area. Recent water use in the CAWP service area, which was used to estimate the baseline
demand, is provided in Table 6-2 below; quantities are in AF.
Table 6-2: Past Water Demand in CAWP Service Area¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Demand (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1,030</td>
</tr>
<tr>
<td>2009</td>
<td>983</td>
</tr>
<tr>
<td>2010</td>
<td>883</td>
</tr>
<tr>
<td>2011</td>
<td>879</td>
</tr>
<tr>
<td>2012</td>
<td>935</td>
</tr>
<tr>
<td>2013</td>
<td>1,037</td>
</tr>
</tbody>
</table>

Source: Long-Term Water Needs Study.

¹ Demand numbers for each year as calculated in the Long-Term Needs Study are slightly different from diversion amounts that were reported to the State Water Resources Control Board (SWRCB), but the average number is essentially the same, with an average of 964 AF reported to the SWRCB as compared to an estimated demand of 958 AF. Demand numbers are based on actual metered retail and wholesale water use plus an estimated quantity of water loss, which is calculated based on water loss from 2015.

Please refer to Table 14 in Appendix E to this Final EIR for quantitative projections of water demand from 2016 through 2100. AWA acknowledges that an increased water supply is not the only way to address a projected shortfall in water supply. For example, as part of the proposed policies for managing the CAWP water supply included within the proposed Project, AWA has committed to ongoing conservation. As stated on page 2-6 of the Draft EIR, “AWA will employ reasonable demand-side water management techniques, including conservation and efficiency, before taking on expensive expansion projects.” Water conservation efforts by AWA consistent with existing and soon to be legal requirements would not dispense with the need for the proposed Project. With a future projected water demand for the CAWP service area at about 5,000 AF per year, a 20 percent reduction through conservation would still leave a demand of 4,000 AF per year which is 1,800 AF more than what the total CAWP water supply would be with the proposed Project.

6.5.4 Response to Comment 5-4

Comment Summary: The comment claims that AWA is responsible for mitigation of indirect impacts and that by increasing water supply AWA would preclude land use agencies from properly mitigating projects that they approve.

See Responses to Comments 4-3, 4-8, 4-28 and 4-38. There is no legal justification for the comment’s claim that approval of the proposed Project would preclude Amador County from properly mitigating the impacts of any development project that might be considered for approval by the County.

6.5.5 Response to Comment 5-5

Comment Summary: The comment claims that AWA has not established policies to restrict use of water from the proposed Project to specific “areas of need,” and suggests that this deficiency could be corrected by adoption of a policy that limits capacity to the amount currently available.

The comment is not entirely clear regarding what is meant by “areas of need,” but it appears that the comment is effectively recommending the No Project Alternative, which would not expand the current water supply. The Draft EIR evaluated the No Project Alternative, and on page 4-3 of the Draft EIR, it points out that, “In the absence of the Project, growth might still occur in the CAWP service area, and although the extent of growth might be reduced, it is not certain that any secondary effects of growth in the service area would be reduced to less than significant.” Although it is correct that the proposed Project benefits future development, it also provides benefits to existing users, because the Project includes...
storage, and as noted on page 2-6 of the Draft EIR, “The additional 1,400 AF of storage in Lower Bear River Reservoir would provide additional dry-year reliability to AWA customers in the CAWP service area.”

Additionally, as pointed out on page 2-5 of the Draft EIR, “AWA ‘must hold itself out as ready to serve’ and must provide water service to its service area without discrimination or preferences, unless differences in the services provided are justified by differences in cost of service. (Butte County Water Users’ Association v. Railroad Commission (1921) 185 Cal. 218, 224-225.) Furthermore, AWA has an obligation to “exert every reasonable effort” to augment and expand its supplies and facilities to meet increasing demands for service within the county. (Swanson v. Marin Municipal Water District (1976) 56 Cal. App. 3d 512, 524.)” The anticipated increasing demands are addressed above in Response to Comment 5-3.

6.5.6 Response to Comment 5-6

Comment Summary: The comment prefaces recommendations regarding alternative policies by stating that they do not relate to statements in the DEIR, characterizing them as scoping comments for a revised DEIR, and requests that AWA use developer fees for the purpose for which they are collected.

AWA uses water rate and developer fee revenue consistent with law. It is not clear how the policy advanced by the comment would reduce environmental impacts.

6.5.7 Response to Comment 5-7

Comment Summary: The comment urges that AWA not build grossly oversized projects that burden ratepayers and states that ratepayers should not be taxed to pay for such projects.

Again, it is not clear how the mentioned policy would reduce environmental impacts. The policy reflects the current state of the law, which AWA follows. To reinforce this, the Draft EIR includes management practices for the CAWP water supply as part of the proposed Project, which are listed on page 2-6 of the Draft EIR, and include the following, which address the concern expressed in the comment:

- “The cost of water infrastructure expansion or improvements will be borne by those who will benefit from and use the infrastructure

- The cost of water infrastructure expansions that are needed solely to accommodate new development will not be borne by existing water utility ratepayers.”

6.5.8 Response to Comment 5-8

Comment Summary: The comment claims that the project is an example of AWA spending rate money to expand water capacity for unknown development, and suggests that ratepayers should be reimbursed for other infrastructure from developer fees.

This comment also has no relation to environmental impacts. As mentioned in Response to Comment 5-5, the proposed Project would benefit existing and future customers in the CAWP service area. Therefore, it would be appropriate for AWA to use both water rate and developer fee revenue to pursue the Project.

6.5.9 Response to Comment 5-9

Comment Summary: The comment asserts that the project has no clear public purpose and provides capacity that is not needed and contends that there is no consideration of the consequences of providing water supply for new development.

The public purpose of the proposed Project is clearly stated on page 2-5 of the Draft EIR:

- “Augment existing water supply to meet the needs of existing customers and accommodate future planned growth; and
• Increase supply resilience for current and future customers in central Amador County.”

The potential environmental impacts of the proposed Project, both direct and indirect, are thoroughly evaluated in Chapter 3 of the Draft EIR. As noted in Response to Comment 5-5, the proposed Project provides benefits to existing users, because increasing storage would provide additional dry-year reliability to AWA customers in the CAWP service area. Please refer to Response to Comment 5-3 for a discussion of the need for the additional water supply. The Draft EIR will allow AWA to make an informed decision about whether to approve the proposed Project.

6.6 Comment Letter 6 – State of California, Governor’s Office of Planning and Research, State Clearinghouse and Planning Unit, Scott Morgan, Director

6.6.1 Response to Comment 6-1

Comment Summary: The comment transmits a comment letter from Caltrans District 10, and confirms that AWA has complied with the State Clearinghouse review requirements for draft environmental documents pursuant to the California Environmental Quality Act.

AWA appreciates the assistance of the State Clearinghouse in complying with CEQA requirements for environmental review. The letter from Caltrans is included in the Final EIR as Letter 1, which indicates agreement with the conclusions of the Draft EIR regarding matters within the purview of that agency.
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Chapter 7  Comment Letters

The comment letters received on the Draft EIR are included in this section.
From: Demetras, Michele@DOT [mailto:michele.demetras@dot.ca.gov]
Sent: Friday, May 05, 2017 11:22 AM
To: Gene Mancebo <gmancebo@amadorwater.org>
Cc: Chuck Beatty <cbeatty@amadorgov.org>; state.clearinghouse@opr.ca.gov
Subject: SCH# 2016092008

Thank you for giving Caltrans District 10 the opportunity to review the Draft EIR of the Central Amador Water Project Water Right Application. We concur that transportation impacts are and will be mitigated through the Amador County General Plan or any subsequent changes to that Plan. Otherwise, we have no comment.

Please contact me if you have any questions.

Michele Demetras
Associate Transportation Planner
Caltrans District 10 - Office of Rural Planning
(209) 948-7647
May 18, 2017

Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

Subject: Draft Environmental Impact Report to Address Potential Environmental Effects of a Water Right Application for the Central Amador Water Project

Dear Gene Mancebo,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and whose service area includes El Dorado, Nevada, Placer, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects. The UAIC would like to consult on this project.

In order to ascertain whether the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that are completed for the project. We also request copies of environmental documents for the proposed project so that we have the opportunity to comment on appropriate identification, assessment and mitigation related to cultural resources. We recommend UAIC tribal representatives observe and participate in all cultural resource surveys. If you are interested, the UAIC’s preservation department offers a mapping, records and literature search services program that has been shown to assist project proponents in complying with the necessary resource laws and choosing the appropriate mitigation measures or form of environmental documentation during the planning process.

The UAIC’s preservation committee would like to set up a meeting or site visit, and begin consulting on the proposed project. Based on the preservation committee’s identification of cultural resources in and around your project area, UAIC recommends that a tribal monitor be present during any ground disturbing activities. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the documents requested above and consulting on your project. Please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,

Gene Whitehouse,
Chairman

CC: Marcos Guerrero, CRM
June 16, 2017

Mr. Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

Subject: Comments on the Draft Environmental Impact Report for the Central Amador Water Project Water Right Application

Dear Mr. Mancebo:

Thank you for the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) for the Amador Water Agency (AWA) Central Amador Water Project (CAWP) Water Right Application. On October 3, 2016, East Bay Municipal Utility District (EBMUD) submitted comments on the Notice of Preparation (NOP) requesting, among other items, clarification of AWA’s existing water rights and water rights basis for storage in Lower Bear Reservoir and the potential operational impacts to EBMUD from possible changes in PG&E’s operations. We appreciate the clarification you provided in the DEIR indicating that AWA’s water rights application is part of the of the 20 TAF State Filings reserved for use within Amador County per the 1959 Release from priority.

Based on our assessment, we concur that the proposed Project is expected to have less than significant impacts on flow into Pardee Reservoir. Nonetheless, EBMUD is concerned about the water rights and operational assumptions used in the MOCASIM model to perform the evaluation. It is important that the assumptions used for the analysis are accurate so that model results are capable of capturing the various water rights agreements and regulatory requirements governing the operations of the Mokelumne River basin. The following are EBMUD’s specific concerns with the analysis:

1. The DEIR relies upon MOCASIM modeling results to assess environmental impacts. Section 2 of the DEIR states that in 2012 MOCASIM was expanded to include representation of the Upper Mokelumne River Basin upstream of the Mokelumne Hill gage and that the model was also enhanced to evaluate the water supply and hydroelectric benefits from potential future developments in the basin. However, the reliance on MOCASIM model is problematic for the following reasons:

- The DEIR does not include any verification runs necessary to validate the model accuracy in representing the operations of the water supply and hydropower projects on the Upper Mokelumne River Basin. At minimum, a comparison of the simulated flows and actual recorded
flows at the Mokelumne Hill gage on a daily basis should be performed. If this has been done, it should be so noted.

- Operations of the upper Mokelumne River facilities in the MOCASIM are simulated on a daily basis. However, the hydrology impact analysis in the DEIR is presented on an average annual basis, which tends to gloss over the impacts. To accurately analyze potential environmental impacts, the comparative analysis should be done on a daily or monthly basis.

- Woodbridge Irrigation District (WID) diversions are listed as 72 TAF per year when Pardee inflow is greater than 375 TAF. EBMUD’s agreements with WID require EBMUD to provide 60 TAF not 72 TAF when Pardee inflow is greater than 375 TAF.

- The MOCASIM model incorporates one of the Lodi Decrees and simply states that Lodi Decree is quite complex from the interpretation and implementation point of view. The Lodi Decrees thus are simplified in MOCASIM. The simplified version of the Lodi Decrees in the model reduces the flow requirements set forth in the Lodi Decrees to a simple flow schedule based on storage levels in Salt Springs and Lower Bear Reservoirs. It should be noted that the Lodi Decrees also include a release schedule based on precipitation. As a result, the MOCASIM assumption of the Lodi Decrees appears to be an arbitrary interpretation of court decrees.

- In general, there are numerous other assumptions made in MOCASIM that could have potentially significant water rights implications and water supply operations impacts.

2. Section 2.3.1 of the DEIR provides a brief overview of the water rights history between EBMUD, AWA, Jackson Valley Irrigation District (JVID) and the 1927 State Filings. The information provided should include a more robust discussion of the Lodi Decrees and the agreements between AWA, PG&E and EBMUD to ensure that the proposed project will be implemented consistent with those agreements.

Thank you for the opportunity to provide comments on the DEIR. We look forward to working with you as the Final EIR is further developed. Please contact me at 510-287-1240 or lena.tam@ebmud.com if you have any questions or concerns regarding our comments.

Sincerely,

Lena L. Tam
Manager, Water Resources Planning
June 15, 2017

Mr. Gene Mancebo  
Amador Water Agency  
12800 Ridge Road  
Sutter Creek, CA 95685  
(209) 223-3018  
gmancebo@amadorwater.org

RE: Comments by the Foothill Conservancy on the CAWP Water Right Application DEIR

Dear Gene:

My name is Tom Infusino and I am submitting these comments on the CAWP Water Right Application DEIR on behalf of the Foothill Conservancy.

The Foothill Conservancy is a nonprofit organization with members who live and work in the Mokelumne River watershed. The Foothill Conservancy seeks to restore, protect, and sustain the natural and human environment in and around Amador and Calaveras Counties. The Foothill Conservancy believes that by working together we can bring communities to prosperity without needless destruction of that which is unique and special about the area.

As you know, the Foothill Conservancy has a 28-year history of working on land use, watershed and river protection and restoration, water resources planning, and sustainable community development. As such, we are well-versed in the integration of water and land use planning and it is in that context that we submit comments on the draft EIR for the proposed CAWP water right.

The California Environmental Quality Act is designed to help local governments identify and mitigate the potentially significant impacts of their actions. On October 3, 2016, the Foothill Conservancy submitted a scoping comment in response to AWA’s notice of intent to prepare an EIR for the CAWP Water Rights Application. The purposes of scoping include, “identifying the range of actions, alternatives, mitigation measures, and significant effect to be analyzed in depth in an EIR,” and resolving the concerns of affected persons “who might not be in accord with the action on environmental grounds.” (CEQA Guidelines, sec.15083.) Our review of the DEIR
indicates that AWA has neither completed an EIR in accordance with our scoping comments, nor resolved our environmental concerns. Below we note many flaws in the DEIR, including those issues discussed in our scoping comment that were not properly analyzed, evaluated, and mitigated.

In summary, the primary failings of the DEIR include:

1. Not considering the impacts of future phases of the project such as expanding and extending water service and wastewater infrastructure.

2. Not identifying mitigation measures for the secondary project impacts of development in the CAWP Service Area suitable for adoption by responsible and trustee agencies, including Amador County.

3. Proposing vague and unenforceable policy proclamations instead of feasible mitigation measures that could also be included as conditions of approval of the proposed water right.

4. Misleading readers with statements and unsubstantiated assumptions that tend to understate the potential secondary project impacts from development in the CAWP service area.

5. Failing to include available development forecasts other than the one calculated maximum.

6. Relying on information from the Amador County General Plan’s flawed DEIR, rather than independently analyzing the secondary project impacts from development in the CAWP service area.

7. Considering a “straw man” alternative focused only on reducing future growth in the CAWP service area, rather than on feasible alternatives focused on reducing the impacts of future growth in the CAWP service area.

We hope that the AWA will take this round of comments to heart and change the project description to eliminate the project’s damage to the Mokelumne River watershed, its valuable resources, and its good people.

We further recommend that the following mitigations be adopted to mitigate the secondary, growth-inducing impacts identified in the DEIR.

1. AWA shall provide water service only to county-approved developments that fully mitigate and pay for their impacts on roads, schools, wildland fire risk, emergency services, air quality, agricultural and timber resources, biological resources, and greenhouse gas emissions. This mitigation measure should also take the form of written and adopted rules and regulations concerning service.

2. AWA shall not expand its water distribution system into currently undeveloped parcels outside the county general plan Town Centers if doing so would (1) allow those parcels to be developed at a density greater than one home per every five acres, or (2) facilitate the subdivision or rezoning of existing parcels greater than
20 acres in size. This mitigation measure can also take the form of written and adopted rules and regulations concerning service.

3. AWA shall not expand the CAWP water distribution system outside the existing CAWP boundary or connect the CAWP system with other water distribution systems without new CEQA review that fully analyzes the impacts of the expanded area of use.

Basic Premises of CEQA

“[T]he ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” (Communities for a Better Environment v. California Resources Agency (2002) 103 Cal.App.4th 98, 110; citing Laurel Heights Improvement Association v. Regents of University of California (1988) 47 Cal.3d 376, 390.)

An environmental impact report or “EIR” should employ “an inter-disciplinary approach that will ensure the integrated use of the natural and social sciences and the consideration of qualitative as well as quantitative factors.” (CEQA Guidelines, sec. 15142.) That is why the lead agency consults with other agencies that are responsible for managing water quality, air quality, wetlands, highways, and other resources affected by a project.

The EIR analyzes the environmental impacts of the project. (CEQA Guidelines, sec. 15126.) The “environment” that is analyzed includes both the natural and built environment. (CEQA Guidelines, sec. 15360.) Thus, in addition to impacts on water quality that affect fish and wildlife habitat, an EIR looks at impacts including noise and traffic that affect our human habitat.

Drafting an EIR involves forecasting, and an agency must use its best efforts to find out and disclose all that it reasonably can. (CEQA Guidelines, sec. 15144.)

“The fact that precision may not be possible . . . does not mean that no analysis is required. ‘Drafting an EIR . . . involves some degree of forecasting. While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.’ (Guidelines, § 15144.) (Laurel Heights I, supra, 47 Cal.3d at p. 399.)” (Banning Ranch Conservancy v. City of Newport Beach (2017), p. 22.)

An EIR must evaluate a range of reasonable alternatives to the project capable of eliminating any significant adverse environmental effects of the project, or reducing them to a level of insignificance, even though the alternatives may somewhat impede attainment of project objectives, or may be more costly. (Pub. Resources Code, sec. 21002; CEQA Guidelines, sec. 15126, subd. (d); Citizens for Quality Growth v. City of Mount Shasta (3d Dist. 1988) 198 Cal.App.3d 433, 443-445 [243 Cal.Rptr. 727].) “The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decisionmaking.” (CEQA Guidelines, sec. 15126.6 subd. (f).) CEQA requires a “quantitative, comparative analysis” of the relative environmental impacts and feasibility of project alternatives. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 730-737 [270 Cal.Rptr. 650].)
CEQA requires the lead agency to respond in writing to comments made on the draft EIR. The response must “describe the disposition of the significant environmental issue raised in the comment,” must give “reasons why specific comments and suggestions were not accepted,” and must provide the same level of detail as the comment. (CEQA Guidelines, sec. 15088.)

“The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. The EIR’s function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been taken into account. (Laurel Heights I, supra, 47 Cal.3d at pp. 391-392.)’ (Vineyard, supra, 40 Cal.4th at p. 449; see Concerned Citizens, supra, 42 Cal.3d at pp. 935-936.)’” (Banning Ranch Conservancy v. City of Newport Beach (2017) pp. 26-27.)

CEQA requires agencies to adopt feasible mitigation measures in order to substantially lessen or to avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).)

Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure compliance during project implementation. “[U]ntil mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.” (Pub. Resources Code, sec. 21081.6, CEQA Guidelines, sec. 15097.)

In determining the adequacy of an EIR, one looks for completeness and a good-faith effort at full disclosure of the impacts by the lead agency. (CEQA Guidelines, sec. 15151.) “A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 712 [270 Cal.Rptr. 650].)

With these precepts in mind, one can analyze the flaws in the DEIR.

Specific Comments on the Sections of the DEIR

Section 1: Executive Summary and Introduction

Page ES-1 states, “JVID and AWA have agreed that the reversion would occur incrementally year-by-year based on projected annual increases in demand in the CAWP service area. AWA would thus not have access to the full additional 1,050 AFY upon approval of the water right, but would have to apply to the SWRCB for an appropriate quantity every year, based on expected demand.” Similarly, page 2-6 states, “On an annual basis, AWA would notify the SWRCB and JVID how much water should revert for the forthcoming year to meet the projected increase in demand for that year.” On page 2-8, the DEIR states, “Rather, before the beginning of each calendar year, AWA would notify the SWRCB and JVID how much water it would need in the forthcoming year to meet increasing demands. The requested amount then would revert to the state and then be assigned to AWA. This annual process would continue until the entire 1,050 reverts and is assigned.”
This approach raises a number of questions.

Does the SWRCB have the capacity to review and approve the proposed annual water right adjustments? How will the increase in demand be demonstrated? There has been an ongoing dispute regarding the way that AWA forecasts population growth and demand. (See Attachment 1, Infusino, Comments on the Draft MAC IRWMP Update, 10/17/12, pp.13-14.) What public review process will be available to ensure that the additional water allocations are needed? What environmental review processes will be used to determine if the CEQA documentation needs to be updated?

In Save Tara, the California Supreme Court ruled that “[W]e apply the general principle that before conducting CEQA review, agencies must not "take any action" that significantly furthers a project "in a manner that forecloses alternatives or mitigation measures that would ordinarily be part of CEQA review of that public project." (Cal. Code Regs., tit. 14, § 15004, subd. (b)(2)(B); accord, McCloud, supra, 147 Cal.App.4th at p. 196 [agreement not project approval because, inter alia, it "did not restrict the District's discretion to consider any and all mitigation measures, including the 'no project' alternative"]; Citizens for Responsible Government, supra, 56 Cal.App.4th at p. 1221 [development agreement was project approval because it limited city's power "to consider the full range of alternatives and mitigation measures required by CEQA"])."

Given that AWA has already made a project related agreement with environmental impact mitigation ramifications with JVID prior to the preparation of this DEIR, isn’t this DEIR coming too late in the project approval process?

DEIR issue 1: The DEIR does not consider the impacts of future phases of the project such as expanding and extending water service and wastewater infrastructure.

Page ES-2 states, “Project facilities already exist and are generally located in open space and agricultural areas, with some portions of the existing water conveyance system extending through residential suburban areas.” Similarly, page 2-6 of the DEIR states, “AWA’s pending water right application for the Project does not require the development or construction of any new water supply infrastructure, as existing facilities owned by AWA and PG&E would be used to store and convey the water.” Will providing this water in the CAWP service area trigger the expansion of infrastructure to parcels currently served, and the extension of water supply infrastructure to parcels not currently served? Didn’t AWA recently propose a financing plan for the future extension of such infrastructure? The Final EIR should note in this section that additional facilities may be needed to deliver the water.

Page ES-2 states that the water is needed to, “accommodate future planned growth.” We submit that the term “planned” should be replaced with the term “forecasted.” The term “planned growth” suggests that the future development is carefully managed to reduce impacts. However, as noted in our scoping comments, “The Amador County General Plan EIR identifies over three dozen direct or cumulatively significant impacts of development across the County. These impacts result from a combination of a plan that allows too much growth in the wrong places, with EIR findings that reject feasible mitigation measures proposed to promote both economic prosperity and resource conservation.” (See Appendix B). “Planned growth” would not have
such wide ranging and adverse impacts, nor would it exclude feasible efforts to reduce those impacts. (See Attachment 2: Foothill Conservancy v. County of Amador, Petition for Writ of Mandate). On the other hand, the term forecasted suggests that the growth is merely anticipated based upon data and analysis. We suggest that other references to “planned growth” in the DEIR also be changed to “forecasted growth.” This includes the one on page 2-5.

Page 1-1 to 1-2 state, “AWA has conducted the CEQA process, including the preparation and circulation of this Draft EIR, to provide to the public and Responsible and Trustee Agencies reviewing this Project with information about the Project’s potential effects on the local and regional environment.” As noted in our scoping comments, the potential secondary impacts of new development facilitated by the proposed water project in the CAWP service area cover many of the impact categories evaluated under CEQA. “We strongly encourage you to address the secondary impacts of the water supply project on air quality, greenhouse gas emissions, cultural resources, the fiscal feasibility of impact mitigation, fire hazard, jobs/housing balance, public services/facilities, parks and recreation, schools, wastewater treatment, solid waste management, traffic circulation, water quality, and land use.” (See Appendix B.) Was the DEIR circulated to each of the state, regional, and local agencies with jurisdiction over these resources? To which agencies did AWA circulate the DEIR? If the appropriate agencies did not receive the DEIR to review, the DEIR should be recirculated to them.

Page 1-2 states, “The NOP was circulated to local and state agencies and other interested parties for 30 days, beginning on September 2, 2016, and ending on October 3, 2016.” In Appendix B, there are very few responses to this NOP. To which local, regional, state, and federal agencies did AWA send the NOP? As noted above, the potential secondary impacts of new development facilitated by the proposed water project in the CAWP service area cover many of the impact categories evaluated under CEQA. If the appropriate agencies were not consulted during the NOP process, the entire environmental review may be tainted.

DEIR issue 2: The DEIR does not identify mitigation measures for the secondary project impacts of development in the CAWP Service Area suitable for adoption by responsible and trustee agencies, including Amador County.

Page 1-2 states, “The same comment letter requested that AWA work with the County to mitigate secondary impacts. AWA would provide water to only those projects that are approved by Amador County, after they have undergone environmental review and have obtained appropriate land use entitlements consistent with the adopted General Plan. It is outside the scope of AWA’s legal authority to develop or implement mitigation for secondary impacts such as traffic.” This last sentence is inaccurate, as explained below, and should be stricken from the Final EIR.

CEQA requires sister agencies to integrate their environmental review and project approval procedures, not treat them serially as suggested above. As explained in the unanimous decision of the California Supreme Court in April of this year,

CEQA sets out a fundamental policy requiring local agencies to “integrate the requirements of this division with planning and environmental review procedures otherwise required by law or by local practice so that all those procedures, to the maximum feasible extent, run concurrently, rather than consecutively.” (§ 21003, subd.
(a.) The CEQA guidelines similarly specify that “[t]o the extent possible, the EIR process should be combined with the existing planning, review, and project approval process used by each public agency.” (Guidelines, § 15080.) (Banning Ranch Conservancy v. City of Newport Beach (2017), pp. 18-19.)

Second, when making findings of fact under CEQA, a lead agency like AWA is required to identify mitigation measures that can and should be adopted by a sister agency with jurisdiction. The lead agency is required to identify when “changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding.” The lead agency findings must explain whether, “Such changes have been adopted by such other agency or can and should be adopted by such other agency.” (CEQA Guidelines, sec. 15091, subd. (a)(2).)

Third, state law specifically requires that water agencies seeking state funding through the Integrated Regional Water Management process must communicate and collaborate with local land use planning efforts. Unfortunately, this integration was noticeably absent during the update process leading to the 2013 IRWMP. (See Attachment 1, Infusino, Comments on the Draft MAC IRWMP Update, 10/17/12, pp.47-50, 12-17, 5-6.)

Fourth, it is completely within the SWRCB’s authority to deny AWA’s water rights application if the water is not used in the public interest. As noted in our scoping comment, “The AWA will be hard pressed to argue that providing water to serve development with over three dozen significant impacts is in the public interest. This is especially true when one considers that some of the other jurisdictions also seeking Mokelumne River water have embraced their obligations to reduce development impacts through the adoption of habitat conservation plans, agricultural land mitigation programs, and other mitigation mechanisms rejected by Amador County.” (See Appendix B.) Local groups have encouraged the AWA and Amador County to improve their public interest profile before seeking further water rights from the SWRCB. (See Attachment 3, Infusino, Public Interest Profile Enhancement Project, 4/29/14.) Unfortunately, the agencies continue to resist.

AWA claims that the proposed project is needed to accommodate growth under the Amador County General Plan. Thus, AWA recognizes the need to integrate land use and water planning, when swinging the sword of project need. However, when AWA’s responsibility for reducing the secondary impacts of the proposed project is raised, AWA seeks to hide behind a shield of limited jurisdiction. As demonstrated above, that shield does not exist.

Thus, as suggested in the NOP comment letter, and contrary to the assertion in the DEIR, it is critically necessary for the success of the proposed project, and absolutely within the jurisdictions of AWA and Amador County, to work together to mitigate secondary impacts of growth facilitated by the proposed project.

Page 1-3 states, “Upon completion of the public review period, comments received will be addressed in a Response to Comments Document, which together with the Draft EIR will constitute the Final EIR.”

According to the CEQA Guidelines, “The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate
anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.” (CEQA Guidelines, sec 15088, subd. (c.).)

We caution the AWA that an inadequate response to even one substantive comment can be enough to justify a writ of mandate remanding the decision to the lead agency. (Gallegos v. California State Board of Forestry (1978) 76 Cal.App.3d 945, 952-955.) Ignoring non-duplicative public comments is prejudicial error. (Environmental Protection and Information Center v. California Department of Forestry and Fire Protection (2008) 44 Cal.App.4th 459.) These responses to comments are necessary to ensure that stubborn problems are not swept under the rug. (Santa Clarita Organization for Planning the Environment v. County of Los Angeles (2003) 106 Cal.App.4th 715.) As explained in the opinion of the California Supreme Court in April of this year, when people raise questions early and often, the lead agency owes them a response. (Banning Ranch Conservancy v. City of Newport Beach (2017), pp. 26-27.) We encourage the AWA to comply with these standards when responding to comments on the DEIR.

Pages 1-3 to 1-4 state, “In making its decision about the proposed Project, the AWA Board will consider the environmental impacts and required mitigation measures, make findings regarding any identified significant impacts, and if necessary, adopt a statement of overriding considerations regarding any significant unavoidable impacts.” Also, page 4-1 states, “As described in Chapter 3, the proposed Project would accommodate growth, which could result in some significant and unavoidable indirect impacts. AWA will be required to adopt Findings as part of its EIR certification process, and will prepare a Statement of Overriding Considerations for those unavoidable significant impacts.”

CEQA requires that one of the following findings be made for each significant effect identified in the EIR: (1) mitigation has been adopted, (2) the agency lacks jurisdiction to make the changes but others should, and/or (3) specific economic, social, technological, or other considerations make mitigation or alternatives infeasible. (Sacramento Old City Association v. City Council (1991) 229 Cal.App.3d 1011; See also County of San Diego v. Grossmont-Cuyamaca Community College District (2006) 141 Cal.App.4th 86.) These findings must be supported by substantial evidence in the record. "Argument, speculation, unsubstantiated opinion, or narrative evidence which is clearly erroneous or inaccurate … does not constitute substantial evidence." (CEQA Guidelines, sec. 15384.)

With regard to the statement of overriding consideration, we remind the AWA that all feasible mitigation must be adopted, and other mitigation properly found infeasible, before an agency can make a statement of overriding considerations. (Los Angeles Unified School District v. City of Los Angeles (1997)58 Cal.App.4th 1019.) As we cautioned in our scoping comments, “Also, do not depend on a statement of overriding considerations to justify the secondary impacts of your project. The jobs, the homes, the businesses and the other benefits associated with this water
allocation are not unique to Amador County. Those benefits will flow to whichever locale the State Water Resources Control Board sends this water. The key difference is that other locations competing for the waters of the Mokelumne have done more to reduce development impacts.” (See Appendix B)

Section 2: Project Description

A project description must include, “A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.” (CEQA Guidelines, sec. 15124, subd. (c).) The technical and engineering data is essential to the project description, because they in turn allow the agency to estimate the environmental impacts of a project. Without this data, true impact analyses are impossible, and neither the decisionmakers nor the public can perform their appropriate CEQA functions. “A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decisionmakers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (i.e. the ‘no project’ alternative) and weigh other alternatives in the balance.” (County of Inyo v. City of Los Angeles (3d Dist. 1977) 71 Cal.App.3d 185, 192-193.) Such a “curtailed …project description draws a red herring across the path of public input.” (Id., at pp. 197-198.)

Page 2-1 states, “The proposed Project does not seek to increase the currently authorized place of use.” Does the proposed project anticipate that the water will be used outside the CAWP service area? The Mokelumne-Amador-Calaveras IRWMP includes an AWA plan to connect the CAWP water system to the systems that serve other areas of Amador County. That makes it reasonably foreseeable that the water from the proposed project will be used outside the CAWP service area. In the Final EIR, please clarify the reasonably foreseeable locations of use of the water from the proposed project. Please evaluate any impacts associated with these foreseeable locations of use.

DEIR issue 3: The DEIR proposes vague and unenforceable policy proclamations instead of feasible mitigation measures that could also be included as conditions of approval of the proposed water right

Page 2-6 of the DEIR states that AWA intends to implement a number of policies that appear to be based on the Foothill Conservancy’s adopted principles. We note that the FC’s policies were developed before Amador County adopted a 2016 general plan with more than two dozen significant, unavoidable environmental impacts, thereby rendering general plan consistency a meaningless environmental standard.

Development with the Amador County General Plan is expected to have devastating impacts on the environment. Development is expected to hamper the achievement of compelling state interests to conserve agricultural lands, reduce traffic congestion, improve air quality, reduce fire hazards, protect sensitive species, and adapt to climate change. As a result, the Conservancy
expects to review and update its infrastructure and development principles in the future so that they are no longer tied to general plan consistency, at least in Amador County.

Furthermore, page 3.3-9 states, “To address the potential that the Project would contribute to impacts associated with population and housing growth, the infrastructure planning and development policies listed in the Project Description (Section 2.4.4) would provide guidance when new development projects are being considered and/or constructed. Adherence to these policies would help to minimize the Project’s potential indirect growth inducing impacts.”

Unless the AWA acts to make these policies enforceable conditions of the water right or to make them enforceable project mitigation measures, there is no assurance that they will have any effect on the adverse, indirect growth-inducing impacts from the project. We strongly encourage AWA to add needed details to their policy intentions, monitor their implementation, and to make them enforceable conditions of the water right.

We further urge the AWA to include the following as mitigation for the secondary, cumulative and growth-inducing impacts of the project and also as conditions on the water right:

1. AWA shall provide water service only to county-approved developments that fully mitigate and pay for their impacts on roads, schools, wildland fire risk, emergency services, air quality, agricultural and timber resources, biological resources, and greenhouse gas emissions. This mitigation measure should also take the form of written and adopted rules and regulations concerning service.

2. AWA shall not expand its water distribution system into currently undeveloped parcels outside the county general plan Town Centers if doing so would (1) allow those parcels to be developed at a density greater than one home per every five acres, or (2) facilitate the subdivision or rezoning of existing parcels greater than 20 acres in size.

3. AWA shall not expand the CAWP water distribution system outside the existing CAWP boundary or connect the CAWP system with other water distribution systems without new CEQA review that fully analyzes the impacts of the expanded area of use.

In addition, there is a current land use-water disconnect in Amador County stemming from the fact that AWA only considers development projects under a current will serve letter as “counting” when it comes to water availability. Thus, as a five-year will serve letter expires, the water made “unavailable” by the will serve letter for that project suddenly becomes available to allocate to another project. This can lead to local government approval of far more developments than the AWA has water to supply. This problem has been exacerbated in recent years, as tentative subdivision maps have been given multiple deadline extensions at the state and local level. We strongly encourage AWA and Amador County to reform this water availability accounting procedure, so that development approvals are predicated on an actual water supply.
Section 3.0 Introduction to Environmental Analysis

Page 3.0-3 states,

Because the only potential direct impacts associated with the Project are due to changes in hydrology, there would be no physical impacts on environmental resources other than potential impacts on hydrology and aquatic biological resources. There is thus no potential for cumulative impacts to other environmental resources, so the list of projects considered for the cumulative analysis is limited to those projects that directly affect the same portion of the watershed through diversion of water.

CEQA requires that an EIR consider foreseeable cumulative impacts, whether they are direct or indirect. (Joy Road Area Forest and Watershed Assn. v. California Dept. of Forestry & Fire Protection (2006) 1142 Cal.App.4th 656 [Future housing development was a foreseeable consequence (with non-speculative impacts) of the proposed timber harvest, so a cumulative impact analysis was required in the THP].) “In considering whether an EIR must include related projects, ‘[t]he primary determination is whether it was reasonable and practical to include the projects and whether, without their inclusion, the severity and significance of the cumulative impacts were reflected adequately.’” (Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 868-869 quoting Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 723.) Given the extensive secondary impacts of the development facilitated by the proposed project, the AWA should reconsider its approach to evaluating cumulative impacts.

Section 3.3: Growth-Inducing Impacts

An EIR must, “Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.” (CEQA Guidelines, sec. 15126.2, subd. (d).)

“It also is settled that the EIR must discuss growth-inducing impacts even though those impacts are not themselves a part of the project under consideration, and even though the extent of the growth is difficult to calculate. The case law supports this distinction. The court in City of Antioch v. City Council (1986) 187 Cal.App.3d 1325 [232 Carper. 507] found that a project required an EIR notwithstanding that the project itself involved only the construction of a road and sewer project which did not in and of themselves have a significant effect on the environment. The court recognized that the sole reason for the construction was to provide a catalyst for further development in the immediate area. It held that because construction of the project could not easily be undone, and because achievement of its purpose would almost certainly have significant environmental impacts, the project should not go forward until such impacts were evaluated in the manner prescribed by CEQA. (Id. at pp. 1337-1338.)” (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 368.)
“A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 712.)

DEIR Issue 4: The DEIR misleads readers with statements and unsubstantiated assumptions that tend to understate the potential secondary project impacts from development in the CAWP service area.

In general, this section includes too many misleading and unsubstantiated assumptions that tend to understate the impacts of new development in the CAWP service area.

For example, page 3.3-1 states, “Local land use plans (e.g., general plans) provide for development patterns and growth policies that allow for the planned and orderly expansion of urban development (i.e., residential, commercial and industrial uses) supported by adequate urban public services (e.g., water supply, wastewater treatment, solid waste service disposal capacity, police and fire services).” This general statement is misleading and confusing in these circumstances. The Amador County General Plan EIR notes that growth under the plan may result in dozens of project-specific and cumulatively significant environmental impacts. This is a far cry from “the planned and orderly expansion of urban development.” Please do not include such misleading statements in the Final EIR.

For another example, page 3.3-1 states, “The Project would augment existing water supply and increase supply resiliency within the CAWP service area, but it does not involve the construction of new water conveyance infrastructure to extend service to areas within the CAWP service area not currently served by AWA.” Similarly, Page 3.3-8 states, “The proposed Project provides additional water supply, but because the Project does not include construction of new infrastructure, it does not provide public water to areas that are not already served by AWA, and is thus not expected to directly result in a change in the density of land use in areas that are not served by the existing water distribution system.”

A project description should account for reasonably foreseeable future phases of proposed projects if they may change the scope of the initial project or its environmental impacts. (Laurel Heights Improvement Association of San Francisco v. Regents of the University of California (1988) 47 Cal.3d 376, 393-399 [253 Cal.Rptr. 426].)

Development is allowed under the Amador County General Plan in the CAWP service area on undeveloped parcels outside the limits and beyond the capacity of the current AWA infrastructure. One purpose of this project is to supply water to new development under the Amador County General Plan. Thus, it is reasonably foreseeable that, to provide water for new development under the Amador County General Plan, AWA will have to extend and expand infrastructure to parcels not currently served by AWA. The potential impacts of this reasonably foreseeable future phase of the project must be acknowledged, evaluated, and mitigated if significant. Please change the text to reflect this in the Final EIR and see our suggested mitigations, above. For yet another example, page 3.3-2 states that, “In addition to the constraints identified in the General Plan EIR, the lack of wastewater treatment capacity limits the potential...
for new development. The majority of the CAWP service area is without wastewater collection and treatment systems.” This misleading half-truth tends to understate the impacts of development facilitated by the proposed project. Under the Amador County General Plan, increased subdivision of Rural Residential parcels in the CAWP service area is allowed when the parcels are served by public water or an on-site wastewater treatment system. Thus, new development can sprawl throughout the CAWP service area, regardless of the lack of a sewer system. Please correct this in the Final EIR and see our suggested mitigation measures.

For another example, page 3.3-2 states, “Approval of AWA’s Application 5647X03 would thus remove one constraint to growth, but growth could not occur until other obstacles are also removed.” The other listed obstacles to the development of vacant parcels are market conditions and private landowners’ development preferences. These are not government-imposed obstacles. These are not permanent obstacles, as they are subject to change with economic changes and changes in land ownership. Thus, the removal of the water supply obstacle is the key to allowing additional development in the CAWP services area, along with all of its potential impacts. Please edit this section in the Final EIR.

For another example, page 3.2-2 states, “However, new development projects within the CAWP service area would be required to go through the customary environmental review process, which would involve an evaluation of a project’s environmental impacts, including impacts related to the provision of utility services such as potable water.” This statement is another misleading attempt to understate secondary impacts of the proposed project. The “customary environmental review procedures” result in Amador County rejecting mitigation measures and approving development projects in spite of their adverse impacts on the environment. Please disclose this in the Final EIR and adopt the mitigation measures suggested above.

DEIR issue 5: The DEIR fails to include available development forecasts other than the one calculated maximum.

Page 3.3-3 states, “The Study process has yielded an estimated population of 22,961 at build-out using the maximum number of dwelling units per acre for all residential land use types and persons per household information from the 2010 Census.” This is an increase of over 15,000 people. By way of contrast, the Department of Finance’s 2013 estimate of future population growth for the entire county through 2050 was about 7,000 people. The Amador County General Plan EIR forecasted the future population increase for the entire unincorporated county to be only 3,300 people by 2030. (Amador County General Plan EIR, sec. 4.12.) AWA’s use of the maximum number of dwelling units per acre to estimate future demand makes no sense. AWA ignored the warning in the Amador County General Plan EIR that such “theoretical” buildout numbers “should not be used for any other long range planning purpose.” This is because such theoretical buildout numbers do not “include transportation, demographic, existing land use, or economic assumptions typically used by a forecasted model to provide more realistic land use planning data.” (Amador County General Plan EIR, section 14.15; Table 4.15-1.) As we explained in our comments on the Gravity Supply Line Initial Study in 2009, growth projections must be based upon a balanced evaluation of the factors that promote growth, and the factors that impede growth. (See Appendix B, Infusino, Letter of 12/28/09, pp. 4-10.) In our scoping
DEIR issue 6: The DEIR relies on information from the Amador County General Plan’s flawed DEIR, rather than independently analyzing the secondary project impacts from development in the CAWP service area.

Pages 3.3-5 through 3.3-9 fairly summarize the seven categories of significant impacts from growth facilitated by the proposed project, as they are described in the Amador County General Plan EIR. Page 3-10 concludes, “All of these impacts would be significant and unavoidable as identified in the Amador County General Plan EIR.”

However, the Amador County General Plan EIR suffers from a number of serious flaws, not the least of which is the failure of the County to adopt mitigation measures proven feasible and effective in other places. That inadequacy of that EIR is currently the subject of ongoing litigation. (Attachment 2: Foothill Conservancy v. County of Amador, filed November 3, 2016). Rather than rely on that unreliable EIR, we strongly encourage the AWA to independently analyze and identify measures to mitigate the potentially significant impacts of future development facilitated by the proposed project and to adopt the mitigation measures we have suggested above. In addition, we encourage the AWA to recommend that Amador County adopt such feasible mitigation measures before the AWA needs to demonstrate to the SWRCB that the water use under proposed project is in the public interest. By doing so, the AWA would meet its obligations regarding findings under CEQA, and may improve its chances of securing the proposed water right from the SWRCB.

Chapter 4 Other CEQA Considerations

Page 4-1 states,

The Initial Study for the Project is included in Appendix A of this EIR. The Initial Study found that the Project had no direct impacts on aesthetics, agriculture and forestry resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, land use and planning, mineral resources, noise, public services, transportation/traffic, or utilities and service systems. The Initial Study for the Project is included in Appendix A of this EIR. The Initial Study found that the Project had no direct impacts on aesthetics, agriculture and forestry resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, land use and planning, mineral resources, noise, public services, transportation/traffic, or utilities and service systems.

Alone, this statement may be misleading and confusing. In this section of the Final EIR, please disclose that the EIR found that the proposed project would result in significant indirect impacts to agricultural and forest lands, from toxic air contaminants, to sensitive species, to roadway and highway levels of service, and from disruption of existing communities. (See DEIR, p. 3.3-10.)
Page 4-1 states, “The cumulative impact analysis for each individual resource topic is included in each of the resource sections.” In Section 3.3 of the Final EIR regarding growth inducing impacts, please identify when growth facilitated by the proposed project would also contribute to cumulatively significant impacts as indicated in the Amador County General Plan EIR.

“It is vitally important that an EIR avoid minimizing the cumulative impacts. Rather it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them.” [Citation.] A cumulative impact analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker’s perspective concerning the environmental consequences of a project, the necessity for mitigation measures, and the appropriateness of project approval. [Citation.] An inadequate cumulative impact analysis does not demonstrate to an apprehensive citizenry that the governmental decisionmaker has in fact fully analyzed and considered the environmental consequences of its action.” Citizens to Preserve Ojai v. County of Ventura (2d Dist. 1985) 176 Cal.App.3d 421, 431 [222 Cal.Rptr. 247], quoting San Franciscans for Reasonable Growth v. City and County of San Francisco (1st Dist. 1984) 151 Cal.App.3d 61, 79 [198 Cal.Rptr. 634].

DEIR Issue 7: The DEIR considers a “straw man” alternative focused only on reducing future growth in the CAWP service area, rather than on feasible alternatives focused on reducing the impacts of future growth in the CAWP service area.

Page 4-1 states,

The Project has no direct significant environmental impacts. It would have the indirect effect of inducing growth in the CAWP service area, which could lead to some significant adverse environmental effects as identified in Section 3.3. CEQA thus requires that the evaluation of alternatives be focused on reducing the potential to accommodate growth, which creates an inherent conflict in that the Project’s purpose is to accommodate planned growth.

That statement is incorrect. An EIR must evaluate a range of reasonable alternatives to the program capable of eliminating any significant adverse environmental effects of the program, or reducing them to a level of insignificance, even though the alternatives may somewhat impede attainment of project objectives or may be more costly. (Pub. Resources Code, sec. 21002; CEQA Guidelines, sec. 15126, subd. (d); Citizens for Quality Growth v. City of Mount Shasta (3d Dist. 1988) 198 Cal.App.3d 433, 443-445 [243 Cal.Rptr. 727].) Thus CEQA requires an evaluation of alternatives focused on reducing the impacts of growth facilitated by the proposed project.

Rather than seeking to reduce the growth, the project alternatives should seek to reduce the impacts of growth. For example, improved public transportation, improved pedestrian and bicycle facilities, and land use patterns with more community centered development and less sprawl could reduce the traffic congestion impacts of new growth, without necessarily reducing the amount of growth. Changes to the land use map, cluster development, transfer of development rights, financial incentives for conservation easements, and mitigation requirements
for the conversion of ranch land, timber lands, and sensitive species habitat could reduce the impacts of new growth on agriculture land, timber land, and sensitive species habitat conversion, without necessarily reducing the amount of growth.

In addition to the project-specific mitigations above, the Foothill Conservancy proposed a suite of mitigation measures that could be used to form an alternative to reduce these and other impacts of development facilitated by the proposed project. (See Attachment 4, Watt, *Matrix of Recommended Mitigation Measures to Address Significant and Significant Unavoidable Impacts Associated with the Proposed Draft Amador County General Plan*, January 2015.) Please evaluate such an alternative in the Final EIR.

To the extent feasible, please quantitatively compare the impacts of this alternative with the proposed project. CEQA requires a “quantitative, comparative analysis” of the relative environmental impacts and feasibility of project alternatives. (*Kings County Farm Bureau et al. v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 730-737.) Since no other action alternative is given detailed evaluation in the DEIR, failure to include a detailed analysis of this alternative would be highly prejudicial.

We encourage the AWA work with Amador County to secure the adoption of such an alternative.

Page 4.2 states, “AWA does not have the authority to refuse service to future development approved by Amador County assuming it has a water supply available to serve it and the development complies with AWA’s rules and regulations concerning service.” That statement is not entirely correct. To serve some specific plans and development projects, the AWA must make the discretionary decision to approve new or expanded water and wastewater infrastructure. When making a discretionary decision to serve such a development project, the AWA must make its own independent CEQA review. If after completion of an EIR, the AWA determines that the benefits of the project do not override the adverse impacts of the project, AWA cannot approve the new or expanded infrastructure. (CEQA Guidelines, sec. 15092.) Please correct this section in the Final EIR.

We hope that your Final EIR for this project will properly address the concerns detailed in this letter, and those of expressed by other commenters. Please notify us a when the Final EIR is available, and when AWA intends to make its decision.

Sincerely,

Thomas P. Infusino, 
for the Foothill Conservancy

Cc. Amador Water Agency Director Gary Thomas  
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List of Attachments


Comments on the Draft MAC IRWMP Update

Prepared by

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For

The Calaveras Planning Coalition

October 17, 2012
Introduction: We must correct serious shortcomings in the Draft MAC IRWMP

My name is Tom Infusino, and I am submitting these comments on behalf of the Calaveras Planning Coalition (CPC). I have been an active member of the Regional Participants Committee (RPC), and can speak from personal experience regarding RPC meetings and the planning process. I have a degree in planning from UC Davis, and a law degree from University of the Pacific. I have been involved in resource planning efforts in the Sierra since 1991.

The CPC is a group of community organizations and individuals who want a healthy and sustainable future for Calaveras County. We believe that public participation is critical to a successful planning process. United behind eleven land use and development principles, we seek to balance the conservation of local agricultural, natural and historic resources, with the need to provide jobs, housing, safety, and services.

We have reviewed the IRWM Guidelines, the draft MAC IRWMP sections provided for public review (Chapters 1 through 4), and the additional MAC IRWMP sections provided at the September 24 RPC meeting (Chapter 5). In general, we feel that, for the success of the MAC IRWMP, we must correct serious shortcomings of the Draft MAC IRWMP before the document gets critical review by the California Department of Water Resources during the 2014 grant funding cycle.
We understand the need for UMRWA to timely approve some MAC IRWMP in January 2013. However, we feel that it is equally essential to continue to improve the plan in 2013 until the plan is both consistent with the IRWMP Guidelines, and competitive with the IRWMPs from other regions. These improvements are needed to meet UMWRA’s goal for the IRWMP process: “Develop an updated MAC Plan which addresses a broad range of water-related and environmental stewardship needs through effective stakeholder participation, and is comprehensive and competitive with other plans.”

Many people have put a lot of time into getting the plan to this point. It would be a shame to get 75% of the way to a complete plan, and then stop the work just before the plan meets the guidelines and becomes competitive. If you stop now, you will have only yourselves to blame when DWR considers the severity of the plan’s ongoing shortcomings, and disqualifies the plan or its projects from grant competition. When gap funding for a quarter of a billion dollars of infrastructure projects region-wide is at stake, it would be penny wise and pound foolish to bring this planning effort to a premature climax.

Below we present our comments on the Draft MAC IRWMP. We review each of the 16 topical areas required in an IRWMP. We identify process, text, or graphic provisions where the IRWMP Guidelines have not been met. We make suggestions for rectifying these plan deficiencies. Some of these deficiencies can be corrected prior to plan approval in January 2013, while others will take longer to correct.

Though we also note aspects of the plan that have excelled in meeting the IRWM Guidelines, we do not believe that the merits of these sections make up for the deficiencies in other sections.

Even though we did not carefully review the text and graphics of the plan for clerical errors, we do note a few that became obvious to us.

We also feel that the text of the plan presents a one-sided and too rosy a picture of the actual planning process. Too often it speaks to what could have happened rather than what did happen. Examples are noted below. In general, the plan needs to finesse issues less often, and tell the whole truth more often.
I. MAC IRWMP Governance

A) Standards.

The governance section of an IRWMP identifies which local, state, and federal officials; and which other people, participated in preparing the plan. It explains the structure of the committees and decisionmaking bodies that prepared the plan. It explains how the form of governance ensured public outreach, effective decisionmaking, a balanced opportunity to participate, effective communication, long-term implementation of the plan, good coordination with neighboring IRWM planning efforts, a collaborative process to establish objectives, a procedure for making interim changes, and a means for updating the plan. (2010 IRWM Guidelines, pp. 19-20, 36-39.)

A key component of the governance section is the explanation of the public involvement process. The process should seek to include all interested parties in plan development including: water purveyors, wastewater agencies, flood control agencies, city and county governments, special district, electrical utilities, Native American tribes, self-supplied water users, environmental
stewardship organizations, community organizations, tax-payer groups, recreational interests, industry organizations, state and federal agencies, and disadvantaged communities.

B) Challenge: Improve public outreach.

Governance was one of the topics for which the 2006 MAC IRWMP did not meet current IRWM Guidelines. A key reason for conducting the update was to fix the governance section of the plan. DWR is likely to scrutinize this topic, and is unlikely to miss our errors. Therefore, we should make a very strong effort to fix this known deficiency of the 2006 MAC IRWMP.

The Governance section, describes the “intended” purpose of the governance structure and what it was “expected” to achieve. (Draft MAC IRWMP, Chapter 2, p. 3.) It does not describe what actually happened. The Governance section describes “anticipated participants”, not who actually shows up and participates on the RPC. (Draft MAC IRWMP, Chapter 2, p. 4.) The Governance section generally describes the public participation for which the MAC IRWMP “strives,” but it does not give the details of how short the public review on the draft plan was (September 14 – October 3), and that only 4 or 5 members of the public attended the September 24 public workshop. (Draft IRWMP, Chapter 2, p. 6.) By way of contrast, when EBMUD proposed to raise the dam on Pardee Reservoir in its 2040 WSMP, they had no problem getting over 100 people to attend their public comment meetings in Amador and Calaveras counties. (Exhibit 1, Articles on EBMUD Hearings.) The discussion of integration claims that the governance structure “fosters integration,” but it does not report that the “diverse group of participants” did not arrive. (Draft IRWMP, Chapter 2, p. 10.) The final plan must do that.

Instead, Section 2.2.5, Benefits of Governance, lists benefits that did not actually materialize. The “three-tiered structure” did not provide balance among stakeholders or result in a decisionmaking process that was “fair.” The water agencies had complete control, and everybody in the room knew it. The public outreach program did not result in “the wide participation by stakeholders and RPC members from all relevant areas of water resources management in the region.” (Draft MAC IRWMP, Chapter 2, p. 7.) This is an example of the Draft MAC IRWMP presenting, “a one-sided and too rosy a picture of the actual planning process.”

The problem is that lengthy commitment to participate on the RPC (August 2011 to January 2013), during weekday working hours, drove stakeholders away from the planning process. The only other opportunity to participate is through the very limited public comment process. There need to be more opportunities to participate and to provide input into the planning process between the two poles of RPC membership and public commenter.

Currently, our RPC has limited regular participation and limited intermittent participation. The water agencies (AWA, CCWD, EBMUD, and JVID), the Foothill Conservancy, the CPC, and
the City of Plymouth attend regularly. We have had occasional visits from the City of Jackson, and the Forest Service. Trout Unlimited came initially and withdrew. The City of Ione has attended one meeting.

Unfortunately, a lot of important parties did not attend the RPC meetings, or dropped out along the way. Wastewater Agency ARSA did not attend, nor did the City of Sutter Creek that depends on ARSA for wastewater treatment. Both these entities have proposed wastewater treatment solutions that are not necessarily consistent with the regional plant proposed by AWA. The County Health Departments, responsible for regulating septic systems and small potable water systems, did not attend. The electrical utility, PG&E did not participate, even though expansion of one of its facilities (Lower Bear River Reservoir) is a project in the plan. Special Districts, like the Fire Districts who depend on the upgraded pressurized water systems under consideration for funding, did not participate. The Sanitation Districts from Mokelumne Hill and San Andreas, potential key partners in water recycling, did not attend. BLM did not attend, though they are a major landowner with jurisdiction over abandoned mines and their drainage remediation, and are actively promoting recreation on the Mokelumne River. Native American Tribes, a key constituent that the IRWMP is supposed to consult and serve, did not participate. Taxpayer and ratepayer groups did not participate in the RPC, but one did provide public comments on the projects. Though one realtor did sign up to participate, she did not subsequently attend, even though she was the only representative from the business and industrial sector.

Unless the RPC creates more opportunities to get input from these very important parties, the MAC IRWMP list of participants will appear too narrow, and may harm our chances of getting funding in 2014.

C) Recommendations

Include in the final plan the attendance sheets for the RPC meetings and the public workshops, so that the actual levels of stakeholder and public participation are reflected. Balance the half-truths in Chapter 2 about what was intended and strived for with the actual results of what was achieved.

Over the course of next year, hold a series of individual meetings to invite key missing stakeholder groups to put their two cents worth in on the plan (i.e. city and county governments planning and health department staff, school districts, Calaveras COG & ACTC, electrical utilities, Native American tribes, self-supplied water users, community organizations, tax-payer and ratepayer groups, recreational interests, industry organizations, state and federal agencies, and disadvantaged communities.). For example, on one day you could have a meeting with City and County planning staff, COG staff, ACTC staff, School Districts.
If this does not work, delegate to RPC volunteers the responsibility of meetings one-on-one with additional stakeholder groups or their representatives. Provide RPC volunteers with questions to ask and materials to share.

Note the suggestions of these new stakeholders. If project ideas result from these meetings, encourage participants to sponsor or cosponsor a project proposal for addition to the plan. Prior to the 2014 grant package submittal, add notes on the new stakeholders’ suggestions in the implementation section, and amend the plan as needed based upon their suggestions. It is not too late for the MAC IRWMP Update to do a more comprehensive job of outreach to important participants. If we fail to do so, we will only have ourselves to blame should DWR find this flaw fatal to our MAC IRWMP.

D) Challenge: No RPC policy on information collection, review, and inclusion in the plan.

Right now, it’s the project applicant’s information or the highway. Unless the NGOs and the public can convince the agency to voluntarily change the description of their project, or their self-reported ranking on their projects, the MAC IRWMP will accepts the agency’s version of the facts without question, even when there is ample evidence to the contrary in public comments. Telling the NGOs that all they have to do is convince the water agencies to downgrade their self-assessment of their proposed projects, is like telling a slave that all he has to do to be free is convince his master to set him free.

For example, comments by the Ratepayer Protection Alliance (RPA), and adopted by one RPC member as his own, indicate that 18 of the Amador Water Agency’s (AWA) 20 project have a high risk of not being implemented (i.e. rated 7 or greater on a scale of 1 to 10). (Exhibit 2: RPA Comments May 2012.) One of the RPA’s key concerns is the equitable distribution of project costs and benefits among existing ratepayers and future customers. This concern is verified by AWA failure to demonstrate an equitable distribution of benefits for 18 of their first 20 projects. (Draft MAC IRWMP, Chapter 4, Appendix A, Table Tier 1-Screening, Step 1 - Reflect Goals and Statewide Priorities.) The RPA can make the risk assessment with credibility, because it knows its member base, and it has already participated in three successful Proposition 218 protests against AWA rate increases. (Exhibit 3: RPA 218 Protest Results.) Such protests can severely hamper AWA’s ability to implement projects.

Despite this important information submitted by an RPC member, the AWA self-assessment of the probability of implementation rates only 2 of its first 20 projects as having a high risk of not being implementation. (Draft MAC IRWMP, Chapter 4, Appendix A, Table Tier 2 - Evaluation, Step 1 –Apply Evaluation Criteria) Furthermore, it is only that AWA assessment that is presented in the spread sheet evaluating projects. The RPA comments, though arguably of equal or greater value, does not yet appear anywhere in the Draft MAC IRWMP. This does not reflect equal power or voice for RPC participants. It erodes claims of collaboration.
For another example, RPC member the Foothill Conservancy assessed the projects on the degree to which they were the best to achieve the purpose, from an economic, environmental, and societal perspective: the so-called triple bottom line. (Exhibit 4: Foothill Conservancy Comments 5/30/12.) The Foothill Conservancy expressed serious concerns about whether 5 of the AWA’s first 19 projects (i.e. Numbers 7, 10, 11, 12, 13) were actually the best to achieve the purpose. Nevertheless, the AWA scored all of those projects high for that criterion. (Draft MAC IRWMP, Chapter 4, Appendix a, Table Tier 2 – Evaluation, Step 1, Apply Evaluation Criteria.) Yet it is only the AWA assessment that appears in anywhere in the Draft MAC IRWMP. This does not reflect equal power or voice for RPC participants. It erodes claims of collaboration.

For another example, when it comes to supply and demand data, unless the NGO’s can convince the agencies to change their data voluntarily, the consultants have said that they will accept only the agency version, regardless of ample evidence to the contrary. (See comments on Regional Description, below.) This does not reflect equal power or voice for RPC participants. It erodes claims of collaboration.

Furthermore, we are near the end of the MAC Update process, and there is still no clear guidance on how non-agency stakeholders or the public will be able to get their information into the plan, if at all. Unlike the other draft sections of the plan that the RPC got to review, there is no section title, no outline for the section, no guidance for submitting information in any particular format, nothing. There is a deadline for public comment, but no clear explanation of how that comment information will be processed, used, or preserved in the plan. This does not reflect a process that provides for equal power or voice for RPC participants. It erodes claims of collaboration. It is not exemplary of a form of governance that ensures public outreach and a balanced opportunity to participate.

Finally, even where the public and the agencies agree that there are data gaps, we have not specifically identified the need for those studies as part of a project, or asked for funds to fill those gaps. A major data gap is that, although the AWA has proposed over 230 million dollars in projects, AWA has no capital improvement plan that identifies, phases, prioritizes, or finances these projects, or has the approval of the AWA Board and its ratepayers. Yet, no proposed AWA project includes the funding and preparation of such a strategic capital improvement plan. Also, although CCWD proposes to “restore” ephemeral streams by using them as conduits to deliver, the project does not specifically call for the study of the previous natural hydrograph to guide this restoration. (Project 23 – New Hogan Reservoir Pumping Project.) In addition, although there is an admitted need for additional studies to clarify CCWD’s future agricultural water demand, no proposed CCWD project includes the funding for these studies. (See Regional Description comments below.)

Thus, incomplete agency information may just languish as such, and remain a shaky and controversial basis for seeking funding. This does not reflect equal power or voice for RPC
participants. It erodes claims of collaboration. It perpetuates weaknesses in the data that instead should better reflect the merits of the projects.

E) Recommendations

We recommend that as an RPC we decide:

1) To include the public comments in the plan verbatim.
2) To review and respond to the public comments.
3) To consider making changes in the draft document based upon public comments on the draft.
4) To delegate to a committee the preparation of new guidance for the way that information will be received, reviewed, and accepted into the plan in future amendments and updates.

F) Challenge: To Improve the balance of power to promote collaboration.

The fact that anything not resolved by the RPC goes to agency-only groups for review and recommendation to UMRWA removes any need or effort by the agencies to discuss or negotiate the controversial issues, and provides a strong disincentive for NGO’s to participate. This disincentive is only reinforced by the fact that non-applicant information is neither considered in project review, nor disclosed in the IRWMP, without the consent of the applicants. The agencies dominate the RPC, the Review Committee, and UMRWA. There is no standard of review by those bodies, no procedures for appeals to those bodies, and no mechanism for accountability if they abuse their discretion. This is not providing RPC participants with and equal voice or power. It is not promoting public participation in the process. It is not working out issues of concern in a collaborative way. It is not promoting long-term implementation of the plan.

When I raised this issue at the RPC meeting on September 24, the facilitator quipped that he was O.K. if I wanted to give up some of my power. Another RPC member questioned that the guidelines called for equal power and equal voice for all members. So I read from the guidelines, “Equal distribution of power and voice among stakeholders.” (2010 IRWM Guidelines, p. 38.) Then he asked if I was also willing to share equally in financial responsibility with the other RPC stakeholders. So I again read from the guidelines, “[T]he opportunity to participate, regardless of their ability to contribute financially to the IRWM Plan.” (Ibid.) His response was that the Guidelines are not etched in stone, and the troublesome ones can be changed. Clearly we have a long way to go on the road toward collaboration.
G) Recommendations:

RPC consultant Allyson Watson has proposed the following (not mutually exclusive) means of improving governance:

**Alternative 1: Eliminate Board Advisory Committee Role and Communicate Directly with Board:**

Currently, if consensus cannot be reached at the RPC level, the matter is elevated to the Board Advisory Committee for resolution. If the Board Advisory Committee does not resolve the issue, it is then elevated to the UMRWA Board for resolution. Under this alternative, if consensus is not reached at the RPC level, the UMRWA Executive Officer would be obligated to work with the affected RPC members to properly account for their concerns and recommendations, and incorporate a description of the matter into the agenda report for the next UMRWA Board meeting. The affected RPC members would be provided with the opportunity to personally present the matter to the Board in conjunction with their deliberations. The Board Advisory Committee would not have a role in resolving RPC issues.

**Alternative 2: Designate Subcommittee of the Full RPC to Resolve Disagreements:**

Currently, if consensus cannot be reached at the RPC level, the matter is elevated to the Board Advisory Committee for resolution. If the Board Advisory Committee does not resolve the issue, it is then elevated to the UMRWA Board for resolution. Under this alternative, all RPC matters would be resolved at the RPC level. To do so, a subset of the RPC representing balanced interests would vote to resolve the conflict. The representation of the subcommittee would need to be determined such that the RPC felt it was reasonably representative of the viewpoints on the committee (preferably also an odd #). It could include, for example, one city/county official, one water/wastewater agency rep, one environmental community rep, one resource agency rep, etc. The RPC members affected would be provided with the opportunity to personally present the matter to the subcommittee, who would decide, either by consensus or vote, how to resolve the issue. Issues would be decided by this group rather than having issues resolved outside the RPC.

**Alternative 3: Request Re-Consideration by Board (this would probably be in conjunction Alt 1, 2 or both):**

Currently, UMRWA has final approval responsibility for Plan products. Under this alternative, whenever the UMRWA Board is considering taking action that differs from recommendations of the RPC, the RPC will be notified in advance, and RPC members will be afforded the opportunity to participate in and provide input to the Board’s deliberations.

The Foothill Conservancy has also suggested that planning agencies, tribal representatives, DAC representatives, conservation groups, and others stakeholders should be allowed to serve at any level of the governance structure, which would mean that UMRWA could not be the final decision body. There might need to be some agreement about principles to which all participants would have to adhere so people can't just jump in to kill and project and jump out. All decisions
could be made by consensus of the parties. There could be a memorandum of understanding developed, that all parties would have to sign, describing both how the final decision-making body would function, and the details their roles and responsibilities.

If those recommendations do not resolve the governance problems, the RPC could delegate to a balanced committee the preparation of new guidance for MAC IRWMP governance.

H) Challenge: to provide examples of circumstances that will trigger plan amendment.

Currently, the Governance section states, “In the event that interim and/or formal changes are needed, the Board would direct the RPC to oversee completion and incorporation of changes.” (Draft MAC IRWMP, Chapter 2, p. 7.) When “needed” is a very vague standard. Please include in the final plan some examples of circumstances that would trigger a plan amendment. For example:

A plan change will be made to incorporate the results of plan monitoring.

A plan change will be made when project-specific monitoring indicates that a project will not achieve one of its asserted benefits, or will exceed its reported costs.

A plan change will be made when the plan or a project is modified through adaptive management.

A plan change will be made when heretofore missing information becomes available (e.g. input from missing stakeholders, results of modifying the governance structure, updated information about the regional description, new project applications, project-related operation and maintenance costs, or new information from updated local water plans or land use plans.)

A plan change will be made when needed to address new IRWM Guidelines.
2) Region Description

A) Standard

The Region Description in the plan describes the watersheds and water systems in the region, the internal boundaries of the region, the water supply and demand for the 20-year planning horizon, the current and expected water quality, the social and cultural makeup of the region, major water related objectives and conflicts, an explanation of how the IRWMP regional boundary was determined to be appropriate for the area, and the working relationship with neighboring IRWMP efforts. The intent of the Region Description is to identify the region by the water systems being managed and the common water issues of concern. By identifying the water systems and issues of concern to people, those working on the IRWMP can try to include a sufficient variety of interested parties in the planning process. (2010 IRWM Guidelines, pp. 20-21, 39-41.)
B) Challenge: To get the regional details right.

The Region Description is covered in Chapter 1 of the Draft MAC IRWMP.

Unfortunately, it appears that the memo providing the crosswalk between the sections in the MAC IRWMP and the IRWM standards they cover was left out of the draft IRWMP made available to the public on the UMRWA website. (See Watson, Section Update Overview, 9/26/11) This may have made it hard for people to comment on the Draft IRWMP. It would have made it hard for me, and I have been working with the document for a year. I am sure it would create a hardship to DWR when it comes time for them to review the plan. We do not want DWR to inadvertently reject the plan simply because the reviewer could not find the section of the plan that covered the IRWM standard.

Please standardize page numbers among the IRWMP chapters. The pagination in Chapter 1 is 1-1, 1-2, etc. The pagination in subsequent chapters is Page 1, Page 2, etc.

On page 1-2 of the section, change “Sierra Nevado” to “Sierra Nevada”.

On page 1-15 of this section add to Table 1-3 the San Andreas Sanitation District.

On page 1-18, please change the name from the “Electra Run” to the “Electra and Middle Bar Runs”. Also, delete the phrase “and above Highway 49.” To the list of other recreational activities, please include “wading, wildflower viewing, gold panning, and spiritual rejuvenation.”

On page 1-21, there are statements that the IRWMP is not intended to drive the General Plan Update process or to influence growth or growth patterns in Amador and Calaveras Counties. Again, rather than state the intent, state the actual facts.

In Amador County, the Gravity Supply Line’s Mitigated Negative Declaration specifically indicated that it will facilitate the conversion over 5000 five-acre lots not served by public water to smaller lots served by public water, in the forested upcountry lands in the CAWP service area. (Exhibit 5, GSL MND, p. 71.) In addition, AWA is developing a broader service area map for the upcountry region, to help finance the GSL. (Exhibit 6, AWA CFD 2 Map.) The potential impacts of the GSL on upcountry land use patterns were raised during project review. (Exhibit 7 – Foothill Conservancy Comments on GSL 12-28-09.) Thus, regardless of intent, the GSL project included in the IRWMP will influence growth patterns in Amador County.

Similarly, CCWD’s two New Hogan projects in the IRWMP (Projects 23 & 24) will increase the amount and distribution of water to western Calaveras County. The Valley Springs area currently has competing proposed community plans, with varying degrees of community-centered growth and sprawl. (Exhibits 8 & 9, Draft Valley Springs Community Plans.) Providing more water and a broader distribution to open space lands can facilitate development of green open space, as opposed to infill. Thus, the New Hogan Projects will influence land use patterns in Calaveras County, regardless of the “intent” of the MAC IRWMP.
On page 1-21, the IRWMP indicates that the MAC IRWMP Region “is home to approximately 130,000 people.” Where does that very high estimate come from? It is not consistent with the County and City population data provided on page 1-13. The IRWMP goes on to state that the population density is 2,000 people per square mile, suggesting that the MAC Region is only 65 square miles ($130,000/2,000$), or 416,000 acres ($65 \times 640$). Amador County alone is 384,000 acres. (Exhibit 10, Amador County, General Plan Update, Classification System and Alternatives Workbook, p. 38.) The MAC Region includes about 2/3 of Calaveras County, or another approximately 435,000 acres. (Exhibit 11, Calaveras County, General Plan Update Alternatives Report, p. 12) The population and population density data on page 1-21 of the Draft MAC IRWMP need to be corrected. Of course, I am only an NGO representative to the RPC, so you will need the permission of the government RPC members before you correct their population and population density data.

On page 1-23, the list of DACs in the text includes Sutter Creek two times. Please delete one of these listings. Also, River Pines is not on that list. Please add it.

Are the listed unincorporated town DACs along Highway 4 (Murphys, Avery, and Dorrington) part of the MAC IRWMP or Part of the Stan-T IRWMP? None of these towns or their special districts participated in the MAC IRWMP Update. Did they participate in the Stan-T IRWMP? They should not fall through the cracks, since Murphy’s Sanitation District and their PUD need all the help they can get.

Page 1-27 states, “The regional water supplies and demands included in this section are based on the best available information and projections.” Again this is another example of the IRWMP’s “one-sided and too rosy a picture of the actual planning process.”

The AWA estimate is based upon “the projected growth described in the local general plans.” What does that mean? Some of the growth estimates in the local government general plans are not based upon current or reliable data. The Sutter Creek general plan dates from 1994. The Amador County General Plan was approved in 1974. Is that the growth data used by AWA to estimate future demand? Since then, those local governments have updated their Housing Elements with more current growth data. Is that the data used by AWA? Mysteriously, the AWA increased its estimate of Amador County’s average annual growth rate from less than 1% in the old UWMP to 1.8% in the new UWMP. Although the Foothill Conservancy asked for some explanation during the UWMP update in 2011, none was forthcoming. (Exhibit 12, Foothill Conservancy on AWA UWMP.) Unfortunately, there was no opportunity for the RPC to discuss those issues before accepting the demand projections from AWA.

On page 1-31, the demand figures for CCWD include a growth in raw water demand for the Valley Springs Area of nearly 16,000 acre-feet per year by 2035. This is based upon a study that identified the need for over 100,000 acre-feet of water per year to irrigate 29,000 acres of agricultural land in Calaveras County. (Exhibit 13, CCWD Irrigation Study, p. 10.)
However, that study recognizes huge deficiencies in the data, not the least of which is that parcelization and development in the rapidly growing Valley Springs area over the last 40 years has gobbled up much of the acreage previously considered suitable for irrigation. The study also generally cautions that “this analysis utilizes a data set that is 30 to 45 years old. This information needs to be verified and ‘ground truthed’ before committing to plans for agricultural development.” (Exhibit 13, CCWD Irrigation Study, pp. 10 & 12.)

The 12-page study includes more than a page-long list of 9 essential future follow-up studies:

**RECOMMENDED NEXT STEPS**

If the District is interested in further pursuing the potential for agricultural development in the western portion of the County, there are a number of questions that need to be answered and items that need to be verified. The following next steps are recommended to help the District decide whether to pursue agricultural development and to what degree:

1) This initial analysis utilizes a dataset of information that is 30 to 45 years old and has not been verified. At this time it is unknown how extensive the original field work was in developing the dataset and it is unknown how things have changed in the area. It is recommended that this initial analysis and subsequent results be reviewed with the County Farm Advisors Office and local NRCS office to ascertain whether local knowledge could refine the analysis. The data needs to be field verified or "ground truthed", but most of the land is privately owned and it may be difficult to obtain permission to access the land.

2) While many soil conditions can often be mitigated through mechanical means, the deeper the soils the better. At this time it is not known what a shallow soil depth in the Soil-Vegetation dataset actually means, but agricultural development will be much more economically attractive if a grower does not have to spend significant capital dollars on deep ripping or other soil modifications. The NRCS is in the middle of their soil survey and it is our understanding that they cannot publicly release any information until the soil survey is published in a few years, but it may be possible to have them verify some of these preliminary findings by comparing soil borings that they have available. They may also be able to generally tell us more information about certain areas such as the Salt Springs area.

3) Discussions with local landowners would be helpful to gain their insight on the potential for developing irrigated agriculture in the area. It is interesting to note that the water supply from the private Salt Springs Reservoir apparently is delivered to agricultural land outside Calaveras County rather than used on the land adjacent to or immediately downstream of the reservoir. It would be helpful to learn more about this area and how that water supply was developed.

4) Gather information on land prices and lease rates in the area.

5) Further evaluate the possible crop mix to identify crops that would likely be limited to small boutique acreage versus larger production acreage and the factors that would influence that decision, such as contracts and processing facilities. It may also be possible to research possible effects of the apparent impact of global warming on future cropping patterns. Almonds moving onto a
Despite this serious data gap that affects the MAC IRWMP, CCWD has not proposed a project to fill this gap.

Even though CCWD has not provided any studies that investigate these data gaps further, there is ample data available that calls into question the feasibility of developing this level of irrigated agriculture in Calaveras County.

For example, evidence of the growth or decline of irrigated agricultural lands in the Sierra Nevada Foothill counties over the last decade indicates that the greatest amount of additional irrigated agriculture in any such county is 1,638 acres. In fact, another foothill county LOST 2,158 acres of irrigated lands to conversion. (Exhibit 14 – CPC Comments on CCWD UWMP, pp. 10-12.)

Furthermore, CCWD’s study admittedly provided no consideration for the fact that the demand for irrigation water will be very sensitive to its price. However, there is data available on the estimated cost of the irrigation water and the value of agricultural crops that can shed light on the economic feasibility of irrigation. Two projects recently considered for tapping CCWD’s area of origin water reservations on Mokelumne River were Pardee Expansion and the Inter-Regional Conjunctive Use Project (IRCUP). The estimated cost of water for these for these projects was...
$730 per acre foot, and $670 per acre foot respectively. (Exhibit 15, EBMUD Technical Memorandum #6, Cost Estimation Evaluation, 2009, p. 10.) CCWD’s study estimates that water usage will be about 3.5 acre-feet per acre. Thus the cost of the irrigation water would be between $2345 per acre and $2555 per acre. The 2009 Annual Crop Report for Calaveras County indicated that only the 800 acres of the county planted in wine grapes yielded a crop valued at more than $2300 per acre. Furthermore, much of the land slated for irrigation is rangeland, that when irrigated produces less than $150 of crop value per acre. (Exhibit 16, Calaveras County, 2009 Report of Agriculture.) Thus, the notion in CCWD’s irrigation study that every acre of land available for irrigation will be irrigated with 3.5 acre-feet of water per acre is without basis in fact. It is simply not economical to do so.

Nevertheless, it is only CCWD’s reported demand level, based upon a seriously inadequate study using admittedly outdated data, that is reflected in the MAC IRWMP. In addition, this data is used with no reference to CCWD’s irrigation study’s disclaimers, or to the other data suggesting that the demand estimate is inflated.

We understand that CCWD seeks to inflate its future agricultural demand in an effort to protect its area of origin water reservations against outside intrusion. However, this 12-page study with its long list of caveats is far too small a fig leaf with which to clothe CCWD’s area of origin water reservations. CCWD would be much better served by actually securing those rights in the present, than by pretending to be able to secure them through a most unlikely future scenario.

What is very distressing about this situation is that this issue of irrigation demand has been raised with CCWD staff, CCWD management, and heard by the CCWD board during the UWMP process, all to no avail. (Exhibit 14 – CPC Comments on CCWD UWMP.) One would hope that the collaborative and regional IRWMP process would provide a forum for resolving these data credibility issues prior to placing unreliable data into the IRWMP. Instead, the IRWMP consultant staff, the facilitator, and the water agencies refused to address these issues. We expect that DWR’s IRWMP plan review staff will not be as quick to ignore these data credibility issues.

Section 1.4 discusses water resource issues and major conflicts. Many of these issues are covered in only a single inaccurate sentence presenting false dichotomies.

For example, “Watershed protection versus community economic needs.” There is no need for watershed protection to conflict with community economic need. This is being proven by the Amador Calaveras Consensus Project that is putting people back to work in the forest; this time on restoration and fuel reduction projects. If the phrase was “Watershed protection versus watershed damaging forestry practices” then it would reflect a true conflict and a true dichotomy.

For another example, “Insufficient groundwater quantity and quality to accommodate growth.” What does that mean? Does it mean insufficient groundwater quantity and quality to build out
isolated rural parcels at their maximum allowed land use intensity under the existing General Plan and Zoning? If so, that does reflect real conflict among groundwater users.

Yet another example, “Obtaining Wild and Scenic River status versus preserving opportunity to develop additional surface water storage.” This is another false dichotomy. The only surface water storage that Wild and Scenic River Status prevents is on-stream storage. Wild and Scenic River Status will not affect existing water rights, and will not prevent the development of off-stream storage facilities. If the issue is “Obtaining Wild and Scenic River Status down to Pardee Reservoir versus preserving the opportunity to inundate more of the Mokelumne River with dams,” then that would reflect a true dichotomy and a true conflict.

Yet another example, “Protecting and improving fish passage on the lower Mokelumne and Calaveras Rivers versus river-sourced water supply development needs and opportunities.” Trap and haul operations could improve fish passage without large reductions in water supply development projects. Also, Calaveras County could perfect its area of origin water rights well before they are needed for domestic use, by storing and releasing the water to improve fishery conditions. In these ways, fishery improvements can occur without serious harm to water project operations. If the phrase is “Protecting and improving fish passage on the lower Mokelumne and Calaveras Rivers at the water diverters expense,” then you do identify a true conflict and a true dichotomy.

I have no idea what is meant by, “Wastewater treatment levels and technology versus environment and benefits.”

Our communities have been harmed enough by people promoting false dichotomies. There is no need for the MAC IRWMP to engage in that.

C) Recommendations

Make sure that the crosswalk between the sections in the MAC IRWMP and the IRWM standards they cover is in the Final MAC IRWMP Update.

Make the minor editorial changes noted above.

In the Final MAC IRWMP Update, admit that some of the water projects in the IRWMP have land use implications. That is no surprise to anyone. Water agencies supply water to people using land (e.g. farmers, ranchers, residents, businesses, and industries.) It is far more credible to simply admit that fact, than it is to imply that all the water projects have no land use implications, or that the water projects are not “intended” to have land use implications.

In the Final MAC IRWMP, correct the population and population density information on page 1-21 of the Draft MAC IRWMP.
In the Final MAC IRWMP, admit the weaknesses in the water demand projections for the region, and identify a project to improve the accuracy of the demand estimates prior to the next UWMP update.

In the Final MAC IRWMP, rephrase the water conflicts noted above so that they accurately represent the true areas of conflict.
3) Goals and Objectives

A) Standards

The objectives of the IRWMP identify the regional conflicts and water management issues the IRWMP will address. The IRWMP must explain the process used to select the objectives. The objectives should be measurable, so that success in meeting the objectives can be monitored and
reported. At a minimum, all IRWMPs must address: water supply reliability, water quality, threats from groundwater overdrafting; stewardship of aquatic, riparian, and watershed resources; groundwater contamination, and the water related needs of disadvantaged communities. (2010 IRWM Guidelines, pp. 21, 41-44.)

B) Challenge: To select useful Goals and Objectives without RPC members killing one another.

The discussion of Objectives is in Section 3.1.

In the tradition of how the Goals and Objectives were word-smithed by the RPC, I take issue with initial sentence in this section stating that the goals and objectives “were formed through a collaborative stakeholder process.” This was stakeholder negotiation, not collaboration. Each side represented its own interests, and did not try to arrive at mutual understanding. The result was consensus based upon exhaustion and pending deadlines, not upon mutual understanding.

When I raised this issue at the RPC, I was told that I was reading too much into the word “collaboration”, and that the Wikipedia definition of collaboration was the operative one for our RPC. That definition is as follows:

**Collaboration** is working together to achieve a goal. It is a **recursive** process where two or more people or **organizations** work together to realize shared goals, (this is more than the intersection of common goals seen in co-operative ventures, but a deep, collective, determination to reach an identical objective — for example, an intriguing **endeavor** that is creative in nature — by sharing knowledge, learning and building consensus. Most collaboration requires **leadership**, although the form of leadership can be social within a **decentralized** and **egalitarian** group. In particular, teams that work collaboratively can obtain greater resources, recognition and reward when facing competition for finite resources. Collaboration is also present in opposing goals exhibiting the notion of **adversarial collaboration**, though this is not a common case for using the word.

Structured methods of collaboration encourage **introspection** of **behavior** and communication. These methods **specifically** aim to increase the success of teams as they engage in collaborative **problem solving**. Forms, rubrics, charts and graphs are useful in these situations to **objectively** document **personal traits** with the goal of improving performance in current and future projects.

Since the Second World War the term "Collaboration" acquired a very negative meaning as referring to persons and groups which help a foreign occupier of their country—due to actual use by people in European countries who worked with and for the Nazi German occupiers. Linguistically, "collaboration" implies more or less equal partners who work
together—which is obviously not the case when one party is an army of occupation and the other are people of the occupied country living under the power of this army.

In order to make a distinction, the more specific term Collaborationism is often used for this phenomenon of collaboration with an occupying army. However, there is no watertight distinction; "Collaboration" and "Collaborator", as well as "Collaborationism" and "Collaborationist", are often used in this pejorative sense—and even more so, the equivalent terms in French and other languages spoken in countries which experienced direct Nazi occupation.

I still say that this was not a collaborative effort. We do not have “shared goals” and “identical objectives.” The water agencies have their pet goals and the NGO’s have theirs. The water agencies have their pet objectives, and the NGO’s have theirs. This is even more obvious when one looks at the agency–driven projects list that neglects key resource concerns like recreation, stormwater runoff, water recycling, agricultural land stewardship, and climate change. (See comments on Project Review Process.) As noted above in the discussion of Governance, we are not “equal partners who work together.” We are unequal negotiators. This process was not collaborative, like Rogers and Hammerstein writing a musical. It was competitive: much more like Ali v. Frazier.

I certainly hope that the IRWMP Update was not intended to reflect the negative meaning of collaboration; “referring to persons and groups which help a foreign occupier of their country.” However, some of my colleagues in the environmental community might think of me that way after they read the Draft MAC IRWMP

The four paragraphs on page 1 of Chapter 3 are an example of what I referred to above as “a one-sided and too rosy a picture of the actual planning process.”

C) Recommendation.

In preparing the Final MAC IRWMP, rewrite page 1 to report to DWR and the public the actual nature of the process, rather than some fictitious ideal.
4) Resource Management Strategies

A) Standards

The 2009 California Water Plan Update provides a list of Regional Management Strategies to encourage diversification of water management approaches. Each IRWMP must consider each of these Regional Management Strategies. To reduce water demand, the state encourages both urban and agricultural water use efficiency. To improve operational efficiency, the state encourages new conveyances, system reoperation and water transfers. To increase water supply the state encourages surface storage, groundwater storage, and recycled municipal water. To improve water quality, the state encourages drinking water treatment, groundwater remediation, pollution prevention, and urban runoff management. To improve resource stewardship, the state encourages economic incentives, ecosystem restoration, forest management, recharge area protection, water–dependent recreation, watershed management, and agricultural land stewardship. (2010 IRWM Guidelines, pp. 21, 44-46.)

B) Challenge: to select and employ the most suitable resource management strategies.

Section 3.2 properly selects the appropriate resources management strategies for the MAC Region.

C) Recommendations.

None.
5) Integration

A) Standards

While most IRWMPs will not have a separate section entitled “Integration”, the integration concept must be apparent in other sections of the plan. The intent is that, through development of the IRWMP, separate pieces of the regional water management puzzle are combined into an efficiently functioning unified effort. For example, the governance section may reflect a balanced process that enabled a diverse group of stakeholders to collaborate in developing the IRWMP. For another example, water projects in the IRWMP may reflect an effort both to improve the natural ecosystem and to enhance water supply. For another example, separate local water supply efforts may be combined to form more efficient regional projects. (2010 IRWM Guidelines, pp. 21, 46-47.)

B) Challenge: To chart a course from regional water management chaos toward order.

The MAC IRWMP Update integration efforts have had mixed results.
On the positive side:

Our efforts at identifying how project proponents integrate their monitoring information into the data management system have been good.

Our coordination efforts have been good at every level in the region. Conservation and water agency stakeholders are holding meetings to work out some surface level concerns. The MOKE WISE process may help to resolve inter-regional conflicts. There are two stakeholder groups working on FERC and forest issues in the region, to integrate the efforts of local, State, and Federal entities. (See comments on Coordination below.)

On the negative side:

The public outreach efforts have not resulted in meaningfully involving a diverse group of stakeholders, and many necessary stakeholders did not participate in the process. (See comments on Governance and Stakeholders)

It is still not clear how non-agency stakeholders can contribute data to the process, how their comments will be included in the plan, and how they are to interface with agencies when monitoring data raises concerns. Thus we have not effectively integrated the public’s role into the data management and project monitoring functions of the MAC IRWMP. Furthermore, there is still no certain funding for plan implementation monitoring. Thus we have failed to integrate plan monitoring, and the adaptive management processes that should follow it, into the MAC IRWMP. (See Data Management and Plan, Project Review Process, Performance Monitoring, and Governance comments.)

Critical cost and cost share data is missing from the Finance Section, and thus we are not effectively integrating ratepayer concerns into the MAC IRWMP Update process. (See comments on Finance.)

While the data from local water plans is being used in the IRWMP, it is being used uncritically, without regard for its quality or uncertainty. Integration of bad information into the MAC IRWMP Update is not the objective of the integration standard. (See comments on Governance, Regional Description, Relation to Local Water Planning, and Technical Analysis.)

There is precious little integration of water planning efforts and land use planning agency expertise and activities. (See comments on Relation to Local Land Use Planning.)

C) Recommendations

In each of the comment sections noted above as containing negative comments on integration, there are also recommendations for correcting those adverse conditions. Implement those recommendations to solve the integration problems.
6) Project Review Process

A) Standards

An IRWMP must include the process used to submit and to select the water projects included in the IRWMP. Project review must consider how the project contributes to achieving the plan objectives, and to implementing the regional management strategies. Also, project review must consider the project’s cost, financing, and economic feasibility. In addition, the project review process must identify the status of the project, and its technical feasibility. Furthermore, the project review must consider environmental justice considerations and the specific benefits of the project to disadvantaged communities. Next, project review must evaluate the project’s contribution to climate change adaptation, and greenhouse gas emission reduction. Finally, the project review must consider a project’s strategic role in IRWMP implementation. An IRWMP includes a list of the selected projects that systematically compares the aforementioned factors. This information should be used in prioritizing projects. (2010 IRWM Guidelines, p. 21-22, 47-51.)
B) Challenge: to accurately convey the project review process and results.

Section 4.1 of the Draft MAC IRWMP discusses the project review process.

A careful review of the Appendix A Tables on Tier 1 Screening reflects that some resource management strategies are seriously neglected in the project list for the MAC IRWMP Update.

For example, only six of our 37 projects address stormwater flows and transport of sediment and contaminants, and only 4 projects address urban runoff management. Given that one of AWA’s justifications for the $13.5 million Gravity Supply Pipeline project is that the new point of diversion is less contaminated by storm runoff from rural residential development, one would think that there would be more projects to remediate this adverse water quality impact.

Only 6 of the 37 projects involve recycling municipal water and only 4 involve matching water quality to use.

Only 6 projects involve recharge area protection.

Only 2 of the AWA’s 24 projects improve tribal waters, even though they have a significant Native American population in their service area. Only 4 of AWA’s 24 projects ensure equitable distribution of benefits. This confirms concerns found in comments by the Ratepayer Protection Alliance.

Although the region’s politics is dominated by anti-regulation and pro-economic incentive rhetoric, there are only 4 economic incentive projects.

Despite the historical and current prominence of the agricultural sector in our region, there are no agricultural land stewardship projects.

A review of the Tier 2 Evaluation table also helps to identify holes in the project list. No projects were ranked high with regard to Criterion 7: Encourage Climate Change Adaptation of Mitigation. Only four were ranked medium. All the rest were ranked low. Climate change is one of the areas that is supposed to be a major focus of improvement for the MAC IRWMP Update, since the 2006 plan did not meet the current climate change standards. Also, climate change is a very high State priority.

In Chapter 4, on page 1, the Draft MAC IRWMP states that project solicitation will occur at least every two years, and that “More frequent calls for projects may be conducted as deemed appropriate by the UMRWA Board of Directors.” A project call in May of 2013 might be useful to help the MAC IRWMP project list strategically include more projects that address these policies, statewide priorities, and resource management strategies that are currently under-subscribed on the project list.
Section 4.1.3 describes the rating process in the passive voice. Please identify who rated the projects for each criterion, and the information used as the basis for this rating.

With regard to Criterion 8: Minimize Implementation Risk, the vast majority of the projects were ranked high. However, this is based solely on self-assessment of the project by the applicant. This needs to be disclosed in the IRWMP. By contrast, comments on the project list by representatives of local public interest groups found that the implementation risk was not minimized for the majority of the projects. (See Exhibit 2, Exhibit 3, Exhibit 17 – Comments of Muriel Zeller May 2012.) These very groups have a proven track record of successfully gauging the risk of implementation, and retarding project implementation thorough public advocacy, administrative appeals, litigation, and rate protests. To include in this IRWMP table (Tier 2-Evaluation, Step 1 Apply Evaluation Criteria) only the project specific risk assessment of the project proponent, and to not include anywhere in this section of the IRWMP the risk assessment of public commenters, is misleading to the public and to DWR. When you know that DWR will be relying upon the assertions of material fact in the MAC IRWMP to make multimillion dollar allocations of state funds, you should be much more careful not to be misleading. The State Attorney General’s Office takes a dim view of fraud perpetrated upon the State of California.

With regard to Criterion 9: Best Project for Intended Purpose, again the ranking is a self-assessment by the project proponent. This needs to be disclosed in the IRWMP. It is not surprising that all but one project received a high ranking in this category. (See Appendix A, Table Tier 2-Evaluation, Step 1 Apply Evaluation Criteria.) Again, these rankings do not reflect the public comments on these projects.

By not allowing project scoring to be influenced by comments from the public and other RPC members, the RPC skewed the results of the project review process. As a consequence, the project review process ranks the vast majority of the projects as high, and does not serve as an effective tool to distinguish projects on their merits.

On September 24, the RPC was presented with an additional paragraph and table to reflect the additional review of public comments on the project. That paragraph states, “[T]he scores of a subset of the projects included in the Plan have not yet been reviewed and adjusted to the mutual satisfaction of all RPC members.” That suggests that the projects that have been vetted have had the scores adjusted to the mutual satisfaction of all RPC members. That is not the objective of the review of public comments. The review of public comments is categorizing the level of disagreement on projects. Some disagreements are being resolved. Other disagreements are not being resolved, and are being scheduled for future discussion. Still other disagreements are so fundamental that they are beyond fruitful discussion. It has been made abundantly clear to the RPC members that they can only influence project application information and scores to the degree that the project proponent agrees to do so. If the project proponent says no change, then no change it is. The IRWMP should not overstate the depth of agreement being achieved by the discussion of the projects.
Section 4.1.5 is a new section that lists consideration for future updates. Throughout these comments I make both recommendations for actions to precede adoption of the MAC IRWMP Update in January 2013, and recommendations for actions prior to DWR’s 2014 review of the MAC IRWMP Update. The latter recommendations I would add to the MAC IRWMP Update's new list of considerations for future updates. (See Exhibit 18, Recommendations for Future Amendments.)

The project review section did not include an appendix containing the project applications. The project applications are the meat of this section. Without the project applications, the projects are reduced to mere numbers and titles. Without the project applications, we lose the coherent connection between the merits of the projects and their scores and rankings. It is much easier to get public and State support for a project to provide more fire safety for a disadvantaged community in a high fire risk area by replacing their decaying redwood storage tanks, than it is get support for a project called “Number 16 Lake Camanche Water Storage Tank & Transmission Main” that has 5 high scores and an overall ranking of High. In addition, the project applications help to identify the amount of work needed on these projects. In short, without the project applications, the public and the state will not find the projects compelling. This is another instance when our limited number of projects affords us the opportunity to provide better information in our IRWMP than other regions can.

C) Recommendations

Add a project call in May of 2013 to strategically include more projects that address the policies, statewide priorities, and resource management strategies that are currently under-subscribed on the project list.

Identify who rated the projects for each criterion, and the information used as the basis for this rating.

Disclose those criteria for which the ranking is based upon the proponent’s self-assessment.

Change the score ranges that result in a High, Low and Medium final priority to get a more normal distribution of the project rankings. For example, if 6 or more high scores resulted in a final High ranking, then 11 projects would be ranked High. If three or fewer high scores resulted in a final Low ranking, there would be 8 projects ranked low. If 4 or 5 high scores resulted in a ranking of Medium, then 18 projects would be ranked Medium.

Include an additional table in this section of the IRWMP that reflects how public comments on the project list ranked the projects with regard to “minimize risk of implementation” and “best project for intended purpose.” This information could be useful when the RPC and UMRWA consider which projects to include in a grant package for 2013. This table could help us achieve...
our goal of prioritizing projects that have the best likelihood of being completed in the planning horizon, and our policy of focusing on areas of common ground and avoiding prolonged conflict. Also, this table will provide DWR with the relevant information, and lets DWR decide what weight to give those comments. To withhold that information from DWR is not consistent with the intent of the public participation requirements of the IRWMP Guidelines. (2010 IRWMP Guidelines, pp. 20, 22, 23, 24, 27, 39, 56, 64-66.)

Correct the new paragraph in Section 4.1.3 so as not to imply that the project review process is resulting in a consensus among RPC members with equal bargaining power, and to avoid exaggerating the depth of agreement being reached over the projects and their scores.

To the list in Section 4.1.5 of considerations for future updates add the items listed in Exhibit 18 to these comments.

Add an appendix to the final MAC IRWMP Update that includes the project applications.
7) Impacts and Benefits

A) Standards

This section contains a screening-level review of project impacts and benefits, including those directly affecting environmental justice, disadvantaged communities, and Native American tribes. This review should be used in the future when plan performance is monitored, to see if some project benefits did not result, or if additional adverse impacts did result. Any such changes must be noted when the plan is updated. (2010 IRWM Guidelines, p. 22, 51-55.)
B) Challenge: To provide a general, balanced, comprehensive, and accurate the discussion of impacts and benefits.

Section 4.3 of the Draft IRWMP contains the impacts and benefits analysis.

In table 4-1 the term “Economic benefits” is not strictly accurate. According to traditional microeconomics, funding local infrastructure through grants paid out from state bond proceeds, the interest on which is paid by state taxpayers, does not result in an economically efficient allocation of resources. The actual benefit is to promote local prosperity. However, that comes at a cost to others elsewhere.

Table 4-1 needs to identify more potential impacts of projects.

Wherever the potential benefit is identified as “Economic Benefit”, the flip side of the project’s potential impacts must also be recognized. For example, as noted above, using this funding mechanism to finance local infrastructure in one place actually poses a real cost to those from another place who pay their taxes, but do not benefit from the program. Thus there is an interregional potential impact of economic loss.

For yet another example, those places that do get grants may create economic hardship for ratepayers who have to come up with the matching funds and operation and maintenance costs. If the ratepayers refuse the rate increase to pay for the operation and maintenance costs, the grant receiving agency may be thrown into fiscal crisis.

With regard to conjunctive use, this benefit comes with a cost to freedom of groundwater use. Those who use groundwater without regulation now will have to come under regulation for conjunctive use to work. This potential impact can be characterized as new regulation or loss of freedom.

With regard to water supply projects and storage facilities, one of the major impacts is recreational use displacement. People who liked flowing water recreation may have that recreation displaced by a reservoir.

Finally, with regard to water supply, water storage, water conveyance, and water treatment facilities, growth inducing and secondary impacts from growth may result.

Generally speaking, there is an imbalance in the treatment of the benefits and the impacts as presented in section 4.3.2. Following the description of each type of benefit, there is a bullet list of potential projects that could result in that benefit. This analysis goes on for 3.5 pages. At the end of that analysis there is a very general statement about potential impacts, without reference to the type of projects they correspond to. There is no bullet list of projects that could result in the impact. This analysis covers less than a page.
With regard to one project, MOKE WISE, Duck Creek Reservoir may still become a project component. Duck Creek reservoir was a component of the MOKE WISE predecessor, IRCUP. Duck Creek remains a priority for the MOKE WISE participants from San Joaquin County. That water storage project is controversial because it would involve a San Joaquin water agency condemning the land, and a wildlife conservation easement on the land that was donated to the California Department of Fish and Game. If public agencies begin to target devalued conservation easement lands for the location public infrastructure, then landowners will stop donating or selling conservation easements. These easements are not only the key to helping the State protect rare plant and wildlife habitat, they are also the key to developers statewide mitigating those habitat impacts to secure project approvals. Ironically, this mitigation need is no more prominent than in San Joaquin County, where programs are in place requiring the acquisition of agricultural land and wildlife habitat offsets.

Since this is a specific impact of a specific component of one project, it may not be appropriate for charting or listing in the very generalized discussions of impacts in this section. Nevertheless, given the gravity of this potential impact, and its statewide implications, it would be a good idea to include a paragraph on it somewhere in Section 4.3. It would improve the degree that we are integrating the concerns of a state agency and RPC members into our IRWMP. I think we would be remiss if we left the concern out of the IRWMP entirely.

C) Recommendations

Change the term “economic benefit” to “local prosperity” in Table 4-1.

Add the additional impacts noted above to Table 4-1.

Balance the presentation of benefit and impact information in Section 4.3.2, so that the description of potential impacts is followed by a list of the type of projects that could generate that impact.

Add a paragraph on the potential of Duck Creek Reservoir to end the use of conservation easements as we know them.
8) Plan Performance and Monitoring

A) Standards

The IRWMP must include performance measures and monitoring to be used in evaluating whether the projects are being implemented, and whether the plan is achieving its objectives. The IRWMP must explain who is responsible for evaluating plan implementation, how frequently they will do so, and who will maintain the monitoring data collected. Also, the IRWMP must identify who is responsible for project-specific monitoring, and when project-specific monitoring plans will be prepared. Such subsequent project-specific monitoring plans will include: a table of what is being monitored for each project, remedies if problems are discovered from monitoring; the monitoring location, frequency, and protocol; the methods of data collection, storage, and sharing; and procedures to fund and keep monitoring on schedule. Finally, the IRWMP must identify the adaptive management procedures for using the plan implementation monitoring data to amend and improve the IRWMP. (2010 IRWM Guidelines, p. 22, 55-56.)
B) Challenge: To fund plan performance monitoring and specify adaptive management procedures.

Section 5.1 of the Draft IRWMP covers plan performance and monitoring.

In Section 5.1.1, on page 1, the Draft IRWMP states, “A MAC Plan Performance Review will be conducted every three years (or as deemed appropriate by the RWMG when funding is available) to evaluate progress made toward achieving Plan objectives.” Thus, plan monitoring is uncertain at this time. It is subject to the availability of funding. It is telling that, in 2012, no plan monitoring results are available for the 2006 IRWMP.

Plan monitoring is a key component of the adaptive management required of IRWMP implementation. (2010 IRWM Guidelines, p. 55.) Without plan monitoring, there is no way to determine if the plan is being effective, and no way to make interim adjustments if the plan is not performing well. If UMRWA cannot make a financial commitment to MAC IRWMP plan monitoring, then perhaps it should not qualify as the Regional Water Management Group for the MAC Region.

Section 5.1.3 indicates that after project monitoring, “This information will be fed back into the project’s decision-making structure to adapt the project to better meet its overall objectives.” That statement is very vague. Which decision-making structure will be activated? Will the RPC or UMRWA, that recommended the project for funding, review the project monitoring data to see if it meets the objectives of the MAC IRWMP? Will the implementing agency review the project implementation to see if it is meeting the agency primary objectives, which may not be as broad as those of the IRWMP? Will DWR, the project’s funding partner, review the data to see if it meets DWR’s primary objectives, which also may differ from those of the agency or the IRWMP? Will any of these evaluations alert the public that this review and reconsideration of these projects is going on, and that public input is welcome? The general statement in the plan: “Monitoring will also provide a clear reporting mechanism for the public,” does not specifically guarantee public participation in the project review process. Adaptive management is a key part of the IRWMP. The plan needs more detail on its application.

C) Recommendations

Make a definitive commitment to fund plan monitoring.

Specify the adaptive management procedures in a way that identifies who will do what, when, and how.
9) Data Management

A) Standards

The IRMP must include a process for data collection, storage, and dissemination to IRWMP participants, stakeholders, the public and the State of California. This information includes project designs, feasibility studies, and information collected in every phase of project development from planning through construction, operation, and monitoring.

The IRWMP should explain the data to be collected, the data collection techniques, how stakeholders contribute data, who will maintain the data, quality control measures for data, data sharing procedures with interested parties and government agencies, and efforts to generate and share data compatible with State databases. (2010 IRWM Guidelines, p. 22, 56-57.)

The public availability of this data is essential to ensure the accountability of local and state agencies. This data will help to determine if projects delivered the promised benefits, if their benefit and cost analyses in the IRWMP were accurate, and if the State chose to spend money
wisely. This data management procedure will help stakeholders in an ongoing effort to provide information useful to the next IRWMP update.

**B) The Challenge: To provide a platform for sharing information that is a two way street.**

Draft IRWMP Section 5.2 deals with data management. It explains how project sponsors can provide information to the centralized DMS. However, there is no indication of how members of the public, or those on the RPC who are not project sponsors, can provide information to the centralized DMS. These stakeholders must also be allowed to contribute data in some fashion. Again, we are this late in the IRWMP process, and there is still no indication how information provided by stakeholders will be managed.

The Guidelines want the data management section to explain how data will be “shared between members of the RWMG and other interested parties and other interested parties.” That is a two way street. Section 5.2 talks about how monitoring data from project sponsors will get to the public. It does not explain how the public can provide information to the implementing agencies. What good is public review of monitoring data if there is no procedure for bringing concerns forward to the proper authorities? Does one go directly to the project sponsor with concerns? To the RPC? To the UMRWA Board? To the regulatory agency with jurisdiction? To DWR? Who in these agencies is responsible for receiving and responding to concerns regarding the IRWMP and its projects? What is their contact information? These questions should be answered in Section 5.2.

On pages 8 and 9 of Chapter 5, the Draft IRWMP identifies data needs for the MAC Region. These include water temperature, quality and streamflow data, watershed conditions, and the location of septic system problems. Is the systematic collection of this data part of the MAC IRWMP implementation? Is this data collection one of the MAC IRWMP projects? If not, how will it be funded? Is this data already collected periodically, and simply needs to be displayed on an accessible website?

On page 9, the plan goes on to state that, “[T]he MAC IRWM program will continue to search for data relevant to the MAC IRWM resource management strategies on an ongoing basis. Any identified data gaps will be filled through the identification of new data sources or new or expanded monitoring activities.” Is this data collection one of the MAC IRWMP projects? If not, how will it be funded? This affirmative declaration seems in conflict with other statements in the plan noting that plan monitoring is not a firm commitment, but contingent on available funding. [E.g. see, Section 5.1.1, page 1, “A MAC Plan Performance Review will be conducted every three years (or as deemed appropriate by the RWMG when funding is available) to evaluate progress made toward achieving Plan objectives.”]
Some additional data needs related to the projects and plan include:

- Identifying the natural hydrograph for ephemeral the streams that CCWD wants to use to distribute water.

- Getting AWA to complete a strategic capital improvement plan that assesses the cost of projects per beneficiary, and assess ratepayer ability and willingness to pay for infrastructure improvements.

- Identifying and reconciling the growth projections in Amador and Calaveras counties used by the local, regional, and state planning and public service agencies; and the expected level of growth that can be accommodated by these agencies without a decline in level of service.

Section 5.2.1 identifies data collection from “project sponsors” for posting in a centralized DMS on the EBMUD server. At the September 24 RPC meeting, the EBMUD representative had some questions about how that will be administered and funded.

C) Recommendations.

Identify ways that the public and stakeholders other than project sponsors can provide information to the DMS.

Provide instructions for the public and stakeholders to communicate concerns to the relevant authorities, in a manner that will result in a prompt response to the concern.

Make a clear and unambiguous commitment to plan monitoring and data collection, and identify the means for funding the efforts.

Add the data gaps noted above to the list on pages 8 and 9 of Section 5.2.1 of the Draft IRWMP. Fill those gaps.

Work out the deal with EBMUD to store the DMS on their server.
10) Finance

A) Standards

In most cases, State funding provides only a very small supplement to the local funds necessary to implement water and wastewater treatment projects. Most of the project costs will be borne by local entities. The Finance section should explain how the many funding pieces fit together for each project.

The Finance section of an IRWMP includes a description of funding for ongoing IRWMP implementation, and of funding sources for specific projects and programs. Project information should include sources of funding for project construction, operation and maintenance. The percentage of funding from each source should be identified. The IRWMP should identify the certainty and longevity of each funding source. The intent of this section is not to demonstrate that all project funding has already been secured, but to demonstrate that the project proponent has thought through how the entire project will be financed. (2010 IRWM Guidelines, pp. 22, 58-59.)
B) Challenge: Disclosing O&M costs and the percentages of funding from each source.

Section 4.4 and Appendix B deal with financing the plan. The first paragraph of Section 4.4 provides a refreshingly realistic assessment of the harsh facts regarding project funding.

The discussion of Capacity Fees on page 23 and 24 of Chapter 4 states that they are used “to achieve and maintain equity among past, present, and future customers.” However, there is no mention that this is a controversial issue for project proponent AWA. One of the chief concerns of the comments by the Ratepayer Protection Alliance is the fact that, in the recent past, connection fees have not provided for equity among present and future AWA customers. Their concern is that implementation of MAC IRWMP Update projects proposed by AWA will similarly not provide for customer equity. This concern is supported by the fact that AWA could only assure that it would meet the statewide priority of equitable benefits distribution for 4 of its 25 projects. (Appendix A, Table, Tier 1 Screening, Step 1, Reflected Goals and Statewide Priorities.) This ratepayer concern should be disclosed in this section.

The discussion of recycled water and its costs on pages 25 and 26 is too simplistic to be objective. First of all, recycled water is not a “non-water supply” project. Recycled water is an addition to an agency’s water supply. Second, when allocating the cost of recycled water, one must also consider if there is a cost saving to the wastewater disposers. In that instance, some of the costs of the recycled water should not be charged to the end user, but to the wastewater disposers. Water recycling is not a good example for the topic under discussion.

The table in appendix B does not identify operation and maintenance costs for projects, and it does not disclose the funding sources by percentage of costs, as does the sample table in the IRWM Guidelines. These are huge issue related to the financial feasibility of the IRWMP. As noted in this section, payment of the “O & M” costs “will likely come primarily from local sources including rates, fees, and assessments.” Also, ratepayers want to know what their share of the total project costs will be. In these rural counties with very few ratepayers, the personal share of project costs can skyrocket quickly. Local economic conditions are not good, and these costs can result in real economic hardship. The lack of this cost and cost share information is especially difficult for the under 7,000 AWA connectors, who are looking at an IRWMP that proposes over $230 million in capital improvements, and who have no Capital Improvement Plan to consult for further details.

Not disclosing the “O&M” costs and not disclosing the percentage of total costs to be borne by local funding sources will not convince DWR that we have “thought through financing of the plan and implementation of the projects.” (2010 IRWM Guidelines, p. 59.)
C) Recommendations

Disclose expressed concerns by the Ratepayer Protection Alliance that, in practice, capacity fees charged by the AWA are resulting in an inequitable share of costs being borne by existing customers relative to future customers.

Delete the recycled water example from the discussion of “O&M” costs.

As discussed at the RPC meeting on September 24, encourage project proponents to estimate the O&M costs and the local cost shares as soon as possible, and add them to the table in Appendix B by 2014.

When considering projects for the 2014 grant package, the RPC may want to favor those noncontroversial projects that also have estimated O&M costs and local cost share percentages.
11) Technical Analysis

A) Standards.

The IRWMP must reference the documents and the data analyses that support the plan. The intent of this standard is to ensure that the IRWMP is based upon sound information. The IRWMP must explain the techniques used to forecast water management needs throughout a plan’s 20-year horizon.

The IRWMP must explain why the information used is adequate, and provide references to its sources. For each data source, an IRWMP explains what the study did, what outcomes resulted, what level of uncertainty applies to the data, and how the data was used in the IRWMP. Any data referenced should be made available to the public upon request. An IRWMP identifies data gaps and how they will be bridged by IRWMP implementation. (2010 IRWMP Guidelines, pp. 22, 59-60.)

B) Challenge: To disclose the uncertainty regarding data, and the need to fill data gaps.

According to the draft table that was supposed to go into Chapter 1, Chapter 4.5 deals with the technical analysis issues.
Section 4.5 directs the reader to the table in section 4.2.2 for the list of key planning reports used in the MAC IRWMP Update. That list includes the current AWA and CCWD Urban Water Management Plans. That list does not identify the level of uncertainty for any of the data in any of the reports relied upon in the MAC IRWMP Update. As noted above, this disclosure is required by the 2010 IRWM Guidelines. As noted in the Governance and Regional Description sections above, and the Local Water Plan section below, there is a huge level of uncertainty regarding the demand data in the Urban Water Management Plans.

In addition, Section 4.5 provides no specific information regarding identified data gaps, and no specific information about how those data gaps will be filled by implementation of the plan. Even where there are admitted data gaps, the MAC IRWMP Update does not specifically identify the need for those studies as part of a project, or otherwise ask for funds to fill those data gaps. As noted above, CCWD’s irrigation water study called for further analysis of irrigation water demand. That data gap creates a huge credibility gap for the MAC IRWMP. Yet no CCWD project proposes to complete the studies needed to refine that assessment. Another major data gap is that, although the AWA has proposed over 230 million dollars in projects, AWA has no capital improvement plan that identifies, phases, prioritizes, or finances these projects, or has the approval of the AWA Board and its ratepayers. Yet no proposed AWA project includes the funding and preparation of such a strategic capital improvement plan. Also, although CCWD proposes to “restore” ephemeral streams by using them as conduits to deliver water (Project 23), the project does not specifically call for the study of the previous natural hydrograph to guide this restoration. (CCWD, Project 23, New Hogan Reservoir Pumping Project Application, p. 4.) Unless the data gaps are identified and filled, incomplete agency information may just languish as such, and remain a shaky and controversial basis for seeking project funding.

C) Recommendation

Before 2014, review the studies that form the basis for the MAC IRWMP and the technical feasibility of the projects. Assess the reliability of their data, and put that information in the tables in Sections 4.2.2 and 4.5. Also, where those studies identify data gaps, identify those gaps in Section 4.5. Include in the IRWMP a request for funding to fill the data gaps in the documents upon which the plan relies. Also, if the data gaps are related to specific proposed projects, add to those project proposals the completion of the additional studies, and the funding needed to complete them.
12) Relation to Local Water Planning

A) Standard

For regional water planning to be effective, it must objectively and fairly incorporate local planning information. The intent of the standard is to ensure that an IRWMP is congruent with local plans, and includes information from current local water plans. Thus, an IRWMP will consider local plans for groundwater management, urban water management, water supply assessments, agricultural water management, flood protection, watershed management, stormwater management, low impact development, and disaster response.

In describing the use of these plans, the IRWMP includes the jurisdiction of the local plan, when it is updated, how it may be influenced by the IRWMP, inconsistencies between the local plans and the IRWMP, and how those inconsistencies might be resolved. An IRWMP must include coordination between local and IRWMP content, information from local plans that is both current and accurate, information from local plans regarding water management and climate change issues, and water management tools or criteria from local plans. (2010 IRWM Guidelines, pp. 22, 60-61.)
B) Challenge: To include the whole truth in the IRWMP Update.

Section 4.2 of the IRWMP addresses this issue. This section includes a list of “initiatives and accomplishments” “indicative of local water planning” and its “interconnectivity with the IRWMP Update. The first example listed is “Inter-regional Conjunctive Use Concept Evaluation.” and its identification of the Inter-regional Conjunctive Use Project.” (DRAFT IRWMP, Chapter 4, p. 8.)

Unfortunately, because there is a lot not disclosed in that discussion of IRCUP, this is another section of the Draft MAC IRWMP Update that presents a one-sided and too rosy a picture of the actual planning process. What that discussion does not disclose is that the Integrated Regional Conjunctive Use Project (IRCUP) included two projects (Duck Creek Reservoir and Pardee Reservoir Expansion) strongly opposed by local, regional, and statewide conservation groups; and the former criticized by the State Department of Fish and Game. (Exhibit 19, DFG, Letter on Duck Creek, pp. 2-3.) In fact, the IRCUP failed to make the cut for inclusion in the Draft MAC IRWMP projects list. Furthermore, despite promises in the adopting resolution for the 2006 IRWMP, EBMUD did not involve Amador and Calaveras stakeholders in a collaborative process to plan for Pardee Reservoir Expansion. Instead, they formed a Community Liaison Committee that did not include Amador and Calaveras representatives. (Exhibit 20 – 2009 EBMUD Hearing, Testimony of Steve Wilensky, p. 4.) Not surprisingly given the extent of public opposition to these projects, both of the Duck Creek and Pardee Expansion projects have already resulted in litigation. (See Exhibit 21 – Ruling in Foothill Conservancy v. EBMUD.) Thus, while I would somberly agree to characterize the process that birthed IRCUP as unfortunately “indicative of local water planning,” I would not characterize this historical mistake as having direct or close interconnectivity with the MAC IRWMP Update. Instead, today there is some hope for conflict resolution on this front, because the next inter-regional planning process, MOKE WISE, includes more participation by local conservation groups at the feasibility study and project design phases.

Section 4.2.2 indicates states that the MAC IRWMP update was developed “based on collaborative discussions” that identified shared needs and “opportunities for collaboration.” The section then goes on to list the data sources used in the IRWMP. The highly finessed implication being that the data sources used for the plan were the result of the immediately aforementioned collaborative effort. That implication is not accurate.

Two RPC members were concerned that the information to be used in the IRWMP from the local Urban Water Management Plans was not “Relevant, current and accurate” as required by the IRWM Guidelines. (2010 IRWM Guidelines, p. 61.) The two RPC members were told by the RPC facilitator, the RPC consultants, and the RPC members that the data from the UWMPs would be used, and that any questioning of that data was outside the scope of the RPC. The minutes of that meeting do not reflect that any procedure was agreed upon to allow non-agency RPC members to contribute local water planning data into the IRWMP process. The
disagreement was noted and to be recorded in the MC IRWMP, Section 1.4.1. End of story.
(See Minutes of RPC Meeting 10/12/11, p. 5.)

Thus, unless the NGO’s could convince the agencies to change their data voluntarily, the consultants have said that they will accept only the agency version, regardless of ample evidence to the contrary.

As noted above in comments on the Regional Description, the huge future growth in irrigation water demand from the CCWD UWMP is based upon a weak study using 40-year old data. Evidence of the growth or decline of irrigated agricultural lands in the Sierra Nevada Foothill Counties over the last decade provides no indication of such enormous growth in irrigated acreage, and indicates that some counties have actually lost irrigated acreage over the last decade. Furthermore, CCWD’s study did not use current water costs and crop values to estimate the financial feasibility of irrigation. Available data suggests that CCWD’s notion that every acre of land available for irrigation will be economically feasible to irrigate with 3.5 acre-feet of water per acre is without basis in fact.

Nevertheless, it is only that inflated irrigation data that is reflected in the MAC IRWMP, with no reference to the study’s disclaimer, or to the other data suggesting that the demand estimate is inflated.

Similarly, the above comments on the Regional Description explain the weaknesses in the demand estimates derived from the AWA UWMP.

C) Recommendations

First, edit the discussion of IRCUP, to provide a detailed explanation of how it failed, and to explain how it was not a collaborative effort of relevant regional stakeholders. After that, feel free to acknowledge what was learned, and how we hope to avoid this mistake in the future. If we cannot demonstrate adaptive management based upon the 2006 MAC IRWMP, how can we convince DWR we will do adaptive management in the future?

Second, in the section regarding the local water planning documents used in the IRWMP, please delete the three misleading introductory sentences to Section 4.2.2 on page 9, and instead provide a detailed explanation of the unresolved controversy over the quality of the water demand data.
13) Relation to Land Use Planning

A) Standards

The IRWMP should include processes that foster communications between regional water managers and land use planners. (2010 IRWM Guidelines, pp. 23, 62-64.)

The IRWMP should explain the current relationship between regional water planning and local land use planning, and future efforts to improve collaboration. It should answer questions like: How do water managers and planning agencies interact? Do they provide input on each other’s projects? Are local land planners included in the IRWMP governance structure or project selection committee? Do the answers to these questions suggest that improvement is needed in future communications and collaboration? If so, the IRWMP should identify these future efforts. For example, it could suggest new forums needed for these professionals to interact.
To facilitate more effective IRWMP implementation, water agencies can seek useful input from land use agencies on issues such as flood management, groundwater recharge, conveyance facilities, stormwater management, water conservation, and watershed management. In turn, land use agencies can get useful advice from water agencies on landscaping programs, recreation, long-term planning, development review, public safety, and habitat management.

The intent of the standard is to require an exchange of knowledge and expertise among these resource professionals. The goal is for these managers to make informed, collaborative, and proactive decisions. The old model of reactive decisionmaking must be changed.

B) Challenge: To improve the working relationship between land use planning and water agencies.

The crosswalk table indicates that Chapter 4.2 discusses Standard 13, Coordination with Water and Land Use Agencies. That section only mentions that local governments were represented in the 2006 MAC IRWMP. There is no mention of planning staff participation, nor any sharing of information between land use planning and water agencies.

During this update of the MAC IRWMP, the staff of the local planning agencies (E.g. City & County Planning Departments, public works, environmental health, LAFCO) have not attended RPC meetings or participated in the update process. Nor have representatives of the service districts and utilities (E.g. fire districts, ACTC, Calaveras COG, PG&E) attended, even though those entities have a key role in future development. Thus, these agencies continue to engage in short-term and long-term planning in the comfort of their own professional silos, if at all.

While State Law requires water supply studies prior to local government approval of large projects (500 units or more), such large projects are infrequent in these rural counties, and there is really very little other coordination between local water agencies and local land use agencies. As a result, water agencies continue to plan for water delivery to ridiculous levels of cumulative buildout, without consideration for the work of land use agencies, or coordination with local land use authorities. For example, AWA assumed ridiculous levels of upcountry development, based upon ludicrous planning assumptions, in its environmental assessment of the Gravity Supply Line (GSL) project. (See Exhibit 7 - Foothill Conservancy GSL Comment Letter, 12/29/09.) When ratepayers asked what priority level the GSL had in the AWA Capital Improvement Plan, they found AWA had no long-term capital improvement plan. The petal hits the metal when ratepayers are asked to pay for these seemingly randomly selected capital improvements. The AWA has lost three rate protests in recent years. (See Exhibit 3 – RPA 218 Protest Results.)

For another example, in Calaveras County the Urban Water Management Plan is preparing to deliver 100,000 acre feet of irrigation water to 29,000 acres of irrigated agriculture. No such level of growth in irrigated agriculture is mentioned in the current Calaveras County General
Plan, or in the draft Agriculture Element of the proposed General Plan Update. On the positive side, both CCWD and Calaveras County are presuming average annual population growth between 1.43% and 1.97%. (Exhibit 11 – Calaveras GPU Alternatives Report, p. 8.) However, the Regional Transportation Plan indicates that the County can only fund about a third of the costs of the roads needed for that growth. (Exhibit 22 – Calaveras COG Draft RTP, pp. 110-114.) Thus, the failure to get these agencies together is resulting in isolated efforts that fail to realistically plan for the future prosperity of the region.

C) Recommendations

First, during 2013 there needs to be meetings (or series of meetings) in Amador and in Calaveras counties so that each of the land use and public service agencies can present their long-term plans for serving existing residents and the additional population and economic growth they expect. Then they need to compare these plans for consistency. Where inconsistencies exist, the agencies and districts need to come to some agreement on some basic level of growth that they all can accommodate. Each agency can then make an interim plan to most efficiently and effectively serve the existing population and the additional basic level of growth. The projects that are needed to serve existing residents and that basic level of growth need to become a high priority for the agencies. Then, the projects in the IRWMP project’s list can reflect those high priority projects. The MAC IRWMP can be amended to describe these meetings and to summarize their results. Since both Amador and Calaveras counties are in the middle of comprehensive General Plan Update processes, now is the perfect time to begin these agency coordination efforts, and to inform those planning processes.

Second, there needs to be a quarterly public meeting of these agencies to exchange current project lists and to consult each other regarding the lists. It is shocking to me that AWA is adopting two CFDs, and not providing basic map information the LAFCO staff, simply because LAFCO approval is not required by law. If we are ever to get public support to implement government plans, the agencies will have to show more coordination and collaboration. As Air Quality planners in the Bay Area in the 1980’s, we met monthly with ABAG and Caltrans to review project lists and compare notes. Without communication and coordination, government planners with conflicting ideas just confuse the public they are supposed to serve.

Currently, Amador County schedules monthly meetings of its own staff to publicly review proposed land use projects. Lately, many of these meetings have been canceled due to lack of project applications to review. Perhaps one of these meetings per quarter could be re-directed toward the interagency sharing and discussion of projects and plans discussed above.

These efforts would meet the IRWM standard to describe “future efforts in the process of establishing a proactive relationship between land use planning and water management.” (2010
IRWMP Guidelines, p. 63.) The IRWMP Guidelines create a reason and a financial incentive for initiating and continuing these inter-agency communication efforts.

If we are not going to do the above, at least explain what is being done to coordinate water and land use planning in the MAC Region. For example, a draft water element for the Calaveras County General Plan Update includes many provisions for getting the County and the CCWD to work together better. (See Exhibit 23, Calaveras GPU Draft Water Element.) This issue of land use and water agency coordination is not treated with any detail in section 4.2 of the Draft IRWMP. If precious little is being done, then admit that. Don’t just “finesse” the issue.
14) Stakeholder Involvement.

A) Standards

The intent of the standard is to ensure that all stakeholders have an opportunity to actively participate in the IRWMP decisionmaking process on an on-going basis.

Stakeholders are needed to gather regional information and to make regional decisions. The IRWMP processes should support stakeholder involvement. As noted above in the comments on the Governance section, the IRWMP explains the efforts made to identify, to inform, to invite, and to involve in the planning process water purveyors, wastewater agencies, flood control agencies, city and county governments, special district, electrical utilities, Native American tribes, self-supplied water users, environmental stewardship organizations, community organizations, tax-payer groups, recreational interests, industry organizations, state and federal agencies, and disadvantaged communities. The IRWMP must explain how the collaborative process engaged a balance of the interest groups. (2010 IRWM Guidelines, p. 23-24, 64-67.)
B) Challenge: To Improve Public Outreach.

As noted above in the comments on the Governance section, the problem is that the lengthy commitment to participate on the RPC (August 2011 to January 2013) drove stakeholders away from the planning process. The only other opportunity to participate is through the public comment process. That process left much to be desired as well. It provided only a short time to review and comment on the draft IRWMP (September 14 to October 3). (With regard to local projects and plans subject to CEQA, the public is used to getting at least a 30-day review period.) As a group, the RPC resisted considering public comments received on the IRWMP projects list in May. It was only later, after RPC members and agency staff began to meet on their own to resolve project differences, that the RPC accepted the conflict resolution procedure. There need to be more opportunities to participate and to provide input into the planning process between the two poles of RPC membership and public commenter.

Currently, our RPC has limited regular participation and limited intermittent participation. The water agencies, the Foothill Conservancy, the CPC, and the City of Plymouth attend regularly. We have had occasional visits from the City of Jackson, and the Forest Service. Trout Unlimited came initially and withdrew.

Unfortunately, a lot of important parties did not attend the RPC meetings. Wastewater Agencies ARSA and San Andreas Sanitation District did not attend. The County Health Departments, responsible for regulating septic systems and small potable water systems, did not attend. The electrical utility, PG&E did not participate, even though their proposed pump-storage facility at Bear River Reservoir may conflict with EBMUD and its partners’ plans for increased water storage at Lower Bear River Reservoir. Special Districts like the Fire Districts, who depend on the upgraded pressurized water systems under consideration for funding, did not participate. BLM did not attend, even though they are a major landowner with jurisdiction over river recreation and abandoned mines and their drainage remediation. FERC did not participate, even though they have jurisdiction over power production at reservoirs in the region. Native American Tribes, a key constituent that the IRWMP is supposed to consult and serve, did not participate. Taxpayer and ratepayer groups did not participate in the RPC, but one did provide public comments on the projects.Though one realtor did sign up to participate, she did not subsequently attend, even though she was the only representative from the commercial and industrial sector.

Unless the RPC creates more opportunities to get input from these very important parties, the MAC IRWMP Update’s list of participants will appear too narrow, and may harm our chances of having a plan that qualifies our grants for funding in 2014.
C) Recommendations.

First, try to hold a series of individual meetings to invite key missing stakeholder groups to put their two cents worth in on the plan (i.e. city and county governments planning and health department staff, school districts, Calaveras COG & ACTC, electrical utilities, Native American tribes, self-supplied water users, community organizations, tax-payer and ratepayer groups, recreational interests, industry organizations, state and federal agencies, and disadvantaged communities.). For example, on one day you could have a meeting with City and County planning staff, COG staff, ACTC staff, School Districts.

If this does not work, delegate to RPC volunteers the responsibility of meetings one-on-one with additional stakeholder groups or their representatives. Provide RPC volunteers with questions to ask and materials to share.

Note the suggestions of these new stakeholders. If project ideas result from these meetings, encourage participants to sponsor or cosponsor a project proposal for addition to the plan. Prior to the 2014 grant package submittal, add notes on their suggestions in the implementation section, and amend the plan as needed based upon their suggestions. It is not too late for the MAC IRWMP Update to do a more comprehensive job of outreach to important participants. If we fail to do so, we will only have ourselves to blame should DWR find this flaw fatal to our MAC IRWMP.

When the next comprehensive IRWMP Update takes place, work these stakeholder subcommittees into the regular planning schedule.
15) Coordination

There are three levels of required coordination.

First, the IRWMP must establish a process to coordinate stakeholder activities to avoid conflicts. This could include bringing local water agencies and stakeholders together in a setting where projects and activities can be discussed.

Second, the IRWMP must identify ways to collaborate with neighboring regions to avoid conflict, to avoid redundant projects, or to reveal opportunities for cooperative projects. It must identify common water management issues among neighboring regions, describe existing coordination efforts, and discuss joint project opportunities.
Third, the IRWMP must identify ways that the State and Federal governments can work with local agencies to promote effective plan and project implementation.

The intent of the standard is to reduce conflict among stakeholders and among neighboring regions; and to build effective working relationships with State and Federal agencies. (2010 IRWMP Guidelines, pp. 24, 67-68.)

B) Challenge: How to move from conflict and neglect toward collaboration.

Regarding the first standard of working out conflict among stakeholders, the region gets an A- for working out conflict over projects. Policy 4 of the plan is to “Focus on Areas of Common Ground and Avoid Prolonged Conflict.” Before the ink was even dry on the draft plan, EBMUD, AWA, and CCWD met with concerned stakeholders to go over their comments and concerns regarding the project list. These meetings are ongoing and resulting in agreement regarding some projects. We expect the meetings to continue after plan adoption, to try to resolve core policy issues. The only problem at this time is that AWA expressed concern that it may not be able to amend its projects as agreed upon in time for MAC IRWMP Update adoption in January 2013.

Regarding the second standard, for working out conflicts with other regions, Chapter 1.1.2 explains that. That section explains that the MAC region and the Eastern San Joaquin region have been engaged at regular coordination at the agency level. (Draft MAC IRWMP, Chapter 1, p. 1-5.) Unfortunately, what that section does not disclose is that the product of that coordination, the Integrated Regional Conjunctive Use Project (IRCUP), included two projects (Duck Creek Reservoir and Pardee Expansion) strongly opposed by local, regional, and statewide conservation groups. Both those projects have already resulted in litigation. Thus, I would hardly characterize the initial agreements of these agencies as a successful effort at inter-regional cooperation. Today, there is some hope for conflict resolution on this front, because the next inter-regional planning process, MOKE WISE, includes more conservation group participation.

The standard for coordination with State and Federal agencies is addressed in only two short paragraphs totaling 5 sentences. (Draft IRWMP, Chapter 2, p. 11.) The first paragraph indicates that UMRWA will coordinate with the unspecified “appropriate agencies.” The second paragraph indicates that IRWMP projects will get the necessary permits and complete the necessary environmental reviews. That is the minimum level of coordination required by law. Given that the MAC Region includes extensive BLM and USFS land and water holdings, numerous hydropower facilities regulated by FERC, an existing conflict over the use of Forest Service lands for reservoir expansion at Bear River Reservoir, and at least two existing stakeholder groups that are already coordinating with federal agencies, one would expect more details in the MAC IRWMP.
C) Recommendations

First, we strongly recommend that either AWA staff or IRWMP consultants find the time in the next three months to make the agreed upon amendments to the draft plan.

Second, in the final IRWMP, please disclose the whole truth about the results of the MAC and Eastern San Joaquin interregional coordination efforts, including the fact that it did not result in a set of projects that resolved regional conflicts.

Third, there is currently an ERC that includes stakeholders overseeing implementation of FERC Project 137 on the Mokelumne River. There is also an Amador Calaveras Consensus Group working with BLM and the USFS on forest restoration and fuel reduction projects. If the MAC IRWMP needs to improve coordination with federal agencies actively involved with watershed management, the IRWMP should commit to sending a delegate to attend one or more of these existing stakeholder groups, to provide information regarding IRWMP projects, and to report back to UMRWA.
16) Climate Change

A) Standards

An IRWMP must discuss both mitigation of greenhouse gas emissions, and adaptation to the effects of climate change.

As part of this effort, an IRWMP explains how GHG emissions are disclosed and considered when choosing among project alternatives. In many cases, this is currently done late in the planning process through quantitative project-level analyses in accordance with the California Environmental Quality Act (CEQA). However, the Project Review section of the IRWMP must include a less detailed analysis of a project’s contribution to reducing GHG emissions and adapting to climate change.

The IRWMP also discloses the potential impacts of climate change on the region, including the water-related impacts on public safety and ecosystems, as well as on water supply reliability. The IRWMP should address the changes in water runoff and in groundwater recharge. The IRWMP Region Description section describes these impacts.

At this time, when considering adaptations to climate change, regions are encouraged to adopt “no regret” adaptations. These are policies, projects and programs that both make sense in light
of current water concerns, and also help in terms of climate change adaptation. These include ongoing practices such as increasing water use efficiency, sustaining ecosystems, and integrating flood management. The Plan Objectives and Resource Management Strategies sections of the IRWMP should include the region’s approach to these “no regret” adaptations.

The IRWMP should contain provisions explaining how adaptive management will be used to respond to climate change challenges as new information becomes available. These provisions should appear in the Plan Performance and Monitoring section of the IRWMP.

In the future, as the analytical tools become available, IRWMPs will have to provide a more detailed evaluation of the adaptability of the region’s water management systems to climate change. (2010 IRWM Guidelines, pp. 24, 68 – 76.)

**B) Challenge: How to address climate change prevention and adaptation in a region that is not concerned about climate change?**

Climate change is one of the areas that is supposed to be a major focus of improvement for the MAC IRWMP Update, since the 2006 plan did not meet the current climate change standards. Also, climate change is a very high State priority. The crosswalk table indicates that climate change is addressed in Section 1.3 of the MAC IRWMP Update. That section covers less than two pages. As noted below, climate change is also addressed in other sections of the Draft MAC IRWMP Update (e.g. Section 3.1, Section 3.2, and Section 4.1)

The discussion of climate change in Section 1.3 does a good job of identifying some of the primary physical changes to the environment. However, it does not trace those primary physical changes, down the chain of cause and effect, to the ultimate impacts on the human environment, and then to the means to reduce those impacts.

For example, Section 1.3 describes reduced natural water storage, but does not explain that the result could be insufficient water supplies for people and wildlife. It does not go on to note the options to adapt to this condition in the MAC Region: increased water recycling, increased water use efficiency, restoration of natural water storage systems, and increased water storage.

For another example, Section 1.3 describes a potential increase in water temperature, but it does not indicate what impacts that will have on the fish and amphibians of the MAC Region, and it does not identify the options for reducing those impacts.

For a final example, although Section 1.3 does indicate that air temperature may increase, it does not identify the potential impacts on watershed vegetation, fire safety, or surface water evaporation; and the means of reducing those impacts.

In part as a result of these deficiencies in Section 1.3, the Draft MAC IRWMP Update barely begins to identify the projects needed to adapt to the most serious water-related consequences of climate change.
The discussion of climate change does not address how GHG emission reduction was considered in evaluating projects proposed in the IRWMP. The IRWMP should note that most of the proposed project applications did not even bother to fill out the section on climate change. (See for example, applications 1 through 20, 23, 24, 25, and 27.)

Section 3.1 of the Draft MAC IRWMP Update discusses goals, objectives, and policies, but it does not specifically call out the many that address climate change adaptation. As a result, these may not get picked up by somebody reviewing the plan at DWR. For example, the Draft MAC IRWMP includes policies for the long-term balance of supply and demand, and for resource stewardship. It includes goals to insure sufficient water supply, to promote water conservation, to develop drought mitigation, and to improve natural watershed processes. It includes objectives to incorporate climate change into long-term planning, and to increase water recycling. All of these provisions of the Draft MAC IRWMP Update address climate change adaptation, and should be recognized as such in the text of Section 3.1. Let’s not bury the things we do right. Let’s highlight them.

Section 3.2 of the Draft MAC IRWMP Update discusses regional management strategies, but it does not specifically call out the many that address climate change adaptation. The strategies selected for the MAC IRWMP Update deal with water use efficiency, conjunctive use, recycled water, ecosystem restoration, forest management, and watershed management. Each of these strategies is an adaptation to climate change, and should be recognized as such in the text of Section 3.2. Let’s not bury the things we do right. Let’s highlight them.

Section 4.1 on the project review process does explain how projects were evaluated for climate change mitigation and adaptation. (See Draft MAC IRWMP Update, Chapter 4, p. 4.)

The statewide priority standards for climate change are very generous. (2012 IRWM Guidelines, p. 13.) Any project that increases water use efficiency can claim climate change benefits. This is true even if the saved water is not held in reserve for responses to drought from climate change, but is instead used to supply more developments, that in turn put more people at risk of drought. That is not really adapting to climate change. That is water agency business as usual. On the other hand, water recycling that shifts more of the local water supply to a source that is available even during a drought, and requires less raw water to serve the same population, is real adaptation to climate change. I think DWR needs to clarify what types of projects can claim climate change benefits. In the meantime, as a result of the generous statewide priority standards, 11 of the 38 projects in the Draft MAC IRWMP Update qualify as climate change response actions. (See Chapter 4, Table 1- Screening, Step 1 – Reflect Goals and Statewide Standards.)

However, the Draft MAC IRWMP Update does not look so good when one reviews the rankings of projects regarding climate change adaptation and mitigation. In the table in Appendix A, one finds that no projects get a high rating for dealing with climate change, only 4 projects get a
medium rating, and all the rest of the projects get a low rating. (Chapter 4, Appendix A, Table, Tier 2 - Evaluation, Step 1 – Apply Evaluation Criteria.) In many cases, the low rating was given because the water agency proposing the project did not bother to evaluate the project’s climate change implications, and simply left that section of the project application blank. (See project applications 1 through 20, 23, 24, 25, and 27.)

This is not really a surprise. In general, the region is politically conservative, and so climate change prevention and adaptation are not high on the list of local government priorities. Even when a plan or project rises to the level of preparing an Environmental Impact Report, the issues of climate change are quickly dismissed, without the adoption of additional feasible mitigation or the serious consideration of alternatives.

As noted above in comments on plan performance and monitoring, Section 5.1 is very general in nature and lacks many important details. Unfortunately, it does not specifically discuss how monitoring and adaptive management will be used to respond to climate change challenges as new information becomes available.

C) Recommendations.

In the crosswalk table, add Section 3.1, Section 3.2, and Section 4.1 to the list of sections that address climate change mitigation and adaptation.

In Section 1.3, trace those primary physical changes noted (i.e. air temperature, water temperature, and water storage) down the chain of cause and effect to the ultimate impacts on the human environment, and to the means to reduce those impacts.

Add to the project evaluation process a primary-level assessment of GHG reductions from each project. Explain that process in Section 1.3. Report the results in of the analysis in Chapter 4.

In the text of Section 3.1 of the final MAC IRWMP Update, specifically note the many goals, objectives, and policies that address climate change adaptation.

In the text of Section 3.2 of the final MAC IRWMP Update, specify the selected regional management strategies that address climate change adaptation.

At the last RPC meeting, staff encouraged the water agencies to review their projects to see if any of them deserved a higher rating for climate change mitigation and adaptation. It is my recommendation that the RPC continue to look for additional climate change response projects, even after plan adoption in January 2013, and add them to the project list before 2014.

Add to Section 5.1 a specific explanation of how monitoring and adaptive management will be used to respond to climate change challenges as new information becomes available.
Conclusions

From a fiscal, environmental, population growth, economic development, and public works standpoint, there is a lot riding on the adequacy of an IRWMP. Now is not the time to try to figure out how little we have to do to minimally comply with the IRWM Guidelines. Now is not the time to see how many guidelines we can get away with ignoring or “finessing.” Now is not the time to present sunny half-truths to the Department of Water Resources. Now is the time to comply with the IRWM Guidelines. Now is the time to tell the whole truth to DWR. It is that whole truth that best displays the region’s need for help.
IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF AMADOR

FOOTHILL CONSERVANCY, a non-profit corporation,

Petitioner

vs.

COUNTY OF AMADOR

Respondent

VERIFIED PETITION FOR WRIT OF MANDATE

I. INTRODUCTION

1. Petitioner Foothill Conservancy (“Petitioner”) challenges Respondent County of Amador’s (“Respondent” or “County”) approval on October 4, 2016 of its General Plan (“Plan” or “Project”) and accompanying Environmental Impact Report (“EIR”), which identifies 26 significant and unavoidable environmental impacts that will occur due to Plan implementation.

2. Petitioner challenges Respondent’s action under the California Environmental Quality Act (“CEQA”), Pub. Res. Code § 21000 et seq. The Plan EIR fails to acknowledge or evaluate the potential for development of rural lands in the County over the next three decades, and thus fails to analyze adequately the impacts of the Plan on aesthetics, agricultural and rural lands, biological resources, water supply, public safety, transportation etc. In approving the Plan, Respondent failed to consider adequately and adopt mitigation measures and alternative policies that would substantially lessen and/or avoid many of the significant impacts identified in the Plan EIR. In particular, Respondent rejected Alternative 2 despite the EIR’s acknowledgment that this alternative would substantially lessen many of the Plan’s impacts and despite Alternative 2’s feasibility and consistency with the Plan’s stated goals of guiding future growth and development into developed areas of the County where adequate public services already exist. In addition, in adopting the Plan and EIR, Respondent deferred the formulation of mitigation measures with objective performance standards, in violation of CEQA. Finally, Petitioner challenges Respondent’s failure to recirculate the EIR based on new information about how the Plan would address the environmental impacts of locating development in areas of high fire risk.

2. Petitioner seeks a writ of mandate pursuant to Code of Civil Procedure § 1085 requiring the County to revise the Plan EIR to consider the impacts of the Plan on the long term health and prosperity of Amador County and to consider reasonable alternatives and mitigation that may avoid and substantially lessen those impacts.

II. PARTIES

3. Petitioner, Foothill Conservancy, is a 501-C-3 nonprofit organization with members who live and work in Amador County. For 26 years, the Foothill Conservancy has worked to restore, protect, and sustain the natural and human environment in and around Amador County. The Foothill
Conservancy's vision for this area includes protected scenic quality, conservation of rural lands and natural diversity of native plants and animals, free-flowing rivers, coordinated land use planning, and balanced economic development that is ecologically and socially sustainable. The Foothill Conservancy and its members have repeatedly submitted public comments and participated in public workshops and hearings throughout the ten-year development of the General Plan and EIR.

4. Respondent County of Amador is and was at all times relevant to this action the governmental entity responsible for reviewing and approving the Project challenged in this action.

III. JURISDICTION AND EXHAUSTION OF REMEDIES

5. Jurisdiction of this Court is invoked pursuant to Code of Civil Procedure § 1085 & Public Resources Code § 21168.5.

6. Petitioner has performed all conditions precedent to filing this instant action and has exhausted any and all available administrative remedies to the extent required by law. Petitioner’s members, public agencies and other members of the public provided written and oral comments to the County during the administrative phase of this Project related to each of the Petition’s claims.

7. On November 2, 2016, Petitioner’s attorney faxed a Notice of Commencement of Action letter pursuant to Public Resources Code § 21167.5 to the Clerk of the Board of Supervisors and County Counsel’s office informing Respondent of Petitioner’s intent to file a legal action in this case challenging Respondent’s approval of the Plan and EIR. (See Exhibit 1, attached hereto.)

8. On November 3, 2016, Petitioner’s attorney served a copy of its Verified Petition on the Attorney General’s office to give notice of Petitioner’s intent to bring this proceeding as a private attorney general under Code of Civil Procedure section 1021.5. (See Exhibit 2, attached hereto.)

9. Petitioner has no other adequate remedy in the course of law unless this Court grants the requested writ of mandate. In the absence of such remedy, the County’s approval of the Plan and EIR will remain in effect in violation of law.

IV. FACTUAL BACKGROUND

A. ENVIRONMENTAL SETTING

10. Amador County is located in the foothills of the Sierra Nevada Range, approximately 25 miles east of Sacramento. State Route 49 traverses the county from north to south, connecting the cities
of Plymouth, Sutter Creek, Amador City, and Jackson, while State Routes 104 and 124 connect Ione with the neighboring areas of Amador and Sacramento Counties. Amador County is bordered by El Dorado County on the north, Alpine County on the east, Calaveras County on the south, and Sacramento and San Joaquin Counties on the west.

11. Amador County’s planning area encompasses the unincorporated land within the County’s boundaries, excluding the land within the city limits of Amador City, Ione, Jackson, Plymouth, and Sutter Creek, an area encompassing approximately 387,874 acres. The majority of this land is rural, with 191,899 acres in the Agricultural-General land use designation, 39,799 acres in Agricultural Transition and 9,499 acres in Rural Residential. In addition, there are approximately 86,000 acres in General Forest or Open-Wilderness land use designations, 10,758 acres in Mineral Reserve and 22,238 acres in General Forest or Open-Wilderness.

12. The vast majority of land designated as agricultural in the County consists of rangeland or “grazing land,” defined in the Government Code as land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. Rangeland “includes areas not suitable for farming because of slope, soil, or water availability. Pastures here provide excellent weight gains for livestock.” Rangelands “provide the open space and natural vistas which attract tourism to the County. Significant development pressure exists in Amador County’s rangeland areas, especially in locations near cities or unincorporated rural communities.” Since 1984, the County has experienced a long-term loss of rangeland, with approximately 4,500 acres converted between 2000 and 2004 alone.

13. The County also contains approximately 8,000 acres of agricultural land designated as either Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

14. Approximately half of all agricultural land in the County are protected by Williamson Act contracts, mostly in the western portion of the County. The Williamson Act supports the conservation of agricultural and open space lands by discouraging premature conversion to urban uses. Under the Act, private landowners contract with the County to voluntarily restrict land to agricultural and open-space uses. The vehicle for these agreements is a rolling term 10-year contract, which begins to run once a landowner files a “notice of nonrenewal” of the Williamson Act contract. As of 2009,
there were 2,735 acres of Williamson Act lands in Amador County whose contracts had not been renewed.

15. In 2008, individual land owners submitted formal requests to the County to have their agricultural lands in excess of 100 acres re-designated for development. The total acreage covered by these requests was over 21,000 acres.

B. GENERAL PLAN

16. The General Plan includes nine elements, which include the seven elements required under Government Code § 65302, Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety, as well as two optional elements, Governance and Economic Development. The Housing Element was updated on a different timeline with its own separate review.

17. The General Plan represents the County’s policy for determining the appropriate physical development and character of Amador County, and establishes an overall future development capacity. A separate Implementation Plan describes the programs which the County intends to use to achieve General Plan goals and policies. The Implementation Plan is not, however, considered a part of the General Plan.

18. The General Plan states that the citizens of Amador County envision the County as a place known for its high quality rural lifestyle, historic resources, healthy natural environment, vibrant local economy, scenic resources and vistas, and services that meet citizens’ needs. The General Plan describes the County’s unique character as based on its history, natural beauty, and rural lifestyle.

19. The General Plan designates three Town Centers in order to focus new growth within the existing unincorporated communities of Pine Grove, Buckhorn, and River Pines. The Plan also identifies Special Planning Areas (“SPAs”), which are areas that have already been subdivided and which the Plan assumes will build out at a rate proportional to the growth of the County as a whole.

20. The General Plan identifies a primary land use goal to “[a]ttain a diverse and integrated mix of residential, commercial, agricultural, industrial, recreational, public, and open space land uses,” which is achieved in part by various policies including:

- Policy LU-1.1: Protect existing land uses and public facilities from encroachment by incompatible land uses.
- Policy LU-1.3: Encourage development patterns which support water quality objectives;
protect agricultural land and natural resources; promote community identities; minimize environmental impacts; enable viable transit, bicycle and pedestrian transportation; reduce greenhouse gas emissions; and promote public health and wellness.

- Policy LU-1.5: Encourage the continued viability of agricultural production in the County’s agricultural areas.

- Policy LU-1.6: Balance the community’s interests in protecting agriculture, historic, cultural, and natural resources, and species with the property rights of individual landowners.

21. The General Plan identifies a further land use goal to “enhance and maintain separate and distinct community areas within the county,” which is achieved in part by various policies including:

- Policy LU-2.1: Direct development to areas with existing urban services and infrastructure, or to areas where extending of urban services is feasible given distance from developed areas and topography, capacity, or land capability.

- Policy LU-2.2: Target future commercial, industrial, and residential growth to Town Center and Regional Service Center locations, including the communities of Martell, Pine Grove, Buckhorn, and River Pines.

- Policy LU-2.3: Promote higher density or intensity development in infill areas, or areas adjacent to existing communities or activity centers.

22. The General Plan identifies a further land use goal to “reduce fire risks to existing and future structures, which is achieved in part by various policies including:

- Policy LU-12.1: Ensure that appropriate levels of emergency services, including fire protection, can be demonstrated for new development.

- Policy LU-12.2: Ensure that new roadways meet County standards for firefighting access. These standards include minimum width, surface, grade, radius, turnaround, turnout, and bridge standards, as well as limitations on one-way roads, dead-end roads, driveways, and gate entrances.

- Policy LU-12.3: Continue to ensure that the County’s development code addresses evacuation and emergency vehicle access, water supplies and fire flow, fuel modification for defensible space, and home addressing and signing.

- Policy LU-12.4 Ensure that new development or redevelopment in the Wildland-Urban Interface meets building and development standards to ensure adequate defensible space.

23. A central stated objective of the Plan is to preserve the County’s rural character. The Plan states “Amador County’s rural lifestyle, including the quality of Amador County’s rural communities, natural beauty, and the historical and cultural resources, are all key draws. Maintaining these qualities is important both for drawing new businesses to the County, and promoting the County’s potential for tourism.” The Plan states that the “County will encourage the continued economic viability of farming ranching, and agricultural business. Agriculture-related businesses and agri-tourism can offer
important sources of income for farmers and ranchers. The County will support continued use of agriculture-related businesses, including wine tasting and roadside stands. Provision of adequate water for farming is also a critical need for farmers. Conservation of agricultural land is key to the continued health of Amador County’s agricultural economy.” The Plan states further that “Agriculture remains a crucial industry for Amador County, both in terms of its economic importance and because farming and ranching lie at the core of the community’s identity and culture. Amador County faces the challenge of ensuring the continued viability of agricultural practices and businesses in the face of increasing development pressure, while respecting the rights of individual landowners.”

24. The Plan purports to preserve the County’s rural character through goals intended to maintain agricultural land such as Goal E-8 (“Preserve the land base necessary to sustain agricultural production and maintain long term economic viability of agricultural land uses”) and Goal E-9 (“Maintain important farmlands for agricultural uses and agri-tourism”). These Goals are supported by a number of policies that include:

- Policy E-8.1: Ensure future land uses are appropriately located and scaled to fit in with the county’s rural and agricultural context.
- Policy E-9.4: Direct future development toward “infill” areas (areas of existing urban development), areas contiguous to cities, and areas with infrastructure and services in order to maintain the viability of existing agricultural land.
- Policy E-9.5: Review future development for compatibility with existing adjacent and nearby agricultural uses.
- Policy E-9.6: Direct future development away from farmlands of local or statewide importance.
- Policy E-9.8: Encourage the use of site planning techniques such as properly maintained buffers, building envelopes and setbacks on lands adjacent to agricultural uses in order to protect agriculture from encroachment by incompatible land uses.

25. The Plan also acknowledges the importance of rural lands to protection of natural resources, including sensitive plant communities and wildlife. For example, with respect to “Oak Woodland Habitat,” the Plan notes that “[l]oss of wildlife habitat associated with anticipated future urban growth in western Amador County will be greatest in the county’s oak woodlands, which form the dominant habitat type in this half of the county. In addition to being an essential element of the county’s rural character, oak woodlands support an unusual diversity of animal species and provide important corridors for wildlife movement. This is a result of the many resources that oak trees provide,
including roosting and nesting sites, and an abundant food supply such as large acorn crops.”

26. Deer migration corridors, including in oak woodlands, are also a concern in Amador County. The county is home to both resident and migratory deer populations, with critical winter range for deer found at elevations between 2,000 and 4,000 feet above sea level, and summer critical habitat at 4,000 to 9,000 feet above sea level. Because of animal migration needs, both the quantity and the location and connectivity of habitat are important considerations.

27. Other important biological resources include “Wetlands, Riparian Habitats, and Other Sensitive Communities.” The Plan states that “the vernal pool complexes and Ione chaparral of western Amador County, and the riparian habitats along corridors such as the Cosumnes River, the Mokelumne River, and Dry Creek are examples of some of the sensitive communities found throughout the county. These sensitive communities are a part of the county’s biological wealth and are home to some of its unique plant and animal species. Future residential, commercial, and infrastructure development and expansion of agricultural or mining activities have the potential to directly remove, degrade, or fragment these sensitive habitats.”

28. Further, Amador County is home to several plant and wildlife species listed as endangered, threatened, or rare based on federal and/or state criteria, including but not limited to Ione Manzanita, California tiger salamander, Central Valley steelhead, tri-colored blackbird, red-legged frog etc. These species are an important part of the county’s biological heritage worth protecting for future generations to experience. Special-status species could be affected by existing and projected land uses if habitat is lost, existing habitat is fragmented, or land use changes on adjacent lands degrade current habitat areas.

29. The Plan adopts several policies to protect these resources including:
   - Policy OS-3.1: Encourage preservation of oak woodlands in accordance with Public Resources Code Section 21083.4.
   - Policy OS-3.2: Encourage the conservation of corridors for wildlife movement, particularly in oak woodland areas and along rivers and streams.
   - Policy OS-3.3: Support voluntary conservation easements to protect wildlife habitat, including oak woodlands.
   - Policy OS-3.4: Use site planning techniques, including, but not limited to, buffers, setbacks, and clustering of development to protect sensitive environments, including wetlands, riparian corridors, vernal pools, and sensitive species.
• Policy OS-3.5: Protect aquatic habitats from the effects of erosion, siltation, and alteration.

30. The Safety Element of the General Plan includes various measures intended to reduce fire risk, a serious safety concern in the County. General Plan Goal S-2 is to “[r]educe fire risks to current and future structures and is supported by policies such as Policy S-2.1, which requires fire-defensible spaces and building materials and designs that increase fire resistance for new buildings. In addition, Policy S-2.2 is to “[g]uide new development to areas where adequate fire protection, roads, and water service are available to support fire response.”

31. The Safety Element also includes implementation programs to address fire risk, including Program D-2: Fire-Safe Development (FEIR Mitigation Measure 4.8-7a) as follows:

• a. The County will review new development applications in moderate, high, and very high fire hazard severity zones to confirm they meet the standards of the Title 24 Wildland Urban Interface Building Codes and 14 CCR 1270.

• b. The County will require new structures and improvements to be built to support effective firefighting.

• c. New development applications in very high fire hazard severity zones shall include specific fire protection plans, actions, and/or comply with Wildland Urban Interface codes for fire engineering features.

• d. The County will seek fire district input on development applications to allow proposed projects to incorporate fire-safe planning and building measures.....

• e. Transportation improvements shall incorporate access for firefighting, within and between existing neighborhoods to provide improved connectivity, but also in areas with no structures. Access standards include minimum width, surface, grade, radius, turnaround, turnout, and bridge standards, as well as limitations on one-way roads, dead end roads, driveways, and gate entrances.

• f. Where public water is available, the County will consult with water agencies on needs for additional water, water mains, fire hydrants, and related appurtenances needed to meet required fire flow criteria and for sufficient water capacity to serve peak demands of multiple fire engines to protect improvements from wildland fires.

• g. A 100’ setback for defensible space will be required, when possible, for high density multiple-family residential or sensitive uses (e.g., care homes, schools, large day care facilities, etc.) proposed to be located in high or very high fire hazard severity zones.

32. The Safety Element also includes Program D-10: Evacuation Planning and Routes (FEIR Mitigation Measure 4.8-2b), which requires the County, when considering discretionary development proposals to ensure that actions will not prevent the implementation of emergency response plans or viability of evacuation routes established by the Office of Emergency Services. In addition, Program F-3: Fire Services Funding (FEIR Mitigation Measure 4.8-7b), states that the County will consult with
the Amador Fire Protection District to establish funding mechanisms, including impact fees, to offset fire protection costs for new development in areas of high wildfire risk.

C. ENVIRONMENTAL IMPACT REPORT FOR GENERAL PLAN.

33. The EIR for the General Plan assesses the impacts of anticipated development by the year 2030 on the following categories: aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; geology, soils, mineral resources, and paleontological resources; greenhouse gas emissions; hazards and hazardous materials; hydrology and water resources; land use, population, and housing; noise; public services; traffic and transportation; utilities and energy efficiency. In addition the EIR analyzes a maximum development scenario of full buildout.

34. The EIR’s impact analysis assumes projected development in the County by 2030 for each land use designation, including 98 new residential units on 191,328 acres designated Agricultural General, 134 units on 39,799 acres of Agricultural Transition and 141 units on 9,499 acres of Rural Residential lands. See Table 3-1. Overall, the DEIR assumes a total number of 1,685 new units over the next 15 years, from 11,679 to 13,364 units, with a population growth from 22,123 to 25,241. Id.

35. The EIR determines that the Project will have significant and unavoidable (“SU”) impacts to the following resource categories: Aesthetics; Agricultural and Forest Resources; Air Quality; Biological Resources; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Population and Housing; Public Services and Utilities; and Transportation.

36. For ‘Aesthetics’ this includes SU impacts related to “Effect on Scenic Vistas,” “Degradation of Visual Character” and “Increase in Light and Glare and Skyglow Effects.”

37. For ‘Agricultural and Forest Resources’ this includes SU impacts related to “Conversion of Farmland,” “Land Use Conflicts with Existing Agricultural Uses,” and “Conversion of Forestland to Non-Forest Use.”

38. For Air Quality, this includes SU impacts related to “Construction-Related Emissions,” “Generation of Long-Term Operational (Regional) Emissions of ROG, NOX, PM10, and PM2.5” due to operational area and mobile-source emissions, and “Exposure of Sensitive Receptors to Short- and Long- Term Emissions of Toxic Air Contaminants.”

39. For Biological Resources, this includes SU impacts related to “Adverse effect on
special-status species,” and “Substantial adverse effect on Ione chaparral, a sensitive natural community.”

40. For Greenhouse Gas Emissions this includes SU impacts related to “Generation of GHG Emissions,” and “Conflict with a GHG Reduction Plan.”

41. For Hazards and Hazardous Materials this includes SU impacts related to “Exposure of Structures to Urban and Wildland Fire.”

42. For Hydrology and Water Quality, this includes SU impacts related to “Interference with Groundwater Recharge or Substantial Depletion of Groundwater Supplies.”

43. For Noise, this includes SU impacts related to “Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels,” “Substantial Permanent Increase in Ambient (Traffic) Noise Levels,” “Expose Noise Sensitive Receptors to Operational (Traffic) Noise Levels Exceeding Standards,” “Expose Noise Sensitive Receptors to Railroad Noise Levels Exceeding Amador County Standards,” and “Exposure of Noise Sensitive Receptors to Stationary Source Noise Levels Exceeding Amador County Standards.”

44. For Population and Housing, this includes SU impacts related to a “Permanent Increase in Population Growth.”

45. For Public Services and Utilities, this includes SU impacts related to “Increased Demand for Water Supplies,” “Increased Demand for Water Conveyance and Treatment Facilities” and “Increased Demand for Wastewater Collection, Conveyance, and Treatment Facilities.”

46. For Transportation, this includes SU impacts related to “Increase in traffic levels on state highways resulting in unacceptable LOS,” and “Increase in traffic levels on local roadways resulting in unacceptable LOS.”

47. Altogether, the EIR and accompanying final CEQA findings identify 26 Significant and Unavoidable Impacts from the proposed Project. For each of these SU impacts, the County determined that 1) there are no mitigation measures available that could avoid the SU impacts; and/or 2) specific economic, legal, social, technological, or other considerations make infeasible certain mitigation measures or project alternatives identified in the Final EIR.

48. In assessing impacts due to the conversion of rural lands to residential and other types of non-
agricultural development, the EIR limited its analysis to the potential loss of “Farmland,” defined in the EIR as Prime Farmland, Farmland of Statewide Importance or Unique Farmland, which represents approximately 4% of the overall agricultural lands in the County. See Table 4.2-2. The EIR estimated that 310 acres of the approximate 7,967 acres of farmland would be converted.

49. In assessing impacts due to the conversion of rural lands to residential and other types of non-agricultural development, the EIR did not consider the loss of other agricultural lands besides Farmland to be potentially significant. The EIR states that “in this case the County has determined that conversion of rangelands is not a significant impact because of their relatively low agricultural productivity.”

50. The EIR also considered alternatives to the Project, including Alternative 2, which included greater restrictions on development in areas of wildfire risk, standards for preservation of agricultural lands and biological resource areas, using alternative circulation standards in addition to Level of Service standards, and setting measurable performance standards for reduced water use. As set forth in the CEQA findings, Alternative 2 would substantially lessen a number of impacts identified in the EIR as significant and unavoidable. However, Alternative 2 was eventually rejected by the County based on the reasoning that it was “undesirable from a policy standpoint because these restrictions would likely make some future development projects more difficult or economically infeasible, which may make it challenging for the County to accommodate the needs of future DOF-projected growth.” Alternative 2 was also deemed undesirable because it purportedly conflicted with General Plan Goal LU-1: “Attain a diverse and integrated mix of residential, commercial, agricultural, industrial, recreational, public, and open space land uses;” General Plan Policy LU-1.2: “Designate residential areas of varying densities to create the opportunity to provide affordable housing for all income levels. Consider affordable and senior housing needs in the siting and design of residential projects;” and Policy E-4.2: “Promote a balance of commercial and industrial development to residential development which maintains the fiscal health of the county.” The CEQA findings rejecting Alternative 2 also state “[A] new economic development policy would assess a fee on all building permits issued in high- or very-high hazard severity zones to fund full-time professional fires and emergency response services. While this may decrease exposure to risk of wildland fire
hazards...requiring additional fees may make many projects, including housing and commercial development, economically infeasible.”

51. The EIR also assesses cumulative impacts from other foreseeable projects over the life of the General Plan. However, the EIR does not consider the potential for future development to occur in rural areas based on future general plan amendments that will subdivide agricultural lands currently zoned at one unit per 40 acres, despite the considerable evidence submitted showing that such land divisions have occurred regularly in the past and can be expected to occur again in the future. The EIR declines to discuss such development based on its reasoning that “development proposals that have yet to be entitled by the County as of the preparation of this EIR, and therefore not included the Project Description, are also not included in this cumulative analysis, as such proposals are not reasonably foreseeable.”

C. PROCEDURAL HISTORY.

52. The Board of Supervisors initiated an update to the General Plan in May 2006. Outreach was done through information dissemination, open houses, and workshops. Public input was provided through General Plan Advisory Committee (GPAC) meetings, Joint Board of Supervisors and Planning Commission meetings, scoping sessions and Planning Commission public hearings.

53. The County conducted a scoping process for the EIR, including circulation of a Notice of Preparation (NOP) dated July 29, 2009 and two public scoping meetings on August 13, 2009 to receive comments on the NOP.

54. On October 31, 2014, the County issued the Draft General Plan and Draft EIR for review by public agencies, organizations, and members of the public.

55. On June 22, 2016, the County provided written responses to comments on the Draft EIR, thereafter issuing a final EIR in July 2016.

56. On July 19, 2016, the Planning Commission took public comment and reviewed the FEIR responses prepared by staff. On August 23, 2016, the Commission reviewed the responses staff had prepared to oral and written comments. Following discussion, the Commission, on a 3-2 vote, recommended that the Board of Supervisors approve the draft General Plan and certify the EIR.

57. Following the Planning Commission hearings, the County made additional changes to the...
General Plan and EIR, including the addition of new policies, programs and mitigation measures in response to comments from the State Board of Forestry and Fire Protection that the Plan posed significant and unnecessary safety risks due to development occurring in areas of high fire risk.

58. On October 4, 2016, the Board of Supervisors approved the General Plan and certified the EIR for the Project.

59. The County filed its Notice of Determination for the EIR the same day, October 4, 2016.

60. On November 2, 2016, Petitioner’s attorney faxed a Notice of Commencement of Action letter to the Clerk of the Board of Supervisors and County Counsel’s office informing the County of Petitioner’s intent to file a legal action in this case challenging the County’s approval of the Project. (See Exhibit 1, attached hereto.)

61. On November 3, 2016, Petitioner’s attorney served a copy of this Verified Petition on the Attorney General's office to give notice of Petitioner’s intent to bring this proceeding as a private attorney general under Code of Civil Procedure section 1021.5. (See Exhibit 2, attached hereto.)

V. FIRST CAUSE OF ACTION
(Violation of CEQA; Pub. Res. Code § 21168.5; Code Civ. Proc. § 1085)

62. Petitioner incorporates by reference the allegations in the paragraphs set forth above.

63. CEQA applies to discretionary activities undertaken by a public agency. Pub. Res. Code § 21080. Courts must interpret CEQA and its administrative “Guidelines” to afford the fullest possible protection to the environment. *Friends of Mammoth v. Board of Supervisors* (1972) 8 Cal.3d 247, 259-260. The Legislature has made clear that an EIR is "an informational document" whose purpose “is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." Pub. Res. Code § 21061; 14 Cal. Code Reg. § 15003(b)-(e). *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391.

64. The EIR in this case does not meet the informational requirements of CEQA. An EIR must adequately describe the environmental setting where the project is located. *San Joaquin Raptor v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722-723. Further, an EIR must contain an adequate project description. *See County of Inyo v. City of Los Angeles* (1977) 71 Cal. App.3d
185, 192-193. Here, the EIR fails to provide adequate information regarding foreseeable development in rural and agricultural areas in the coming decades, thereby completely ignoring the potential for land use conversion on over 95% of the County’s agricultural lands. This approach leads to the EIR’s erroneous assumption that the next 15 years will see only 98 new units created in these areas despite the evidence showing that the County has approved more than that figure on an annual basis in the past. The EIR also uses outdated information for its impacts analysis based on data almost a decade old in many cases. The EIR fails to provide information on biological resources in the County, and how future development approved on a project by project basis could fragment plant and wildlife habitat, thereby causing significant impacts that are not identified or mitigated in the EIR.

The EIR does not analyze how the foreseeable 16,000 acre Rancho Arroyo Seco development will affect County resources and other impact categories. The EIR provides no discussion of aesthetic impacts that will result from the numerous commercial and residential projects that will not undergo any design review. The EIR provides no discussion or analysis of current controversial aspects of development such as the increased construction of wine tasting venues, which serve as locations for large public and private events.

65. The failure to present and analyze this relevant significant information undermines the EIR’s impact analyses, both for impacts found to be insignificant and those found to be significant and unavoidable, in violation of CEQA. See Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova (2007) 40 Cal.4th 412, 435.

66. Agencies cannot approve a project as proposed if feasible alternatives or mitigation are available that can substantially lessen the significant environmental effects. Mountain Lion Foundation v. Fish and Game Commission (1997) 16 Cal.4th 104, 134 Pub. Res. Code §§ 21002 21081(a); CEQA Guidelines §§ 15002(a)(3) 15021(a)(2), 15091(a)(1). Here, the EIR does not provide adequate information to justify its findings that impacts to 26 resource categories are significant and unavoidable, given the County’s failure to adopt alternatives and mitigation that would avoid or substantially lessen many of those impacts. During the Administrative proceedings, Petitioner and other members of the public provided numerous feasible mitigation measures that would avoid or at the least substantially lessen Project impacts on numerous resource categories,
including but not limited to aesthetics, air quality, agricultural land conversion, biological resources, water supply, fire risk, transportation etc. Many of these measures were included in Alternative 2, which the County rejected without evidence that this alternative was infeasible or would fail to avoid or substantially lessen many Project impacts.

67. An agency cannot rely on mitigating a significant impact by developing a mitigation plan after project approval, unless the project approval contains objective and achievable performance standards that direct the parameters of the deferred mitigation. See e.g., POET v. California Air Resources Board (2013) 218 Cal.App.4th 681; Communities for a Better Environment v. City of Richmond (2010) 184 Cal.App.4th 70, 92. Here, the EIR defers the formulation of mitigation plans or measures on numerous resources categories, including but not limited to impacts to aesthetics, air quality, agricultural land, biological resources, cultural resources, infrastructure, fire safety, geologic safety, water supply and use, public services and transportation. Further, the County's approach wrongfully defers the development of mitigation for these resource impacts to the project-specific stage despite the need for programmatic mitigation measures that would identify at the General Plan stage how best to protect the resource in question. For example, avoidance of important plant and animal habitat fragmentation must be addressed at the programmatic level to be effective.

68. The EIR’s Responses to Comments and the County’s CEQA findings fail to provide adequate information to the public as to the basis for the County’s decisions not to adopt mitigation measures and/or alternatives – including Alternative 2 - that would avoid or substantially lessen Project impacts identified as significant and unavoidable by the County. The County’s responses and findings fail to meet the standard that the County adequately explain the analytical route between evidence and action to the public. See Topanga Association for a Scenic Community v. County of Los Angeles (1974) 11 Cal.3d 506, 514-516; Village Laguna of Laguna Beach v. Board of Supervisors (1982) 134 Cal.App.3rd 1022, 1035-1035.

69. Respondent further violated CEQA by failing to recirculate the EIR following the additional changes to the General Plan and EIR made by the County after the close of EIR comment, including the addition of new policies, programs and mitigation measures in response to comments from the Board of Forestry that the Plan posed significant and unnecessary safety risks due to development
occurring in areas of high fire hazard.

VIII. PRAYER FOR RELIEF

WHEREFORE, Petitioner prays for judgment as follows:

1. For a Peremptory Writ of Mandate ordering the County to (1) set aside its General Plan and EIR; (2) revise its EIR to correct the errors and inadequacies alleged in this Petition; and (3) file a return with the Court showing compliance with the writ of mandate.

2. For reasonable attorney's fees under Code of Civil Procedure § 1021.5.

3. For costs of suit.

4. For such other and further relief as the Court deems proper.

DATED: November 3, 2016

By: [Signature]
Michael W. Graf
Attorney for Petitioner
VERIFICATION

Foothill Conservancy v. County of Amador
Amador County Superior Court, Case No. ________

I, Michael W. Graf, declare that:

1. I am an attorney at law duly admitted and licensed to practice before all courts of this State. I have my professional office at 227 Behrens Street, El Cerrito California, 94530.

2. I am the attorney of record for Petitioner Foothill Conservancy, which has its principal place of business in Amador County. Petitioner is absent from Contra Costa County in which I have my office. For that reason, I make this verification on its behalf.

4. I have read the foregoing Verified Petition for Writ of Mandate and know the contents thereof; the factual allegations therein are true of my own knowledge, except as to those matters which are therein stated upon my information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct.

Executed on the 3rd day of November 2016 at El Cerrito, California.

[Signature]
November 2, 2016

RE: Notice of Commencement of Action Challenging the County of Amador's October 4, 2016 Approval of its General Plan and Environmental Impact Report

To Whom it May Concern:

Pursuant to California Public Resources Code § 21167.5, please take notice that the Foothill Conservancy intends to file a Petition for Writ of Mandate challenging the County of Amador's October 4, 2016 Approval of its General Plan and Environmental Impact Report. Petitioner's actions will include claims under the California Environmental Quality Act ("CEQA.")

Please contact me immediately if the County wishes to discuss this matter.

Sincerely,

Michael W. Graf
Attorney for Foothill Conservancy
EXHIBIT 2
Via Regular Mail  
California Attorney General's Office  
1300 I Street  
Sacramento, CA 95814-2919

Re: Petition for Writ of Mandate Action Challenging the County of Amador's October 4, 2016 Approval of its General Plan and Environmental Impact Report

To Whom it May Concern:

Pursuant to Public Resources Code § 21167.7 and Code of Civil Procedure 388, enclosed please find a copy of Petitioner’s Verified Petition for Writ of Mandate in the above referenced matter.

Please let me know if you have any questions.

Very truly yours,

Michael W. Graf

November 3, 2016
From: Tom Infusino, CPC  
To: MCG  
Re: Public Interest Profile Enhancement Project (PIPE)  
Date: April 29, 2014  

I was discussing with Katie Cole my disappointment that there were no “projects” to implement some of the MCG objectives. These include the demand estimates, demand issues, maximizing benefits, avoiding end use harm, and avoiding unnecessary litigation objectives. She suggested that I try to come up with projects to implement those objectives. I ran some ideas by the project review focus group, and they suggested that I generate a more complete proposal that explains the challenges that the project aims to overcome. Below I propose that the MCG establish a focus group to work on the Public Interest Profile Enhancement Project (PIPE).

I) The PIPE Project addresses many challenges faced by MCG participants who try to negotiate the State Water Board permitting process.

A) Applicants for water permits must demonstrate to the State Water Board that their application complies with a number of Constitutional, statutory, and regulatory provisions.

Many of the efforts at MokeWISE already deal with identifying some of the basic project parameters future applicants will need in their State Water Board application. Efforts at MokeWISE are already aimed toward resolving some basic stakeholder concerns.

For example, at MokeWISE we are learning the names of current and future applicants, the sources of the water supply, the nature and amount of the proposed water uses, and the locations and the descriptions of the diversions and the storage facilities. (Water Code, Section 1260.) Applicants that work out stakeholder concerns regarding the location of diversion and storage facilities will have improved prospects for smooth and successful applications.

In addition, the water availability study in MokeWISE will identify various perspectives on the amount of unappropriated water that is available for appropriation, and how much is needs to stay in-stream to meet recreation, fish, wildlife, and water quality needs. (See Water Code, sections 1242.5, 1243, 1243.5, 1253, and 1257.5.) Applicants that work out these issues with stakeholders will have improved prospects for smooth and successful applications.

However, these are only a few of the issues that the State Water Board will address when it evaluates a permit application.

Agencies seeking water for municipal needs must present data on the “population to be served” and the “future requirements of the city.” (Water Code, Section 1264.) Thus, a key issue is the adequacy of the method used for calculating future population growth, and for estimating future water demand. Applicants with weak population growth estimates or poor methods for estimating future water
demand may be stymied at the State Water Board. In contrast, applicants that have worked out their population estimate and demand calculation methodologies (including drought management/storage contingencies) with potential critics have one less thing to worry about.

Similarly, applicants seeking water for agricultural purposes need to identify the land to be irrigated, its acreage, and its irrigation needs. (Water Code, Sections 1260 & 1262.) Again, applicants that have worked out questions about the long-term use of the agricultural lands, and efficient irrigation strategies with potential critics have one less thing to worry about.

In addition, an application for water storage must provide information regarding the height of the dam, the capacity of the reservoir, and the use to be made of the water. (Water Code, Section 1266.) Applicants that have worked out these questions with potential critics have fewer things to worry about.

Furthermore, the California Constitution prohibits the waste, the unreasonable use, the unreasonable method of use, and the unreasonable method of diversion of water. (California Constitution, Article 16, Section 3.) This is a very difficult issue, since the definition of what is an unreasonable use changes as water gets scarcer, and as we develop new ways to avoid waste and to use water more efficiently. Thus, leaking miners’ ditches, once suitable for transporting water in rural areas, may become unsuitable. Agricultural irrigation methods that were reasonable in the past may become unreasonable. (See Wilson, Watermaster, State Water Resources Control Board Delta Stewardship Council, The Reasonable Use Doctrine & Agricultural Water Use Efficiency, January 2011.) Similarly, using virtually all water in the home only once and flushing it out to sea, without reclaiming a meaningful proportion for a second use, may someday be considered waste. (See for example reclamation goals in SB 1011, Stats. of 1995) A permit applicant that has effectively reduced the waste in its system, and aggressively reclaimed wastewater, will have a better chance of demonstrating that its future use of water will not be wasteful.

Finally, one of the broadest, and perhaps the most confounding, standards that applicants must meet is the public interest standard. The State Water Board must determine that approving the application is in the public interest. (Water Code, Sections 1243, 1243.5, 1253, 1255, 1256, 1257.)

We have already noted that the Water Code specifically calls out some of these public interest issues like unreasonable water use, water waste, water conservation, water demand, water re-use, water for fish and wildlife, water quality, etc.

Furthermore, the State Water Plan, that is updated periodically, is used as a guide on public interest issues. (Water Code, Section 1256.) The 2013 Draft 2013 California Water Plan Update provides guidance on the following public interest issues: Environmental, Economic and Social Prosperity; Innovation & Infrastructure, Transparent Decision-Making, Finance Planning, Agricultural Water Use Efficiency, Urban Water Use Efficiency, Flood Management, System Reoperation, Conjunctive Use, Recycled Water, Matching Quality to Use, Pollution Prevention, Stormwater Management, Ecosystem Restoration, Land Use Planning, Watershed Management, and Water-dependent Recreation.

In addition, the Public Trust Doctrine imposes a duty on the State of California to give proper weight to the public’s right to access navigable waterways for fishing, recreation, and commerce when making
decisions about water rights, water storage, and water diversions. An applicant should be prepared to address this aspect of the public interest during the review its water rights application.

Penultimately, a major issue in water rights application is the potential harm to existing water users. All of these aforementioned public interest issues address the concerns of people who may question the impacts of a water application on the water source (e.g. river or lake) and those that use it.

Finally, there is another aspect of the public interest that sincerely drives the concerns of many water application critics. This is the end use harm associated with the water use. These issues are often treated in the environmental review document for the application. In the terminology of the California Environmental Quality Act (CEQA) these are the “secondary impacts” of the water project (not because they are less important, but because they are a step farther down the chain of causation). These are the harms that result when water use (e.g. agriculture, mining, urban development) has significant and unmitigated impacts on the human environment. (For a list of these potential harms, consult a CEQA Initial Study Checklist.) From the perspective of these critics, the public interest is best served when precious water resources are allocated to those entities that do the best job of reducing the adverse impacts of the water use. For example, a local government that has no current plan to meet clean air standards, repeatedly violates clean water standards at its waste water treatment plant, has no program to mitigate the loss of agricultural lands to new development, has no habitat conservation plan for endangered species, and has no plans and/or funding to meet the infrastructure and public service needs of an expanding population, will have a much harder time arguing that additional water provided to it will serve the public interest. On the other hand, a local government that has a clean air plan, complies with its waste discharge requirements, has an active and successful agricultural lands mitigation program, has an effective habitat conservation plan, and has plans to fully fund the infrastructure and services needed for an expanded population will have a much easier time arguing that additional water provided to will serve the public interest.

The bottom line is that an applicant that has developed a broad public interest profile in advance of the application, and in conjunction with likely critics, has a much better chance of a smooth and successful application process.

B) The PIPE Project will help applicants to develop the practices, policies, and programs that will help their application to meet legal standards and to get approved.

Often future applicants choose to ignore the aforementioned permit approval standards until the time comes to file an application. They chose not to deal with the concerns expressed by critics until the time comes to file an application. At that time, applicants try to do their best to try to spin their existing practices, policies, and programs in the best light. However, if there are gaping holes in their waste reduction, conservation, reclamation, or public interest profile, then their critics raise these issues in protests, and propose permit conditions sufficient to warrant dismissal of the protest. If negotiations over those conditions are not successful, the application becomes the focus of a contested hearing before the State Water Board. These expensive and lengthy processes can disrupt timely project completion.
An alternative approach is for future project applicants to anticipate the need to meet these application approval standards. They can spend the years before the permit application developing the practices, policies, and programs that will help their applications to meet legal standards. They can work to alleviate the concerns of critics regarding the impacts of the project on existing water users, the impacts on the water source, and the end use harm. Generally people call this strategy “front-loading.” In this instance, the front-loading involves work prior to the water permit application process, so that the actual process runs smoothly and successfully. In addition to the benefits associated with water permit streamlining; practices, policies, and programs that improve an applicant’s public interest profile also have the added advantage of actually producing benefits to the applicant’s community such as clean water, more secure water supplies, clean air, public infrastructure and services, agricultural land preservation, and wildlife habitat protection, to name a few.

C) The PIPE Project gets applicants the cooperation they need from local land use authorities to meet some State Water Board standards and some DWR funding standards.

Perhaps the biggest barrier that a future water applicant has in improving its public interest profile is the limits of its jurisdiction. If a water purveyor is fortunate, its jurisdiction extends over both providing water and treating wastewater. In that case, it can strongly influence its public interest profile when it comes to reducing water delivery waste, promoting water conservation, meeting waste discharge requirements at the wastewater treatment plant, and investing in water reclamation. Even in these circumstances, it is impossible for the water purveyor alone to address the end use harm associated with water use. The local or regional air districts deal with air pollution. The regional transportation commission, the council of governments, and the individual cities and counties deal with traffic congestion. School districts deal with school capacity. Counties and cities deal with law enforcement and land use issues. This jurisdictional entropy complicates interagency cooperation.

However, the State of California is calling upon water purveyors and local governments to overcome the challenges of jurisdictional entropy and to collaborate across the board. For example, Prop. 84 funding was accessed by regions completing Integrated Regional Water Management Plans (IRWMPs) with multiple local agency stakeholders. These plans needed to demonstrate collaboration among water planners and land use planners. For those future water applicants that will also seek partial (or primarily) state funding for projects, it makes sense to use these IRWMP processes as opportunities to get other jurisdictions to help reduce end use harm that is outside the purview of the water purveyor. Unfortunately, past IRWMP processes have had mixed results in getting active participation from local government representatives, and in securing meaningful land use related improvements in public interest profiles.

Fortunately for us, the MokeWISE MCG includes some county and some city representatives, as well as water purveyor and environmental stakeholders. This provides a new opportunity for the water purveyors and the land use authorities to work together to improve their public interest profile. In addition, since both Amador County and Calaveras County are currently preparing comprehensive updates of their general plans, both counties are in a position to adopt policies and programs to improve
their public interest profiles. The synchronous nature of these planning efforts is a fluke that is unlikely to repeat. This opportunity for coordinated action may not come again.

**D) Information exchanged among MCG agencies through the PIPE Project can help the group to better compete against other outside water interests.**

We are most fortunate at MokeWISE to have the participation of a variety of agencies that have diverse experiences when it comes to improving their public interest profiles. The Amador Water Agency has been successful in reducing water lost from its leaky ditch system. Calaveras County has been successful in water reclamation. East Bay MUD has been successful in water conservation. San Joaquin County and some of its local governments have developed programs to address the mitigation of agricultural land loss and the protection of endangered species habitat. If these entities are committed to banding together to compete against outside water interests, as opposed to fighting among themselves, it would be in the best interest of these agencies to exchange information to help each other to improve their public interest profiles. By doing so with environmental stakeholders present, it may help to improve the agencies’ reputations in the environmental community.

**E) Using the PIPE Project to improve the public interest profiles of MCG agencies will reduce local objections to their projects.**

As noted above, many critics of water permit applications have sincere concerns about the impacts of water projects on existing users, the impacts on the water source, and the end use harm. By improving their public interest profiles, MCG agencies will be able to resolve many of these concerns.

**F) Through the PIPE Project the environmental interests at the MCG will benefit by having their issues addressed at MokeWISE.**

Any one who has reviewed the objectives statements and the summary table has seen that different environmental stakeholders at MokeWISE have different interests. Some are concerned about the impacts of future projects on the water source and its many beneficial in-stream uses. Some are concerned about the end use harm. Some are concerned about both. The PIPE Project would address these concerns.

**II. The PIPE Project will provide information exchange to resolve the issues likely to otherwise arise during contested hearings at the State Water Board.**

**A) Demand Reduction and Calculation Exchange**

1) Have the focus group review and explain the existing calculation of agency demand estimates. Identify water demand issues for timely and constructive evaluation by the water agencies during the next UWMP update.
2) Have the focus group review and explain the existing drought management efforts. Those entities (e.g. agencies, districts, cities, and counties) doing better on drought management will provide helpful hints to others. At the end of the exercise, each entity can identify the efforts it will take to improve its drought management efforts.

This effort will help each agency to have consistent demand estimates, supported by substantial evidence in the record, and not challenged by other MCG interests, when it comes time for an application to the State Water Board.

**B) Waste and Unreasonable Use/Diversion Exchange**

Have the focus group review potential future water waste and unreasonable use issues, and the efforts of each entity (e.g. agency, district, cities and counties) to avoid waste and unreasonable use. Those entities (e.g. agencies, districts, cities, and counties) doing better on waste reduction will provide helpful hints to others. At the end of the exercise, each entity can identify the efforts it will take to avoid future waste and unreasonable use. This effort will help each agency to demonstrate, based upon substantial evidence in the record, that their water use does not constitute waste, and is not subject to challenge as such, when it comes time for an application to the State Water Board.

**C) Water Conservation and Wastewater Reclamation Exchange**

1) The focus group will identify the barriers to wastewater reclamation and craft solutions for overcoming the barriers to wastewater reclamation. Those entities (e.g. agencies, districts, cities, and counties) doing better on wastewater reclamation will provide helpful hints to others. At the end of the exercise, each entity can identify the efforts it will take to improve its wastewater reclamation efforts.

2) Have the focus group review water conservation efforts of each entity (e.g. agency, district, cities and counties). Those entities (e.g. agencies, districts, cities, and counties) doing better on water conservation will provide helpful hints to others. At the end of the exercise, each entity can identify the efforts it will take to improve its water conservation efforts.

This effort will help each agency to demonstrate, based upon substantial evidence in the record, that it is meeting its obligation to implement its water conservation plan, and to help the state meet its water reclamation target.

**D) Reduction in End Use Harm/Adverse Secondary Impacts of Water Use**

The focus group will identify a list of public interest criteria relating to end use harm. Each of the entities (e.g. agencies, districts, cities, counties) in the focus group that are or will be seeking an approval from the State Water Board related to a water appropriation from the Mokelumne River would evaluate their end use harm against these public interest criteria. Those entities that are doing better on particular criteria can indicate to others how they have managed to achieve those public interest objectives. At the end of the exercise, each agency can identify the efforts it will take to improve its public interest profile to reduce end use harm. This effort will help each agency to demonstrate, based
upon substantial evidence in the record, that its appropriation is in the public interest, and not subject to challenge on those grounds.

E) Design Enhancement

The focus group will identify the objectionable issues associated with the design of the proposed projects and try to improve the design to reduce the objections. This could also be an opportunity to demonstrate how the project design addresses public trust issues (fishing, recreation, commerce, etc.).

III. PIPE Project Work Products

It is up to the MCG, but I can envision many possible work products.

First, I could see each potential applicant producing an agency audit that identifies its strengths and weaknesses regarding each of the application issues noted above: demand calculation and reduction, waste reduction, reclamation and conservation, and reduction in end use harm.

A second work product could be a set of improved project designs to reduce objectionable aspects of projects.

A third work product could be a plan by each potential applicant, and its associated land use authorities, to address those areas where their public interest profile is currently weak. For example, agencies that are good at water conservation but weak in wastewater reclamation can identify ways to improve the latter. By implementing these plans, each applicant could improve its chances for a prompt and successful permit process, and reduce the likelihood of substantive objections arising.

Regardless of the work products chosen, I think that one of the most valuable outputs of the project will be the information exchanged among agencies with unique and varied successes in water management. For example, agencies that are weak in conservation can learn from those that are strong in that area. Also, as agencies share their successes with the environmental community at the table, they are likely to improve their reputation with those MCG participants.

Agencies that complete this process will be effectively preparing for the day when they apply for a permit with the State Water Board. Members of the environmental community who participate in this process will have an opportunity to seek the reforms they strive for in a collaborative setting with all the relevant parties at the table.

IV. Some Possible Reservations & Responses

It is possible that the agencies are not yet inclined to cooperate as fully as required to exchange information. I doubt that, since they generally like to talk about their successes.

It is possible that the agencies do not want to audit their public interest profiles in public at this time. If that is the case, I encourage them to do so privately, so that they can begin improving their public interest profiles as soon as possible.
It is possible that some agencies are not interested in improving some aspects of their public interest profiles. They may not share the values that underlie the state’s definition of the public interest. They may not share the political philosophy that state and local government is responsible or well suited for promoting these so called public interests. If that is the case, I would hope that those agencies would not object to the other agencies participating in the PIPE Project.

It is possible that the effort would take more time than the MCG stakeholders are willing to spend at this time. It is possible that this effort, like so many other proposals made during IRWMP processes, will be deferred to some unspecified time, and some uncertain process, that is yet to be funded. That would be unfortunate. It has been stated previously the group may achieve a goal of identifying a set of water development and resource conservation projects that together meet many MCG participants’ objectives. It would not be ideal if the applications to the State Water Board for those water development projects proceeded, without employing the PIPE Project to resolve the remaining issues associated with the water permits. If we avoid or postpone the PIPE Project, then we are not likely to meet our stated expectation for MokeWISE: “to yield a scientifically-based and broadly-supported water resources program that includes comprehensive and sustainable approaches to water resources management in the Mokelumne River watershed.” (emphasis added.)

Most of the MCG members have worked too long and too hard at too many half-hearted attempts to resolve water resource management issues in the watershed. Let this effort be different. Let us give this effort our whole hearts.

It is easy to give in to past hurts and ongoing grudges. It is easy to assert one’s particular brand of self-righteousness. It is easy to give into the temptation to let somebody else take the risk of failure, and to let somebody else do the heavy lifting of negotiation. It would be easy to half-heartedly glide through MokeWISE, and to make little progress in the end.

It is hard to put aside past hurts and ongoing grudges to come to the table. That is required in collaborative processes. It is hard to try to understand somebody else’s reason for self-righteousness. But that is necessary for collaboration. It is hard to take the risks to collaborate. One reason to take the risk is because the rewards of conflict resolution are substantial. Another reason to take the risk to collaborate is to band together against a greater threat. (As the old saying goes, only fools fight in a burning house.) No doubt about it; successful collaboration takes hard work. It is the hard that makes the success great.
Dear Cecily,

I have completed my review of the Amador County General Plan ("DGP"), its Draft Environmental Impact Report ("DEIR") and related materials including the current General Plan, staff reports, and comment letters submitted in the course of plan development. As requested my focus has been to identify additional feasible impact mitigation measures that based on my professional opinion and experience will further reduce significant and significant unavoidable impacts associated with implementation of the DGP and identified in the DEIR. I have been careful to recommend feasible impact mitigation measures that also meet the DGP principles and DEIR objectives as well as preserve and enhance the economic assets of the County as described in both the DGP and DEIR. My resume is attached hereto as Attachment 1.

The DEIR identifies numerous significant and significant unavoidable impacts, but fails to propose all feasible mitigation capable of further reducing those impacts. The DEIR must identify any and all feasible impact mitigation measures even if they will not reduce the impact to a less than significant level. CEQA Guidelines Section 15126.2(b). The DEIR identifies as significant and unavoidable, impacts to aesthetics and scenic resources, farmland, forestland, biological resources, greenhouse gas emissions, hazards and public facilities and services, among other impacts. The DEIR also neglects to fully analyze and identify all feasible mitigation measures capable of reducing cumulative impacts. Numerous feasible mitigation measures in the form of additional policies are available to reduce the severity of these impacts. Mitigation measures proposed in an EIR must be “fully enforceable” through legally binding instruments and in this case by adding them as policies directly to the General Plan and listing them in the General Plan EIR Mitigation Monitoring Report. CEQA Guidelines Section 15126.4(a)(2). In addition to reducing impacts, in
most cases the addition of new policies will help to fulfill requirements of state planning law for required contents of the General Plan, such as
the requirement for an open space program.

I have been careful to choose and recommend mitigation measures in the form of proposed policies that will also preserve and enhance the
economic assets of the County including but not limited to the County’s scenic, recreational, agricultural and forest landscapes and resources.
As such, the majority of recommended policies and programs in the matrix below are suggested for inclusion in the General Plan Economic
Element, though the County and its consultants can select the appropriate element that is the best fit for each recommendation. Each of the
mitigation measures address multiple impacts. Where these or similar measures have been adopted in other County General Plans and have
been relied on to address significant impacts, that co-benefit is noted. Policy examples (cited in the Matrix below) from a number of exemplary
County General Plan’s, are attached to the main Foothill Conservancy comment letter. At a later date, I will be sending excerpts from the EIR’s
and CEQA Findings for those General Plan’s that document reliance on measures like those recommended below to reduce significant and
significant unavoidable impacts.

In conclusion, it is my professional opinion that the County must adopt additional feasible mitigation measures similar to those recommended
below in the matrix. If you have questions concerning my recommendations, please feel free to contact me,

Terrell Watt, AICP

*Terry Watt*

Owner, Terrell Watt Planning Consultants
### Matrix of Recommended Mitigation Measures to Address Significant and Significant Unavoidable Impacts Associated with the Proposed Draft Amador County General Plan

<table>
<thead>
<tr>
<th>DEIR Conclusion</th>
<th>DEIR/DGP Context and Widely Accepted Mitigation Approaches</th>
<th>Proposed Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note:</strong> The impact mitigation measures below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted, most of the recommendations could therefore be included in the Economic Element of the General Plan. However, the County and its consultants may choose to incorporate the recommended measures, or alternative but equivalent measures, in other elements of the General Plan as they deem the best fit.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Aesthetics (SU)

The DEIR and DGP acknowledge the importance of County’s scenic resources for tourism. According to the DGP, “In addition to providing economic benefits in its own right, increased tourism offers expanded opportunities to showcase the County’s rural character and high quality of life.” DGP at E-25. According to the DEIR, “[t]he most common scenic views in Amador County, where development would most likely occur, are open views of low-lying hills covered in annual grasslands, oak woodlands, and crop- and rangeland in the western part of the County.” DEIR at 4.1-4

The DEIR finds numerous significant unavoidable impacts on scenic vistas and resources. The DEIR seeks to reduce the significance of the impacts through a number of measures including project conditions such as on building height and orientation and adoption of a Scenic Highway Ordinance expressed as Implementation Programs in the DGP. DEIR at 4.1-5 to 6. The latter measure, Scenic Highway Ordinance, holds some promise.

The impact mitigation measures (or modified measures) below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted most of the recommended policies could therefore be included in the Economic Element of the General Plan.

Modify the Proposed Mitigation Measure 4.1-2: Implement Program P-13, Scenic Highway Ordinance to include performance measures that ensure scenic viewsheds are protected for all state highways and major collectors including, but not necessarily limited to Ridge Road, Old Sacramento Road, Fiddletown Road, Shake Ridge Road, Climax Road, New York Ranch Road, Stoney Creek Road and State Highways 16, 88, 49, 26, 104, and 124. Incorporate the following into the Ordinance and General Plan, through amendment as needed, to ensure protection of the scenic resources:

- Working with stakeholders in the community, develop a diagram (“Figure X”) showing areas of high and very high visual sensitivity. Viewsheds from major collectors and highways, as well as ridgelines and hillsides visible from those roads, highways and other public areas, shall be mapped and criteria adopted to avoid visible development as well as to protect natural and historic features.
- Development in visually sensitive areas including but not limited to ridgelines and viewsheds from major collectors and highways (as shown on “Figure X”) shall be subordinate to natural and historical features and all feasible measures taken to properly locate development to avoid visually sensitive areas.
but lacks meaningful performance measures to ensure its full efficacy in reducing impacts.

The DEIR concludes that with these and other measures, impacts remain significant and unavoidable. The DEIR neglects to include feasible mitigation for impacts to scenic and historic resources including scenic highways including the following approaches taken by other County General Plans:

- Maps (General Plan Figures) showing the locations and extent of scenic and historic resources and policies requiring development avoid these areas through development at the lowest end of the density range, subdivision limitations and clustering where feasible.
- Support for purchase of development rights and conservation easements from willing sellers in these scenic areas.
- Policies and programs in the General Plan that provide compensation for noncommodity values (e.g., scenic beauty, habitat, GHG sequestration, cultural resources, etc.) provided by private properties and support for funding mechanisms to provide funding for purchase or lease of these values from willing sellers. Funding mechanisms include, but are not limited to real estate transfer fees, document filing fees, landscape and lighting districts, creation of an open space district with ability to generate bond and other funding, sales tax

New Goal in Economic Element: Retain the character and natural beauty of Amador County that supports tourism by conserving and maintaining visible physical features, natural and historical resources, and agricultural and forest/woodland landscapes.

New General Plan Policy (based on policy in the current Amador County General Plan): Prohibit clearcut logging on parcels 2 acres or larger within sight of all state highways and major collectors including, but not necessarily limited to Ridge Road, Old Sacramento Road, Fiddletown Road, Shake Ridge, Climax Road, NY Ranch Road, Stoney Creek Road and State Highways 16, 88, 49, 26, 104, and 124.

New General Plan Policy: Outdoor light to illuminate the premises shall be the minimum necessary to provide for public safety and security and shall avoid spillover light, glare and sky glow to the maximum extent feasible. Use of well designed, energy efficient fixtures that face downward, emit the correct intensity of light for the use and incorporate energy saving timers will also save costs. Outdoor lighting fixtures that are used to illuminate an architectural feature shall be directed or shaded so that the light does not fall on adjacent properties or create glare within public rights of ways.

The above recommended mitigation measures in the form of General Plan policies also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:

- DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
- DEIR Objectives 1, 2, 3, 6, 7, 10 and 11.

All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts to aesthetic and scenic resources. In addition to the above recommended policies, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence.
| Conversion of Farmland (SU) Including rangelands | The DEIR and DGP underscore the importance of agriculture to Amador County. DEIR at 4.2-4 and DGP at E-26. “Conservation of agricultural land is key to the continued health of Amador County’s agricultural economy.” DGP at E-26. See also Draft Conservation Element at pages C-8 to C-11. “Agriculture remains a crucial industry for Amador County, both in terms of its economic importance and because farming and ranching lie at the core of the community’s identity and culture.” Draft Conservation Element at C-10.

The DEIR finds numerous significant unavoidable impacts as a result of the conversion of agricultural land, including farm and range lands, with implementation of the General Plan. The DEIR seeks to reduce the significance of the impacts through a number of measures including working with LAFCo to identify alternatives to expansion of SOIs into farmland, site planning techniques to avoid impacts at time of project consideration where projects would convert 5 acres or more, and in the event impacts cannot be avoided, requirement for a conservation easement at a 1:1 ratio. DEIR at 4.2-15-17.

It should be noted that the DEIR fails to provide evidence that a higher ratio of mitigation – 3:1 – is infeasible. | The following recommended mitigation measures (or modified measures) in the form of policies would be added to the Economic Element of the General Plan. The recommended measures would further reduce significant and significant unavoidable impacts:

Modify Mitigation Measure 4.2-1c and add a Framing Policy to Implement Agricultural Conversion Easements as follows:

Add a New Framing Policy to the Economic Element: New EE Policy: Require farmland conversion mitigation where avoidance has been found infeasible for either of the following actions:

a. A General Plan amendment that changes the designation of any land from an agricultural to a nonagricultural use or

b. An application for a development permit that changes the use of land from production agriculture to a nonagricultural use, regardless of the General Plan designation.

In such cases, the minimum mitigation required shall be 2:1 of equivalent value farmland. (See e.g., Davis General Plan at page 295 (j) requirement for a minimum of 2:1 mitigation for agricultural land conversion to development).

Modify the Agricultural Conversion Easement Program to implement above policy: Modified EE Program to be included in the General Plan: Create and adopt a farmland conversion mitigation program and ordinance. Require compensation for loss of agricultural land, including rangeland. Establish appropriate mitigation ratios for the program or utilize a graduated mitigation mechanism. The mitigation ratio shall be a minimum of at least 2:1 (2 acres of farmland and/or rangeland protected through mitigation with land of equivalent value for each acre converted). The program shall not present regulatory barriers to agritourism, agricultural services, and agricultural processing where such uses are permitted and where they are sited to avoid the best farmland and rangeland. The program, where feasible, shall also establish mitigation within the... |
The DEIR concludes that with these and other measures, impacts remain significant and unavoidable. The DEIR neglects to include feasible mitigation for the loss of farmland and rangeland including measures routinely included in other County General Plan and found to further reduce impacts. In general such measures include:

- Limitations on new subdivisions where such subdivisions would not advance agricultural vitality and production (see e.g., Yolo County General Plan Policy AG-1.2: “Maintain parcel sizes outside of the community growth boundaries large enough to sustain viable agriculture and discourage conversion to non-agricultural home sites” and Policy AG-1.3: “Prohibit division of agricultural land for non-agricultural uses.” These two Yolo County Policies were relied on in the EIR and CEQA findings to reduce significant impacts to agricultural lands as well as related to greenhouse gas emissions. Yolo County General Plan at page AG-22.
- Inclusion of additional areas in agricultural reserve designations/overlays with findings for conversion.
- Establishing minimum parcel size based on optimal parcel size for specific agricultural/farming/ranching activity by agricultural region or area.
- Urban growth boundaries around county unincorporated communities with findings required for expansion.
- Higher ratio of mitigation (e.g., 2:1 agricultural area where the conversion occurs as a preferred strategy. The General Plan program and ordinance shall include a fee option and shall provide an exemption for farmworker housing, again ideally sited off of the best farmland and rangeland.

Add New framing Policies and General Plan Implementation Programs as follows:

New Policies to be added to the Economic Element:

EE Policy: Ensure that agricultural parcels are maintained at a sufficient minimum parcel size so as to remain a “farmable unit.” Farmable units are defined as the size of parcels a farmer would consider viable for leasing or purchasing for different agricultural purposes. Acknowledge the eight major agricultural resource areas (See Figure E-4 in the Draft Economic Element) and use these regions to support the maintenance and expansion of profitable agricultural production by defining the minimum parcel size based on the agricultural resource in each area and minimum viable parcel size to maintain and expand profitable production.

EE Policy: Maintain agricultural production as the principle use on agricultural lands by limiting residential and other uses to that which supports agriculture, including rangeland and farmland. Allow one residence and a permitted secondary unit on each legal lot of record as of [as of specified date] provided however that (i) the owner demonstrates compliance with all other applicable requirements, and (ii) before such exemption is granted, the lots have first been merged with contiguous parcels to the maximum extent possible consistent with state law. (See for example Solano County General Plan Policy Example.)

Add New Implementing Programs below to the General Plan:

EE Program: Develop and adopt minimum parcel sizes appropriate to each Agricultural Area and use those minimum parcel sizes in conjunction with the agricultural land use descriptions and designations to ensure the maintenance and enhancement of profitable production. Incorporate the resulting Table into the General Plan within one year of adoption of the General Plan. (See for example Table AG-3: Agricultural Regions in the Solano County General Plan at page AG-21 submitted with Policy Examples).
minimum) for all conversions (not just 5 or more acres).

- Measures to address the cumulative conversion of agricultural land including through City development such as pass through agreements (e.g., Yolo County pass through agreements with Davis) that restrict County development in City SOIs and require joint and community based planning for projects in those areas.
- Voter approval for any project that would result in a conversion of farmland or rangeland in specified agricultural areas or zones.
- Clustering programs to preserve the best farmland and rangeland. Note: The County’s DGP Implementation Plan includes a revision to the zoning code to allow for clustering. See page P-4 (d). This proposal should be strengthened to require a conservation easement in all cases of clustering.

Also note that the DEIR includes the recommendation by the Foothill Conservancy in Alt 2 for an additional economic development policy that identifies the minimally economic parcel sizes for agricultural and timber lands. A recommendation for mitigation in the form of a feasible implementing program for that approach is provided in column 3.

Conversion of Forestland (SU)  The DEIR and DGP underscore the importance of timber resources to Amador County’s economic vitality and public safety. DEIR at 4.2-20 and DGP at

New EE Program in the General Plan: Require that the subdivision of agricultural lands shall only be allowed upon demonstration that long-term productivity on each parcel created would be enhanced as a result of the subdivision. In approving such subdivisions where findings can be made that subdivision would in fact enhance long-term productivity, fewer parcels (at a lower density) than allowed by the General Plan Land Use designation may be approved consistent with the minimum parcel sizes allowed in each Agricultural Area and taking into consideration topography, soil, water availability, and the capacity of the resulting parcels to sustain viable agricultural production. (Note: A model program that could be used as a template for an Amador-tailored program pursuant to this recommendation is the Tulare County Rural Valley Lands Plan point system, submitted with the Policy Examples).

The above recommended mitigation measures in the form of General Plan policies and General Plan programs also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:

- DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
- DEIR Objectives 1, 2, 3, 6, 7, 9, 10 and 11.

All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts to farmland, rangeland and working landscapes as well as other impacts. In addition to the above recommended General Plan policies and programs, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence.
“Amador County supports the continued viability of timber harvesting. Property management and production of timber resources can also reduce risk of catastrophic wildfire, especially in the eastern portion of the County.”

The DEIR finds numerous significant unavoidable impacts as a result of the conversion of Forestland to Non-Forest use with implementation of the General Plan. The DEIR seeks to reduce such impacts through mitigation measures in the form of new general plan programs that seek to retain appropriate land use designations and zones and require development review for discretionary projects.

The DEIR concludes that with these and other measures, impacts remain significant and unavoidable. The DEIR neglects to include feasible mitigation for the conversion of forestland to non-forest uses including measures routinely included in other County General Plans and found to further reduce impacts. In general such measures include:

- Mitigation (e.g., 2:1 minimum) for all conversions of forestland that are not avoidable.
- Clustering with conservation easements required on remainder property to preserve the best forestland.
- Programs that provide compensation for noncommodity values (e.g., scenic beauty, habitat, GHG sequestration, cultural resources, etc.) provided by private in the Economic Element of the General Plan.

Implementation programs for Timber Production in the Implementation Plan should be incorporated into the General Plan and strengthened. In addition, the following new program incorporated into the General Plan would further reduce significant impacts:

New Program in the General Plan: Cooperate with federal and state agencies to achieve the sustainable conservation of forest land as a means of providing open space, protecting scenic beauty and cultural resources, supporting eco-tourism and recreation, maintaining carbon sinks, protecting natural resource lands and protecting against uncharacteristic wildland fire, especially fires that pose a threat to lives, property, habitat and recreational or cultural resources.

Modify the Ag Conversion Easement Program to include Forestlands OR develop a similar mitigation program for forestland conversion: Modified EE Program in the General Plan: Create and adopt an agricultural land and forestland conversion mitigation program and ordinance. Require compensation for loss of agricultural lands, including farm and rangeland, and forest lands. Establish appropriate mitigation ratios for the program or utilize a graduated mitigation mechanism. The mitigation ratio shall be a minimum of at least 2:1 (2 acres of farmland/rangeland/forestland protected through mitigation with land of equivalent value for each acre converted.) The program shall not present regulatory barriers to agritourism, agricultural services, and agricultural processing or uses compatible with timber harvest where such uses are permitted and where they are sited to avoid the best farmland/forestland. The program, where feasible, shall also establish mitigation within the agricultural area [add forestlands] where the conversion occurs as a preferred strategy. The program shall include a fee option and shall provide an exemption for farmworker housing, again ideally sited off of the best farmland and rangeland.

The above recommended mitigation measures in the form of General Plan policies and programs also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:

- DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
- DEIR Objectives 1, 2, 3, 6, 7, and 9.
properties and support for funding mechanisms to provide funding for purchase of these values from willing sellers. Funding mechanisms include, but are not limited to real estate transfer fees, document filing fees, landscape and lighting districts, creation of an open space district with ability to generate bond and other funding, sales tax (tied to transportation or stand alone), impact fees, development agreement related fees, etc. See e.g., Sonoma, Yolo, Placer County General Plans.

| Biological Resources (SU) | The DGP and DEIR acknowledge the abundance and importance of habitats and species diversity in the County. “The complex array of habitats in Amador County supports an abundant and diverse fauna because large tracts of land are covered by habitats known to have outstanding value for wildlife, such as mixed coniferous forests and oak woodlands.” DEIR at 4.4-10. The DEIR finds numerous significant unavoidable impacts to special status species, riparian habitats, numerous sensitive natural communities (e.g., lone chaparral, oak woodlands) and wetlands with implementation of the General Plan. The DEIR seeks to reduce such impacts through mitigation measures in the form of discretionary project review and imposition of BMPs, compensatory mitigation (e.g., 1:1 replacement) and other requirements where avoidance is not possible. Given this rich array of habitat and species, and the importance of preserving this diversity for

| Direct Impact to Species and Habitats | All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts to reduce impacts to forestland and timber resources. In addition to the above recommended General Plan policies and programs, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence. The impact mitigation measures below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted most of the recommended program modifications and policies could therefore be included in the Economic Element of the General Plan. New Policy or Program in the Economic Element: The County shall, in concert with the US Fish and Wildlife Service, the California Department of Fish and Wildlife, and stakeholders including but not limited to property owners develop a conservation strategy for the County to provide for the protection of natural communities and rare and special status species. Focus areas shall be identified by the stakeholders. The conservation strategy shall at a minimum be adopted by the County Board of Supervisors, but consideration should also be given to obtaining grant funding and evolving the strategy into a formal Conservation Plan capable of allowing the County to be a permittee for the purpose of streamlining biological resource permits for covered activities. The strategy shall be adopted within four years of General Plan adoption and until such time the County will work with the USFWS and CDFW to refine mitigation requirements (as described in the DGP DEIR) for habitat loss due to discretionary project approval. Incorporation of these measures into an interim conservation strategy tied to the conservation planning agreement should be considered. New EE Program in the General Plan: Establish a resource mitigation overlay district within the zoning ordinance to encourage site and permit mitigation banks. |
ecotourism and the economic vitality of the County, it is disappointing to see the DEIR fails to identify all feasible mitigation measures capable of further reducing the likely significant impacts to these resources with Plan implementation. Such measures include but are not limited to the additional of new policies and programs that include landscape scale, rather than project specific, solutions to meet both human needs and the needs of the natural environment such as Natural Communities Conservation Plans (NCCPs) and Habitat Conservation Plans. In addition to Conservation Plans that both serve to conserve natural communities at the landscape level while accommodating and streamlining permits for appropriate development, numerous feasible mitigation measures are omitted that are capable of further reducing significant impacts to biological resources. In general such measures include:

1. Adoption and implementation of NCCP/HCP (recent examples include Orange County Transportation Authority NCCP/HCP providing programmatic mitigation for Freeway Projects; East Contra Costa County NCCP/HCP that avoids project by project permitting that is costly and time consuming for applicants and often results in uncoordinated and biologically ineffective mitigation.

2. Resource conservation overlays on the Land Use Diagram to identify areas of the county with high-priority needs for biological resource management and/or focus areas for mitigation banks or other

New EE Program in the General Plan: Development shall avoid, minimize and mitigate impacts to rare and special status species and critical habitat to the maximum extent feasible. Measures may include, but are not limited to:

- Clustering lots to avoid habitat areas and wildlife corridors (pursuant to proposed DGP Implementation Program P-1);
- Dedications of permanent conservation easements;
- Purchase of development rights from willing sellers; and
- Other appropriate means.

If development may affect listed species, consultation with resource agencies may be required and mitigation requirements met as determined by law but in no case less than 2:1 for equivalent habitat.

The above recommended mitigation measures in the form of General Plan policies and programs also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:

- DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
- DEIR Objectives 1, 2, 3, 4 and 5 and 8 (through NCCP/HCP to streamline permitting for development in appropriate areas with programmatic mitigation), 6, 7, and 10.

All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts to biological resources including impacts to species and habitats. In addition to the above recommended General Plan policies and programs, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence.
forms of mitigation. The Yolo County General Plan Overlay policy and program RS 1.2 provided in the Policy Examples serves as a possible template for tailoring to Amador County.

3. Programs that provide compensation for noncommodity values (e.g., scenic beauty, habitat, GHG sequestration, cultural resources, etc.) provided by private properties and support for funding mechanisms to provide funding for purchase of these values from willing sellers. Funding mechanisms include, but are not limited to real estate transfer fees, document filing fees, landscape and lighting districts, creation of an open space district with ability to generate bond and other funding, sales tax (tied to transportation or stand alone), impact fees, development agreement related fees, etc. See e.g., Sonoma, Yolo, Placer County General Plans.

| GHG (SU) | The DEIR finds that greenhouse gas emissions remain a significant and unavoidable impact after mitigation including development of a GHG reduction plan and project specific measures. The County's commitment to the completion and adoption of the plan is to be applauded, but a greater commitment should be made to specific measurable outcomes capable of reducing GHG emissions including but not limited to:
|          | • Specific VMT goals countywide and project specific VMT goals. | The impact mitigation measures (or modified measures) below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted most of the recommended program modifications and policies could therefore be included in the Economic Element of the General Plan.
|          | Modifications to proposed Mitigation Measure 4.7-1a: Development and Implementation of a GHG Reduction Plan. The GHG Reduction Plan shall review the proposed mitigation measures recommended by the Attorney General's Office and incorporate all feasible measures into the GHG Reduction Plan and General Plan. See Attachment 2. Until the GHG Reduction Plan is adopted and implemented through General Plan amendment, the County shall withhold approval of major new developments (10 or more units), specific plans, master plans and other discretionary projects that generate an increase in GHG emissions. |
- Amendment to goals, policies, programs and land uses in the General Plan if found as a result of the GHP Plan work to reduce GHG emissions.
- Strategies in the Attorney General’s recommended Mitigation List (Attachment 2).

These and other measures adopted in other County General Plans typically have economic (lower energy costs) and job generation (renewable energy jobs) co-benefits.

New Policy: New development (consisting of projects of ten units or more, specific and/or master plans) shall meet or exceed a vehicle miles per household of equal to or greater than the average Vehicle Miles Traveled (VMT) in the existing cities in Amador County at the time of project approval. (See for example Yolo County General Plan Policy CI-3.19: The Dunnigan Specific Plan shall incorporate a maximum of 44 VMT generated per household through implementation of all feasible actions including but not limited to specifications in policies CC-3.3 through CC-3.6. As part of the specific plan implementation, the VMT performance shall be monitored in each phase. If VMT performance exceeds the threshold in this policy, then additional actions shall be implemented (list provided). Page CI-37 of the Yolo County General Plan.)

New Policy: Reduce Vehicle Miles Traveled (VMT) by providing jobs/housing balance and limiting new development to single family homes on legal lots of record where public elementary schools, childcare, shops (grocery, pharmacy, banking) and basic medical services are not available within 1 mile. Related New Program: The County shall adopt an appropriate jobs/housing balance and require major new developments (projects of ten or more units) specific plans and master plans to achieve that balance.

New Policy: Strive for a high enough minimum density in side town centers for new development projects (ten units or more) and in specific plans or master planned communities, sufficient to support transit or car share programs (e.g., carshare, zipcar).

New Program in General Plan: All County buildings and services (including street lighting and vehicle fleets), and projects that rely on County funds or subsidies, shall exceed California energy efficiency codes, fuel efficiency goals and other requirements (e.g., net zero by incorporating energy efficient lighting, heating and cooling systems, appliances, equipment, control systems; incorporating passive or active solar design where feasible, using cool roofs and pavements; installing efficient lighting and reducing unnecessary outdoor lighting; and incorporating water reducing systems - e.g., graywater systems, and features including water efficient landscapes and other measures as feasible listed in Attachment 2). The GHG Reduction Plan shall seek to improve on these strategies for County sponsored or supported projects and extend these and other measures to new development.
| Hazards (SU) | The DEIR finds numerous significant unavoidable impacts associated with hazards. In particular, the DEIR finds that exposure of structures to wildland fire to be a significant unavoidable impact. Figure 4.8-1 in the DEIR identifies areas of fire danger. Despite the DEIR’s conclusion that implementation of the DGP will put people and new structures in areas of high and very high risk from wildland fire, feasible mitigation measures are omitted and assuming development in these areas, focuses only on fire safe development and funding to improve services. These are good policies and programs to include in the General Plan but do not offer landowners and county tax payers other options that in the long run will cost the County and tax payers less and save property and lives. Other county General Plans have adopted stronger and feasible policies and programs to first reduce the number of new people and structures located in these high hazard areas. Typical policy and program examples adopted by other counties.

| The impact mitigation measures below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted most of the recommended program modifications and policies could therefore be included in the Economic Element of the General Plan. In the case of the recommendations below, limiting new development in areas of high and very high fire danger would also save the County and taxpayers money as well as save lives and property.

| **New Policy:** Calculate potential residential densities and commercial floor area ratio (FAR) at the low end of the applicable range on sites with sensitive habitat, in viewsheds or on ridgelines, where properties lack public water or sewer systems and in high hazard areas (e.g., high and very high fire danger, flooding, steep slopes) except for any properties identified for multi-family housing to meet Regional Housing Needs Allocation (RHNA) in the Housing Element. [Note: This Policy would also mitigate other significant unavoidable impacts including but not limited to scenic resources and hazards, among others.]

| **EE Program:** Require that the subdivision of land in areas of high and very high fire hazard shall be allowed only upon demonstration that adequate fire and emergency medical protection personnel and equipment are in place and funded long-term to protect lives and property (e.g., 24/7 fully staffed and equipped professional fire protection facility is within five miles). |
include:

- Limit new development to the lowest end of the density range in high and very high fire danger areas where fire protection services are limited.
- Provide incentives for property owners to participate in conservation easement purchase programs in areas of high and very high fire danger to reduce new development in those areas.
- Provide incentives for lot mergers to reduce new development in areas of high fire danger.
- Limit new subdivisions in areas of high and very high fire danger and where fire protection services are limited.

In addition to this approach, other recommended feasible mitigation measures are proposed in column three.

| Public Facilities and Services (SU) | The DEIR finds numerous significant unavoidable impacts to public services and utilities. The DEIR seeks to reduce such impacts through a combination of development demonstration of sufficient facilities/capacity of services and/or funding for additional capacity. The latter, funding for additional capacity should be evaluated for indirect or secondary impacts related to expanded services, facilities and utilities and in particular growth inducement. Setting that omission aside, it is disappointing to see the DEIR fails to identify all feasible mitigation measures capable of further reducing the likely significant impacts associated | The above recommended mitigation measures in the form of General Plan policies and programs also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:

- DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
- DEIR Objectives 1, 2, 3, 6, 7, and 9.

All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts associated with hazards. In addition to the above recommended General Plan policies and programs, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence. |

The impact mitigation measures (or modified measures) below were chosen because they also preserve and enhance the economic assets of the County. Unless otherwise noted most of the recommended program modifications and policies could therefore be included in the Economic Element of the General Plan.

Modify Development Proposal Review (D) to incorporate additional requirements for new development to ensure adequate public facilities and services and no fiscal impacts to the County (below), OR in the alternative, adopt the following new policies that pursuant to Imp Program D new development would have to be found consistent with.

Modification to IP D or New Policy (could replace #7 at page P-17): Require a fiscal analysis for all development proposals over 10 units and for specific and master plans so as not to have any short or long-term negative fiscal impact on County facilities, services or
with the lack of adequate services, facilities and capacity as these impacts are compounded on existing residents and businesses where new development is not required to fully pay its own way.

In the alternatives discussion of the DEIR, additional measures were identified as recommended by the Foothill Conservancy and others:

**Alt 3** – Limit new development to 50 units per year

**Alt 2** - rural development standards

Other counties have addressed the potential impacts of service limitations by including resource or growth management systems in their General Plans that monitor both manmade and natural resources and balance land use accordingly. Examples are provided in the Policy Examples (e.g., Resource Allocation Program and ordinance City of Jackson and San Luis Obispo County Resource Management System).

In addition to this approach, other recommended feasible mitigation measures are proposed in column three.

operations and no reduction in County services or infrastructure conditions for existing residents. Require planned growth to pay the full cost of new development, as well as, to the greatest extent feasible, benefit residents in each existing community through efforts that result in basic urban services. New development should show significant net benefit to the existing community.

**Modification to IP D or New Policy or Program:** Require all the following be in place for consideration of any specific plan, master plan and/or major new development (10 units or more): 5 acres of park per 1000 population, library, grocery store, basic medical, K-12 schools within walking or biking distance, 24/7 fully staffed professional fire department within five miles with adequate response times, sheriffs’ services with adequate response time, Advanced Life Support (ALS) units with adequate response times, municipal water, sewer system, municipal storm drainage serving entire community.

In addition, the following new policies should be adopted to reduce impacts associated with the lack of adequate services and facilities:

**New Policy:** Discourage extension of urban levels of service to serve new developments beyond existing town-like unincorporated communities and cities.

**New Policy:** Calculate potential residential densities and commercial floor area ratio (FAR) at the low end of the applicable range on sites with sensitive habitat, in viewsheeds or on ridgelines, where properties lack public water or sewer systems and in high and very high hazard areas (e.g., high and very high fire danger, flooding, steep slopes) except for any properties identified for multi-family housing to meet RHNA in the Housing Element. [Note: This Policy would also mitigate other significant unavoidable impacts including but not limited to scenic resources and hazards.]

**New Policy:** Prohibit the designation of new development (discretionary development beyond the minimum allowed on existing legal lots of record) in places with one or more of the following characteristics:

- Areas without adequate emergency services and utility capacity (e.g., public water and sewer) and where there are no capital improvement plans to pay for, construct and operate new facilities that can accommodate the proposed development;
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|   | • Areas where there are significant hazards and where there are no plans or adequate funding to adequately mitigate the risk (including but not limited to floodplains, high and very high fire hazard areas, unstable soils, known seismic faults, etc.);
|   | • Areas where there are significant natural and cultural resources (including but not limited to groundwater recharge, wildlife habitat, mineral or timber resources, scenic areas, etc.);
|   | • Areas not contiguous to existing urban (1 acre parcels or smaller) development.
|   | New Program in the General Plan: Recalibrate and establish a transportation fee program that is tied to VMT and takes into consideration all modes of travel for purposes of allocating mitigation and other fees and funding.
|   | New Program in the General Plan: Investigate adoption of differential fees for new development to reflect the higher cost of providing services and facilities farther from county services and facilities and infill areas. Review programs that have been effective in other jurisdictions to curb high costs of services and service delivery declines associated with new development including but not limited to the City of Lancaster’s Urban Structure Program, The City’s of Modesto, Sacramento and Visalia infill fee reduction program. [Note: Differential fees that reflect the true cost of providing services to new development have been shown to reduce GHG emissions and curb costs.]
|   | The above recommended mitigation measures in the form of General Plan policies and programs also serve to meet numerous DGP Principles and DEIR Objectives including, but not limited to:
|   | • DGP Community Vision Statement (All). See DGP at pages 1-7 to 1-8.
|   | • DEIR Objectives 1, 2, 3 and in particular 9.
|   | All of the above recommended measures have been relied on in one or more other County General Plans to reduce impacts associated with public services and facilities. In addition to the above recommended General Plan policies and programs, additional feasible mitigation measures listed in column 2 should be considered. Where found to be infeasible, conclusions must be supported by evidence.
June 16, 2017

Gene Mancebo, General Manager
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

Re: Environmental Impact Report for Water Right Permit Application No. 5647X03
(SCH #2016092008)

This letter is submitted on my behalf and behalf of the Ratepayer Protection Association (RPA) to comment on the draft Environmental Impact Report (DEIR) for the Central Amador Water Project (CAWP) Water Right Application (State Clearinghouse No. 2016092008) pursuant to the California Environmental Quality Act (CEQA) and other laws and regulations. These comments incorporate by reference all other comments made concerning this project.

In general, the DEIR is inadequate in at least three areas: 1) the scope of the project is misidentified, 2) the need for the project is not adequately quantified, and 3) although feasible mitigation exists, none is imposed. In addition, this comment discusses alternative policies that would reduce or eliminate the need for this project.

I. Scope of Project

AWA has plans to connect the CAWP system to the Amador Water System (AWS) near the intersection of Clinton Road, Irishtown Road, and State Highway 88. This is part of the project to provide treated water to customers along the Amador Ditch, but the physical connection will also allow treated water from the CAWP system to be delivered to the AWA Tanner facility, which actually distributes treated water to most of the inhabited portion of Amador County and which has a mandate to distribute water county wide. Therefore the proposed increase in water available to the CAWP system has a potential growth-inducing effect county wide, and that effect has not been addressed in the DEIR.

Although the CAWP and AWS systems are currently separated physically, AWA has adopted a combined rate structure that makes all rate payers collectively responsible for each AWA system. Therefore the planned connection between the CAWP and AWS systems does not constitute a new project or a reorganization of AWA. Instead, distribution of water obtained through the proposed Water Right (WR) is a natural consequence of AWA's current organization.

In order to make an informed decision, the DEIR must provide quantitative information regarding all significant impacts on the entire area served by AWA, including the planned extensions in the Ione and Shenandoah Valley regions and all other reasonably foreseeable extensions.
For example, the City of Jackson recently approved a project to increase the capacity of its waste water treatment facility to accommodate a 10-fold increase in population. Although Jackson is served by the AWS water system, the water provided by this project can be used to augment the AWS system to facilitate growth in the Cities and County. The DEIR does not disclose how the capacity of the AWS system relates to planned growth in that system and therefore the potential demand on the CAWP system that will be fulfilled by this project.

II. Need for Project

AWA has not based this project on any quantified need. Indeed, on page 2-5, the DEIR states that the current allocation of 1,150 af (acre-feet) of water is effectively used up\(^1\). The DEIR goes on to say that 11 years later, conservation measures have reduced demand. From these facts, AWA makes the illogical conclusion that an increased allocation is needed.

The DEIR must disclose the record of water use in the AWA service area and show quantitatively how available capacity is, or will inevitably become, inadequate. With that done, the DEIR must explain why there is no possible mitigation of the shortage other than increasing capacity in the manner proposed for this project.

III. Feasible Mitigation

The DEIR Executive Summary states "It is outside the scope of AWA's legal authority to develop or implement mitigation for secondary impacts such as traffic." That statement ignores the duty of AWA to establish policies to mitigate the direct and indirect effects of decisions that AWA makes.

AWA has identified itself as the Lead Agency (LA) for this project. It is therefore false reasoning that defeats the purpose of CEQA for a LA to argue that it is not responsible for the consequences of a project that it approves. AWA's statement quoted above is appropriate for a Responsible Agency (RA), not a LA. By approving a project to vastly increase the amount of water available, AWA will have precluded land use controlling agencies from properly mitigating projects that they approve. The direct effect of AWA's position is to eliminate the review and mitigation required by CEQA.

In order for AWA to limit its analysis as is appropriate for a RA, some other public agency must incorporate the proposed project into one for which it is the LA, and thereby take responsibility for analyzing all environmental impacts of the project. Only in that circumstance can AWA restrict its analysis as it has in the current DEIR.

Furthermore, even if AWA were a RA for this project, it has not fulfilled its responsibilities under CEQA. No policies have been established to restrict the use of water from the proposed project to specific areas of need. Existing AWA policies are unfair to ratepayers and the proposed project is designed to further that injustice rather than meet an identified need.

\(^1\) 1,149.7 af is reported to have been diverted from the Mokelumne river in 2006.
These deficiencies could be, and must be, easily corrected by the adoption of appropriate policies. The DEIR is inadequate because the alternatives analysis does not discuss the policies that would mitigate the significant adverse consequences of this project.

The one policy that would avoid all significant adverse impacts would be to limit capacity to the amount currently available. The DEIR falsely implies that this project is for the benefit of existing customers. In fact, it solely benefits future development. Because excess capacity has been proven over the preceding decade, an undisclosed amount of growth can occur without this project. Therefore the "no project" alternative is the only logical conclusion based on the information disclosed in the DEIR.

IV. Alternative Policies

The following comments discuss the effects of AWA policies in place and how alternative policies would reduce the significant adverse impacts of projects such as this one. Because the DEIR is silent on these matters, the following comments cannot all be related to specific statements in the DEIR, but rather amount to scoping comments for a revised DEIR.

1. Use funds collected from developers for what they are collected. If they are not needed for that purpose, they should be used to offset ratepayer costs in a way that they will effectively be used to reimburse ratepayers for their investment. More developer projects do not qualify as helping ratepayers.

2. Do not build grossly oversized projects that will overburden ratepayers with debt. This can easily be accomplished by taxing the properties that benefit from the project by being able to develop rather than having ratepayers pay the debt.

3. This very project is an example of AWA spending rate money to expand water capacity for unknown development. AWA says some project funds come from developer fees, but the fees were collected to pay for other infrastructure.

Ratepayers cannot be reimbursed for the other infrastructure if the funds collected for those projects are spent on this new water right.

Conclusion

This project has no clear public purpose. It is designed to provide capacity that is not currently needed, and may not ever be needed, without analysis of the consequences of making that capacity available for the asking of development interests. This project thereby defeats the purpose of CEQA to require that public agencies make informed decisions.
June 16, 2017

Gene Mancebo
Amador County Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

Subject: Central Amador Water Project Water Right Application
SCH#: 2016092008

Dear Gene Mancebo:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 15, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency
SCH# 2016092008
Project Title Central Amador Water Project Water Right Application
Lead Agency Amador County Water Agency

Type EIR  Draft EIR
Description AWA is requesting a water right permit to store up to 1,400 acre-feet per year (AFY) in Lower Bear River Reservoir and to directly divert up to 1,050 AFY of water that is currently diverted by Jackson Valley Irrigation District (JVID) further downstream. The permit would allow: 1) increase maximum rates of direct diversion allowed from the Bear River and North Fork Mokelumne River from 3 cubic feet per second to 5 cfs., with combined rates between these sources not to exceed 5 cfs; 2) increase the amount of water that may be diverted into storage annually at Lower Bear River Reservoir from 1,600 AF to 3,000 AF; and 3) increase the amount of water that may be beneficially used annually, whether by direct diversion or re-diversion of water released from storage, from 1,150 AF to 2,200 AF. The diversion would use existing facilities; no new construction is needed.

Lead Agency Contact
Name Gene Mancebo
Agency Amador County Water Agency
Phone 209-223-3018
Fax
Address 12800 Ridge Road
City Sutter Creek
State CA
Zip 95685

Project Location
County Amador
City
Region
Lat / Long
Cross Streets
Parcel No.
Township
Range
Section
Base

Proximity to:
Highways 88, 26
Airports
Railways
Waterways Mokelumne River, Bear River, Tiger Creek, Cole Creek
Schools Pioneer& Pine Grove ES
Land Use Not Applicable; no new facilities to be constructed

Project Issues Water Supply; Growth Inducing; Cumulative Effects; Biological Resources

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 2; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; State Water Resources Control Board, Division of Water Rights; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission

Date Received 05/02/2017 Start of Review 05/02/2017 End of Review 06/15/2017

Note: Blanks in data fields result from insufficient information provided by lead agency.
Thank you for giving Caltrans District 10 the opportunity to review the Draft EIR of the Central Amador Water Project Water Right Application. We concur that transportation impacts are and will be mitigated through the Amador County General Plan or any subsequent changes to that Plan. Otherwise, we have no comment.

Please contact me if you have any questions.

Michele Demetras
Associate Transportation Planner
Caltrans District 10 - Office of Rural Planning
(209) 948-7647
Appendix A – Notice of Preparation and Initial Study
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NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

TO: Responsible and Trustee Agencies, Organizations, and Interested Parties

FROM: Amador Water Agency (AWA)
12800 Ridge Road
Sutter Creek, CA 95685

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the Central Amador Water Project Water Right Application

AGENCIES: AWA will be the lead agency under the California Environmental Quality Act (CEQA) and will prepare an Environmental Impact Report (EIR) for the project identified below. AWA requests the views of public agencies as to the scope and content of the environmental information that is relevant to the agency’s statutory responsibilities in connection with the proposed project, in accordance with California Code of Regulations, Title 14, Section 15082(b), if the agency will need to use the EIR prepared by AWA when considering any permit or other approval for the project.

ORGANIZATIONS AND INTERESTED PARTIES: AWA requests comments and concerns from organizations and interested parties regarding the environmental issues associated with operation of the proposed project.

PROJECT TITLE: Central Amador Water Project Water Right Application

PROJECT LOCATION: Amador County, with existing diversion facilities on Bear River, Tiger Creek, and North Fork of Mokelumne River (see Figure 1 and 2)

PROJECT DESCRIPTION: AWA has applied to the State Water Resources Control Board (SWRCB) for a water right permit to store up to 1,400 acre-feet per year (AFY) in Lower Bear River Reservoir and to directly divert up to 1,050 AFY of water that is currently diverted by the Jackson Valley Irrigation District (JVID) further downstream. The proposed diversion will provide additional supply to the Central Amador Water Project (CAWP) service area, where AWA expects water use to increase beyond the amount allowed in its existing water right permit.

JVID’s water right Permit 12167 allows for the reversion of up to 2,200 AF of the face value amount of 5,000 AF to water users within Amador County (such as AWA) upstream of JVID’s diversion point. A reversion is allowed only after a determination is made by the SWRCB indicating that the reverted water is needed by the upstream water user requesting the reversion. Previous actions by the SWRCB resulted in the reversion of 1,150 acre-feet to AWA. If approved, AWA’s new water right permit would have the following effects (relative to AWA’s existing Permit 17579):

- Increase the maximum rates of direct diversion allowed from the Bear River and North Fork Mokelumne River from 3 cubic feet per second (cfs) to 5 cfs, with the combined rates between these sources not to exceed 5 cfs.
- Increase the amount of water that may be diverted into storage annually at Lower Bear River Reservoir from 1,600 AF to 3,000 AF.
• Increase the amount of water that may be beneficially used annually, whether by direct diversion or re-diversion of water released from storage, from 1,150 AF to 2,200 AF.

The proposed diversions and storage would be accomplished using existing facilities of AWA and PG&E, which have ample capacity for the increased diversion rates and storage amounts. No new water facility infrastructure would be required. AWA’s proposed points of diversion and rediersion are upstream from JVID’s current point of diversion at Pardee Reservoir. Water would be diverted, stored, and conveyed to the Buckhorn Water Treatment Plant for delivery within AWA’s Central Amador Water Project (CAWP) service area.

Additional details on the Project are provided in the Initial Study, which is available at the AWA website:

POTENTIAL ENVIRONMENTAL EFFECTS: The following areas of potentially significant environmental impact will be analyzed in the Draft EIR: Biological Resources, and Hydrology and Water Quality. Potential cumulative impacts and potential for growth inducement and associated indirect impacts will be addressed. Further details on the probable environmental effects of the proposed project can be found in Attachment A.

PUBLIC REVIEW PERIOD: This NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b) for 30 days. The comment period for the NOP begins September 2 and ends on October 3, 2016. Due to the limits mandated by State Law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

RESPONSES AND COMMENTS: Please indicate a contact person for your agency and send your responses and comments by 5:00 October 3, 2016 to:

Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685
(209) 223-3018

SCOPING MEETING: AWA will hold a scoping meeting on September 21 from 5:00 p.m. to 7:00 p.m. at the Board of Supervisors Chambers at the Amador County Government Center on 810 Court Street, Jackson. You are welcome to attend and present environmental information that you believe should be addressed in the EIR.

The NOP and all CEQA related documents for this project will be available for review on the web. You can view the NOP and Initial Study electronically at:

http://www.amadorwater.org/

If you require additional project information, please contact Gene Mancebo at (209) 223-3018 or visit the AWA website indicated above.
Figure 1: Vicinity Map
Figure 2: Diversion Locations
Initial Study

Central Amador Water Project
Water Right Application

Prepared for:

Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

May 2016
Initial Study for the Amador Water Agency Central Amador Water Project
Water Right Application

CEQA Lead Agency and Contact Person

Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685
(209) 223-3018

Project Sponsor

Amador Water Agency
Table of Contents
Chapter 1  Introduction ......................................................................................................................... 1-1
  1.1 Purpose of this Document ........................................................................................................ 1-1
  1.2 Scope of this Document .......................................................................................................... 1-1
  1.3 Impact Terminology .............................................................................................................. 1-1
Chapter 2  Project Description ............................................................................................................. 2-1
  2.4 Project Overview .................................................................................................................... 2-1
  2.5 Purpose and Need for Project ................................................................................................ 2-1
  2.6 Background .......................................................................................................................... 2-1
    2.6.1 Water Rights ................................................................................................................. 2-2
  2.7 Existing Facilities and Operational Requirements ............................................................... 2-5
  2.8 Permits Required .................................................................................................................... 2-5
Chapter 3  Environmental Checklist Form ......................................................................................... 3-1
  3.1 Aesthetics ............................................................................................................................. 3-3
  3.2 Agriculture and Forestry Resources ...................................................................................... 3-3
  3.3 Air Quality ........................................................................................................................... 3-4
  3.4 Biological Resources .......................................................................................................... 3-5
  3.5 Cultural Resources .............................................................................................................. 3-7
  3.6 Geology and Soils ................................................................................................................ 3-7
  3.7 Greenhouse Gas Emissions ................................................................................................... 3-8
  3.8 Hazards and Hazardous Materials ......................................................................................... 3-9
  3.9 Hydrology and Water Quality ............................................................................................... 3-10
  3.10 Land Use and Planning ........................................................................................................ 3-12
  3.11 Mineral Resources ............................................................................................................. 3-12
  3.12 Noise .................................................................................................................................. 3-13
  3.13 Population and Housing ...................................................................................................... 3-14
  3.14 Public Services .................................................................................................................... 3-14
  3.15 Recreation .......................................................................................................................... 3-15
  3.16 Transportation/Traffic ......................................................................................................... 3-16
  3.17 Utilities and Service Systems .............................................................................................. 3-17
  3.18 Mandatory Findings of Significance ................................................................................. 3-18
Chapter 4  Report Preparation ............................................................................................................. 4-1
  4.1 Report Authors ...................................................................................................................... 4-1
  4.2 References ............................................................................................................................. 4-1

List of Figures
Figure 2-1: Vicinity Map ................................................................................................................... 2-3
Figure 2-2: Diversion Locations ...................................................................................................... 2-4
## Acronym List

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<th>Description</th>
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Chapter 1 Introduction

1.1 Purpose of this Document

The Amador Water Agency (AWA) has filed a water right application with the State Water Resources Control Board (SWRCB), requesting approval to directly divert up to 1,050 acre-feet per year (AFY) of water from Bear River and North Fork Mokelumne River and store up to 1,400 AFY in Lower Bear River Reservoir (Project). The amount taken by direct diversion and rediversion from storage for consumptive uses in the central portion of Amador County would not exceed 1,050 AFY. The water rights process involves water right Permit 12167 of Jackson Valley Irrigation District (JVID). Currently, JVID is authorized to directly divert 3,850 acre-feet of water from March through October each year at Pardee Reservoir. JVID’s permit provides that of that amount, 1,050 acre-feet may revert to upstream diversions. AWA is requesting such reversion. AWA’s proposed direct diversion and storage may reduce water flow along the Mokelumne River between the AWA diversions and Pardee Reservoir. However there would be no net change in water flow downstream of Pardee Dam.

The proposed diversions and storage would be accomplished using existing infrastructure. No new water facility infrastructure would be required.

AWA has prepared this Initial Study (IS) to provide the public and Responsible and Trustee Agencies reviewing the proposed Project with information about the potential impacts on the environment. AWA proposes to complete an Environmental Impact Report (EIR) for the proposed Project and is using this Initial Study to focus environmental review. This project-level Initial Study evaluates potential environmental impacts associated with the Project and identifies potentially significant impacts that require further study to determine whether or not such impacts are significant, and if so, whether or not they can be mitigated to less than significant levels with mitigation. These include the Project’s potential direct impacts on hydrology and aquatic biological resources, and indirect impacts that could be associated with growth that could be accommodated by the Project. These environmental topics will be addressed in detail in a focused EIR to be prepared for this Project.

1.2 Scope of this Document

The IS was prepared to examine any impacts on environmental resources that would result from approval of the Project. Areas of potential impacts that were evaluated include:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

1.3 Impact Terminology

The environmental impact analysis for each resource defines the criteria used to judge whether an impact may be significant based on the CEQA Initial Study Checklist and regulatory agency standards. Impacts that exceed identified threshold levels are considered significant. In describing the significance of
impacts, the following categories of significance are used and are based on the best professional judgment of the preparers of the Initial Study:

**No Impact:** An effect that would have no impact, or would have a positive impact on the environment, such as reducing an existing environmental problem.

**Less than Significant:** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures.

**Less than Significant with Mitigation:** An impact is potentially significant, but can be reduced to below the threshold level (to less than significant) given reasonable and available mitigation measures.

**Potentially Significant:** An impact that may cause substantial impacts above the threshold level. Such an impact requires further evaluation necessitating the preparation of an EIR for the project and may require consideration of mitigation measures if, after further evaluation, the impact is determined to be significant.
Chapter 2  Project Description

2.4 Project Overview

AWA has filed a water right application (Application 5647X03) requesting year-round direct diversion of up to 1,050 AF from Bear River and the North Fork Mokelumne River and the annual storage of up to 1,400 AF in Lower Bear River Reservoir during the period of October 1 to July 15. The total amount to be directly diverted and rediverted from storage for consumptive uses on an annual basis would not exceed 1,050 acre-feet. To achieve the direct diversion of 1,050 acre-feet annually, the application is coupled with a request that of JVID’s currently authorized direct diversion right of 3,850 acre-feet pursuant to its Permit 12167, 1,050 acre-feet revert to AWA as contemplated in said permit. Under AWA’s application, water would either be diverted or re-diverted from the Bear River and North Fork of the Mokelumne River at four different locations:

1) Bear River at Lower Bear River Reservoir Dam
2) North Fork Mokelumne River at Salt Springs Reservoir Dam
3) North Fork Mokelumne River at Tiger Creek Afterbay Dam
4) Tiger Creek at Tiger Creek Regulator Dam

AWA’s proposed points of diversion and rediversion are upstream from JVID’s current point of diversion at Pardee Reservoir. Water would be diverted, stored, and conveyed to the Buckhorn Water Treatment Plant (WTP) for delivery within AWA’s Central Amador Water Project (CAWP) service area. AWA’s pending water right application for the Project does not require the development or construction of any new water supply infrastructure, as existing facilities owned by AWA or Pacific Gas and Electric Company (PG&E) would be used to store and convey the water. Figure 2-1 shows the Project vicinity.

2.5 Purpose and Need for Project

AWA expects water use in the CAWP service area to increase in the future beyond the amount allowed in its existing water right Permit 17579, and for that reason, filed Application 5647X03, along with the above-referenced reversion request. AWA’s existing Permit 17579 allows the direct diversion of 1,150 AFY and the storage of 1,600 AFY at Lower Bear River Reservoir, with the total taken for consumptive use by direct diversion and rediversion from storage not to exceed 1,150 AFY. In 2006, AWA’s annual diversion for the CAWP service area was 1,149.7 AF, which was very close to the amount of water allowed under the permit. Although water use declined during the recession and was further reduced due to conservation during the multi-year drought that extended through 2015, AWA has projected that the need for water has not decreased and will likely increase in the future.

2.6 Background

CAWP was constructed in the late 1970s to provide surface water to communities in central Amador County hard hit by the multi-year drought being experienced at that time. The service area is generally along the Highway 88 corridor near the communities of Pine Grove, Mace Meadows, Sunset Heights, Ridgeway Pines, Rabb Park, Pioneer and Pine Acres (see attached map). CAWP currently draws raw water via the Gravity Supply Pipeline from PG&E’s Tiger Creek Regulator Reservoir to the Buckhorn WTP in Pioneer. The Buckhorn WTP currently provides treated water on a wholesale basis to three retail water purveyors, and provides treated water for direct retail sale to customers. There are currently about 3,500 parcels actively using water. Most water services are for residential use; however, there are some commercial services. Over the last 5 years, the total annual water use under AWA’s existing water right permit (Permit 17579) has ranged from about 777 acre-feet (AF) to about 952 AF.

The sources of supply for CAWP are the North Fork Mokelumne River (North Fork) and Bear River (tributary to the North Fork). Water redverted by AWA at PG&E’s Tiger Creek Regulator Reservoir may be comprised of natural flow or stored Bear River water released from PG&E’s Lower Bear River
Reservoir. PG&E delivers water to its Tiger Creek Regulator Reservoir by way of facilities owned and operated by it in connection with its Mokelumne Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 137). Use of the PG&E facilities by AWA is per an agreement between the two parties, most recently amended in 2012. PG&E's facilities used by AWA consist of the following: Lower Bear River Reservoir; Bear River Tunnel and Penstock; Salt Springs Reservoir and Powerhouse; Tiger Creek Conduit; Tiger Creek Regulator Reservoir; and Tiger Creek Forebay, Powerhouse and Afterbay. Tiger Creek Afterbay serves as a standby point of direct diversion and rediversion of water released from storage in Lower Bear River Reservoir in the event that AWA is unable to divert from the Regulator.

2.6.1 Water Rights

In 1960, the predecessor of the SWRCB issued water right Permit 12167 to JVID authorizing it to directly divert 5,000 acre-feet from Pardee Reservoir at a rate not to exceed 50 cubic feet per second (cfs) from March 1 through October 31. The permit was made subject to a condition that up to 2,200 of the 5,000 acre-feet could revert to water users within Amador County, such as AWA, upstream of JVID’s diversion point (Pardee Reservoir). A reversion is allowed only after a determination is made by the state indicating that the reverted water is needed by the upstream water user requesting the reversion.

In 1979, the SWRCB issued Permit 17579 to AWA as a result of Decision 1490. As part of the Decision, the SWRCB approved the reversion of 1,150 acre-feet from JVID’s permit. Permit 17579 has a 1927 priority based on an assignment of a portion of State-filed Application 5647 to AWA pursuant to procedures set forth in California Water Code (Code) sections 10500-10506. Permit 17579 authorizes a year-round direct diversion of 1,150 AF at a rate not to exceed 3 cfs and the storage of 1,600 AFY in Lower Bear River Reservoir with the limitation that the total that can be taken from the sources for consumptive use whether by direct diversion or rediversion from storage is 1,150 AFY.

AWA has submitted Application 5647X03 to the SWRCB, and if approved, JVID's Permit 12167 would be further reduced by 1,050 AFY in favor of AWA. Together with the previous reversion amount of 1,150 AFY, this would bring the total amount of reversion to 2,200 AFY. Relative to the Agency's existing water right Permit 17579, the new permit would effectively:

- Increase the maximum rates of direct diversion allowed from the Bear River and North Fork Mokelumne River from 3 cubic feet per second (cfs) to 5 cfs, with the combined rate between these sources not to exceed 5 cfs.
- Increase the amount of water that may be diverted into storage annually at Lower Bear River Reservoir from 1,600 AF to 3,000 AF.
- Increase the amount of water that may be beneficially used annually, whether by direct diversion or re-diversion of water released from storage, from 1,150 AF to 2,200 AF.

The new permit also would have a 1927 priority as the Agency, in conjunction with the filing of Application 5647X03, submitted a petition for partial assignment of State Application 5647 pursuant to Water Code sections 10500-10506.
Figure 2-1: Vicinity Map
Figure 2-2: Diversion Locations
2.7 Existing Facilities and Operational Requirements

The Project would use existing facilities of AWA and PG&E, which have ample capacity for the increased diversion rates and storage amounts. Lower Bear River Reservoir has a total storage capacity of about 51,400 AF. AWA leases storage capacity in the reservoir under an existing agreement with PG&E that allows for increasing the AWA's storage allocation from 1,600 AF to 3,000 AF with a pre-condition of compliance with CEQA, which will be provided by this document.

PG&E is required to maintain certain minimum flows for streams affected by PG&E's hydroelectric operations within the Mokelumne River system, including the North Fork Mokelumne River, Bear River, and Tiger Creek. Minimum flow criteria are set forth in Appendix A to PG&E's Relicensing Settlement Agreement for its Mokelumne River Project (FERC No. 137) dated July 21, 2000. Under the terms of the AWA's agreement with PG&E, PG&E is solely responsible for providing and maintaining the specified minimum flows, notwithstanding AWA's diversions under its existing and future appropriative water rights.

2.8 Permits Required

Anticipated permits include, but may not be limited to:

- Water right permit from SWRCB
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Chapter 3 Environmental Checklist Form

1. Project Title: Central Amador Water Project Water Right Application

2. Lead Agency Name and Address: Amador Water Agency
   12800 Ridge Road
   Sutter Creek, CA 95685

3. Contact Person and Phone Number: Gene Mancebo
   Amador Water Agency
   12800 Ridge Road
   Sutter Creek, CA 95685
   (209) 223-3018

4. Project Location: Amador County, with diversion facilities on Bear River, Tiger Creek and North Fork of Mokelumne River

5. Project Sponsor’s Name: Amador Water Agency

6. General Plan Designation: Not Applicable, no new facilities would be constructed

7. Zoning: Not applicable, no new facilities would be constructed

8. Description of Project: Amador Water Agency has applied to the SWRCB for a water right permit to store 1,400 AFY in Lower Bear River Reservoir and to directly divert 1,050 AFY of water that is currently diverted by the Jackson Valley Irrigation District at a location downstream of AWA’s proposed diversion locations. No new facilities would need to be constructed.

9. Surrounding Land Uses and Setting: Project facilities already exist and are generally located in open space and agricultural areas, with some portions of the existing conveyance system extending through residential suburban areas.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)
    - Water right permit for the Amador Water Agency from State Water Resources Control Board
Environmental Factors Potentially Affected

The proposed Project could potentially have direct effects on the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☐ Land Use
☐ Aesthetics
☒ Population and Housing
☐ Cultural and Paleo. Resources
☐ Transportation and Circulation
☐ Noise
☐ Environmental Justice
☐ Air Quality
☐ Wind and Shadow
☐ Recreation
☐ Utilities and Service Systems
☐ Public Services
☐ Biological Resources
☐ Indian Trust Assets
☐ Geology and Soils
☒ Hydrology and Water Quality
☐ Hazards/Hazardous Materials
☐ Mineral/Energy Resources
☐ Agricultural and Forestry Resources
☐ Greenhouse Gas Emissions
☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature ________________________________ Date ________________

Gene Mancebo ___________________________ Amador Water Agency ___________________________
Printed Name For
3.1 Aesthetics

Would the Project:

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

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

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

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

Discussion

a-d) Because no facilities would be constructed, there would be no effects on scenic vistas or scenic resources, and the Project would not degrade the existing visual character of the Project area. PG&E would still be required to maintain minimum flows in the North Fork Mokelumne River, Bear River and Tiger Creek (FERC 2000), so no change in the visual character of any of these streams would occur. Because no new facilities are needed, the Project would not create any sources of light or glare.

Mitigation Measures: None required or recommended.

3.2 Agriculture and Forestry Resources

Would the Project:

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

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? ☐ ☐ ☐ ☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))? ☑ ☑ ☐ ☒

d) Result in the loss of forest land or conversion of forest land to non-forest use? ☑ ☑ ☐ ☒

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? ☑ ☑ ☐ ☒

**Discussion**

a-e) Because the Project would not require the construction of any new facilities there would be no conflicts in zoning and no adverse effects on agricultural or forest lands.

**Mitigation Measures:** None required or recommended.

### 3.3 Air Quality

**Would the Project:**

a) Conflict with or obstruct implementation of the applicable air quality plan? ☑ ☑ ☐ ☒

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

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ☑ ☑ ☐ ☒

d) Expose sensitive receptors to substantial pollutant concentrations? ☑ ☑ ☐ ☒

e) Create objectionable odors affecting a substantial number of people? ☑ ☑ ☐ ☒
Discussion

a-e) The Project would not generate any construction-period emissions because there is no construction associated with the proposed Project. Operation of the Project would use existing facilities and is not expected to result in additional emissions. Water would be diverted at the existing intakes, and conveyed to users through AWA’s existing gravity system. Conveyance of surface water would not be a source of odors. The Project thus would not result in new operational emissions.

Mitigation Measures: None required or recommended.

3.4 Biological Resources

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? ☒ ☐ ☐ ☐

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

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? ☐ ☐ ☐ ☒

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? ☒ ☐ ☐ ☐

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ☒ ☐ ☐ ☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ☑

Discussion

a) Terrestrial species of concern that could occur in the Project area include a variety of plants and wildlife species such as the California tiger salamander, California red-legged frog, giant garter snake, vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle (AWA 2009). However, the Project does not include construction of new facilities and thus would have no effects on any terrestrial species of concern.

Because the Project may have a small effect on flows at times in the North Fork Mokelumne River and Bear River, it could have the potential to affect aquatic species of concern. PG&E would still be responsible for maintaining minimum flows in these streams, but when flows are above the minimum flow requirements, there may be slight reductions in flows. The Mokelumne River watershed upstream of Pardee Reservoir supports populations of resident trout and other fish species, as well as being considered for potential experimental reintroduction of fall-run Chinook salmon. A more detailed analysis of potential effects on aquatic biota will be presented in an EIR.

b) As noted above, the Project may result in a small change in water levels at times, but minimum flows would still be maintained. Effects on riparian habitat will be addressed in an EIR.

c) The Project requires no new construction and thus would not involve direct removal, filling or hydrological interruption of any federally protected wetlands as defined by Section 404 of the Clean Water Act.

d) Although anadromous fish historically occurred in the Project area, the portions of the Mokelumne River and its tributaries above Pardee Reservoir are no longer accessible to migratory fish. The Project would thus not interfere with fish migration but could affect resident fish. Because no new facilities would be constructed, there is no possibility that the Project would interfere with migration of terrestrial wildlife species. A more detailed evaluation of potential impacts to resident fish populations will be presented in the EIR.

e) Because the Project would not require construction of new facilities, there would be no need for tree removal. Because there are no effects on terrestrial biological resources, there would be no conflicts with policies protecting biological resources.

f) There are no Habitat Conservation Plans or Natural Community Conservation Plans that cover the Project area.

Mitigation Measures: Mitigation would be developed if needed based on the analysis of effects on aquatic biota.
3.5  Cultural Resources

Would the Project:

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<th>Potential Impact</th>
<th>Less Than Significant</th>
<th>Mitigation Incorporation</th>
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a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |

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

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |

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

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |

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

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |

Discussion

a-d) Because there would be no construction of facilities, there would be no ground disturbance with the potential to affect archaeological, historic, or paleontological resources, or to disturb human remains.

Mitigation Measures: None required or recommended.

3.6  Geology and Soils

Would the Project:

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<tr>
<th>Potential Impact</th>
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<th>Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
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a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |

ii) Strong seismic ground shaking?

Yes ☒ | No ☐ | Mitigation ☐ | Impact ☒ | Incorporation ☐ | Impact ☒ | No ☐ |
iii) Seismic-related ground failure, including liquefaction? □ □ □ ☒

iv) Landslides? □ □ □ ☒

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

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

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

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

Discussion

a-e) Because there would be no construction of facilities, the Project would not expose people or structures to any geologic hazards, would not result in erosion, would not locate structures on unstable or expansive soils, and would not include use of septic systems.

Mitigation Measures: None required or recommended.

3.7 Greenhouse Gas Emissions

Would the Project:

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

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

Discussion

a,b) Because there would be no construction of facilities, the Project would not generate any construction-period emissions of greenhouse gases. Operation of the Project would use existing
facilities and is not expected to result in additional greenhouse gas emissions. Water would be conveyed through AWA’s existing gravity supply line. 

*Mitigation Measures:* None required or recommended.

### 3.8 Hazards and Hazardous Materials

<table>
<thead>
<tr>
<th>Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</td>
<td>☐</td>
<td>☐</td>
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<td>☒</td>
</tr>
<tr>
<td>b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the Project area?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
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<tr>
<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>
Discussion

a-d) The Project involves no new facilities and would not require use or transport of hazardous materials. There would be no hazardous emissions associated with operation, and because no new facilities would be constructed, there is no potential to locate facilities within any hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e,f) Operation of the Project would require no new facilities and operation of existing facilities would not result in safety hazards relative to any nearby public airport operations.

g) Because there are no new facilities required for the Project, and thus no construction, there is no potential for interference with an emergency response plans or evacuation plans.

h) There are no activities or new facilities that would expose people or structures to the risk of wildland fires.

Mitigation Measures: None required or recommended.

3.9 Hydrology and Water Quality

<table>
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<tr>
<th>Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>✗</td>
</tr>
<tr>
<td>b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>✗</td>
</tr>
<tr>
<td>c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation on- or off-site?</td>
<td>□</td>
<td>□</td>
<td>✗</td>
<td>□</td>
</tr>
<tr>
<td>d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</td>
<td>✗</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater systems?</td>
<td>✗</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
Discussion

a,f) Because the Project does not require construction of any new facilities, there would be no potential for construction-related water quality impacts. The Project proposes to divert water from the North Fork Mokelumne River and Bear River at existing diversion points and convey water using existing conveyance facilities.

b) The Project does not include any groundwater pumping and would not construct any new facilities. There thus would not be any increase in impervious surface, and therefore no interference with groundwater recharge.

c,d,e) The Project does not include construction of any new facilities, and thus has no potential to alter drainage patterns, increase runoff or to cause erosion or siltation. Ongoing operation of existing facilities that would be used for the Project would not be changed in such a way as to increase runoff, erosion, or siltation.

The Project would result in diversion and storage of additional water at existing diversion points. There may be an incremental reduction in flows at times in the North Fork Mokelumne River and Bear River between the AWA diversion points and the existing JVID diversion at Pardee Reservoir. PG&E would still maintain minimum flows, but flows may be reduced by up to 2 cfs during periods when existing flows are above those minimums. A more detailed evaluation of potential flow impacts will be conducted, and presented in the EIR for the Project.

j) The Project does not include housing or other new structures within flood hazard areas and does not include any new structures that would expose people to the risk of flooding or inundation of seiche, tsunami or mudflow.

Mitigation Measures: Mitigation would be developed if needed based on detailed analysis to be conducted for the EIR.
3.10 Land Use and Planning

Would the Project:

<table>
<thead>
<tr>
<th>Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant With Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Physically divide an established community?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>❌</td>
</tr>
<tr>
<td>b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>❌</td>
</tr>
<tr>
<td>c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>❌</td>
</tr>
</tbody>
</table>

Discussion

a-c) The Project does not include any new facilities and thus would not divide an established community and has no potential to conflict with land use plans, policies or regulations. There are no Habitat Conservation Plans or Natural Community Conservation Plans that cover the Project area.

Mitigation Measures: None required or recommended.

3.11 Mineral Resources

Would the Project:

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<th>Would the Project:</th>
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<th>Less Than Significant With Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>❌</td>
</tr>
<tr>
<td>b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?</td>
<td>□</td>
<td>□</td>
<td>□</td>
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</tbody>
</table>

Discussion

a,b) Because the Project includes no new facilities, there would be no effect on the availability of mineral resources.
Mitigation Measures: None required or recommended.

3.12 Noise

Would the Project result in:

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

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

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

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

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

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

Discussion

a-d) There would be no construction noise because no new facilities would be constructed. Operation of the Project would use existing facilities and is not expected to result in increased operational noise. Water would be diverted at existing diversion points, and conveyed to AWA users through the existing conveyance system. The Project thus would not increase operational noise.

e,f) Operation of the Project would require no new facilities and would not include construction of housing that would expose people to noise from airport operations.

Mitigation Measures: None required or recommended.
3.13 Population and Housing

Would the Project:

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

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

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<th>Potentially Significant Impact</th>
<th>Less Than Significant Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

<table>
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<th>Potentially Significant Impact</th>
<th>Less Than Significant Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</table>

Discussion

a) The Project would provide a water supply that would increase the availability of water to the CAWP service area. Because the Project would potentially accommodate additional growth in the Project area, this will be evaluated in the EIR for the Project, which will also consider the potential indirect impacts associated with that growth. Potential indirect impacts on public services, recreation, traffic and transportation, and utilities and service systems will be evaluated in the Growth Inducement section of the EIR.

b, c) Because no new facilities would be constructed, the Project would not displace housing or people.

Mitigation Measures: None required or recommended for direct impacts of the Project. The potential for mitigation for indirect impacts will be considered in the EIR.

3.14 Public Services

Would the Project:

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

- Fire protection? □ □ ☒ ☒
- Police protection? □ □ ☒ ☒
- Schools? □ □ ☒ ☒
- Parks? □ □ ☒ ☒
- Other public facilities? □ □ ☒ ☒

Discussion

a) The Project would not require construction of new facilities and would not require provision of new or physically altered public service facilities. Potential for indirect impacts to public services associated with possible accommodation of growth in the Project area will be evaluated in the EIR for the Project.

Mitigation Measures: None required or recommended for direct impacts of the Project. The potential for mitigation for indirect impacts will be considered in the EIR.

3.15 Recreation

<table>
<thead>
<tr>
<th>Would the Project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>☒</td>
</tr>
<tr>
<td>b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>☒</td>
</tr>
</tbody>
</table>

Discussion

a, b) The Project would not affect recreational opportunities in the North Fork Mokelumne River, Bear River and Tiger Creek because PG&E would be required to maintain minimum flows in each of these streams. These minimum flows were established to ensure that streamflows are adequate to support recreational uses, including whitewater boating. As noted in Section 3.13, Population and Housing, the indirect effects of growth on recreation, such as park use, will be evaluated in the growth inducement section of the EIR.

Mitigation Measures: None required or recommended.
3.16 Transportation/Traffic

Would the Project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of a circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersection, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

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

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

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

e) Result in inadequate emergency access?

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

Discussion

a-c) The Project would not generate construction or operational traffic and thus would not conflict with any plan, ordinance or policy regarding effectiveness of the circulation system. Because it would not generate any traffic, the Project would also not conflict with any congestion management program or violate any level of service standards. The Project would not change air traffic patterns. As noted in Section 3.13, Population and Housing, the indirect effects of growth on traffic and transportation will be evaluated in the growth inducement section of the EIR.


Mitigation Measures: None required or recommended.

3.17 Utilities and Service Systems

Would the Project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project’s projected demand in addition to the provider’s existing commitments?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

f) Be served by a landfill with sufficient permitted capacity to accommodate the Project’s solid waste disposal needs?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

g) Comply with federal, state, and local statutes and regulations related to solid waste?
   - Potentially Significant Impact
   - Less Than Significant With Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact
   ☒ ☒ ☒ ☒

Discussion

a-c) The Project does not require the construction of any new water or wastewater treatment facilities. The Project would be operated completely with existing facilities. The Project also would not require any new storm drainage facilities.
d) As part of the Project, AWA has applied to the SWRCB for a water right permit to serve the CAWP service area, as more fully discussed earlier in this document. This environmental document evaluates the effects of that application if approved.

e) The Project would not result in any demand for wastewater treatment.

f,g) The Project would not generate any solid waste, and would not require any disposal of solid waste.

As noted in Section 3.13, Population and Housing, the indirect effects of growth on utilities and service systems will be evaluated in the growth inducement section of the EIR.

*Mitigation Measures:* None required or recommended.

### 3.18 Mandatory Findings of Significance

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Less Than Significant Mitigation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b) Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Discussion**

a) Because the Project would be implemented entirely with existing facilities, there is no potential for impacts on terrestrial biota or cultural resources associated with construction or operation of new facilities. Potential effects of minor changes in flows in the North Fork Mokelumne River and Bear River on aquatic species will be evaluated in the EIR.

b) The only potential physical effect of the Project may be a minor reduction in flows at times in the North Fork Mokelumne River and Bear River between AWA’s proposed points of diversion and the existing JVID diversion point in Pardee Reservoir. Potential cumulative effects of flow reduction will be considered in the EIR.
c) The Project would have no direct adverse effects on human beings. As noted in Section 3.13, Population and Housing, the indirect effects of growth will be evaluated in the growth inducement section of the EIR.
Chapter 4 Report Preparation

4.1 Report Authors

This report was prepared by AWA with assistance from RMC Water and Environment (RMC). Staff that were involved include:

Amador Water Agency
- Gene Mancebo

RMC Water and Environment
- Robin Cort
- Katie Cole
- Dave Richardson

4.2 References


AWA 2004. Application 5647X03 to Appropriate Water by Permit and Petition to Change the Point of Diversion of Permit 17579 (Application 5647B), filed October 7, 2004

AWA 2013. Letter to SWRCB regarding Application 5467X03 of Amador Water Agency Proposed Changes

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Appendix B – Public Comments Received on the NOP
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October 3, 2016

Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685
(sent by email)

Dear Mr. Mancebo:

My name is Tom Infusino, and I am submitting these comments on behalf of the Foothill Conservancy. Thank you for the opportunity to comment on the scope of the CAWP Water Right Application EIR.

1) **Thank you for considering the growth inducing impacts of the project.**

Your environmental transmittal documents indicates that the EIR will address the growth inducing impacts of providing additional water to serve the CAWP service area. This is consistent with our understanding of February 16, 2010. (See attached letter.) Thank you.

We strongly encourage you not to make the same mistakes in the EIR that you made when addressing growth inducing impacts in the EA for the pipeline project. To help you avoid those mistakes, our comments on that analysis are attached.

We strongly encourage you not to merely tier down from the three-paragraph analysis of growth inducing impacts in the EIR for the Amador County General Plan. That analysis does not quantify the impacts, and is plagued with circular logic.

2) **Please look at more of the secondary impacts of providing water to the CAWP service area.**

The Amador County General Plan EIR identifies over three dozen direct or cumulatively significant impacts of development across the County. These impacts result from a combination of a plan that allows too much growth in the wrong places, with EIR findings that reject feasible mitigation measures proposed to promote both economic prosperity and resource conservation. Furthermore, that EIR does not specify which and how much of these impacts will be associated with development in the CAWP service area. Your EIR needs to clarify which of these secondary impacts of your water supply increase will occur in the CAWP service area, and how severe these secondary impacts will be. Your EIR needs to address the problem that, while additional water supplies allow the County to approve new development, that development is not
similarly correlated with the capacities of others to provide infrastructure and services to the CAWP area.

As Cecily Smith stated at the September 21, 2016 scoping meeting, Foothill Conservancy is also concerned with development-related growth inducing impacts created by landowners’ ability to subdivide their property in the CAWP area. Under Amador County’s current, as well as the proposed final general plan, parcels with an “RR” land use designation have the ability to subdivide a minimum five-acre parcel to “one-acre net minimum lot sizes…in areas served by public water.” (Amador County Proposed Final General Plan, page LU-9).

In addition, your environmental transmittal documents are inconsistent with the May 2016 CAWP Water Right Application Initial Study. The transmittal notes that the EIR will only address impacts on biological resources, water supply, growth inducement, and cumulative effects. We strongly encourage you to address the secondary impacts of the water supply project on air quality, greenhouse gas emissions, cultural resources, the fiscal feasibility of impact mitigation, fire hazard, jobs/housing balance, public services/facilities, parks and recreation, schools, wastewater treatment, solid waste management, traffic circulation, water quality, and land use. While not listed in the transmittal, some of these secondary impacts are mentioned in the initial study (see Mitigation Measures for 3.13 Population and Housing through 3.17 Utilities and Public Services, pages 3-14 to 3-18).

We request you send a revised environmental transmittal which mentions all the indirect impacts the EIR will address, including those specific to growth-inducing impacts. We also request that you send a copy of this revised transmittal to the Foothill Conservancy and to the following: CA Air Quality Board, Amador County School District; Cal Fire; Caltrans; CA Department of Resources, Recycling and Recovery; Native American Heritage Commission; and CA Office of Historic Preservation.

3) Please work with County to mitigate more of the secondary impacts of your project.

The future prosperity, livability, and environmental quality of Amador County depend upon public agencies responsible for infrastructure, services, and resource management collaborating to preclude new development from outpacing their ability to maintain current levels of service to existing community residents. Unless and until these agencies reasonably accommodate the competing interests of new development and existing residents, within the context of financial and environmental constraints, Amador County will continue to be a place where people fight about growth, but rarely benefit from it.

Also, do not depend on a statement of overriding considerations to justify the secondary impacts of your project. The jobs, the homes, the businesses and the other benefits associated with this water allocation are not unique to Amador County. Those benefits will flow to whichever locale the State Water Resources Control Board sends this water. The key difference is that other locations competing for the waters of the Mokelumne have done more to reduce development impacts.
There is at least one local agency that adopted policies to mitigate the growth inducing impacts of an infrastructure project (Kirkwood Meadows Public Utilities District). We trust that as you move forward with the environmental analysis for this project, you will look to that and other examples of feasible mitigation.

In closing, we remind the AWA that the State Water Resources Control Board can only allocate the Mokelumne River’s water in the public interest. The AWA will be hard pressed to argue that providing water to serve development with over three dozen significant impacts is in the public interest. This is especially true when one considers that some of the other jurisdictions also seeking Mokelumne River water have embraced their obligations to reduce development impacts through the adoption of habitat conservation plans, agricultural land mitigation programs, and other mitigation mechanisms rejected by Amador County.

Sincerely,

Thomas P. Infusino
February 16, 2010

Gene Mancebo
Interim General Manager
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

RE: Confirming Letter Regarding 2/5/10 Meeting on Proposed Gravity Supply Pipeline Project.

Dear Mr. Mancebo:

I am writing this letter on the proposed Gravity Supply Pipeline Project on behalf of the Foothill Conservancy. During our discussions on February 5, 2010, I believe that we came to some better understanding of the nature of the project and the anticipated environmental review procedures.

1) The pipeline is intended to transmit up to 2200 afy from the existing and the applied for water rights on the Mokelumne River.

2) The pipeline is sized at 5 cfs to account for short term peak flow needs.

3) It is the intention of the Amador Water Agency to analyze the growth-inducing and secondary impacts of providing the additional water in the CAWP service area in the environmental review document for the water rights application. The Foothill Conservancy looks forward to receiving a copy of that analysis when it is available for public review. While we at the Foothill Conservancy are willing to wait for that analysis, there is no guarantee that others with concerns about the GSL project will be similarly accommodating.

4) Any additional water right acquisition and modification of the water delivery system would similarly be preceded by an analysis of the growth-inducing and secondary impacts of providing the additional water in the CAWP service area.
5) AWA staff anticipates that the costs of the GSL system will be split between the existing users and the future users in proportion to the capacity that they use. For example, if current use is 1150 afy, then current rate payers will pay for 1150/2200 of the AWA costs for the GSL.

We strongly encourage AWA staff to work with staff from the other service providers during the Amador County General Plan Update, to identify levels of growth that can be reasonably accommodated without unmitigated environmental harm and the loss of quality of life in the area. By allocating our precious resources efficiently, we can all move toward a more sustainable environment, economy, and community.

Sincerely,

[Signature]

Thomas P. Infusino
December 28, 2009

Gene Mancebo  
Interim General Manager  
Amador Water Agency  
12800 Ridge Road  
Sutter Creek, CA 95685

RE: Comments on the Gravity Supply Pipeline Project Initial Study and Proposed Mitigated Negative Declaration.

Dear Mr. Mancebo and Members of the Board:

I am writing this comment letter on the Gravity Supply Pipeline Project Initial Study and Proposed Negative Declaration on behalf of the Foothill Conservancy. The Foothill Conservancy supports reducing energy use from the Central Amador Water Project water delivery system. However, as explained in this letter, we believe the Initial Study and proposed Negative Declaration for the Gravity Supply Line do not sufficiently consider the growth-inducing impacts of providing far more water to the CAWP service area than will be needed for estimated growth in the region. In addition, the Initial Study does not afford a comparative evaluation of less-impacting alternatives.

Consequently, proceeding with the Gravity Supply Line as proposed could result in AWA’s building excess infrastructure capacity at higher than needed public expense or inducing local growth at levels higher than any other local public agency is currently planning to address.

We therefore recommend that the AWA take one of the following actions:

1) Reconsider the capacity of the project and ensure it is sized to meet the water demands of projected growth for the CAWP area in the next 20 years. The growth projection should take into account the amount of growth anticipated for the area for the planning period, considering the entire county general plan (not just the maps of the land use element), the Regional Transportation Plan,
school master plans, community fire plans, community fire-safe plans, current and projected (not past) economic conditions, and other local infrastructure and services planning efforts. And the water supply analysis should be modified so it is clear and easy to understand, which is not the case in the current study.

Or

2) Limit the number of new hookups in the CAWP area in the next 20 years to a number consistent with the growth projections of other agencies, not just the land use maps in the county general plan.

Either action would allow the project to legally proceed with its current level of environmental review.

However, if the AWA chooses not to pursue either of those options, it should prepare a focused EIR on the potentially significant impacts of the project on population and housing, public services, transportation, air quality and greenhouse gas emissions, wildlife, growth inducement, and cumulative impacts, as explained below.

Local infrastructure planning and growth

The Foothill Conservancy is a nonprofit organization that seeks to restore, protect, and sustain the natural and human environment in and around Amador and Calaveras Counties. The Foothill Conservancy believes that by working together we can bring communities to prosperity without needless destruction of that which is unique and special about the area. The Foothill Conservancy vision for this area includes protected scenic quality, conserved forest lands, restored natural diversity of native plants and animals, and balanced economic development that is ecologically and socially sustainable.

The Foothill Conservancy has adopted the Infrastructure Planning and Development Principles listed below:

- The user should pay: The cost of infrastructure expansion or improvements should be born by those who will benefit from and use the infrastructure.

- The cost of infrastructure expansions that are needed solely to accommodate new development should not be borne by existing ratepayers and taxpayers.
• Infrastructure planning should be done in open, inclusive processes that actively involve all affected stakeholders and the public, using methods that will ensure broad participation.

• Infrastructure planning should be based on adopted county and city general plans, not on speculative development that is inconsistent with adopted plans.

• The location, scale, and timing of infrastructure development should be done in a way that does not drive growth beyond what is already planned in local land use plans.

• Infrastructure such as roads, water, and wastewater facilities should not be extended into undeveloped areas unless those areas are contiguous to existing communities and approved for dense development in an adopted county or city general plan.

• When infrastructure facilities are extended across lands not planned for development in order to reach existing communities, connections to those facilities outside of developed communities should be limited.

• Infrastructure agencies should employ demand-side management techniques, including conservation and efficiency, before taking on expensive expansion projects.

• When resources are limited or finite, infrastructure providers should develop and follow smart-growth, demand-side management, and efficiency policies in order to allocate resources based on specified criteria rather than serve all applicants on a first-come, first-serve basis.

• Infrastructure should be developed in a way that works with natural systems and minimizes damage to the natural and built environment.

We encourage you to follow these principles as you continue this project planning process. These principles are more than currently popular platitudes. They are the culmination of wisdom learned through two decades of work by the Foothill Conservancy in the Mokelumne River watershed and involvement in land use and water planning in the region.
Members of our community, including members of the Foothill Conservancy, suffer as local cities and counties routinely approve development projects with significant and unmitigated impacts including traffic congestion, air pollution, declining levels of public services, loss of working landscapes, and harm to fish and wildlife. (Exhibit 1: Kirkwood & Gold Rush EIR excerpts.) The proposed water project would provide the County with additional supplies of water without any enforceable commitment from the County to reduce the impacts of the development that water facilitates. Thus, the proposed project will exacerbate the magnitude and intensity of existing problems suffered as a result of poorly planned development. We strongly encourage AWA to coordinate project planning and impact mitigation for the GSL project with the County’s General Plan update and ACTC’s Regional Transportation Plan update, as well as emergency services planning underway by the Amador Fire Protection Authority and community fire-safe plans of the Amador Firesafe Council. By working together with the public and other service providers, local entities can identify common growth projections and plan for parallel levels of infrastructure development. These efforts are necessary to promote balanced economic development that is financially, ecologically, socially sustainable as well as fiscally viable.

**Detailed comments on the Initial Study**

**I. An EIR is Required Unless AWA Modifies the Project to Avoid Significant Impacts.**

An EIR is required when evidence in the record indicates that the proposed project may have a significant impact on the environment either by itself or cumulatively. (CEQA Guidelines, sec. 15063.) As indicated below, there is substantial evidence in the record that the proposed GSL project (even with the proposed mitigation measures) may have significant impacts on the environment, and thus AWA must prepare an EIR for the project. AWA can avoid preparing an EIR only if it further modifies the project to eliminate the potential for these significant impacts.

**II. Development Distribution, Population and Housing.**

**A. Introduction**
As the Initial Study concedes, CEQA requires an analysis of a project’s impacts on population and housing. With regard to the GSL project, the impacts of housing and population growth are potentially significant secondary impacts associated with the growth induced by the additional water supplied by the project.

It is well established in case law that an environmental review for an infrastructure project must consider the impacts of the future development that the infrastructure will serve. "Construction of the road way and utilities cannot be considered in isolation from the development it presages." (City of Antioch v. City Council of Pittsburgh (1st Dist. 1986) 187 Cal.App.3d 1325.) "It is obvious that constructing a large interchange on a major interstate highway in an agricultural area where no connecting road currently exists will have substantial impact on a number of environmental factors." (City of Davis v. Coleman (9th Cir. 1975) 521 F.2d 661, 674-675.)

When completing an EIR, the EIR must, "Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. (CEQA Guidelines, sec. 15126.2, subd. (d).)

“It also is settled that the EIR must discuss growth-inducing impacts even though those impacts are not themselves a part of the project under consideration, and even though the extent of the growth is difficult to calculate. The case law supports this distinction. The court in City of Antioch v. City Council (1986) 187 Cal.App.3d 1325 [232 Cal.Rptr. 507] found that a project required an EIR notwithstanding that the project itself involved only the construction of a road and sewer project which did not in and of themselves have a significant effect on the environment. The court recognized that the sole reason for the construction was to provide a catalyst for further development in the immediate area. It held that because construction of the project could not easily be undone, and because achievement of its purpose would almost certainly have significant environmental impacts, the project should not go forward until such impacts were evaluated in the manner prescribed by CEQA. (Id. at pp. 1337-1338.)” (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 368.)

**B. The growth-inducing impact analysis in the Initial Study is not adequate.**

The Initial Study refers to, but does not include, a water demand study for the service area. (IS, p. 5-71.) There are many potential problems with this analysis.
First, it identified 5-acre parcels that could be changed into five 1-acre parcels, and assumed that they would be based on the land use element maps of the Amador County General plan. The Initial Study does not indicate if the five-acre parcels chosen for this division were suitable for division, or were otherwise constrained by roadway capacity, slope, soil type for septic systems, setbacks from other parcels, state fire-safe standards, or potential to contaminate neighboring wells. In addition, there is no indication of the historic mix of 1-acre and 5-acre parcels in the area. If the area has historically had a steady proportion of 1s to 5s, it is unlikely that the bulk of the 5s will convert uniformly to 1s. AWA should review County Planning and County Assessor records to identify the current mix of 1s to 5s, and to note the degree to which the market is not choosing to develop at maximum density in the CAWP service area. There is no support in the record for assuming that the residential parcels will develop to their maximum density.

Second, the analysis assumed that industrial/commercial parcel would develop to the maximum density. There is no evidence in the record to support this assumption. AWA should review County Planning and County Assessor records to identify the percentage of maximum density at which current industrial and commercial projects have developed, and look at the vacancy rate of developed commercial and industrial buildings, which will also influence the amount of development that will occur on undeveloped parcels. Past development patterns are a better indication of future development patterns than an unsupported blanket assumption of development at maximum density.

A critical mistake in the aforementioned analyses is the presumption that the maximum density in the land use designations in the existing General Plan are an accurate predictor of estimated near-term future development in the CAWP service area. The land use designations in the CAWP service area are not a predictor of estimated future development, but merely of the capacity of the landscape to support a particular range of development density on a specific parcel. Buildout to the maximum density under the general plan is not expected (due to constraints noted above), not planned for with regard to public services or infrastructure, nor even desirable given the potential cumulative impacts.

Third, the analysis ignores the time element of buildout relative to the life of the project. The analysis concludes that buildout of these maximum land use designations under the existing general plan in the CAWP service area would add 11,578 residential connections. (IS, p. 5-71) The question remains—but when? The County has estimated that all unincorporated development in the entire County for the
next 20 years under the existing general plan will be about only 6,246 residential units. (Exhibit 2, Amador County Planning, Land Use Workbook, June 2008, p. 39, table 3b.) Similarly, the County has estimated that under the new general plan, all unincorporated development in the entire County for the next twenty years would be about only 6,200 residential units. (Exhibit 2, Grijalva, Memo to State Clearinghouse 7/28/09 re NOP for General Plan EIR, p. 9.) Even if one were to assume a generous development split of 50/50 between the Highway 49 corridor and the Highway 88 corridor, that would be about only 3,100 additional residential units in the CAWP service area over the next 20 years. There is no evidence in the record to suggest that any time in the foreseeable future, the CAWP service area will reach the maximum theoretical buildout under the existing General Plan of 11,578 residential units. This number is a false and inappropriate basis for planning infrastructure, and for evaluating the potential impacts of growth associated with providing additional water to the CAWP service area.

Fourth, the above discussion suggests that to avoid building more expensive infrastructure capacity than it needs, AWA would be wise to compare the expected life of the project to the expected development in the CAWP service area. For example, if the pipes will have to be replaced in 30 years, and the service area is only expected to need an additional 4,000 connections in 30 years, there is no reason to spend the extra ratepayer money (or other public funds) to install pipes with a capacity to serve 8,000 connections. The EIR should answer questions like how long as it will take for the area to grow enough to benefit from the huge excess capacity of the project? Will current ratepayers end up paying the price for over-sizing the pipeline, and never get reimbursed by future development? Why doesn’t AWA size the pipeline to accommodate growth projected for its useful life, and worry about adding additional capacity at the time of replacement? As noted in our infrastructure planning principles, we believe that the location, scale, and timing of infrastructure development should be done in a way that does not drive growth beyond what is already planned in local land use plans.

Fifth, the Initial Study analysis and conclusion is flawed. The Initial Study analysis concludes that there can be no growth-inducing impact from the project unless it provides water in excess of maximum buildout under the existing General Plan land use designations. (IS, pp. 5-71 to 5-72.) This is incorrect. The baseline condition is the development at this time. The future condition is buildout under the additional water supply. If the impacts of that future development are significant, then the water project has a significant impact associated with the growth it induces.
Finally, the Initial Study’s analysis regarding the amount of water AWA could provide with the GSL is difficult to follow, and would benefit from clear tables indicating the current number of connections served, the amount of water provided by the GSL, and the number of additional residential and non-residential connections to be served. It is also unclear whether or not the Initial Study takes into account additional water supplies that AWA may bring online (1,050 acre feet a year) if its current water rights application 5647X03 is approved?

We strongly encourage AWA to closely consult with Amador County and other service providers in the CAWP service area before investing in infrastructure expansion. The Amador Water Agency should not plan to serve an exaggerated estimate of future development that is not expected to be demanded and not expected to be developed if no other service provider is preparing to provide the necessary parallel services needed for such a level of development.

C. The EIR must more thoroughly evaluate growth-inducing impacts.

When evaluating the potential pattern of development from providing additional water supplies in the Central Amador Water Project service area, there are a number of factors that must be considered including: the amount of additional water, the amount of development it can serve, the past demand for development of the area, the likely future demand for development of the area, the constraints to development in the area, the constraints to density increases in the area, and the likelihood of sprawl.

The Initial Study does identify the amount of additional water that will be provided by the GSL project. The Initial Study indicates that the CAWP area is currently served by 2 cfs of raw water, and the GSL will increase delivery capacity to 5 cfs. (IS, p. 5-71.) Also, since the existing supply system is being retained as a “back up” the infrastructure will have the potential to deliver 7 cfs in the future. According to the analysis, 5 cfs is enough water to serve about an additional 8,180 connections, and 7 cfs is enough to serve about 11,450 connections. The Initial Study estimates that 85.5% of the connections would be residential.

Past growth in the area has been served by only 2 cfs of water, so the project would increase growth potential by 150%. If the additional “backup” system is reinstated for regular use, the project could increase growth potential by 250%. Since the County allows for densities higher than 5-acre lots only when public water supply is available, the water supply would reduce a barrier to increasing development in the CAWP service area. (Exhibit 2, Amador County Zoning Code, sec. 19.24.045.) Thus
the additional water supplied by the project has a very substantial growth-inducing impact.

Also, a different buildout scenario than that in the Initial Study could greatly increase the impacts of development in the area. There is no evidence in the record to support the growth scenario assumption that development in the CAWP service area would proceed by densification of existing 5-acre parcels and maximum development of existing commercial/industrial designated parcels. While such a development pattern would reduce the footprint of future growth and thereby limit some of its impacts, there is no mitigation measure or County policy to direct future growth in this fashion. In the CAWP service area there are parcels larger than 5 acres and designated for development on 10, 20, or 40 acre-minimum lots. (Exhibit 2, Amador County, 2007 Existing General Plan Map; Amador County, Alternative A Existing General Plan Map.) If the GSL project made water were available to such parcels, or even if it caused fewer people to be on groundwater in the area, this would facilitate such large-lot ranchette-style development. This would result in a much larger development footprint in the area, and much broader scale impacts on such things as water quality, air quality, and wildlife habitat.

Thus, there is substantial evidence in the record that the project will have significant growth-inducing effects, and an EIR must evaluate those impacts. In doing so, it would also helpful to consider also the potential factors that could limit future development in the CAWP service area. There are factors suggesting that, with the implementation of reasonable policy constraints, the full extent of this growth-inducing effect will not be realized on the ground.

First, there are constraints in addition to surface water availability that discourage or prevent converting 5-acre lots to many 1-acre lots. As evident from the wetland delineation study attached to the Initial Study, much of the CAWP service area is characterized by a steeply sloping landscape. Many of the 5-acre lots in the CAWP service area are on steep terrain. Thus, much of the space on the divided lot will be consumed by access roads, cut & fill areas, and setbacks, precluding the creation of five 1-acre lots for every 5 available acres. In addition, many of the 5-acre lots are not served by roads that could handle the additional traffic associated with full conversion of the 5-acre lots to 1-acre lots. (Exhibit 3: ACTC, 2004 RTP, Chapter 4.) Also, there may be limitations on the division of lots that will be served by septic systems, based upon the suitability of the soil, and the proximity to down-gradient neighbors still using wells. (Exhibit 2: Amador County Zoning Code, secs. 14.12.061 – 14.12.063.)
Second, there are additional constraints to buildout of the area. The road infrastructure in the region is not now, nor projected to be, sufficient to meet the needs of so much additional development. As noted below, 6,994 units of residential development would generate more than 66,933 vehicle trips per day. The Regional Transportation Plan does not include the necessary upcountry traffic improvements to serve so much development. In addition, in its current form, the RTP is underfunded by $128 million. (Exhibit 3: ACTC, 2004 RTP, Chapters 4 & 7.) We know of no school infrastructure development plans to serve such an addition of students in the upcountry area. Similarly, we know of no law enforcement financial plans to provide such an addition of officers to serve in the CAWP service area. Furthermore, since the CAWP area is home to a number of sensitive, threatened and endangered species, protection of their habitat may necessitate some reductions in full buildout of the CAWP service area. (See GSP Project Initial Study, Appendix C.) Finally, efforts to reduce greenhouse gas emissions statewide may result efforts to discourage full residential buildout in areas isolated from job centers. (Exhibit 4, Brown, *Addressing Global Warming Impacts at the Local Level*; ARB, *Climate Change Proposed Scoping Plan*, 2008, pp. 26-27.)

Third, the estimated buildout numbers from the Initial Study are dramatically higher than any other projected demand for the area. For example, the County Planning Department estimates *all* unincorporated development in the *entire* County for the next 20 years under the existing general plan will be about only 6,246 residential units. (Exhibit 2, Amador County Planning, *Land Use Workbook*, June 2008, p. 39, table 3b.) Similarly, the County has estimated that, under the proposed new general plan, *all* unincorporated development in the *entire* County for the next 20 years will be about only 6,200 residential units. (Exhibit 2, Grijalva, *Memo to State Clearinghouse 7/28/09 re NOP for General Plan EIR*, p. 9.) Development in the CAWP would only be a portion of that countywide development.

Thus, an EIR is needed for a detailed *and balanced* evaluation of the growth-inducing impacts of the CAWP project.

### III. Public Services

Impacts on local public services including schools and law enforcement can dramatically alter the quality of the human environment and are therefore evaluated in CEQA reviews. Because of the potential for the GSL project to result in increased
growth in the CAWP service area, it is critical to evaluate the potential need for increased school and law enforcement services in the area.

Both the Amador Unified School District and past environmental impact reports have used a K-12 student generation rate of about 0.7 students per single-family unit. (Exhibit 5, City of Jackson, Jackson Hills Revised EDIR, pp. 4.11-14.) Given that the GSL would accommodate water for an estimated 6,994 single-family residential units, that would result in a need to house an additional 4,895 K-12 students in the CAWP service area. State Department of Education and other studies indicate that construction costs for housing students range from about $10,000 – 20,000 per K-12 student. We know of no school district facility master plan that estimates such an expansion of the system in the CAWP service area, and provides a method of raising the capital to construct such facilities. Thus, opening the way for such growth by providing the water supply may result in excessive classroom and playground overcrowding, and have significant adverse impacts on the ability of the school system to provide a free and appropriate education to the students in the district.

Similarly, studies in the region indicate that growth in population results in a need for additional law enforcement personnel, from deputies on patrol, to staff in the DA and Public Defender’s office, to judges on the bench, and guards in the jail. For example, a Calaveras County study showed that one additional deputy and one quarter of an additional sheriff’s office support staff person is needed for every 1,340 new residents. (Exhibit 6, Calaveras County Sheriff’s Office, Staffing Analysis and Strategic Plan, pp. 71-72.) The Initial Study indicates that the GSL would provide water to serve 6,994 residences. The County Planning Department estimates that the average residence houses about 1.9 people. (Exhibit 2, Amador County Planning, Land Use Workbook, June 2008, p. 38, table 3a.) Thus the water provided to the CAWP service area would support 13,255 residents. This in turn would trigger the need for additional deputies, and additional Sheriff’s Office support staff. Again, we do not know of any plan that is in place to fund such an increase in law enforcement services to the area. Thus, opening the way for such growth by providing the water supply may result in shortages of law enforcement services and significant declines in public safety in the CAWP service area. The EIR must evaluate this potentially significant impact.
IV. Transportation

Recent local EIRs figure 9.57 vehicle trips per day are generated by each single-family home. (Exhibit 1, Sutter Creek, Gold Rush Ranch Revised DEIR, p. 17.) Thus, since the GSL project will facilitate the development of 6,994 single-family homes, it will generate about 66,933 vehicle trips per day in the CAWP service area. The Regional Transportation Plan does not include the necessary upcountry traffic improvements to serve so much development. In addition, in its current form, the RTP is underfunded by $128 million. (Exhibit 3: ACTC, 2004 RTP, Chapters 4 & 7.) The EIR must evaluate the potentially significant impacts of additional tens of thousands of daily trips on traffic congestion and traffic safety.

V. Wildlife Impacts

As noted in Initial Study Appendix C, the CAWP service area is home to a number of threatened, endangered, and sensitive species. The additional water provided beyond existing growth projections could result in sprawling development of 5, 10, 20, and 40 acre lots across the landscape, with very significant impacts on TES species. In fact, the sprawling scenario is more likely than the compact scenario analyzed in the Initial Study. Sprawl is easier because it involves merely the development of existing lots through the ministerial approval of building permits. Compact development requires speculative attempts to get discretionary approvals for subdivisions from the Board of Supervisors. The EIR must evaluate the impacts on wildlife associated with the growth facilitated by the introduction of the additional water supply by the GSL project.

VI. Alternatives

Since there is a need to do an EIR, AWA will be required to provide a quantitative comparative analysis of the impacts of the alternatives. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 730-737.)

We hope that you will consider an alternative with a smaller diameter pipe, which would be consistent with projected growth in the CAWP service area. Since the existing system is always available as a backup, it provides a method of accommodating extra growth, should that occur.

We also encourage you to consider an alternative that includes merely upgrading the existing system with more energy-efficient pumps, and perhaps the addition of solar panels to offset the pumps’ power use.
To benefit ratepayers, you may also want to explore the feasibility of pumping water during off-peak periods when energy is less expensive. PG&E is looking for ways to use wind energy at night, as evidenced by its pumped-storage proposals in the Sierra. Also, there are both federal stimulus money and energy efficiency grants available to help fund this infrastructure upgrade. (See Exhibit 7, Energy Efficiency Funding.)

VII. Mitigations

When AWA prepares the EIR, you will need to explore ways to mitigate the impacts of the growth facilitated by the additional water provided by the GSL project. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15126.4, 15091, subd. (a)(1).) We hope that you will work closely with County Planning, ACTC, and the public to develop policies in the ongoing General Plan Update and Regional Transportation Plan Update that can mitigate these impacts.

VIII. Financial Feasibility

CEQA requires that the EIR or another document in the record evaluate the economic feasibility of alternatives and mitigation measures. (CEQA Guidelines, sec. 15131, subd. (c).) We encourage AWA to carefully evaluate the economic feasibility of the proposed project and its alternatives.

Consistent with our infrastructure planning principles, we encourage AWA to carefully apportion project costs so that the cost of facility expansion for new development is born by the beneficiaries of the new development.

Given today’s economic and fiscal challenges, decisionmakers are being even more careful to consider the costs as well as the benefits of a decision. Here in Amador County, the Board of Supervisors and the City of Sutter Creek are asking project applicants for fiscal analyses of their proposed development projects. More often now through bond initiatives we are being asked as a taxpaying and ratepaying public, “Do you want to pay this much for enhanced public goods and services?” Nowhere is the issue of cost-effectiveness more critical than in projects that plan for the long-term. These projects involve the largest commitments of public funds over the longest periods of time.
Different alternatives will have different benefits and different costs. If the GSL project ends up having significant and unavoidable impacts, CEQA does require that AWA to balance the environmental costs against the benefits of the project, to determine if a Statement of Overriding Considerations, and project approval, is supported by substantial evidence in the record.

In this instance, it will be incumbent upon AWA quantify and estimate the benefits and costs of the alternative it chooses. We encourage AWA to prepare such a cost-benefit analysis for each of the alternatives. We encourage you to make this analysis available for AWA Board and public review at least 30-days in advance of your decision. With such an analysis, your directors will have information necessary to make a rational decision regarding the choice of alternatives. With such information, the Statement of Overriding Considerations will have the requisite support of substantial evidence and rational argument in the record. (Sierra Club v. Contra Costa County (1992) 10 Cal.App.4th 1212.)

IX. Public Outreach Process

As noted in our infrastructure planning principles, we believe that infrastructure planning should be done in open, inclusive processes that actively involve all affected stakeholders and the public, using methods that will ensure broad participation. While CEQA does not require that an EIR comparatively evaluate the fiscal merits of a project, we encourage AWA to do such a fiscal analysis, and to give ratepayers a way to respond to the results. Your ratepayers deserve to know how much they will pay for different project alternatives, as well as what projects could do to the character of their community and available services and infrastructure by inducing growth. They deserve to have a vehicle to express this concern early in the development of this program. Ultimately, state law provides the ratepayers with the opportunity to challenge future rate increases. Thus, without timely ratepayer input, AWA could find itself adopting and investing in a costly program now, only to find that the ratepayers are unwilling to pay for the program in the future. The appropriate time for determining ratepayer preference is now, before AWA begins to waste precious funds on a costly project.
Conclusions

The California Environmental Quality Act is designed to help local governments identify and mitigate the potentially significant impacts of their actions. We hope that AWA will take these comments to heart and modify the project, as well as

1) objectively evaluate the impacts of the proposed project and its alternatives,
2) outreach to involve the upcountry community in the decision,
3) coordinate mitigation measure adoption and implementation with responsible agencies to avoid growth-inducing impacts and sprawl,
4) and ensure that costs of facility expansion are passed onto future beneficiaries and not existing ratepayers.

We trust that AWA will properly address the concerns detailed in this letter, and those of expressed by other commenters. Please notify us of your plans, and if you choose to prepare an EIR rather than modify the project, please let us know when the opportunity is available to provide scoping comments, as well as when the draft EIR is available for public review. Please notify us when AWA intends to make its decision on this project.

We are more than willing to work with AWA on this project and to address the concerns raised in this letter.

Sincerely,

Thomas P. Infusino,  
for the Foothill Conservancy

cc: AWA Directors, ACTC, Amador County Sheriff, Caltrans District 10, Amador County Unified School District, Amador County Planning Department, Amador County Environmental Health, Amador Fire Protection Authority, CalFire, Amador Firesafe Council
October 3, 2016

Mr. Gene Mancebo  
Amador Water Agency  
12800 Ridge Road  
Sutter Creek, CA 95685  

Subject: Comments on Notice of Preparation of a Draft Environmental Impact Report for the Central Amador Water Project Water Right Application  

Dear Mr. Mancebo:  

Thank you for the opportunity to provide comments on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (Draft EIR) for the Amador Water Agency (AWA) Central Amador Water Project Water Right Application.  

Since the 1920’s, EBMUD’s primary source of water has been the Mokelumne River. EBMUD diverts Mokelumne River water for municipal and hydroelectric uses pursuant to a series of water rights. EBMUD facilities on the Mokelumne River include Pardee and Camanche Reservoirs and the Mokelumne Aqueducts along with hydroelectric generation facilities at the base of Pardee and Camanche Dams. EBMUD operates the Mokelumne River facilities to meet water supply demands and provides releases to satisfy downstream senior rights, provide flood control protection for the lower Mokelumne River area, meet instream flow requirements, manage water temperature to benefit the Mokelumne River fishery, satisfy recreational needs and generate hydropower.  

The quantity of water that EBMUD can divert under its water rights is affected by the seniority of those rights, the amount of Mokelumne River runoff, EBMUD’s storage capacity, and the myriad of orders, decrees and interagency agreements with various Mokelumne River users. EBMUD’s agreements including those with AWA, JVID, PG&E and others govern Mokelumne River operations and the availability of water for EBMUD. Additionally, the 1958 Release from Priority reserved 20,000 acre-feet of water for use in Amador County that is senior to a portion of EBMUD’s water rights.  

The NOP states that AWA has submitted an appropriation application to the State Water Resources Control Board (SWRCB) for a water right permit to store up to 1,400 AFA in Lower Bear River Reservoir, and for a partial reversion of rights under JVID’s Permit 12167 in the amount of 1,050 AFA, reducing JVID’s water right to 2,800 acre-feet.
In order to better understand the project, we request the following information be included and discussed in detail in the Draft EIR:

Clarification of AWA’s existing water rights and water rights basis for storage in Lower Bear River Reservoir: In 1959, the Department of Water Resources issued a Release from Priority, under which 20,000 acre-feet of water were reserved for Amador County under the 1927 State Filings (Application 5647 and 5648). It is our understanding that AWA’s new application to the SWRCB for storage is part of the 20,000 acre-feet reserved in 1959. Please provide clarification confirming the basis of the water rights for the new appropriation application for storage in Lower Bear River Reservoir.

Potential Impact to PG&E Operations and resultant impacts to EBMUD under Lodi Decree operations: Under its appropriation application, AWA proposes to store 1,400 AFA of Mokelumne River water in PG&E’s Lower Bear River Reservoir. Such storage could impact EBMUD’s water rights under the Lodi Decrees. The Lodi Decrees settle the relative priorities between PG&E, EBMUD and the City of Lodi. The Decrees allow PG&E’s junior hydropower project (including Lower Bear River Reservoir) to store water during the spring and requires PG&E to subsequently release that stored water later in the season for EBMUD. Please provide the terms of the agreement between AWA and PG&E facilitating AWA use of Lower Bear Reservoir, including the accounting of water, to demonstrate and ensure that there are no impacts to EBMUD’s water rights and operations.

Potential Environmental and Operational Impacts: EBMUD’s Pardee Reservoir is located downstream of PG&E’s Lower Bear River Reservoir and is a point of diversion for JVID’s water supply. Please provide the terms of coordinated operations between AWA and JVID to ensure there are no direct or indirect impacts to EBMUD’s water rights and operations.

Thank you for the opportunity to provide comments on the NOP. We look forward to working with you as the DEIR is further developed. Please contact me at 510-287-1240 or lena.tam@ebmud.com if you have any questions or concerns regarding our comments.

Sincerely,

[Lena Tam signature]
Lena Tam
Manager, Water Resources Planning

LLT: ARU: dlb
September 14, 2016

Gene Mancebo
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

RE: AB 52 Consultation Request for NOP DEIR for the Central Amador Water Project Water Right Application, Amador County, CA

Dear Gene Mancebo,

The United Auburn Indian Community (UAIC) received a letter from Amador Water Agency dated 8/31/2016, formally notifying us of a proposed project, the NOP DEIR for the Central Amador Water Project Water Right Application in Amador County, and an opportunity to consult under AB 52. This letter is notice that UAIC would like to initiate consultation under AB 52.

This letter is also a formal request to allow UAIC tribal representatives to observe and participate in all cultural resource surveys, including initial pedestrian surveys for the project. Please send us all existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted prior to our first consultation meeting. If tribal cultural resources are identified within the project area, it is UAIC’s policy that tribal monitors must be present for all ground disturbing activities. Finally, please be advised that UAIC’s strong preference is to preserve tribal cultural resources in place and avoid them whenever possible. Subsurface testing and data recovery must not occur without first consulting with UAIC and receiving UAIC’s written consent.

In the letter, Gene Mancebo is identified as the lead contact person for consultation on the proposed project. Marcos Guerrero, our Cultural Resources Manager, will be UAIC’s point of contact for this consultation. Please contact Mr. Guerrero by phone at (530) 883-2364 or email at mguerrero@auburnrancheria.com to begin the consultation process.
Thank you for involving UAIC in the planning process at an early stage. We ask that you make this letter a part of the project record and we look forward to working with you to ensure that tribal cultural resources are protected.

Sincerely,

Gene Whitehouse
Chairman

CC:  Mathew Moore, UAIC Tribal Historic Preservation Officer
     Marcos Guerrero, UAIC Cultural Resources Manager
Robin,

UAIC has not comments at this time. thank you for following up.

mg

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Hi, just trying to close the loop with you and make sure that you don’t have any concerns about the Amador Water Agency Central Amador Water Rights project. 

Thanks

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Mr. Guerrero, I just left you a voice mail message. Amador Water Agency (AWA) received a request for AB52 Consultation from Gene Whitehouse, who requested that we contact you. We would like to provide you with additional information about the project so as to clarify the fact that the water rights application does not involve any new construction and thus there would be no ground disturbing activities requiring a monitor. All of the infrastructure to deliver additional water to AWA is already in place so the environmental review process will thus not include any cultural resource assessments, records searches or pedestrian surveys. The entire purpose of the project is to obtain approval to divert a small amount of additional water through existing diversion facilities on the Mokelumne River.

You can contact me at this email address or at the direct (D) phone number below so that I can address any questions you might have.

Thanks,

Robin Cort
Senior Environmental Planner
RMC Water and Environment
2175 North California Boulevard, Suite 315
Walnut Creek, CA 94596
P: 925.627.4100
D: 925.627.4145
Nothing in this e-mail is intended to constitute an electronic signature for purposes of the Electronic Signatures in Global and National Commerce Act (E-Sign Act), 15, U.S.C. §§ 7001 to 7006 or the Uniform Electronic Transactions Act of any state or the federal government unless a specific statement to the contrary is included in this e-mail.
Appendix C – Summary of MOCASIM Modeling Results to Support Hydrology Impact Analysis
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This technical memorandum describes the modeling used to support the hydrology analysis of Amador Water Agency’s Central Amador Water Project water right application (Project). The memorandum is organized as follows:

1. **Project Overview**
   
   Amador Water Agency (AWA) has filed water right Application 5647X03 with the State Water Resources Control Board, Division of Water Rights (SWRCB), requesting a year-round direct diversion of up to 1,050 acre-feet per year (AFY) from Bear River and the North Fork Mokelumne River for delivery within AWA’s Central Amador Water Project (CAWP) service area. The proposed maximum rate of direct diversion, in combination with AWA’s existing water right Permit 17579 (State Water Right Application 5647-B), would be 5 cubic feet per second (cfs) for the CAWP system. Application 5647X03 also requests the collection of up to 1,400 AF to storage in Lower Bear River Reservoir between October 1 and July 15 each year. The total amount of water to be directly diverted and rediverted from storage for consumptive uses within the CAWP service area would not exceed 1,050 AF annually.

   To achieve the direct diversion of up to 1,050 acre-feet annually, the application was filed with a Petition for Partial Assignment of State Water Right Application 5647 and Partial Reversion of Rights Assigned to
Jackson Valley Irrigation District (JVID) under Permit 12167 (State Water Right Application 5648-B). Under the proposed reversion, up to 1,050 acre-feet of JVID’s currently authorized direct diversion right of 3,850 acre-feet would revert to AWA as referenced in Permit 12167. The reversion would occur on an annual basis over time as AWA needs the water to meet the demands of its customers in the Central Amador Water Project (CAWP) service area. Under AWA’s application, water would either be diverted or re-diverted from the Bear River and North Fork of the Mokelumne River at four locations:

1) Bear River at Lower Bear River Reservoir Dam
2) North Fork Mokelumne River at Salt Springs Reservoir Dam
3) North Fork Mokelumne River at Tiger Creek Afterbay Dam
4) Tiger Creek at Tiger Creek Regulator Dam

AWA’s proposed points of diversion and rediversion are upstream from JVID’s current point of diversion at Pardee Reservoir. Water would be diverted, stored, and conveyed to the Buckhorn Water Treatment Plant (WTP) for delivery within the CAWP service area. AWA’s pending water right application for the Project does not require the development or construction of any new water supply infrastructure, as existing facilities owned by AWA or Pacific Gas and Electric Company (PG&E) would be used to store and convey the water.

AWA expects water use in the CAWP service area to increase in the future beyond the amount allowed in its existing water right Permit 17579 (Application 5647B), and for that reason, filed Application 5647X03, along with the above-referenced Petition. AWA’s existing water right Permit 17579 allows for direct diversion of up to 1,150 AFY and collection to storage of up to 1,600 AF seasonally in Lower Bear River Reservoir, with the total taken for consumptive use by direct diversion and rediversion from storage not to exceed 1,150 AFY. In 2006, AWA’s annual diversion for beneficial uses within the CAWP service area was 1,149.7 AF, which was very close to the amount of water allowed under the permit. Although water use declined during the recession and was further reduced due to conservation during the multi-year drought that occurred from Water Years 2012 through 2015, AWA has projected that the need for water has not decreased and will likely increase in the future.

To support the environmental analysis of AWA’s pending water right application, the Mokelumne Calaveras Amador Simulation (MOCASIM) Model was used identify changes in Mokelumne River flow as a result of AWA increasing its CAWP diversion. Details of the model, model inputs, and results are outlined in the following sections.

2 MOCASIM Model Overview and Logic

MOCASIM is a reservoir operations model designed to simulate water storage and diversion operations on the Mokelumne River. MOCASIM is capable of analyzing various operating strategies of Pardee and Camanche reservoirs on the Mokelumne River, assessing water availability to serve EBMUD; Amador, Calaveras and San Joaquin counties; and then simulating newly proposed storage and diversion alternatives for beneficial use. MOCASIM also incorporates imports from water supply developments in the American and Calaveras River Watersheds.

MOCASIM is a mass-balance simulation model. It uses either monthly or daily time-step (depending on the geographical area, as explained below) for the hydrologic period beginning in 1953 through 2010. Senior appropriations, fishery flows, and hydropower releases are based on historical and/or future levels of development in the basin, water rights and agreements, and reservoir operating rules.

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1 Permit 17579 also allows for diversions from Antelope Creek, however, AWA no longer diverts from this source and has no plans to do so in the future. It is expected that Antelope Creek will be deleted as a source in an amended permit to be issued by the SWRCB pursuant to a pending Petition for Extension of Time for Permit 17579.
The model was developed by AD Consultants in 2007 for the Mokelumne River Water and Power Authority (MRW&PA) and has been maintained and upgraded by AD Consultants ever since. The original version of the model concentrated on the Lower Mokelumne River system starting at the Mokelumne Hill gage upstream of Pardee Reservoir and culminating at the confluence with the Cosumnes River. The model was designed at the time to examine potential yield from the MORE Water Project, an off-stream storage reservoir that would capture non-appropriated high flows from the Mokelumne River and regulate this supply to an integrated system of conjunctive use projects to provide additional water supply and reliability for the region.

In 2012, MOCASIM was expanded to include representation of the Upper Mokelumne River Basin upstream of the Mokelumne Hill gage. The model was also enhanced to allow evaluating the water supply and hydroelectric benefits from potential future developments in the basin.

### 2.1 Geographical Areas

MOCASIM in its present configuration encompasses two interrelated geographical areas: The Upper Mokelumne system and the Lower Mokelumne system. The model can simulate the operation of each geographical area independently or in sequence (from top to bottom).

The time-step for simulating the Upper Mokelumne is daily while the time-step for simulating the Lower Mokelumne is monthly. The primary reason is that the Upper Mokelumne is “peakier” hydrologically than the Lower Mokelumne. The combined storage capacity of Pardee and Camanche reservoirs in the Lower Mokelumne is an order of magnitude greater than the reservoir storage in the Upper Mokelumne, thus providing greater attenuation of flood events (which coincides with the actual practice of regulating flow below Camanche for safety and environmental considerations). Furthermore, most of the water rights and agreements associated with existing water users on the Lower Mokelumne were defined on a monthly basis. Internally in the model, the difference in time-step resolution is handled by converting the daily outflow from the Upper Mokelumne to monthly inflow to the Lower Mokelumne. The transition point is the Mokelumne Hill gage at the Highway 49 Bridge (USGS #11319500), immediately upstream of Pardee Reservoir.

The following describes the characteristics and operating rules associated with each geographical area as simulated in MOCASIM.

#### 2.1.1 Upper Mokelumne System

The flow regime in the Upper Mokelumne system is primarily dominated by the operation of PG&E Project 137 on the North Fork Mokelumne. Project 137 consists of two primary reservoirs (Salt Springs and Lower Bear River reservoirs), and five hydroelectric power plants: Salt Springs #1 & #2, Tiger Creek, West Point and Electra powerhouses. PG&E operates these facilities with consideration to power generation objectives, instream flow requirements mandated by the Federal Energy Regulatory Commission, and in accordance with the Lodi Decree.

MOCASIM is coded to include the physical characteristics of the upper basin including PG&E reservoirs, waterways and power plants as well as all applicable operational rules for these facilities. **Figure 2-1** shows an overview of the Upper Mokelumne system as coded into MOCASIM.

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2 The Lodi Decree is a series of court decisions from the 1940’s and 50’s that mandate average monthly outflow from Salt Springs and Lower Bear River reservoirs as a function of reservoir storage.
Note: In standard model operation, Jackson Valley Irrigation District water is assumed to be diverted at Node 3. For the purposes of the Project, this has been updated as explained in Section 5.

As shown in Figure 2-1, the Middle and South Forks of the Mokelumne were combined in the model into a single inflow node (inflow to Node 11), as the flow in these forks is hardly regulated. Similarly, the
watershed upstream of Salt Springs Reservoir is also represented as a single inflow component to the Salt Springs Reservoir because of the limited storage regulation upstream of the Reservoir.

Other boundary conditions are: inflow to Lower Bear River Reservoir, the flow in Cole Creek, flow in Tiger Creek, and the combined flow in Beaver, East Panther and West Panther creeks. Local inflow is introduced in the model at discrete points as shown this schematic. Local inflow is the net of accretions and depletions to the system and is based on historical hydrology. Channel losses are included in the calculation for depletions.

Primary facilities of Project 137 and operational rules that have been incorporated in the model are described in Table 2-1 (refer also to Figure 2-1 for waterways capacities).

<table>
<thead>
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<th>Reservoirs</th>
<th>Minimum (AF)</th>
<th>Maximum (AF)</th>
<th>Modeling Assumption</th>
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<td>5,000</td>
<td>141,860</td>
<td>Reservoir operates based on target rule curve subject to downstream release requirements</td>
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<tr>
<td>Lower Bear River Reservoir</td>
<td>2,150</td>
<td>52,020</td>
<td>Reservoir operates based on target rule curve subject to downstream release requirements</td>
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<td>Upper Blue Lake</td>
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<td></td>
<td>Are not explicitly modeled. Represented as a single input node to Salt Springs Reservoir.</td>
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<tr>
<td>Lower Blue Lake</td>
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<td>Twin Lakes Reservoir</td>
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<td>Meadow Lake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Bear River Reservoir</td>
<td></td>
<td></td>
<td>Is not explicitly modeled. Represented as a single input node to Lower Bear River Reservoir.</td>
</tr>
<tr>
<td>Cole Creek Diversion</td>
<td></td>
<td></td>
<td>Storage is not explicitly modeled. Represented as a diversion node.</td>
</tr>
<tr>
<td>Tiger Creek Regulator, Forebay</td>
<td></td>
<td></td>
<td>Are not explicitly modeled. Represented as diversion nodes.</td>
</tr>
<tr>
<td>and Afterbay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Tabeaud</td>
<td></td>
<td></td>
<td>Storage is not explicitly modeled. Represented as a diversion node.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Plants</th>
<th>Maximum (MW)</th>
<th>Maximum (CFS)</th>
<th>Modeling Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Springs #1</td>
<td>11.0</td>
<td>700</td>
<td>Usually not peaking (although model provides for this option)</td>
</tr>
<tr>
<td>Salt Springs #2</td>
<td>33.0</td>
<td>225</td>
<td>Usually not peaking (although model provides for this option)</td>
</tr>
<tr>
<td>Tiger Creek</td>
<td>58.0</td>
<td>750</td>
<td>Usually Peaking (defined by specified plant factors)</td>
</tr>
<tr>
<td>West Point</td>
<td>14.5</td>
<td>675</td>
<td>Usually Peaking (defined by specified plant factors)</td>
</tr>
<tr>
<td>Electra</td>
<td>92.0</td>
<td>1130</td>
<td>Usually Peaking (defined by specified plant factors)</td>
</tr>
</tbody>
</table>

**Lodi Decree**

The Lodi Decree establishes minimum flow and releases relative to reservoir storage levels in the North Fork Mokelumne reservoirs. The flow is measured immediately upstream of the confluence with the Middle Fork Mokelumne River (Node 1 in Figure 2-1). The Lodi Decree is quite complex from the interpretation and implementation point of view. However, in the expanded model, the Lodi Decree was
simplified by defining a required flow schedule in the North Fork (NF) as a function of the combined storage in Salt Springs and Lower Bear River reservoirs (SS+LB), as shown in Table 2-2 below.

Table 2-2: Lodi Decree (North Fork Flow Schedule in cfs)

<table>
<thead>
<tr>
<th>Storage (Salt Springs + Lower Bear River)</th>
<th>Dry Year</th>
<th>Normal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;130,000 AF</td>
<td>&gt;130,000 AF</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When?</th>
<th>Always</th>
<th>June 1st</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>And greater than:</th>
<th>The following flow or natural flow, whichever is less:</th>
<th>Minimum flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>112,000</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>July</td>
<td>94,000</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>August</td>
<td>76,000</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>September</td>
<td>58,000</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>October</td>
<td>40,000</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>November</td>
<td>30,000</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>December</td>
<td>20,000</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>January</td>
<td>10,000</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>February</td>
<td>0</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>March</td>
<td>0</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>April</td>
<td>0</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

In the simplified Lodi Decree, there are two year types depending on the combined storage in Salt Springs and Lower Bear River reservoirs on June 1. If the storage is greater than 130 TAF, then the minimum required flow from the North Fork Mokelumne for the next 12 months is as prescribed in the table for Normal Year. If the storage on June 1 is less than 130 TAF, then the minimum required flow from the North Fork Mokelumne is in accordance with the prescribed schedule for Dry Year, but could also be reduced to the natural flow in a manner to gradually empty the reservoirs down to the target storage levels shown above (in the “and greater than” column).
**Instream flow requirements**

Instream flow requirements (see **Table 2-3**) are mandated by the FERC and are defined at six control points as depicted in **Figure 2-1** (CP 1 to CP 6). The FERC also requires maintaining pulse flows at these points as shown in **Table 2-4**.

**Table 2-3: FERC Instream Flow Requirements in cfs**

<table>
<thead>
<tr>
<th>Control Point</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 – North Fork below Electra Diversion</td>
<td>Critical Dry</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>25</td>
<td>30</td>
<td>50</td>
<td>80</td>
<td>95</td>
<td>50</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>40</td>
<td>40</td>
<td>80</td>
<td>135</td>
<td>250</td>
<td>180</td>
<td>35</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Above Normal</td>
<td>60</td>
<td>60</td>
<td>110</td>
<td>190</td>
<td>490</td>
<td>270</td>
<td>40</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Wet</td>
<td>90</td>
<td>100</td>
<td>150</td>
<td>400</td>
<td>980</td>
<td>950</td>
<td>145</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>CP2 – North Fork below Tiger Creek Afterbay (bypass to West Point Powerplant)</td>
<td>Critical Dry</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>25</td>
<td>30</td>
<td>50</td>
<td>80</td>
<td>95</td>
<td>50</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>40</td>
<td>40</td>
<td>80</td>
<td>135</td>
<td>250</td>
<td>180</td>
<td>35</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Above Normal</td>
<td>60</td>
<td>60</td>
<td>110</td>
<td>190</td>
<td>490</td>
<td>270</td>
<td>40</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Wet</td>
<td>90</td>
<td>100</td>
<td>150</td>
<td>400</td>
<td>980</td>
<td>950</td>
<td>145</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>CP3 – Tiger Creek below Tiger Creek Regulator</td>
<td>Critical Dry</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Above Normal</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
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<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>Wet</td>
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<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>CP4 – North Fork below Salt Springs Reservoir</td>
<td>Critical Dry</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>60</td>
<td>70</td>
<td>40</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>40</td>
<td>40</td>
<td>70</td>
<td>110</td>
<td>210</td>
<td>160</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Above Normal</td>
<td>50</td>
<td>50</td>
<td>90</td>
<td>170</td>
<td>430</td>
<td>230</td>
<td>30</td>
<td>20</td>
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<tr>
<td></td>
<td>Wet</td>
<td>75</td>
<td>110</td>
<td>135</td>
<td>375</td>
<td>930</td>
<td>720</td>
<td>145</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>43</td>
</tr>
<tr>
<td>CP5 – Bear River below Lower Bear River Reservoir</td>
<td>Critical Dry</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>40</td>
<td>4</td>
<td>4</td>
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<tr>
<td></td>
<td>Dry</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>25</td>
<td>20</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>25</td>
<td>40</td>
<td>20</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Above Normal</td>
<td>14</td>
<td>14</td>
<td>20</td>
<td>30</td>
<td>70</td>
<td>40</td>
<td>15</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Wet</td>
<td>20</td>
<td>20</td>
<td>25</td>
<td>50</td>
<td>110</td>
<td>70</td>
<td>30</td>
<td>15</td>
<td>6</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>CP6 – Cole Creek below diversions to Lower Bear River Reservoir</td>
<td>Critical Dry</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>15</td>
<td>14</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Below Normal</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>25</td>
<td>50</td>
<td>15</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td></td>
<td>Above Normal</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>30</td>
<td>70</td>
<td>30</td>
<td>15</td>
<td>6</td>
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<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Wet</td>
<td>15</td>
<td>15</td>
<td>20</td>
<td>45</td>
<td>100</td>
<td>60</td>
<td>25</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 2-4: FERC Pulse Flow Requirements in cfs

<table>
<thead>
<tr>
<th>CP/month</th>
<th>Critical Dry</th>
<th>Dry</th>
<th>Below Normal</th>
<th>Above Normal</th>
<th>Wet</th>
<th>Duration and Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 – North Fork below Electra Diversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>CP2 – North Fork below Tiger Creek Afterbay (bypass to West Point Powerplant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>CP3 – Tiger Creek below Tiger Creek Regulator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>One day</td>
</tr>
<tr>
<td>Mar</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>One day</td>
</tr>
<tr>
<td>CP4 – North Fork below Salt Springs Reservoir</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>CP5 – Bear River below Lower Bear River Reservoir</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>300</td>
<td>570</td>
<td>700</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>CP6 – Cole Creek below diversions to Lower Bear River Reservoir</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>0</td>
<td>Natural Flow</td>
<td>Natural Flow</td>
<td>Natural Flow</td>
<td>5 continuous days</td>
</tr>
</tbody>
</table>

Note: for modeling purposes, it was assumed that pulse flow is triggered at the beginning of the month.

**Diversions**

Upstream water users include those in Amador County and Calaveras County. The model has the provision to handle specific entities within these counties as follows:

Amador County:
- Amador Water Agency (AWA)\(^3\) via Amador Water System (AWS): Diversion at Lake Tabeaud
- Amador Water Agency via Central Amador Water Project (CAWP)
- Jackson Valley Irrigation District (JVID)\(^4\)

Calaveras County:
- Calaveras Public Utility District (CPUD)
- Calaveras County Water District (CCWD)

The monthly distribution of annual water diversions by upstream users is an explicit input into the model, which is further described in **Section 6** below. The model assumes that the annual diversions by the upstream users are distributed on a monthly basis in accordance with the percentages depicted in Table 2-5.

Table 2-5: Percent Distribution of Annual Diversion to Upstream Users

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amador</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AWS</td>
<td>5.8%</td>
<td>5.6%</td>
<td>6.2%</td>
<td>6.8%</td>
<td>8.9%</td>
<td>10.4%</td>
<td>11.7%</td>
<td>12.0%</td>
<td>10.4%</td>
<td>8.6%</td>
<td>7.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td>CAWP</td>
<td>5.8%</td>
<td>5.6%</td>
<td>6.2%</td>
<td>6.8%</td>
<td>8.9%</td>
<td>10.4%</td>
<td>11.7%</td>
<td>12.0%</td>
<td>10.4%</td>
<td>8.6%</td>
<td>7.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td>JVID</td>
<td>5.8%</td>
<td>5.6%</td>
<td>6.2%</td>
<td>6.8%</td>
<td>8.9%</td>
<td>10.4%</td>
<td>11.7%</td>
<td>12.0%</td>
<td>10.4%</td>
<td>8.6%</td>
<td>7.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Calaveras</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPUD</td>
<td>6.9%</td>
<td>5.7%</td>
<td>5.8%</td>
<td>8.2%</td>
<td>10.0%</td>
<td>11.7%</td>
<td>11.1%</td>
<td>10.6%</td>
<td>9.2%</td>
<td>7.4%</td>
<td>6.6%</td>
<td>6.9%</td>
</tr>
<tr>
<td>CCWD</td>
<td>6.9%</td>
<td>5.7%</td>
<td>5.8%</td>
<td>8.2%</td>
<td>10.0%</td>
<td>11.7%</td>
<td>11.3%</td>
<td>10.6%</td>
<td>9.2%</td>
<td>7.4%</td>
<td>6.6%</td>
<td>6.9%</td>
</tr>
</tbody>
</table>

Note: as explained in Section 5, the model logic has been updated to reflect JVID diversion from Pardue Reservoir. Given this change, the monthly distribution for JVID does not affect the modeling results for the Project. While JVID’s actual monthly distribution may vary from what is shown in the above table, the results will not be affected by altering these percentages.

---

\(^3\) Formerly known as Amador County Water Agency (ACWA).

\(^4\) Standard model operation combines the diversion for JVID and AWA. As described in **Section 5**, this part of the model logic has been changed to more accurately model the hydrologic impacts of the project.
The flow after being regulated by PG&E’s system and reduced by the upstream diversions becomes the inflow to Pardee Reservoir. The flow is measured at the USGS gaging station #11319500 Mokelumne River near Mokelumne Hill (near the Highway 49 Bridge).

In simulating future conditions on the river, MOCASIM uses historical flow at the gage adjusted for the difference between the historical upstream diversions and projected upstream diversions associated with proposed projects.

**Power Plant Operations**

The operation of the power plants in the Upper Mokelumne River System when plant factors are specified (usually for Tiger Creek, West Point and Electra power plants) can be summarized as follows:

1. The model always tries to run at maximum flow (assuming maximum power).
2. If the available flow is less than the maximum for the specified plant factor, the plant factor is modified to accommodate maximum flow.
3. Two flow rates are reported – average during period (24 hours) and flow ‘producing’, meaning flow corresponding to the resulting plant factor.

**Upper Mokelumne System Operation**

The operation of the Upper Mokelumne River System can be summarized as follows:

1. Minimum demand of the System is computed starting with the most downstream point (Node 1) taking into account the Lodi Decree, instream flow requirements, diversion, local runoff and power plant factors (if specified).
2. Maximum demand is calculated the same way except assuming maximum plant factor for all power plants (=1). This demand represents the maximum release from the upper reservoirs (Salt Springs and Lower Bear River) without hydropower spill.
3. Maximum and minimum demands are divided between Salt Springs (SS) and Lower Bear River (LB) reservoirs based on storage ratios LBR/(SS+LB), SS/(SS+LB).
4. If the computed storage falls below the reservoir rule curve with minimum demand, the model accepts the minimum demand as the release.
5. If the computed storage is above the reservoir rule curve with maximum demand, the model accepts the maximum demand as the release.
6. Otherwise, the model releases to comply with the “rule curve”, which is the compilation of operating criteria, guidelines, and specifications that govern the storage and release function of the respective reservoir, subject to downstream release requirements.

**2.1.2 Lower Mokelumne River System**

The Lower Mokelumne River System is defined as the portion of the Mokelumne basin downstream of Highway 49. A logical overview of the Lower Mokelumne as coded into MOCASIM is presented in Figure 2-2 below.
The inflow at Node 1 in the above Logical Overview represents the entire flow from the Upper Mokelumne watershed, as measured at the Mokelumne Hill gage after adjustment for historical diversions by users in Amador and Calaveras counties.

The flow regime in this area is governed by channel losses, fish release requirements, flood control curves, and the need to supply water for downstream water users (diversions). Each of these is described in more detail below.
Channel Losses

Channel losses to the groundwater basin occur in the Lower Mokelumne River below Camanche Reservoir. EBMUD, under water rights agreements with other water users on the river, is obligated to release sufficient water to ensure that entitlements are delivered to the users at their points of diversion.

Channel losses deplete the amount of water in the river, thus requiring EBMUD to increase the releases from Camanche Dam to compensate for the losses. MOCASIM incorporates the same methodology used by EBMUD for modeling channel losses (obtained from public records).

Channel losses in the model depend on the total release from Camanche as illustrated in Figure 2-3.

![Figure 2-3: Channel Losses on the Lower Mokelumne as a function of Camanche Release](image)

Fish Release Requirements

MOCASIM includes fish flow requirements set forth in the 1997 Joint Settlement Agreement (JSA). The Agreement prescribes minimum release requirements below Camanche Reservoir in different year types, subject to meeting minimum flow conditions below Woodbridge Diversion Dam. In other words, if the minimum release required from Camanche does not result in flow below Woodbridge as prescribed in the schedule, Camanche releases must be increased accordingly.

The annual fish release requirements are summarized in Table 2-6 below.

---

5 The Joint Settlement Agreement is an agreement among East Bay Municipal Utility District (EBMUD), the United States Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (now the California Department of Fish and Wildlife or CDFW). The JSA includes flow and non-flow measures, and requires EBMUD, USFWS, and CDFW to develop a plan for a Water Quality and Resource Management Program.
Table 2-6: Fish Releases as Required by the JSA in cfs

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Requirements</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Annual (TAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Minimum Camanche</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>194</td>
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<td></td>
<td>Release</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below Normal</td>
<td></td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
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<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
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<td>100</td>
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<td></td>
</tr>
<tr>
<td>Critical</td>
<td></td>
<td>115</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>100</td>
<td>100</td>
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<td>100</td>
<td>100</td>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>300</td>
<td>300</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>86</td>
</tr>
<tr>
<td>Below Normal</td>
<td>below Woodbridge</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diversion Dam</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td>150</td>
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<td>200</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>73</td>
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<td>150</td>
<td>150</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td></td>
<td>45</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

**EBMUD Water Supply System**

The EBMUD water supply system on the Mokelumne River consists of Pardee Reservoir and power plant, Camanche Reservoir and power plant, and the Mokelumne Aqueducts, which deliver water to the EBMUD service area. The operation of the EBMUD system is modeled in the MOCASIM as follows.

**Pardee Reservoir and Power Plant**

Pardee Reservoir has a gross storage capacity of about 198 TAF. It fills up and draws down to target storage levels using forecasting procedures that minimize reservoir spills. This mode of operation takes into account delivery of water to EBMUD customers via the Mokelumne Aqueducts and releases to Camanche in order to supply Lower Mokelumne flow requirements.

The Pardee power plant is situated at the base of Pardee Dam and contains three Francis turbines with a total generating capacity of 28,650 kilowatts. The total rated flow for the plant is 1,100 cfs. MOCASIM assumes that the Pardee power plant operates at a uniform flow rate governed by water supply and flood control rules (no peaking).

Because of limited information from public documents about the characteristics of the Pardee power plant, MOCASIM uses generic performance curves for Francis turbines.

**Camanche Reservoir and Power Plant**

Camanche Reservoir has a gross storage capacity of about 417 TAF. It provides releases to meet flow requirements for the Lower Mokelumne River, including: water demands by downstream diverters, releases to offset channel depletion (loss), fish release, and releases to maintain flood control space in the system.

The Camanche power plant is situated at the base of Camanche Dam and contains three Kaplan turbines with a total generating capacity of 10,680 kilowatts. The total rated flow for the plant is 1,200 cfs. MOCASIM assumes that the Camanche power plant operates at a uniform flow rate (no peaking).

Because of limited information from public documents about the characteristics of the Camanche power plant, MOCASIM uses generic performance curves for Kaplan turbines.
Aqueduct Draft and Early Deficiency Rules

EBMUD demand is expressed in the model as average annual daily demand in Million Gallons per Day (MGD) and percent distribution by month. EBMUD demand is delivered from Pardee Reservoir via the Mokelumne Aqueducts to terminal reservoirs in the Bay Area.

The combined maximum capacity of the Mokelumne Aqueducts is assumed to equal 325 MGD (approximately 500 cfs) which is EBMUD’s full allocation under its water rights. The terminal reservoirs in the Bay Area are represented in the model by a single reservoir called Terminal Reservoir Area (TRA) with a combined capacity of 160 TAF.

The TRA has target storage levels which the model tries to maintain during the simulation. Water is withdrawn from the TRA only when there is shortage in supply from the Mokelumne Aqueducts (Pardee Reservoir).

In dry years when shortages in supply occur, EBMUD imposes rationing on its customers, which in the model is called Early Deficiency Rules. These rules impose cutbacks of deliveries to EBMUD whenever total system storage at the end of September is projected to fall below 500 TAF. The total system storage is defined as the combined storage in Pardee, Camanche and TRA.

The Early Deficiency Rules result in a sliding scale of reduction to EBMUD demand, depending on projected end of September total system storage levels, as shown in Figure 2-4.

MOCASIM mimics hydrologic forecasting by employing an iterative process of decision making as explained above. Accordingly, the model operates the system first without cutbacks until the end of September. If system storage falls below 500 TAF, it defines the percent of cutbacks based on the Early Deficiency Rules, resets the simulation clock to January and re-operates the system again imposing cutbacks on EBMUD demand. This concept is consistent with the way EBMUD models customer cutback as found in public documents.
Another provision in MOCASIM reduces the computed cutbacks by 50% in the first year of the drought, based on the assumption that in the first year of the drought it could take up to six months before customers respond to the imposed conservation measures. This concept is also compatible with EBMUD modeling assumptions.

**Flood Control Operation**

The flood control operation must be done in accordance with the US Army Corps of Engineers (COE) Flood Control Manual for the Mokelumne River Basin and can be summarized as follows:

- System’s required flood control storage space is 200 TAF from November 15 to March 15
- Up to 70 TAF is transferable to PG&E’s Salt Springs and Lower Bear River reservoirs based on COE guidelines (only a portion of the free space in PG&E’s reservoirs can be used to offset flood space requirements in Pardee and Camanche reservoirs).
- Flood control space can be divided in any portion between Pardee and Camanche reservoirs.
- After March 15, flood storage space requirements are based on rainfall and snow pack estimates.

The system flood control diagram is presented in Figure 2-5.

MOCASIM simulates the above-mentioned flood control operation rules, with some approximation subject to the model’s time-step resolution.

---

**Figure 2-5: Flood Control Diagram**

Example: If on end of April the forecasted runoff from May 1 to July 31 is 600 TAF (point A on the 600 TAF curve), then the total flood space requirement is 170 TAF of which 60 TAF (point B) is non-transferable and 110 TAF is transferable (170-60=110. Of this amount, 20 TAF is for rainflood reservation and 90 TAF is for snowmelt reservation. The transferable space is further reduced depending on the free space in PG&E’s Salt Springs and Lower Bear reservoirs.
Diversions

Diversions by downstream users depend primarily on the hydrologic conditions. Table 2-7 summarizes the diversion amounts on an annual basis. Section 6 provides the specific diversions used for the Project analysis.

<table>
<thead>
<tr>
<th>User</th>
<th>Amount (TAF)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian &amp; Senior Appropriators</td>
<td>20</td>
<td>When Oct to Jun TNF is greater than 250 TAF (see Note 1)</td>
</tr>
<tr>
<td></td>
<td>16.1</td>
<td>When Oct to Jun TNF &lt; 250 TAF, diversions in July, August and September are reduced to 50%</td>
</tr>
<tr>
<td>North San Joaquin Water Conservation District (NSJWCD)</td>
<td>20</td>
<td>In normal years</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>When Camanche storage is in deficit (see Note 2)</td>
</tr>
<tr>
<td>Woodbridge Irrigation District (WID)</td>
<td>72</td>
<td>When Pardee actual inflow is greater than 375 TAF</td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>When Pardee Actual Inflow is less than 375 TAF</td>
</tr>
<tr>
<td>City of Lodi</td>
<td>3.6</td>
<td>All years (see Note 3)</td>
</tr>
</tbody>
</table>

Notes:
1) TNF is the True Natural Flow as measured at the Mokelumne Hill gage.
2) NSJWCD supply is modeled by providing water equal to the projected November spill (but not more than its full allocation amount of 20 TAF)
3) City of Lodi supply is based on the Lodi Decree which allows the city to divert water to offset declining groundwater levels.

The model assumes that the annual diversions by downstream users are distributed on a monthly basis in accordance with the percentages listed in Table 2-8.

<table>
<thead>
<tr>
<th>User</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Year</td>
<td>0.9%</td>
<td>0.8%</td>
<td>2.5%</td>
<td>8.1%</td>
<td>20.6%</td>
<td>29.3%</td>
<td>14.3%</td>
<td>9.3%</td>
<td>4.7%</td>
<td>4.4%</td>
<td>1.9%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Wet Year</td>
<td>0.7%</td>
<td>0.6%</td>
<td>1.9%</td>
<td>6.3%</td>
<td>16.0%</td>
<td>22.8%</td>
<td>22.3%</td>
<td>14.6%</td>
<td>7.3%</td>
<td>3.4%</td>
<td>1.4%</td>
<td>2.6%</td>
</tr>
<tr>
<td>WID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Dry Year</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.0%</td>
<td>8.4%</td>
<td>14.8%</td>
<td>19.2%</td>
<td>21.9%</td>
<td>18.9%</td>
<td>12.1%</td>
<td>3.6%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Wet Year</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.7%</td>
<td>5.3%</td>
<td>12.9%</td>
<td>18.4%</td>
<td>22.8%</td>
<td>21.1%</td>
<td>12.5%</td>
<td>6.3%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>NSJWCD</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All Years</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>17.0%</td>
<td>23.0%</td>
<td>27.0%</td>
<td>17.0%</td>
<td>10.0%</td>
<td>6.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>City of Lodi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Years</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.4%</td>
<td>14.9%</td>
<td>18.4%</td>
<td>17.7%</td>
<td>17.4%</td>
<td>16.6%</td>
<td>8.9%</td>
<td>2.5%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

3 Hydrology and Simulation Period

The primary source of flow data used in MOCASIM is the recorded flow at the Mokelumne Hill Gage (USGS # 11319500), immediately upstream of Pardee Reservoir. The simulation period in the model is from 1953 to 2010. A flow duration curve showing monthly flow measured at the gage is provided in Figure 3-1. The figure also shows the annual runoff in each year for this period.

The year 1953 was selected as the starting year because it provides the first year for which complete records for storage conditions in the Upper Mokelumne River Basin are available. Storage conditions in PG&E’s reservoirs at the Upper Mokelumne River Basin (so-called Project 137), namely, Salt Springs and Lower Bear River reservoirs are important factors for the simulation as MOCASIM considers the available space in these two reservoirs when computing the required flood control space in the Pardee-Camanche reservoirs.
system (per the COE flood control rules). Lower Bear River Reservoir, the more recently constructed of the two, was completed in 1952 and storage conditions have been available since January 1953, thus defining the beginning year for the simulation period. The year 2010 is the last year for which complete hydrological data were compiled for the latest version of the model.

As explained earlier, the model can simulate the operation of the Upper Mokelumne as a standalone system. To do so, an additional hydrologic data set was developed. Unlike the Lower Mokelumne which operates in the model on a monthly time step (a reasonable assumption given the ability to regulate flow in Pardee and Camanche reservoirs), the Upper Mokelumne required a higher level of resolution given the limited storage in the Upper Mokelumne reservoirs to regulate flow. As such, a daily time step was selected for the upper watershed.

The data was synthesized from over two dozen hydrological monitoring stations provided by PG&E, USGS and CDEC as shown in Figure 3-2. This resulted in developing ten discrete inflow time series as illustrated in the logical view in Figure 2-1 and explained below:

1. **Salt Springs**: Inflow to Salt Springs Reservoir
2. **Lower Bear**: Inflow to Lower Bear River Reservoir
3. **Cole Creek**: Inflow to Cole Creek above Diversion Dam (Node 17)
4. **Cole Creek Local**: Runoff between Cole Creek Diversion Dam and Tiger Creek Canal (Node 16)
5. **Bear River Local**: Runoff between Lower Bear River Dam and Tiger Creek Canal (Node 15)
6. **Other Tiger Creek**: Runoff from Beaver, East and West Panther creeks (Node 14)
7. **Tiger Creek**: Inflow to Tiger Creek Regulator (Node 13)
8. **Tiger Creek AB - Local**: Runoff between Salt Springs Reservoir and Tiger Creek Afterbay (Node 7 to Node 3)
9. **NF, SF, MF – Local to Node 1**: Runoff between Tiger Creek Afterbay and the Mokelumne Hill Gage (Node 3 to Node 1). This also includes local runoff between the Calaveras diversion on the South and Middle Forks of the Mokelumne (Node 11) and Node 1.
10. **MS Fork Mokelumne – Local**: Inflow from the Middle and South Forks of the Mokelumne before the Calaveras diversion (Node 11)
Figure 3-1 - MOCASIM Hydrology

<table>
<thead>
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<th>Year</th>
<th>% Exc. TAF</th>
<th>TAF</th>
</tr>
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<td>100%</td>
<td>145</td>
</tr>
<tr>
<td>1976</td>
<td>98%</td>
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<td>1981</td>
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<td>1966</td>
<td>71%</td>
<td>488</td>
</tr>
<tr>
<td>2004</td>
<td>69%</td>
<td>496</td>
</tr>
<tr>
<td>1987</td>
<td>67%</td>
<td>496</td>
</tr>
<tr>
<td>2008</td>
<td>66%</td>
<td>529</td>
</tr>
<tr>
<td>1989</td>
<td>64%</td>
<td>535</td>
</tr>
<tr>
<td>1985</td>
<td>62%</td>
<td>543</td>
</tr>
<tr>
<td>1964</td>
<td>60%</td>
<td>545</td>
</tr>
<tr>
<td>1957</td>
<td>59%</td>
<td>594</td>
</tr>
<tr>
<td>1962</td>
<td>57%</td>
<td>604</td>
</tr>
<tr>
<td>2009</td>
<td>55%</td>
<td>622</td>
</tr>
<tr>
<td>1953</td>
<td>53%</td>
<td>644</td>
</tr>
<tr>
<td>1993</td>
<td>50%</td>
<td>651</td>
</tr>
<tr>
<td>1979</td>
<td>48%</td>
<td>697</td>
</tr>
<tr>
<td>1990</td>
<td>47%</td>
<td>727</td>
</tr>
<tr>
<td>2000</td>
<td>45%</td>
<td>732</td>
</tr>
<tr>
<td>1971</td>
<td>43%</td>
<td>775</td>
</tr>
<tr>
<td>1975</td>
<td>41%</td>
<td>783</td>
</tr>
<tr>
<td>1973</td>
<td>41%</td>
<td>782</td>
</tr>
<tr>
<td>1963</td>
<td>38%</td>
<td>865</td>
</tr>
<tr>
<td>1989</td>
<td>36%</td>
<td>880</td>
</tr>
<tr>
<td>1984</td>
<td>34%</td>
<td>886</td>
</tr>
<tr>
<td>1978</td>
<td>33%</td>
<td>909</td>
</tr>
<tr>
<td>1979</td>
<td>31%</td>
<td>914</td>
</tr>
<tr>
<td>1974</td>
<td>29%</td>
<td>918</td>
</tr>
<tr>
<td>1993</td>
<td>28%</td>
<td>965</td>
</tr>
<tr>
<td>1958</td>
<td>26%</td>
<td>1,024</td>
</tr>
<tr>
<td>1965</td>
<td>24%</td>
<td>1,037</td>
</tr>
<tr>
<td>1967</td>
<td>22%</td>
<td>1,057</td>
</tr>
<tr>
<td>1980</td>
<td>21%</td>
<td>1,074</td>
</tr>
<tr>
<td>2005</td>
<td>19%</td>
<td>1,087</td>
</tr>
<tr>
<td>1996</td>
<td>17%</td>
<td>1,090</td>
</tr>
<tr>
<td>1987</td>
<td>16%</td>
<td>1,095</td>
</tr>
<tr>
<td>1956</td>
<td>14%</td>
<td>1,101</td>
</tr>
<tr>
<td>1966</td>
<td>12%</td>
<td>1,155</td>
</tr>
<tr>
<td>1998</td>
<td>10%</td>
<td>1,247</td>
</tr>
<tr>
<td>1969</td>
<td>9%</td>
<td>1,313</td>
</tr>
<tr>
<td>2006</td>
<td>7%</td>
<td>1,387</td>
</tr>
<tr>
<td>1993</td>
<td>5%</td>
<td>1,496</td>
</tr>
<tr>
<td>1982</td>
<td>3%</td>
<td>1,569</td>
</tr>
<tr>
<td>1983</td>
<td>2%</td>
<td>1,916</td>
</tr>
<tr>
<td>1953-2010 Average</td>
<td>732</td>
<td></td>
</tr>
</tbody>
</table>

Source: US Geological Survey, Water Resources Data
Model Operation

MOCASIM was designed to perform specific water availability analyses and then to assess the potential yield from proposed new developments in the Mokelumne watershed. In order to do so, the model is run, internally, in two passes (i.e., it performs full simulation for the entire simulation period several times):

1) In the first pass, MOCASIM simulates the operation of the existing facilities in the Mokelumne River system in accordance with current water rights and agreements. The results of this pass are the deliveries to all existing users and the magnitude and duration of non-appropriated water. In general, non-appropriated water is defined in the model as the flow to the Bay-Delta (as measure at Interstate 5 Bridge, not including the contribution from the Cosumnes River), in excess of what is needed to satisfy all existing users in the entire Mokelumne River system (Upper and Lower), including fish flow.

2) In the second pass, MOCASIM allocates the non-appropriated water for beneficial use through new developments. New developments may include additional on-stream storage, off-stream storage, direct diversion for water supply, or groundwater recharge. For the purposes of this project, the new development is the 1,050 AFY of additional consumptive use by AWA associated with water right Application 5647X03.
5 Model Logic Changes

For the purposes of modeling this Project, there were two changes made to the model logic, including (1) moving JVID’s diversion point to Pardee Reservoir and (2) assuming that JVID can divert water in each year type. The standard structure of the model, as described above, combines JVID’s and AWA’s diversion amounts and diverts the combined amount at the modeled location for AWA’s diversions. In reality, JVID diverts water at Pardee Reservoir. Additionally, because of its diversion location, JVID cannot physically take water when the elevation of Pardee Reservoir drops below 550 feet. However, discussions with EBMUD indicate that EBMUD would be willing to enter into an agreement that would allow JVID to install infrastructure to extract water from the Pardee Reservoir at elevations below 550 feet. To accurately capture the reality of JVID’s diversion, these two changes were made to the model logic.

6 Inputs and Cases

Diversions were included as the primary input to the model. To model changes in the system, three cases were modeled, including two baseline cases and a post-Project case. The first baseline case assumed current level of diversions, which was assumed to be 2010 (demand in 2015 was artificially low due to the drought and the Governor’s conservation mandates). In an effort to be more conservative, demand in the year 2010 was selected to represent current diversion levels. The second baseline case assumed maximum diversions without Project implementation. The third case assumed maximum diversions with Project implementation. In both maximum diversion level cases, all agencies were assumed to divert their full Mokelumne River right, except for EBMUD. EBMUD’s maximum diversion levels were assumed to be 2040 projected demand from EBMUD’s 2015 UWMP. Table 6-1 indicates the diversion amounts used for each of the three model runs.

Table 6-1: Diversions used for Modeling Cases

<table>
<thead>
<tr>
<th>Diverter</th>
<th>Current Diversion - Without Project (CASE 1)</th>
<th>Maximum Diversions - Without Project (CASE 2)⁵</th>
<th>Maximum Diversions - With Project (CASE 3)⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWA CAWP</td>
<td>938⁶</td>
<td>1,150</td>
<td>2,200</td>
</tr>
<tr>
<td>AWA AWS</td>
<td>7,160⁷</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>CCWD</td>
<td>159</td>
<td>2,030</td>
<td>2,030</td>
</tr>
<tr>
<td>CPUD</td>
<td>1,299</td>
<td>1,930⁸</td>
<td>1,930⁸</td>
</tr>
<tr>
<td>EBMUD</td>
<td>241,920</td>
<td>257,800</td>
<td>257,800</td>
</tr>
<tr>
<td>JVID</td>
<td>3,850</td>
<td>3,850</td>
<td>2,800</td>
</tr>
<tr>
<td>NSJWCD</td>
<td>3,021</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>WID</td>
<td>72,000</td>
<td>72,000</td>
<td>72,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>330,347</strong></td>
<td><strong>373,760</strong></td>
<td><strong>373,760</strong></td>
</tr>
</tbody>
</table>

⁵ Aside from EBMUD, all maximum diversions assume full Mokelumne River right.
⁶ From AWA data for 2010.
⁷ From CCWD’s 2010 UWMP, page 3-15; maximum diversions includes 1,830 AFY Bear Creek right plus 200 AFY from CPUD.
⁸ Total right is 2,130; this is reduced by 200 AFY, which is applied to CCWDs total per CCWD-CPUD agreement.
⁹ Current diversions as used in Mokelumne Watershed Interregional Sustainability Evaluation (MokeWISE). Maximum diversions represent 2040 projected demand from EBMUD 2015 draft UWMP, page 56.
7 Results

To determine changes in flow, results from Case 2 (pre-Project) and Case 3 (post-Project) were compared. However, flow in the Mokelumne River varies greatly from year to year and largely depends on the year type. In order to account for natural changes in the system, the average flow in wet, above normal, below normal, dry, and critically dry years was calculated at five different nodes, including:

1. Mokelumne Hill (Pardee Inflow)
2. North Fork below Electra Diversion (Control Point 1)
3. North Fork below Tiger Creek Afterbay Dam (Control Point 2)
4. North Fork below Salt Springs Reservoir (Control Point 4)
5. Bear River below Lower Bear River Reservoir (Control Point 5)

These averages for Case 2 (pre-Project) are shown in Table 7-1 below.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>1,594</td>
<td>472</td>
<td>641</td>
<td>429</td>
<td>241</td>
</tr>
<tr>
<td>Above Normal</td>
<td>1,130</td>
<td>226</td>
<td>329</td>
<td>232</td>
<td>203</td>
</tr>
<tr>
<td>Below Normal</td>
<td>826</td>
<td>131</td>
<td>186</td>
<td>156</td>
<td>169</td>
</tr>
<tr>
<td>Dry</td>
<td>611</td>
<td>50</td>
<td>60</td>
<td>56</td>
<td>128</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>442</td>
<td>37</td>
<td>45</td>
<td>44</td>
<td>104</td>
</tr>
</tbody>
</table>

Flows from Case 3 (maximum diversions with Project) were compared against flows from Case 2 (maximum diversion without Project) at the five different nodes for each day during the simulation period to determine the difference in flow from pre-Project to post-Project. For the purposes of this analysis, any flow change of 1% or more is categorized as a change in flow. It was also assumed that any flow change less than 1 cfs is not considered measurable in the environment or substantially different between modeling scenarios, so in the case where 1% of flow is less than 1 cfs, 1 cfs was used as the threshold. Table 7-2 indicates, for each year type at each node, the flow threshold used to analyze the results. For example, the Pardee Inflow threshold for a wet year is 16 cfs, which is 1% of the average 1,594 cfs flow in a wet year. If inflow to Pardee post-Project in a wet year changes by 5 cfs, the analysis registers no effective change; if flow changes by 20 cfs, the analysis captures the change in flow.
The following set of tables show, by year type, the number of days within the period of record that would experience a change in flow post-Project based on the threshold for that location and year.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>16</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Above Normal</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Below Normal</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dry</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 7-3 shows the results for wet years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At four of the five nodes, flows stayed the same in 99% of days falling within a wet year (7,303 days) and only decreased in 1% of days. At Control Point 5, Bear River below Lower Bear River Reservoir, flows stayed the same in 98% of days and decreased in 2% of days.

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold (cfs)</td>
<td>16</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Average Change (cfs)</td>
<td>-1.6</td>
<td>-0.4</td>
<td>-0.9</td>
<td>0.0</td>
<td>-0.1</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>73</td>
<td>37</td>
<td>90</td>
<td>82</td>
<td>157</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>7,226</td>
<td>7,266</td>
<td>7,212</td>
<td>7,221</td>
<td>7,129</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
</tr>
</tbody>
</table>

October 2016
Table 7-4 shows the results for above normal years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At two of the five nodes, flows stayed the same in 99% of the days falling within an above normal year (2,922 days) and only decreased in 1% of days. At Control Points 2, 4, and 5, flows stayed the same in 98% of days and decreased in 2% of days.

<table>
<thead>
<tr>
<th>ABOVE NORMAL</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold (cfs)</strong></td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Average Change (cfs)</strong></td>
<td>-1.4</td>
<td>-0.2</td>
<td>-0.6</td>
<td>-0.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Number of Days Flow Increases (#)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Percent of Days Flow Increases (%)</strong></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Number of Days Flow Decreases (#)</strong></td>
<td>37</td>
<td>16</td>
<td>48</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td><strong>Percent of Days Flow Decreases (%)</strong></td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Number of Days Flow Does Not Change (#)</strong></td>
<td>2,885</td>
<td>2,906</td>
<td>2,874</td>
<td>2,853</td>
<td>2,854</td>
</tr>
<tr>
<td><strong>Percent of Days Flow Does Not Change (%)</strong></td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
</tr>
</tbody>
</table>
Table 7-5 shows the results for below normal years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At three of the five nodes, flows stayed the same in 98% of the days within the period of record (2,920 days) and only decreased in 2% of days (percentages do not add up to 100% at Control Point 4 due to rounding). At Control Point 1, North Fork below Electra Diversion, flows stayed the same in 95% of days and decreased in 5% of days. The average difference in flows post-Project at Control Point 1 is a 0.1 cfs decrease. At Control Point 5, Bear River below Lower Bear River Reservoir, flows stayed the same in 97% of days, decreased in 2% of days, and increased in 1% of days. The increase in flow at Control Point 5 can be attributed to AWA’s increased diversion; the model releases additional water from Lower Bear River Reservoir to meet this demand.

Table 7-5: Results for Below Normal Year Analysis

<table>
<thead>
<tr>
<th>BELOW NORMAL</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Tiger Cr. Afterbay</th>
<th>CP2 - NF below Salt Springs Reservoir</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold (cfs)</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Average Change (cfs)</td>
<td>-1.5</td>
<td>-0.1</td>
<td>-0.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>68</td>
<td>142</td>
<td>52</td>
<td>40</td>
<td>68</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>2%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>2,852</td>
<td>2,774</td>
<td>2,864</td>
<td>2,874</td>
<td>2,821</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>98%</td>
<td>95%</td>
<td>98%</td>
<td>98%</td>
<td>97%</td>
</tr>
</tbody>
</table>
Table 7-6 shows the results for dry years (with a period of record of 3,654 days) and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. In dry years, the largest decrease in flows is seen at Control Point 2 (North Fork below Tiger Creek Afterbay) and Control Point 5 (Bear River below Lower Bear River Reservoir), with decreases in 4% and 3% of days, respectively. The increase in flows at Control Points 4 and 5 can be attributed to AWA’s increased diversion; the model releases additional water from Salt Springs and Lower Bear River Reservoirs to meet this demand.

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold (cfs)</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Average Change (cfs)</td>
<td>-1.1</td>
<td>0.0</td>
<td>-0.1</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>332</td>
<td>40</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>81</td>
<td>7</td>
<td>142</td>
<td>52</td>
<td>103</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>2%</td>
<td>0%</td>
<td>4%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>3,572</td>
<td>3,647</td>
<td>3,512</td>
<td>3,270</td>
<td>3,511</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>98%</td>
<td>100%</td>
<td>96%</td>
<td>89%</td>
<td>96%</td>
</tr>
</tbody>
</table>
Table 7-7 shows the results for critically dry years (with a period of record of 4,749 days) and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. In critically dry years, the largest decrease in flows is seen at Mokelumne Hill (Pardee Inflow) and Control Point 5 (Bear River below Lower Bear River Reservoir), each with a decrease in flow 3% of days. The increase in flows at Control Points 4 and 5 can be attributed to AWA’s increased diversion; the model releases additional water from Salt Springs and Lower Bear River Reservoirs to meet this demand.

<table>
<thead>
<tr>
<th>CRITICAL DRY</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold (cfs)</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Average Change (cfs)</td>
<td>-1.3</td>
<td>0.0</td>
<td>-0.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>13</td>
<td>22</td>
<td>22</td>
<td>283</td>
<td>155</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>159</td>
<td>41</td>
<td>117</td>
<td>39</td>
<td>138</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>4,577</td>
<td>4,686</td>
<td>4,610</td>
<td>4,427</td>
<td>4,456</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>96%</td>
<td>99%</td>
<td>97%</td>
<td>93%</td>
<td>94%</td>
</tr>
</tbody>
</table>
Table 7-1 at the beginning of this section shows average flow from Case 2 (pre-Project) in cfs by year type. Table 7-8 below shows the change in average flow from Case 2 (pre-Project) to Case 3 (post-Project) in cfs and as a percent change in average baseflow. As shown, average flow does not decrease by more than 2 cfs in any year type at any node. At Control Points 1, 4, and 5, the percentage reduction in average base flows was less than 0.1% in every year type. The largest changes were seen at Control Point 1 in wet, above normal, and below normal years with 0.08% to 0.09% changes. Pardee Inflow and Control Point 2 saw higher changes than the other Control Points, but all year types have changes less than 0.3% of average baseflow.

**Table 7-8: Change in Average Flow from Case 2 to Case 3 by Year Type (in cfs and %)**

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>CP1 - NF below Electra Diversion</th>
<th>CP2 - NF below Tiger Cr. Afterbay</th>
<th>CP4 - NF below Salt Springs Reservoir</th>
<th>CP5 - Bear River below Lower Bear River Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>-1.6 cfs</td>
<td>-0.4 cfs</td>
<td>-0.9 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
</tr>
<tr>
<td></td>
<td>0.10%</td>
<td>0.08%</td>
<td>0.14%</td>
<td>0%</td>
<td>0.04%</td>
</tr>
<tr>
<td>Above Normal</td>
<td>-1.4 cfs</td>
<td>-0.2 cfs</td>
<td>-0.6 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.12%</td>
<td>0.09%</td>
<td>0.18%</td>
<td>0.04%</td>
<td>0%</td>
</tr>
<tr>
<td>Below Normal</td>
<td>-1.5 cfs</td>
<td>-0.1 cfs</td>
<td>-0.4 cfs</td>
<td>0.0 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.18%</td>
<td>0.08%</td>
<td>0.22%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Dry</td>
<td>-1.1 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
<td>0.1 cfs</td>
</tr>
<tr>
<td></td>
<td>0.18%</td>
<td>0%</td>
<td>0.17%</td>
<td>0%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>-1.3 cfs</td>
<td>0.0 cfs</td>
<td>-0.1 cfs</td>
<td>0.0 cfs</td>
<td>0.0 cfs</td>
</tr>
<tr>
<td></td>
<td>0.29%</td>
<td>0%</td>
<td>0.22%</td>
<td>0%</td>
<td>0%</td>
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</table>
Figure 7-1 and Figure 7-2 below shows the annual storage duration curve for Lower Bear River Reservoir and Salt Springs Reservoir, respectively. Storage duration curves indicate the percentage of time over the period of record that the reservoir will have at least a certain amount of water in storage. Results indicate minimal changes between pre-project (Case 2) and post-project (Case 3) storage in both Lower Bear River Reservoir and Salt Springs Reservoir.
Figure 7-2: Annual Average Salt Springs Reservoir Storage Duration Curve

Salt Springs Reservoir Storage from Jan-Dec (AF-Avg)

% Time (days) Equal to or Lower

Pre-Project

Post-Project
Appendix D – Summary of Project Effects on Fisheries and Aquatic Habitat
Introduction

Amador Water Agency (AWA) has filed water right Application 5647X03 (Proposed Project) with the State Water Resources Control Board, Division of Water Rights (SWRCB), requesting a year-round direct diversion of up to 1,050 AF per year from the Bear River and North Fork Mokelumne River for delivery within AWA’s Central Amador Water Project (CAWP) service area. The proposed maximum rate of direct diversion, in combination with AWA’s existing water right Permit 17579 (State Water Right Application 5647-B), would be 5 cubic feet per second (cfs) for the CAWP system. Application 5647X03 also requests the collection of up to 1,400 AF to storage in Lower Bear River Reservoir between October 1 and July 15 each year. The total amount of water that would be directly diverted and re-diverted from storage for consumptive use within the CAWP service area would not exceed 1,050 AF annually.

AWA filed Application 5647X03 concurrent with a Petition for Partial Assignment of State Water Right Application 5647 and Partial Reversion of Rights Assigned to Jackson Valley Irrigation District (JVID) under Permit 12167 (State Water Right Application 5648-B). While the total combined face value amount of water that could be directly diverted annually by AWA and JVID would not change, the location of where the water is diverted would move from JVID’s existing point of diversion location at Pardee Reservoir upstream to AWA’s points of diversion on the North Fork Mokelumne River and Bear River.
Accordingly, there may be an incremental reduction in flows at times in the North Fork Mokelumne River and Bear River between the AWA diversion points and the existing JVID diversion at Pardee Reservoir. PG&E would still maintain minimum flows in these streams, but flows may be reduced by up to 2 cfs during periods when flows are above those minimums. There would be no net change in flow downstream of Pardee Dam.

The Bear River and North Fork Mokelumne River provide habitat for populations of resident fish and other aquatic species, and support recreational fishing in the area. The purpose of this technical memorandum is to evaluate whether the magnitude of change in instream flows and aquatic habitat that could occur as a result of the change in diversions could potentially have a significant adverse effect on resident fish populations. To assess the potential effects of the Proposed Project on instream flows and associated changes to aquatic species, hydrologic simulation modelling was performed using MOCASIM as described by RMC Water and Environment (RMC) (2016). Results of the hydrologic simulation modelling were subsequently used to assess the magnitude of changes in instream flows and aquatic habitat in the analyses presented below.

**Proposed Project**

The Proposed Project would use existing diversion and water conveyance infrastructure to divert water from the Bear River and/or North Fork Mokelumne River at three locations:

- Bear River at Lower Bear River Reservoir Dam
- North Fork Mokelumne River at Salt Springs Reservoir Dam
- North Fork Mokelumne River at Tiger Creek Afterbay Dam

Under normal operating conditions water would be diverted from Bear River and the North Fork Mokelumne River at Salt Springs Reservoir Dam and conveyed via PG&E-owned facilities to PG&E’s Tiger Creek Regulator Reservoir. Water would be “re-diverted” at the Tiger Creek Regulator Reservoir and conveyed to AWA’s Buckhorn Water Treatment Plant via AWA’s recently-constructed Gravity Supply Pipeline (GSP) for subsequent distribution within the CAWP service area.¹ No new diversion, conveyance, treatment, or distribution facilities would be required.

AWA’s existing water right Permit 17579 allows for direct diversion of up to 1,150 AF per year and collection to storage of up to 1,600 acre-feet seasonally in Lower Bear River Reservoir. Under Permit 17579, the maximum amount that AWA can directly divert and

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¹ Prior to constructing the GSP, AWA pumped water from the North Fork Mokelumne River at Tiger Creek Afterbay to the Buckhorn Water Treatment Plant. Under the Proposed Project, the pumping system at Tiger Creek Afterbay will remain operational, but will only be used as a back-up system in the event of an outage of PG&E’s conveyance facilities.
re-divert from storage for consumptive use is 1,150 AF annually, which is close to the historic maximum demand for the CAWP service area. AWA anticipates further growth in water demand in the future which would be met by diversions under a new water right permit issued pursuant to Application 5647X03.

Environmental Setting

Watershed

The North Fork Mokelumne River is 62 miles (100 km) long originating at Highland Lakes (elevation 8,584 feet). The upper 8.7 miles (14 km) of the North Fork Mokelumne River are characterized by Moyle et al. (1996) as a meadow stream flowing through a wide glaciated valley with sub-alpine and riparian vegetation. The river then flows 18 miles (29 km) through the Mokelumne Wilderness Area which includes a deeply incised canyon with bedrock pools, boulder clusters, and waterfalls. Access to the canyon reach is limited by steep side slopes. Exiting the canyon reach the river flows into Salt Springs Reservoir, which was constructed and operated by Pacific Gas & Electric Company (PG&E) for hydroelectric power generation. The Bear River enters the North Fork Mokelumne River downstream of Salt Springs, and then the North Fork passes downstream though Tiger Creek Reservoir before joining the Middle Fork southeast of Pine Grove. The mainstem river flows past Mokelumne Hill before discharging into Pardee Reservoir. The discharge from Pardee Reservoir flows directly into Camanche Reservoir, which then discharges into the lower Mokelumne River, which meanders 34 miles (55 km) downstream into the Delta where it joins the lower San Joaquin River. The lower reaches of the river are characterized by a lower gradient when compared to the canyon reach, substrate becomes finer, and water temperatures during the summer increase as the river flows downstream into Pardee Reservoir and the lower river.

Facilities

PG&E operates a series of hydroelectric generation facilities on the upper North Fork Mokelumne River known as the Mokelumne River Project (Project 137; originally licensed by FERC in 1925). The dams and reservoirs extend from Upper Blue Lake (elevation 7,300 feet) downstream to the Electra powerhouse (elevation 700 feet). The project has a generation capacity of 201 MW and includes seven storage reservoirs, four powerhouses, and numerous diversions, canals, and conduits used to convey water to generators (Hydropower Reform Coalition and River Management Society 2015). PG&E owns and operates Lower Bear River Reservoir and Salt Spring Reservoir, which are the primary diversion points for the Proposed Project, as well as Tiger Creek Afterbay (back-up diversion point) and the Tiger Creek Regulator Reservoir, which is named as a point of re-diversion under Application 5647X03.
The FERC license and other agreements for the Mokelumne River Project require that PG&E maintain prescribed minimum instream flows that vary by season and hydrologic conditions, however, these required flows have varied substantially over the project life. As part of the most recent FERC relicensing process, which began in 1972 and extended to 2000, a settlement agreement was developed through collaborative negotiations that includes a new agreed-upon minimum instream flow schedule, pulse flows, and ramping rates. The agreement also stipulates minimum pool levels that apply to reservoir operations. The new instream flows identified in the settlement agreement and pulse flow operations for fisheries are shown in Tables 1 and 2 by location, month, and water year-type.
### Table 1. FERC instream flow requirements in cfs.

<table>
<thead>
<tr>
<th>CP1 - NF below Electra Diversion</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<tbody>
<tr>
<td>Critical Dry</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>60</td>
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<td>20</td>
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<td>25</td>
</tr>
<tr>
<td>Above Normal</td>
<td>60</td>
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<td>110</td>
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<td>20</td>
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</tr>
<tr>
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<table>
<thead>
<tr>
<th>CP2 - NF below Tiger Cr. Afterbay (bypass to West Point PP)</th>
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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<th>CP3 - Tiger Creek below Tiger Creek Regulator</th>
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<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<th>CP4 - NF below Salt Springs Reservoir</th>
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<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<table>
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<tr>
<th>CP5 - Bear River below Lower Bear</th>
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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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<td>6</td>
<td>6</td>
<td>10</td>
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<table>
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<tr>
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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
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<td>Critical Dry</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dry</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>15</td>
<td>14</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Below Normal</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>25</td>
<td>50</td>
<td>15</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Above Normal</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>30</td>
<td>70</td>
<td>30</td>
<td>15</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Wet</td>
<td>15</td>
<td>15</td>
<td>20</td>
<td>45</td>
<td>100</td>
<td>60</td>
<td>25</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 2. FERC pulse flow requirements in cfs.

<table>
<thead>
<tr>
<th>CP/month</th>
<th>Critical Dry</th>
<th>Dry</th>
<th>Below Normal</th>
<th>Above Normal</th>
<th>Wet</th>
<th>Duration and timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 - NF below Electra Diversion</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP2 - NF below Tiger Cr. Afterbay (bypass to West Point PP)</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP3 - Tiger Creek below Tiger Creek Regulator</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>one day</td>
</tr>
<tr>
<td>Feb</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>CP4 - NF below Salt Springs Reservoir</td>
<td>0</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP5 - Bear River below Lower Bear</td>
<td>0</td>
<td>300</td>
<td>570</td>
<td>700</td>
<td>0</td>
<td>5 continuous days</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP6 - Cole Creek below div. to Lower Bear</td>
<td>0</td>
<td>0</td>
<td>Natural Flow</td>
<td>Natural Flow</td>
<td>Natural Flow</td>
<td>5 continuous days</td>
</tr>
</tbody>
</table>

The minimum required instream flow schedule is designed to mimic the natural seasonal pattern of flows in the area reflecting late winter and spring precipitation and snow melt. Typically, flows in the river are greater than the minimum flows outlined above.

Minimum instream flows for Chinook salmon, steelhead, and other aquatic resources in the lower Mokelumne River downstream of Camanche Dam were agreed upon in the 1997 Joint Settlement Agreement (JSA). The JSA prescribes minimum release requirements below Camanche Reservoir in different year types, subject to meeting minimum flow conditions below Woodbridge Diversion Dam. The annual fish release requirements are summarized in Table 3.

Table 3. Fish release requirements in cfs downstream of Camanche Dam.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Requirements</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Annual (TAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Minimum Camanche</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>325</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>194</td>
<td></td>
</tr>
<tr>
<td>Below Normal</td>
<td></td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td></td>
<td>115</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>Expected Flow</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>150</td>
<td>300</td>
<td>300</td>
<td>25</td>
<td>25</td>
<td>86</td>
</tr>
<tr>
<td>Below Normal</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>200</td>
<td>20</td>
<td>20</td>
<td>73</td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>150</td>
<td>150</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>Critical</td>
<td></td>
<td>45</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>34</td>
</tr>
</tbody>
</table>

2 The Joint Settlement Agreement is an agreement among East Bay Municipal Utility District (EBMUD), the United States Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (now the California Department of Fish and Wildlife or CDFW). The JSA includes flow and non-flow measures, and requires EBMUD, USFWS, and CDFW to develop a plan for a Water Quality and Resource Management Program.
**Hydrology**

Hydrology in the Mokelumne River and its tributaries varies substantially on a daily, seasonal, and annual basis in response to precipitation and snow melt in the watershed, in addition to reservoir releases. USGS streamflow data for the North Fork Mokelumne River downstream of Salt Springs Dam (USGS 11314500) were used to characterize the hydrologic conditions in the vicinity of the Proposed Project diversions. Streamflow data were summarized using average daily flow measured over an 89-year period of record extending from October 1926 through September 2015. Average daily flows were greatest (>500 cfs) beginning in early May and extending through June reflecting primarily snow melt runoff. Average daily flow ranged from 440 cfs on July 1 declining to 78 cfs by July 31. Average daily flows were typically less than 100 cfs from August 1 through January 31. The lowest average daily flows occurred from mid-September through mid-November at levels typically ranging from 35 to 50 cfs.

Average monthly flow below Salt Springs Dam over the 89-year period of record averaged 84 cfs in January, 99 cfs in February, 125 cfs in March, and 235 cfs in April. Average monthly flows increased in May (724 cfs) and June (875 cfs). Average monthly flows then showed a pattern of decline in July (190 cfs), August (67 cfs), September (51 cfs), October (41 cfs), November (51 cfs) and December (79 cfs).

Annual average flow below Salt Springs Dam over the 89-year period of record varied from 4.3 cfs in 1977 to 710.1 cfs in 1983, reflecting drought and wet hydrologic conditions in the watershed. This includes the period before the Mokelumne Relicensing Settlement Agreement, which established minimum flow requirements.

**Water Quality**

The two primary water quality parameters of interest in the watershed with respect to aquatic habitat suitability are dissolved oxygen concentrations and water temperatures. PG&E is required to routinely monitor and report dissolved oxygen concentrations associated with the Mokelumne River Hydroelectric Project (P-137) operations. Dissolved oxygen levels are within the suitable range for fish and invertebrates. PG&E is also required to operate reservoirs and instream flow releases to maintain average daily water temperatures less than 20°C (68°F) year-round to protect cold-water habitat for trout at the following locations:

- Blue Creek between Upper Blue Lake Dam and Lower Blue Lake;
- Blue Creek between Lower Blue Lake Dam and Deer Creek;
- Meadow Creek between Meadow Lake Dam and North Fork Mokelumne River;
- Cole Creek between Bear River Tunnel Diversion and North Fork Mokelumne River;
• Bear River between Lower Bear River Reservoir Dam and North Fork Mokelumne River;
• Tiger Creek between Tiger Creek Regulator Dam and Tiger Creek Afterbay; and
• North Fork Mokelumne River between Salt Springs Reservoir Dam and Tiger Creek Afterbay.

Water temperatures in the upper watershed show a typical seasonal pattern with low temperatures in the winter and extending through the spring (e.g., June) in response to elevated runoff from snow melt, followed by warming during the late summer and early fall as streamflows decrease. Results of water temperature monitoring further downstream at Mokelumne Hill (inflow to Pardee Reservoir) show a similar seasonal pattern with declining temperatures during October-December in response to decreased air temperatures. Seasonal low temperatures occurred in January-February within a range from approximately 4°-8° C (39°-46° F). Seasonal temperatures began to rise in March reaching a seasonal peak in August-September before declining starting in October. The peak average daily temperatures in August-September at Mokelumne Hill were typically in the range from 14°-19° C (57°-66° F). Water temperature conditions in the upper watershed are typically within the range considered to be suitable for the mid-Sierra elevation fish community.

EBMUD manages water temperatures and dissolved oxygen levels in the lower river downstream of Camanche Dam. Dissolved oxygen concentrations in Camanche Reservoir are managed using a hypolimnion oxygenation system (HOS) to seasonally increase dissolved oxygen and reduce the risk of hydrogen sulfide production in the reservoir hypolimnion. Water temperatures are managed through cold water pool management in the reservoir and selective releases to the lower river using outlet valves at various reservoir elevations. Water temperatures are managed in the lower river seasonally to provide suitable habitat for various life stages of Chinook salmon and steelhead.

Fish Community

The fish community inhabiting the upper reaches of the watershed includes both native wild and hatchery produced rainbow trout, non-native brown trout, dace, and hitch in the riverine reaches; and kokanee primarily reside in the reservoirs. Aquatic insect production in the upper watershed provides a food resource for resident fish. The rainbow and brown trout support an active recreational fishery.
Further downstream in the reach between West Point Diversion Dam and Electra Powerhouse, as well as in Pardee and Camanche Reservoirs, water temperatures generally increase and there is a shift in species dominance from a cold water trout community to a greater number of warm water fish species including largemouth bass.

Recently, there has been growing interest in evaluating the feasibility of reintroducing anadromous fall-run Chinook salmon into the upper reaches of the watershed. A collaborative effort, known as MokeWISE, has begun with participation from a number of governmental agencies, local NGOs, EBMUD, CSPA, Trout Unlimited, and others to provide a forum for discussing future actions that could potentially be implemented in the upper watershed. As part of the process, a draft proposal has been developed to conduct a pilot level study of salmon reintroduction. The pilot study would include collection of adult fall-run Chinook salmon from the Mokelumne River Fish Hatchery, located downstream of Camanche Dam, so that fish can be trucked and released upstream of Pardee Reservoir. Spawning site selection, hatching success, juvenile rearing, and the ability to effectively capture juvenile salmon that could then be transported and released into the lower river are all proposed elements of the pilot study. Habitat mapping and a suitability assessment of the upper watershed have also been discussed.

The lower Mokelumne River, downstream of Camanche Dam, supports a diverse community of resident and migratory fish. Camanche Dam is a complete barrier to upstream migration by anadromous fish. The lower river provides habitat for approximately 35 species of fish including fall-run Chinook salmon, steelhead, resident rainbow trout, prickly sculpin, and Sacramento sucker (Merz 2002). The lower river is also habitat for a number of non-native fish including mosquitofish, largemouth bass, bluegill, and striped bass.

**Hydrologic Modeling Results**

Hydrologic simulation modelling conducted to assess the effects of the Proposed Project on instream flows (RMC 2016) included analyses of three model scenarios representing current diversions without the Proposed Project (baseline Case 1), maximum diversions without the Proposed Project (Case 2), and maximum diversions with the Proposed Project (Case 3). The annual water diversions included in the modelling for each of the three conditions, by agency, are summarized in Table 4.
Table 4. Diversions used for modeling cases.

<table>
<thead>
<tr>
<th>Diverter</th>
<th>Current Diversion - Without Project (CASE 1)</th>
<th>Maximum Diversions - Without Project (CASE 2)</th>
<th>Maximum Diversions - With Project (CASE 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWA CAWP</td>
<td>938&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1,150</td>
<td>2,200</td>
</tr>
<tr>
<td>AWA AWS</td>
<td>7,160&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>CCWD&lt;sup&gt;c&lt;/sup&gt;</td>
<td>159</td>
<td>2,030</td>
<td>2,030</td>
</tr>
<tr>
<td>CPUD</td>
<td>1,299</td>
<td>1,930&lt;sup&gt;d&lt;/sup&gt;</td>
<td>1,930&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>EBMUD&lt;sup&gt;e&lt;/sup&gt;</td>
<td>241,920</td>
<td>257,800</td>
<td>257,800</td>
</tr>
<tr>
<td>JVID</td>
<td>3,850</td>
<td>3,850</td>
<td>2,800</td>
</tr>
<tr>
<td>NSJWCD</td>
<td>3,021</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>WID</td>
<td>72,000</td>
<td>72,000</td>
<td>72,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>330,347</strong></td>
<td><strong>373,760</strong></td>
<td><strong>373,760</strong></td>
</tr>
</tbody>
</table>

(a) Aside from EBMUD, all maximum diversions assume full Mokelumne River right.
(b) From AWA data for 2010.
(c) From CCWD’s 2010 UWMP, page 3-15; maximum diversions include 1,830 AFY Bear Creek right plus 200 AFY from CPUD.
(d) Total right is 2,130; this is reduced by 200 AFY, which is applied to CCWDs total per CCWD-CPUD agreement.
(e) Current diversions as used in Mokelumne Watershed Interregional Sustainability Evaluation (MokeWISE). Maximum diversions represent 2040 projected demand from EBMUD 2015 draft UWMP, page 56.

To assess effects of the Proposed Project on instream flows, results from Cases 2 and 3 were compared (maximum diversions with and without the Proposed Project). The incremental change in flows estimated to occur with the Proposed Project (Case 3), relative to maximum diversions without the Proposed Project (Case 2), were characterized using both the absolute average change in flow in cfs and the percentage change in river base flows at various locations in the upper watershed. Case 2 base flows used in the analysis are summarized in Table 5. Flows were evaluated at five locations, including the Pardee Inflow at Mokelumne Hill and four other Control Points (CP):

- Mokelumne Hill (Pardee Inflow)
- North Fork below Electra Diversion (Control Point 1)
- North Fork below Tiger Creek Afterbay Dam (Control Point 2)
- North Fork below Salt Springs Reservoir (Control Point 4)
- Bear River below Lower Bear River Reservoir (Control Point 5)
Table 5. Average flow in cfs by year type in Case 2 (Maximum Diversion Pre-Project).

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion-CP1</th>
<th>NF below Tiger Cr. Afterbay-CP2</th>
<th>NF below Salt Springs Reservoir-CP4</th>
<th>Bear River below Lower Bear River Reservoir-CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>1,594</td>
<td>472</td>
<td>641</td>
<td>429</td>
<td>241</td>
</tr>
<tr>
<td>Above Normal</td>
<td>1,130</td>
<td>226</td>
<td>329</td>
<td>232</td>
<td>203</td>
</tr>
<tr>
<td>Below Normal</td>
<td>826</td>
<td>131</td>
<td>186</td>
<td>156</td>
<td>169</td>
</tr>
<tr>
<td>Dry</td>
<td>611</td>
<td>50</td>
<td>60</td>
<td>56</td>
<td>128</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>442</td>
<td>37</td>
<td>45</td>
<td>44</td>
<td>104</td>
</tr>
</tbody>
</table>

As discussed in RMC 2016, for the purposes of this analysis, any flow change of 1% or more is categorized as a change in flow. It was also assumed that any flow change less than 1 cfs is not considered measurable in the environment or substantially different between modeling scenarios, so in the case where 1% of flow is less than 1 cfs, 1 cfs was used as the threshold. For example, the Pardee Inflow threshold for a wet year is 16 cfs, which is 1% of the average 1,594 cfs flow in a wet year. If inflow to Pardee post-Project in a wet year changes by 5 cfs, the analysis registers no effective change; if flow changes by 20 cfs, the analysis captures the change in flow.

Results of the hydrologic simulation model analyses are summarized in Tables 6-10 for each of the five water-year types included in the analyses. Results of these analyses show that instream flow reductions associated with the Proposed Project operations, on average, ranged from -0.1 to -2 cfs. The percentage of days in the model simulation when instream flows were reduced from the baseline typically ranged from 1-2%, although the number of days that flows were predicted to be reduced was up to 5% for some conditions (e.g. North Fork Mokelumne River below Electra Diversion in a below normal water year).

Table 6 show results for wet years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At four of the five nodes, flows stayed the same in 99% of days falling within a wet year (7,303 days) and only decreased in 1% of days. At Control Point 5, Bear River below Lower Bear River Reservoir, flows stayed the same in 98% of days and decreased in 2% of days.
Table 6. Results for Wet Years

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion - CP1</th>
<th>NF below Tiger Cr. Afterbay - CP2</th>
<th>NF below Salt Springs Reservoir - CP4</th>
<th>Bear River below Lower Bear River Reservoir - CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Change (cfs)</td>
<td>-1.6</td>
<td>-0.4</td>
<td>-0.9</td>
<td>0</td>
<td>-0.1</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>73</td>
<td>37</td>
<td>90</td>
<td>82</td>
<td>157</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>2,885</td>
<td>2,906</td>
<td>2,874</td>
<td>2,853</td>
<td>2,854</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
</tr>
</tbody>
</table>

Table 7 shows results for above normal years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At two of the five nodes, flows stayed the same in 99% of the days falling within an above normal year (2,922 days) and only decreased in 1% of days. At Control Points 2, 4, and 5, flows stayed the same in 98% of days and decreased in 2% of days.

Table 7. Results for Above Normal Years

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion - CP1</th>
<th>NF below Tiger Cr. Afterbay - CP2</th>
<th>NF below Salt Springs Reservoir - CP4</th>
<th>Bear River below Lower Bear River Reservoir - CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Change (cfs)</td>
<td>-1.4</td>
<td>-0.2</td>
<td>-0.6</td>
<td>-0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>37</td>
<td>16</td>
<td>48</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>2,885</td>
<td>2,906</td>
<td>2,874</td>
<td>2,853</td>
<td>2,854</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
<td>98%</td>
<td>98%</td>
</tr>
</tbody>
</table>

Table 8 shows results for below normal years and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. At three of the five nodes, flows stayed the same in 98% of the days within the period of record (2,920 days) and only decreased in 2% of days (percentages do not add up to 100% at Control Point 4 due to
At Control Point 1, North Fork below Electra Diversion, flows stayed the same in 95% of days and decreased in 5% of days. The average difference in flows post-project at Control Point 1 is a 0.1 cfs decrease. At Control Point 5, Bear River below Lower Bear River Reservoir, flows stayed the same in 97% of days, decreased in 2% of days, and increased in 1% of days. The increase in flow at Control Point 5 can be attributed to AWA’s increased diversion; the model releases additional water from Lower Bear River Reservoir to meet this demand.

**Table 8. Results for Below Normal Years.**

<table>
<thead>
<tr>
<th>Below Normal</th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion - CP1</th>
<th>NF below Tiger Cr. Afterbay - CP2</th>
<th>NF below Salt Springs Reservoir - CP4</th>
<th>Bear River below Lower Bear River Reservoir - CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Change (cfs)</td>
<td>-1.5</td>
<td>-0.1</td>
<td>-0.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>68</td>
<td>142</td>
<td>52</td>
<td>40</td>
<td>68</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>2%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>2,852</td>
<td>2,774</td>
<td>2,864</td>
<td>2,874</td>
<td>2,821</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>98%</td>
<td>95%</td>
<td>98%</td>
<td>98%</td>
<td>97%</td>
</tr>
</tbody>
</table>

Table 9 shows results for dry years (with a period of record of 3,654 days) and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. In dry years, the largest decrease in flows is seen at Control Point 2 (North Fork below Tiger Creek Afterbay) and Control Point 5 (Bear River below Lower Bear River Reservoir), with decreases in 4% and 3% of days, respectively. The increase in flows at Control Points 4 and 5 can be attributed to AWA’s increased diversion; the model releases additional water from Salt Springs and Lower Bear River Reservoirs to meet this demand.
Table 9. Results for Dry Years

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion -CP1</th>
<th>NF below Tiger Cr. Afterbay -CP2</th>
<th>NF below Salt Springs Reservoir -CP4</th>
<th>Bear River below Lower Bear River Reservoir -CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Change (cfs)</td>
<td>-1.1</td>
<td>0.0</td>
<td>-0.1</td>
<td>0.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>332</td>
<td>40</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>81</td>
<td>7</td>
<td>142</td>
<td>52</td>
<td>103</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>2%</td>
<td>0%</td>
<td>4%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>3,572</td>
<td>3,647</td>
<td>3,512</td>
<td>3,270</td>
<td>3,511</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>98%</td>
<td>100%</td>
<td>96%</td>
<td>89%</td>
<td>96%</td>
</tr>
</tbody>
</table>

Table 10 shows results for critically dry years (with a period of record of 4,749 days) and indicates the average changes in flow and number of days that the flow changed from Case 2 to Case 3. In critically dry years, the largest decrease in flows is seen at Mokelumne Hill (Pardee Inflow) and Control Point 5 (Bear River below Lower Bear River Reservoir), each with a decrease in flow 3% of days. The increase in flows at Control Points 4 and 5 can be attributed to AWA’s increased diversion; the model releases additional water from Salt Springs and Lower Bear River Reservoirs to meet this demand.

Table 10. Results for Critically Dry Years

<table>
<thead>
<tr>
<th></th>
<th>Mokelumne Hill (Pardee Inflow)</th>
<th>NF below Electra Diversion -CP1</th>
<th>NF below Tiger Cr. Afterbay -CP2</th>
<th>NF below Salt Springs Reservoir -CP4</th>
<th>Bear River below Lower Bear River Reservoir -CP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Change (cfs)</td>
<td>-1.3</td>
<td>0.0</td>
<td>-0.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Number of Days Flow Increases (#)</td>
<td>13</td>
<td>22</td>
<td>22</td>
<td>283</td>
<td>155</td>
</tr>
<tr>
<td>Percent of Days Flow Increases (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Decreases (#)</td>
<td>159</td>
<td>41</td>
<td>117</td>
<td>39</td>
<td>138</td>
</tr>
<tr>
<td>Percent of Days Flow Decreases (%)</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Days Flow Does Not Change (#)</td>
<td>4,577</td>
<td>4,686</td>
<td>4,610</td>
<td>4,427</td>
<td>4,456</td>
</tr>
<tr>
<td>Percent of Days Flow Does Not Change (%)</td>
<td>96%</td>
<td>99%</td>
<td>97%</td>
<td>93%</td>
<td>94%</td>
</tr>
</tbody>
</table>
Effect on Fish and Aquatic Habitat

Results of the hydrologic simulation modelling show that the Proposed Project would result in average reductions in instream flows at four of the control points in the upper watershed (North Fork below Electra Diversion, North Fork below Tiger Creek Afterbay, North Fork below Salt Springs Reservoir, and Bear River below Lower Bear River Reservoir) that range from 0 to -0.9 cfs. Flow fluctuations of this magnitude are within the range of natural variability in the watershed, and given the magnitude of seasonal base flow, would not be expected to have a detectable effect on quality or availability of suitable habitat for trout or other fish.

As previously discussed, the settlement agreement associated with PG&E’s FERC license requires PG&E to maintain minimum flows and provide pulse flows set forth in Tables 1 and 2, respectively, herein. Under Project conditions, PG&E would continue to manage its operations to account for AWA’s Proposed Project diversions to avoid flow reductions below the required minimum bypass flows stipulated in the PG&E agreement and FERC license. PG&E would likewise manage its operations to avoid conditions that would violate the agreement and FERC license requirements to maintain water temperatures of less than 20°C (68°F) within the designated river reaches to provide suitable habitat for cold water fish such as rainbow trout. The Proposed Project does not require construction of any new infrastructure for diversion, conveyance or storage. Therefore, there would be no construction-related impacts.

The average flow reduction estimated for the Proposed Project operations for locations in the upper watershed, by water-year type, was evaluated as a percentage reduction in average baseflows presented in Table 5. The percentage reduction in average flow by water-year was calculated for the North Fork below Electra Diversion, North Fork below Salt Springs Reservoir, and Bear River below Lower Bear Reservoir locations and is shown in Tables 11 through 13.

Table 11. Change in flow at North Fork below Electra Diversion associated with proposed project diversions.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Average North Fork flow (cfs)</th>
<th>Average flow reduction (cfs) from proposed project</th>
<th>Percentage reduction in average baseflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>472</td>
<td>0.4</td>
<td>0.08</td>
</tr>
<tr>
<td>Above Normal</td>
<td>226</td>
<td>0.2</td>
<td>0.09</td>
</tr>
<tr>
<td>Below Normal</td>
<td>131</td>
<td>0.1</td>
<td>0.08</td>
</tr>
<tr>
<td>Dry</td>
<td>50</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>37</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 12. Change in flow at North Fork below Salt Springs Reservoir associated with proposed project diversions.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Average North Fork below Salt Springs Reservoir flow (cfs)</th>
<th>Average flow reduction (cfs) from proposed project</th>
<th>Percentage reduction in average baseflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>429</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Above Normal</td>
<td>232</td>
<td>0.1</td>
<td>0.04</td>
</tr>
<tr>
<td>Below Normal</td>
<td>156</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Dry</td>
<td>56</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>44</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 13. Change in flow at Bear River below Lower Bear River Reservoir associated with proposed project diversions.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Average Bear River below Lower Bear River Reservoir flow (cfs)</th>
<th>Average flow reduction (cfs) from proposed project</th>
<th>Percentage reduction in average baseflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>241</td>
<td>0.1</td>
<td>0.04</td>
</tr>
<tr>
<td>Above Normal</td>
<td>203</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Below Normal</td>
<td>169</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Dry</td>
<td>128</td>
<td>0.1</td>
<td>0.08</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>104</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>

For the North Fork below Electra Diversion location, the percentage reduction in average base flows was 0.08% to 0.09% in wet, above normal years, and below normal years, and was 0% in dry years and critically dry water years. For the North Fork below Salt Springs Reservoir location, the percentage reduction in average base flows was 0% in wet, below normal, dry, and critically dry years and 0.04% in above normal years. For the Bear River below Lower Bear River Reservoir location, the percentage reduction in average base flows was 0% in above normal, below normal and critically dry water years, 0.04% in wet years, and 0.08% in dry water years. In all of these hydrologic modeling scenarios, the percentage reduction in average base flows was less than 0.1%. This small reduction in baseflows in the upper watershed would not be expected to result in a detectable reduction in quality or availability of suitable habitat, channel velocities, wetted channel width, or local seasonal water temperatures.

Information on the stage-discharge relationship from USGS gage calibration measurements was used for the North Fork Mokelumne River below Salt Springs Dam location to estimate the magnitude of change in water depth that would occur from Proposed Project diversions. Data were used for gage calibrations conducted between September 2011 and September 2015 over a range of river flows from 21.5 to 126 cfs to represent typical
summer flow conditions. Based on 9 measurements, the stage-discharge linear regression was highly significant, which means that depth of water can be very reliably predicted using flow data:

\[
\text{Water depth (feet)} = 1.262 + (0.00925 \times \text{flow})
\]

The adjusted R² = 0.947 with P<0.001

Using this relationship in a sensitivity analysis showed that a change in instream flows of 1 cfs did not result in a detectable change in predicted water depth. Information was not available to estimate how an average reduction in flow would affect water depths at other locations of interest, or how stream velocity or wetted width would be changed. Given the small magnitude of the predicted reduction in average instream flows of less than 1 cfs, and the estimate of no detectable change in water depths at the Salt Springs gage site, it is expected that the Proposed Project diversions would have no significant effect on river habitat for resident fish such as rainbow trout.

The estimated absolute magnitude of flow reduction associated with the Proposed Project operations at Mokelumne Hill was greater than at other locations and, on average, ranged from a reduction of 1.1 to 1.6 cfs. To put this instream flow reduction into perspective, the percentage reduction in average flow by water-year was calculated. Results of the comparison are summarized in Table 14. Results of these comparisons show that the effect of the Proposed Project on instream flows at Mokelumne Hill would, on average, range of 0.1 to 0.29%. A change in flow of less than 2 cfs from an average base flow ranging from 442 cfs (critically dry) to 1,594 cfs (wet) on quality of availability of river habitat for resident fish would not be detectable. The magnitude of instream flow reduction estimated for the Proposed Project would not be expected to result in significant adverse effects to water velocities, channel depth, channel wetted width, or water temperatures at Mokelumne Hill.

### Table 14. Change in flow at Mokelumne Hill associated with proposed project diversions.

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Average Mokelumne Hill flow (cfs)</th>
<th>Average flow reduction (cfs) from proposed project</th>
<th>Percentage reduction in average baseflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet</td>
<td>1,594</td>
<td>1.6</td>
<td>0.10</td>
</tr>
<tr>
<td>Above Normal</td>
<td>1,130</td>
<td>1.4</td>
<td>0.12</td>
</tr>
<tr>
<td>Below Normal</td>
<td>826</td>
<td>1.5</td>
<td>0.18</td>
</tr>
<tr>
<td>Dry</td>
<td>611</td>
<td>1.1</td>
<td>0.18</td>
</tr>
<tr>
<td>Critically Dry</td>
<td>442</td>
<td>1.3</td>
<td>0.29</td>
</tr>
</tbody>
</table>
The Proposed project would not increase maximum annual water diversions from the upper Mokelumne River (Table 4; Cases 2 and 3) and therefore there would be no effect on the annual volume of water downstream of Pardee Reservoir entering Camanche Reservoirs. The ability of EBMUD to meet downstream water temperatures and instream flows in accordance with the JSA, and the ability to provide suitable habitat for Chinook salmon, steelhead, and other fish inhabiting the lower river, would not be affected by the Proposed Project.

**Findings**

Based on results of the hydrologic simulation modeling it was concluded that AWA’s Proposed Project would result in a small incremental reduction in average instream flows in the North Fork Mokelumne River and Bear River in reaches downstream of the proposed points of diversion. The magnitude of the estimated average reduction in instream flows was less than 0.25% at the upstream locations and less than 0.3% at Mokelumne Hill. The reduction in flows would not be expected to result in a detectable or significant reduction in aquatic habitat quality or availability, water velocities, channel depth, channel wetted width, or adversely affect seasonal water temperatures. No change in the volume of water downstream of Pardee reservoir entering Camanche Reservoirs would occur, and therefore, the Proposed Project would have no effect on aquatic habitat in the Camanche Reservoir or on EBMUD stream flow releases and water temperature management for salmonids under the JSA in the lower Mokelumne River. No construction would be required. Therefore, there would be no physical changes to existing aquatic habitat. The diversions would be operated in a manner that would avoid impacts to PG&E’s ability to maintain minimum instream flows and water temperature management as required by the Settlement Agreement and FERC license. The Proposed Project would therefore have a less than significant adverse impact on fishery resources and aquatic habitat in the North Fork Mokelumne River and Bear River.

**Literature Cited**


Appendix E – AWA Land Use Based Water Demand Projections
1 Introduction

This memorandum details the methodology for developing Amador Water Agency (AWA) demand projections using a land-use based approach. Future land use in Amador County was collected from multiple planning documents:

- Amador County Draft General Plan (2014)
- City of Ione General Plan (2009)
- City of Jackson General Plan (2008 Land Use Element)
- City of Plymouth General Plan (2009)
- City of Sutter Creek General Plan (1994)

A GIS shapefile containing land use for each of the above planning regions was obtained from Amador County Transportation Commission (ACTC) which combined the future land use projection files for each of the above cities and combined them with the county’s general plan land use layer. These future land use projections are expected to be developed at "build-out" which has no defined year. Further discussion of the assumptions used for build-out can be found in Section 2.5 - Interpolating from Build-Out.

Amador County has many planned developments in near-term and longer-term planning stages. It was assumed that near-term developments would be reflected accurately in the land use layers provided by each respective city and Amador County. While specific information about these developments was not used to inform this analysis, a review showed that all near-term developments within the county matched their respective underlying land use types (e.g. residential developments were located in residential land uses, mixed residential/commercial developments were located in mixed use regions, etc.).

A slightly different analysis was conducted for three separate regions of the county, as shown in Figure 1:

1) AWA’s current area of service, including both retail and wholesale. This was constructed by mapping the geographic extent of parcels currently served by active AWA accounts.
All future land use types within this area were considered.

2) Extent of the Central Amador Water Project (CAWP) service area boundary, not including land contained within the current CAWP area served.

- All land use types were considered, except for Agriculture.
- Agricultural Transition, a primarily rural residential land use type, was included.

3) Remaining county area not contained by current area served and the CAWP service area boundary.

- Agricultural and Agricultural Transition land use types were not included. Only 50% of rural residential land use area was included.
- A very small total acreage of water-consumptive land uses (residential, mixed use, commercial, etc.) were not included in the analysis because they are located along the farthest eastern edge of Amador County and AWA does not expect to ever provide water service to this area due to high elevations and distance.

Figure 2 shows a map of the land use types across the entire county, along with the boundaries described in Figure 1.

First, the methodology for determining demands from land within the current water area served is described in detail below. Second, any differences in methodology for calculating demands from lands outside of the current area of water service are described in a following section.

Note that the projections for this demand analysis do not explicitly reflect climate change assumptions as they relate to a changing future demand profile.
Figure 1 – Breakdown of Three Regions of Land Use Analysis
Figure 2 – Land Use Type Map
2 Land within the Current Area of Water Service

The county-wide future land use layer was clipped by the limits of AWA's current areas of water service: Central Amador Water Project (CAWP) Retail, CAWP Wholesale, Amador Water System (AWS) Retail, AWS Wholesale, Lake Camanche Village, and La Mel Heights. The area of each unique land use type within each system was calculated and exported into Microsoft Excel for further analysis. See Figure 3 for a breakdown of these future land use categories, aggregated into nine categories.

Figure 3 – Future Land Use Breakdown within Current Area Served

A three-part approach was used for calculating total water demand based on projected land use areas:

1) **Residential land use** – water demands were calculated by multiplying the number of expected residents based on land use type by per capita water consumption.

2) **Non-residential, non-agricultural land use** - water demands were calculated using an area-based water demand factor calculated using historical AWA data.

3) **Agricultural land use** - water demands were calculated by assigning the same breakdown of 2014 crops to full build-out agriculture lands and then applying a California DWR area-based water demand factor to each crop type.

The methodology for each land use category is described further in the sections below.
2.1 **Methodology: Residential Land Uses**

Total Residential water demands were calculated using the following formula:

\[(\text{Area of Land Use Type}) \times (\text{Dwelling units per acre density}) \times (\text{People per dwelling unit}) \times (\text{R-GPCD})\]

where R-GPCD represents the residential component of GPCD, or gallons per capita per day.

**Table 1** shows a breakdown of the unique residential land use types in each planning area as well as the allowable dwelling unit density according to each respective planning document.

For the unique planning areas where specific numbers of future dwelling units were known (Regional Service Center, Town Center, Castle Oaks, Preston Reuse, and Ringer Ranch), a dwelling unit density was created manually by dividing total number of expected dwelling units by the respective land use area.

<table>
<thead>
<tr>
<th>Planning Area</th>
<th>Land Use Type</th>
<th>Maximum Dwelling Units/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amador City</td>
<td>Special Planning</td>
<td>6.2</td>
</tr>
<tr>
<td>Amador City</td>
<td>Residential Single Family</td>
<td>6.2</td>
</tr>
<tr>
<td>County</td>
<td>Special Planning Area</td>
<td>2^A</td>
</tr>
<tr>
<td>County</td>
<td>Residential-Low Density</td>
<td>7</td>
</tr>
<tr>
<td>County</td>
<td>Residential-Medium Density</td>
<td>25</td>
</tr>
<tr>
<td>County</td>
<td>Residential-Rural</td>
<td>1</td>
</tr>
<tr>
<td>County</td>
<td>Agricultural Transition</td>
<td>0.2</td>
</tr>
<tr>
<td>County</td>
<td>Regional Service Center</td>
<td>4.3</td>
</tr>
<tr>
<td>Ione</td>
<td>Town Center</td>
<td>2.3</td>
</tr>
<tr>
<td>Ione</td>
<td>Rural Residential</td>
<td>2</td>
</tr>
<tr>
<td>Ione</td>
<td>High Density Residential</td>
<td>25</td>
</tr>
<tr>
<td>Ione</td>
<td>Downtown Transition</td>
<td>11.25^B</td>
</tr>
<tr>
<td>Ione</td>
<td>Medium Density Residential</td>
<td>15</td>
</tr>
<tr>
<td>Ione</td>
<td>Low Density Residential</td>
<td>7</td>
</tr>
<tr>
<td>Ione</td>
<td>Castle Oaks</td>
<td>4.0</td>
</tr>
<tr>
<td>Ione</td>
<td>Preston Reuse</td>
<td>1.5</td>
</tr>
<tr>
<td>Ione</td>
<td>Ringer Ranch</td>
<td>4.8</td>
</tr>
<tr>
<td>Planning Area</td>
<td>Land Use Type</td>
<td>Maximum Dwelling Units/Acre</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential Low Density</td>
<td>2</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential Duplex</td>
<td>10.9</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential Medium Density</td>
<td>14.5</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential High Density</td>
<td>21.8</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential Suburban</td>
<td>1</td>
</tr>
<tr>
<td>Jackson</td>
<td>Residential Single Family</td>
<td>5.4</td>
</tr>
<tr>
<td>Jackson Rancheria</td>
<td>Agricultural Transition</td>
<td>0.2&lt;sup&gt;C&lt;/sup&gt;</td>
</tr>
<tr>
<td>Plymouth</td>
<td>Urban Residential</td>
<td>16</td>
</tr>
<tr>
<td>Plymouth</td>
<td>Auto Urban Residential</td>
<td>4.8</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential and Professional Office</td>
<td>8</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential High Density</td>
<td>22.5&lt;sup&gt;D&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential Medium Density</td>
<td>15</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential Suburban</td>
<td>6.2&lt;sup&gt;F&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential Low Density</td>
<td>2</td>
</tr>
<tr>
<td>Sutter Creek</td>
<td>Residential Single Family</td>
<td>6.2</td>
</tr>
<tr>
<td>Sutter Creek-Gold Rush</td>
<td>Mixed Use Commercial, Office, Residential</td>
<td>3.1&lt;sup&gt;E&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sutter Creek-Gold Rush</td>
<td>Attached Residential</td>
<td>6.2&lt;sup&gt;E&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sutter Creek-Gold Rush</td>
<td>Single Family Residential</td>
<td>6.2&lt;sup&gt;E&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sutter Creek-Gold Rush</td>
<td>Mixed Use Commercial/Recreation</td>
<td>3.1&lt;sup&gt;E&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

**Table 1 Notes:**

A. The maximum is 18 DU/ac, but this is not likely for all future Special Planning Areas. Camanche Village Special Planning Area covers a large portion of all Special Planning Area and it has a density of 2 DU/ac. Various calculations of average density across residential land use types in General Plans or in near-term developments came to around 2 DU/ac as well.

B. Downtown Transition assumes mix of multi-family and commercial-transition zoning. Assumed to be 75% of the maximum lone multiple-family residential DUs/ac.

C. Assumed to be the same as Agricultural Transition in the County General Plan.

D. Average of the maximum dwelling unit density range of 16-29 DU/ac.

E. Assumed to be 50% of single-family residential in Sutter Creek General Plan.

F. Assumed to be same as single-family residential in Sutter Creek General Plan.

People per dwelling unit came from 2010 U.S. Census Data at the block group level. The 29 block groups in Amador County were matched with the master land use layer using the “Spatial Join” tool.
in ArcGIS. This ensured that each unique land parcel would have a spatially-relevant matched attribute of people per household based on the underlying census block group.

A residential gallons per capita-day (R-GPCD) value was calculated for each water service area by dividing the total residential consumption for each water service area by population. 2008-2013 was chosen as a representative baseline of water consumption before the reduced consumption in 2014-2015 due to the drought. Population for each water service area was determined using the California DWR Population Tool that was made available for 2015 Urban Water Management Plans (UWMPs). The tool calculates an area-weighted total population for a given water service boundary shapefile using census block data in 2000 and 2010. Using a user-input number of residential service connections in 2000 and 2010, the tool interpolates population from 2001 to 2009 and will also provide a population value for 2015. Population for 2008 – 2010 was obtained directly from the DWR Population Tool, while 2011 – 2013 population was interpolated manually between the population provided by the tool for 2010 and 2015.

The DWR Population Tool provided an average population in La Mel Heights of 2-3 people total, an unrealistically low value which is a function of how the tool operates by calculating population from portions of census blocks. Since the actual total population in La Mel Heights is known to be significantly higher, a more precise value for population was calculated by multiplying the average number of residential connections each year from 2008-2013 by the persons per household according to the 2010 U.S. Census block group data (2.17 persons per household in La Mel Heights).

An average R-GPCD for each water service area based on a 2008 – 2013 baseline is shown in Table 2. Since residential consumption was only known for retail (not wholesale) regions, the R-GPCD for AWS and CAWP retail were applied to the respective wholesale regions as well.
## Table 2 – Calculation of R-GPCD

<table>
<thead>
<tr>
<th></th>
<th>AWS</th>
<th>CAWP</th>
<th>LCV</th>
<th>LMH^A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>9,129</td>
<td>3,774</td>
<td>901</td>
<td>128</td>
</tr>
<tr>
<td>2009</td>
<td>9,087</td>
<td>3,638</td>
<td>921</td>
<td>124</td>
</tr>
<tr>
<td>2010</td>
<td>9,028</td>
<td>3,519</td>
<td>957</td>
<td>124</td>
</tr>
<tr>
<td>2011</td>
<td>9,182</td>
<td>3,344</td>
<td>988</td>
<td>124</td>
</tr>
<tr>
<td>2012</td>
<td>9,336</td>
<td>3,169</td>
<td>1,019</td>
<td>124</td>
</tr>
<tr>
<td>2013</td>
<td>9,491</td>
<td>2,994</td>
<td>1,050</td>
<td>124</td>
</tr>
<tr>
<td><strong>Residential Water Use (CCF)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>813,073</td>
<td>239,131</td>
<td>103,342</td>
<td>8,917</td>
</tr>
<tr>
<td>2009</td>
<td>690,713</td>
<td>225,963</td>
<td>92,513</td>
<td>7,353</td>
</tr>
<tr>
<td>2010</td>
<td>653,810</td>
<td>196,123</td>
<td>83,663</td>
<td>7,086</td>
</tr>
<tr>
<td>2011</td>
<td>712,669</td>
<td>194,266</td>
<td>82,622</td>
<td>6,595</td>
</tr>
<tr>
<td>2012</td>
<td>732,469</td>
<td>205,561</td>
<td>85,843</td>
<td>7,867</td>
</tr>
<tr>
<td>2013</td>
<td>744,700</td>
<td>246,757</td>
<td>93,883</td>
<td>7,449</td>
</tr>
<tr>
<td><strong>R-GPCD (AF/capita/yr)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>0.204</td>
<td>0.145</td>
<td>0.263</td>
<td>0.160</td>
</tr>
<tr>
<td>2009</td>
<td>0.174</td>
<td>0.143</td>
<td>0.231</td>
<td>0.136</td>
</tr>
<tr>
<td>2010</td>
<td>0.166</td>
<td>0.128</td>
<td>0.201</td>
<td>0.132</td>
</tr>
<tr>
<td>2011</td>
<td>0.178</td>
<td>0.133</td>
<td>0.192</td>
<td>0.122</td>
</tr>
<tr>
<td>2012</td>
<td>0.180</td>
<td>0.149</td>
<td>0.193</td>
<td>0.146</td>
</tr>
<tr>
<td>2013</td>
<td>0.180</td>
<td>0.189</td>
<td>0.205</td>
<td>0.138</td>
</tr>
<tr>
<td><strong>Average (AF/capita/yr)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>0.181</strong></td>
<td><strong>0.148</strong></td>
<td><strong>0.214</strong></td>
<td><strong>0.139</strong></td>
</tr>
<tr>
<td><strong>Average (gal/capita/day)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>161</strong></td>
<td><strong>132</strong></td>
<td><strong>191</strong></td>
<td><strong>124</strong></td>
</tr>
</tbody>
</table>

**Table 2 Notes:**

A. Population for La Mel Heights was calculated by multiplying number of residential connections each year by the persons per household according to the 2010 U.S. Census block group data (2.17 persons per household).

Total residential land use demands at build-out are summarized in **Table 3**. Further discussion of the assumptions used for build-out can be found in Section 2.5 - Interpolating from Build-Out.
### Table 3 – Summary of Residential Water Demands at Build-Out

<table>
<thead>
<tr>
<th>Water Service Area</th>
<th>Residential Water Demand (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Retail</td>
<td>4,029</td>
</tr>
<tr>
<td>AWS Wholesale</td>
<td>3,177</td>
</tr>
<tr>
<td>CAWP Retail</td>
<td>1,317</td>
</tr>
<tr>
<td>CAWP Wholesale</td>
<td>694</td>
</tr>
<tr>
<td>La Mel Heights</td>
<td>12</td>
</tr>
<tr>
<td>Lake Camanche Village</td>
<td>464</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9,694</strong></td>
</tr>
</tbody>
</table>

#### 2.2 Methodology: Non-Residential, Non-Agricultural Land Uses

For non-residential, non-agricultural land uses, an area-based water demand factor was calculated based on actual AWA data. Average annual water consumption by account for 2008-2013 was matched to the area of the account’s particular parcel by Assessor’s Parcel Number (APN) in a county parcel layer. The 16 non-residential AWA account types were reclassified into three categories as shown in Table 4: Commercial, Industrial, or Institutional. Several account types were screened out in the process of calculating area-based water demand factors because they were either residential, wholesale, or not pertaining to a particular land use type.
Table 4 – Account Type Reclassification for Calculation of Area-Based Demand Factors

<table>
<thead>
<tr>
<th>Account Code</th>
<th>Definition</th>
<th>Reclassification</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>CAWP Residential</td>
<td>(screened out)A</td>
</tr>
<tr>
<td>C2</td>
<td>CAWP Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td>C3</td>
<td>CAWP Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td>C4</td>
<td>CAWP Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td>CS</td>
<td>AWS Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td>CW</td>
<td>CAWP Wholesale</td>
<td>(screened out)</td>
</tr>
<tr>
<td>DI</td>
<td>Untreated Ditch (Canal)</td>
<td>(screened out)</td>
</tr>
<tr>
<td>DO</td>
<td>Domestic Treated</td>
<td>(screened out)</td>
</tr>
<tr>
<td>IN</td>
<td>Industrial</td>
<td>Industrial</td>
</tr>
<tr>
<td>LC</td>
<td>Lk Camanche Commercial</td>
<td>Commercial</td>
</tr>
<tr>
<td>LI</td>
<td>Light Industrial (prison)</td>
<td>(screened out)B</td>
</tr>
<tr>
<td>LM</td>
<td>La Mel Residential</td>
<td>(screened out)</td>
</tr>
<tr>
<td>LR</td>
<td>Lk Camanche Residential</td>
<td>(screened out)</td>
</tr>
<tr>
<td>MC</td>
<td>Martell Commercial (served from Tanner)</td>
<td>Commercial</td>
</tr>
<tr>
<td>MU</td>
<td>Multi Unit</td>
<td>(screened out)</td>
</tr>
<tr>
<td>PA</td>
<td>Public Agency (Schools, hospitals, etc)</td>
<td>Institutional</td>
</tr>
</tbody>
</table>

Table 4 Notes

A. Residential, wholesale, and a few other account types were screened out in the process of calculating area-based water demand factors. This only pertains to calculation of non-residential demand factors and does not mean these land use types were excluded from future water use projections.

B. The prison was screened out of the industrial water demand factor analysis because it does not represent typical industrial water use expected in future industrial land use types.

Total consumption by category for the selected accounts was divided by total area to calculate a water demand factor, as shown in Table 5. To calculate an average yearly consumption from 2008 – 2013 historical data, several steps of filtering were required:

- “0” or negative consumption recorded in a single year was ignored for that year only.
- Each account was only included if there was positive (non-zero, non-negative) consumption for a minimum of three out of six years.
• 113 accounts were screened out because either AWA did not have an APN to match up with an area in the County parcel map OR the available APN was unable to match with any parcel in the County's parcel map.

• One Commercial account was removed from the analysis because it was found to have a parcel area four times larger than the next largest parcel. This caused it to have an extremely low water consumption per acre and was skewing down the aggregate Commercial value. Three additional Commercial parcels were removed from the analysis because they were found to have two of the lowest water consumption to area ratios that were suspected to be skewing down an accurate representation of the whole.

**Table 5 – Area-Based Water Demand Factor Calculation**

<table>
<thead>
<tr>
<th>Account Type Reclassification</th>
<th>Number of Accounts</th>
<th>Total Consumption (AF)</th>
<th>Total Area (Acres)</th>
<th>Water Demand Factor (AF/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>360</td>
<td>287</td>
<td>921</td>
<td>0.312</td>
</tr>
<tr>
<td>Industrial^A</td>
<td>1</td>
<td>255</td>
<td>190</td>
<td>1.344</td>
</tr>
<tr>
<td>Institutional</td>
<td>55</td>
<td>136</td>
<td>289</td>
<td>0.471</td>
</tr>
</tbody>
</table>

**Table 5 Notes**

A. Since there was only 1 available industrial account, this value was not used. See text below for explanation of actual industrial water demand factor used.

Since only 1 industrial account was available for calculations in **Table 5**, a separate value had to be calculated. The Northern California Water Association published a “Land Use/Water Supply Analysis Guidebook” for the Sacramento Valley as an addendum to an Integrated Regional Water Management Plan in November 2007. Typical water demand factors for light industrial and heavy industrial land use types were reported, broken down by indoor, hardscape, and landscape uses. These values were averaged to 1.575 AF/ac. This water demand factor was used for future Amador County industrial land use types.

Several future land use types found in the General Plans pertain to recreation and parks which are expected to have an irrigation demand. Since AWA does not have a classification for irrigation-specific accounts, an irrigation area-based water demand factor could not be calculated. Instead, an irrigation value calculated for a similar land-use water demands study for Calaveras County Water District’s 2015 UWMP was used (1.065 AF/ac).

Each projected non-residential, non-agricultural land use type was sorted into one of the four categories (Commercial, Industrial, Institutional, or Irrigation). For land uses that are mixed use, a weighting factor was used to reduce the expected water demand for that particular land use (e.g. a mixed residential/commercial land use might be 50% residential and 50% commercial, thus its commercial water demand factor is cut in half). Land use types with a reclassification of “IGNORE” were assumed to not have any water demands. See **Table 6** for the land use type assignments and adjusted water demand factors.
<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Reclassification</th>
<th>Water Demand Factor (AF/ac)</th>
<th>Weighting Factor</th>
<th>Adjusted Water Demand Factor (AF/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Urban Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Casino</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Castle Oaks&lt;sup&gt;A&lt;/sup&gt;</td>
<td>Commercial</td>
<td>0.31</td>
<td>5%</td>
<td>0.02</td>
</tr>
<tr>
<td>Central Business District</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Commercial Retail</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Conservation and Open Space Preserve</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Downtown Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Downtown Transition&lt;sup&gt;B&lt;/sup&gt;</td>
<td>Commercial</td>
<td>0.31</td>
<td>25%</td>
<td>0.08</td>
</tr>
<tr>
<td>General Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>General Forest</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Historic Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Industrial</td>
<td>Industrial</td>
<td>1.58</td>
<td>100%</td>
<td>1.58</td>
</tr>
<tr>
<td>Industrial H and L</td>
<td>Industrial</td>
<td>1.58</td>
<td>100%</td>
<td>1.58</td>
</tr>
<tr>
<td>Light Industrial</td>
<td>Industrial</td>
<td>1.58</td>
<td>100%</td>
<td>1.58</td>
</tr>
<tr>
<td>Light/Medium Manufacturing</td>
<td>Industrial</td>
<td>1.58</td>
<td>100%</td>
<td>1.58</td>
</tr>
<tr>
<td>Limited Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Mineral Resource Zone&lt;sup&gt;C&lt;/sup&gt;</td>
<td>Industrial</td>
<td>1.58</td>
<td>10%</td>
<td>0.16</td>
</tr>
<tr>
<td>Mixed Use Commercial, Office, Residential&lt;sup&gt;D&lt;/sup&gt;</td>
<td>Commercial</td>
<td>0.31</td>
<td>50%</td>
<td>0.16</td>
</tr>
<tr>
<td>Mixed Use Commercial/Recreation&lt;sup&gt;D&lt;/sup&gt;</td>
<td>Commercial</td>
<td>0.31</td>
<td>50%</td>
<td>0.16</td>
</tr>
<tr>
<td>NONE</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Office Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Office/Research and Development</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Open Forest</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Open Recreation</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Land Use Type</td>
<td>Reclassification</td>
<td>Water Demand Factor (AF/ac)</td>
<td>Weighting Factor</td>
<td>Adjusted Water Demand Factor (AF/ac)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Open Space</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Parks and Rec</td>
<td>Irrigation</td>
<td>1.07</td>
<td>100%</td>
<td>1.07</td>
</tr>
<tr>
<td>Preston Reuse(^E)</td>
<td>Commercial</td>
<td>0.31</td>
<td>70%</td>
<td>0.22</td>
</tr>
<tr>
<td>Professional Office</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Public</td>
<td>Institutional</td>
<td>0.47</td>
<td>100%</td>
<td>0.47</td>
</tr>
<tr>
<td>Public and Quasi-Pubic</td>
<td>Institutional</td>
<td>0.47</td>
<td>100%</td>
<td>0.47</td>
</tr>
<tr>
<td>Public Institutional</td>
<td>Institutional</td>
<td>0.47</td>
<td>100%</td>
<td>0.47</td>
</tr>
<tr>
<td>Public Service(^F)</td>
<td>Institutional</td>
<td>0.47</td>
<td>50%</td>
<td>0.24</td>
</tr>
<tr>
<td>Public Service - Recreation(^G)</td>
<td>Irrigation</td>
<td>1.07</td>
<td>10%</td>
<td>0.11</td>
</tr>
<tr>
<td>Public Services(^H)</td>
<td>Institutional</td>
<td>0.47</td>
<td>50%</td>
<td>0.24</td>
</tr>
<tr>
<td>Public Utility Easement</td>
<td>IGNORE</td>
<td>0.00</td>
<td>100%</td>
<td>0.00</td>
</tr>
<tr>
<td>Recreation Zone(^I)</td>
<td>Irrigation</td>
<td>1.07</td>
<td>30%</td>
<td>0.32</td>
</tr>
<tr>
<td>Recreational(^J)</td>
<td>irrigation</td>
<td>1.07</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Regional Service Center(^K)</td>
<td>71.5% Commercial &amp; 28.5% Industrial</td>
<td>0.61</td>
<td>75%</td>
<td>0.45</td>
</tr>
<tr>
<td>Residential and Professional Office(^D)</td>
<td>Commercial</td>
<td>0.31</td>
<td>50%</td>
<td>0.16</td>
</tr>
<tr>
<td>Right of Way</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Special Planning(^L)</td>
<td>Commercial</td>
<td>0.31</td>
<td>25%</td>
<td>0.08</td>
</tr>
<tr>
<td>Special Planning Area(^L)</td>
<td>Commercial</td>
<td>0.31</td>
<td>25%</td>
<td>0.08</td>
</tr>
<tr>
<td>Suburban Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Urban Commercial</td>
<td>Commercial</td>
<td>0.31</td>
<td>100%</td>
<td>0.31</td>
</tr>
<tr>
<td>Water</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Town Center(^D)</td>
<td>Commercial</td>
<td>0.31</td>
<td>50%</td>
<td>0.16</td>
</tr>
<tr>
<td>Open Wilderness</td>
<td>IGNORE</td>
<td>0.00</td>
<td>0%</td>
<td>0.00</td>
</tr>
<tr>
<td>Ringer Ranch(^M)</td>
<td>Commercial</td>
<td>0.31</td>
<td>10%</td>
<td>0.03</td>
</tr>
</tbody>
</table>
Table 6 Notes

A. Castle Oaks is expected to have 70,000 sf of commercial/office space. At average floor-to-area ratio of 0.625 (Lone Zoning), this is 2.57 ac which is ~5% of total Castle Oaks area of 52 ac.

B. Downtown Transition is zoned for multi-family residential and commercial. Assumed to be 75% residential, 25% commercial.

C. Mineral Resource Zone covers 11,868 acres in the entire county. Only about four facilities currently receive or are expected to receive AWA water in the future with any others expected to find their own source of water. In absence of expected mining production amounts from these known facilities, 10% of the total Mineral Resource Zone was assumed to be supplied with water using the Industrial water demand factor.

D. Assumed to be 50% commercial and 50% other (either residential or commercial).

E. Preston Reuse is expected to have 760,000 sf of office capacity. At average floor-to-area ratio of 0.925 (Lone Zoning), this is 18.86 ac which is larger than 17 ac total property size. Since 25 residential units are expected, it was assumed for simplicity that 70% of area would be Office and 30% residential.

F. “Public Service” is a designation in Lone. A large portion of future “Public Service” area is currently Open Space, Mining, or Agricultural Transition. In absence of more specific property information, this was assumed to not use full institutional water usage in the future and was weighted by 50%.

G. “Public Service – Recreation” is a designation in Sutter Creek which is a school facility which is estimated to have 10% irrigation.

H. “Public Services” is a designation for the county. It includes typical institutional uses, but also large acreages in highway rights-of-way. For this reason, it was weighted to 50%.

I. “Recreation Zone” is a designation in Sutter Creek. Current Google Earth imagery shows this to be 2 irrigated fields and one large non-irrigated parcel. A 30% irrigation was estimated for this land use type.

J. “Recreational” is a designation in Jackson for primarily one large parcel which does not appear to be irrigated according to recent Google Earth imagery.

K. The only “Regional Service Center” refers to the community of Martell which has a maximum of 2.5 million sf of commercial and 1 million sf of industrial space at an average intensity of 5,100 sf per acre (0.12 FAR). This comes to ~670 ac which is almost 99% of the total property size of 679 ac, meaning the average FAR is not a perfect number for calculating total plotted area of non-residential development. Since desired land use is mixed with residential but an emphasis on commercial and industrial, it was assumed to be 75% non-residential. Within the 75%, 71.5% is commercial and 28.5% industrial.

L. Special Planning/Special Planning Areas are purposely vague in General Plans. It was assumed that most Special Planning Areas with be primarily residential, with a 25% component included for potential Commercial mixed-use land types.

M. Ringer Ranch is primarily designated for residential land uses, with 50,000 sf of Commercial development capacity which was assumed to be 10%.
A summary of total non-residential, non-agricultural water demands at build-out are included in Table 7. Further discussion of the assumptions used for build-out can be found in Section 2.5 - Interpolating from Build-Out.

Table 7 - Summary of Non-Residential, Non-Agricultural Water Demands at Build Out

<table>
<thead>
<tr>
<th>Water Service Area</th>
<th>Non-Residential Water Demand (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Retail</td>
<td>1,308</td>
</tr>
<tr>
<td>AWS Wholesale</td>
<td>377</td>
</tr>
<tr>
<td>CAWP Retail</td>
<td>138</td>
</tr>
<tr>
<td>CAWP Wholesale</td>
<td>11</td>
</tr>
<tr>
<td>La Mel Heights</td>
<td>0</td>
</tr>
<tr>
<td>Lake Camanche Village</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,844</strong></td>
</tr>
</tbody>
</table>

2.3 Methodology: Agricultural Land Uses

28% (6,724 acres) of the current AWA area served is expected to have an agricultural land use. Since the exact distribution of crop types in the future is not known, the 2014 county crop cover breakdown was applied to the area of future agricultural lands. Water demand factors were assigned to each crop type based on California DWR calculations of applied water for irrigated cropland across all of California in 2010.

Note that 95% of all Amador County agricultural lands in 2014 were non-irrigated pasture. It was assumed that all parcels of agricultural land within the current water area served will be irrigated since the extent of the current area served is largely based on specific parcels that are known water customers.

The water demands were multiplied by 33% to account for the fact that not all parts of agricultural plots of land are irrigated. This value was calculated based on 2016 Amador County data collected by the Sacramento Amador Water Quality Alliance. The data compares area of irrigated acres to total acres, broken down by individual parcel. These values were self-reported by farmers as a result of the Regional Water Quality Control Board’s Irrigated Lands Program. Parcels that reported 0% of land area under irrigation were excluded from the calculation. See Table 8 for the distribution of crop types and matched water demand factors.
An additional 3,478 acres are expected to be “Agricultural Transition”, a primarily rural residential land use type in the County General Plan that is permitted to have small-scale agriculture (e.g. limited animal husbandry, family garden, orchard, or vineyard). Amador’s Planning department indicated that agricultural uses have been somewhat limited in current developments under this land use type, but some have developed with vineyards. For the land-use based projection, it was assumed that 10% of the area of this primarily residential land use type would use water for agricultural purposes, using the same breakdown of water use factors described above. Note that the residential component of water use for Agricultural Transition land use types is tabulated separately in the earlier residential land uses section. A summary of total agricultural water demands at build-out are included in Table 9. Further discussion of the assumptions used for build-out can be found in Section 2.5 - Interpolating from Build-Out.
### Table 9 - Summary of Agricultural Water Demands at Build Out

<table>
<thead>
<tr>
<th>Water Service Area</th>
<th>Agricultural Water Demand (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS Retail</td>
<td>4,546</td>
</tr>
<tr>
<td>AWS Wholesale</td>
<td>1,056</td>
</tr>
<tr>
<td>CAWP Retail</td>
<td>272</td>
</tr>
<tr>
<td>CAWP Wholesale</td>
<td>48</td>
</tr>
<tr>
<td>La Mel Heights</td>
<td>5</td>
</tr>
<tr>
<td>Lake Camanche Village</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,936</strong></td>
</tr>
</tbody>
</table>

### 2.4 Water Losses

Water losses were incorporated as a percent of demand. Table 10 shows the water losses in 2015 as a percent of 2015 demands for CAWP, Lake Camanche Village, and La Mel Heights. These values were calculated by AWA for each system as part of the AWWA Water Loss Audit required for the 2015 Urban Water Management Plan. The same percentage of water loss was used to calculate future water losses for each respective water system through build-out.

#### Table 10 – Water Loss Percentage Used for Projections (all systems except AWS)

<table>
<thead>
<tr>
<th></th>
<th>2015 Demands^A (AF)</th>
<th>2015 Water Losses^B (AF)</th>
<th>Water Loss %^C</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAWP</td>
<td>396</td>
<td>84</td>
<td>17.57%</td>
</tr>
<tr>
<td>La Mel Heights</td>
<td>12</td>
<td>&lt;1</td>
<td>0.31%</td>
</tr>
<tr>
<td>Lake Camanche Village</td>
<td>152</td>
<td>40</td>
<td>20.83%</td>
</tr>
</tbody>
</table>

**Table 10 Notes**

A. Excludes wholesale demands and agricultural raw water demands (does include non-agricultural raw water demands).

B. AWA Water Loss calculations included retail and non-agricultural raw water demands (excluding wholesale and any agricultural raw water demands)

C. Water loss percent is calculated as a percent of total demands: (Volume Losses)/(Volume of Losses + Volume of Demands)

Water loss in the AWS system had to be calculated separately because several system improvements are expected in the near-term and closer to 2040 which will reduce losses significantly. Additionally, since 2015 was an abnormal consumption year due to the drought, the calculated 2015 water losses for AWS do not line up well with the volume of expected savings from the system improvements during a normal water year.
To calculate AWS losses, total consumption was subtracted from total production to estimate unaccounted-for water in 2010-2012 in Table 11.

Table 12 lists projects expected to reduce losses in AWS by 2020. One additional but significant project is the installation of a small diameter pipeline from Amador Canal to New York Ranch. The completion date of the pipeline is unknown, but it is expected to be installed by 2040. To build in the uncertainty about the pipeline installation, its expected water loss reduction of 1,800 AF was added incrementally from 2021-2040 at 5% per year. Finally, Table 13 calculates the adjusted water loss percent used in projections from 2020-2035 and 2040 to buildout. Note that for simplicity, water losses are shown in 5-year increments for 2020-2040 but were calculated and applied annually in the land use model.

Table 11 – Calculation of Percent Unaccounted-For Water in AWS 2010-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Consumption</th>
<th>Unaccounted-For Water (Production - Consumption)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>7,160</td>
<td>4,393</td>
<td>2,768</td>
</tr>
<tr>
<td>2011</td>
<td>7,325</td>
<td>4,170</td>
<td>3,155</td>
</tr>
<tr>
<td>2012</td>
<td>8,130</td>
<td>4,501</td>
<td>3,629</td>
</tr>
<tr>
<td>Average</td>
<td>7,538</td>
<td>4,355</td>
<td>3,184</td>
</tr>
</tbody>
</table>

Table 11 Notes
A. All diversions from river, including raw water and what was sent to Tanner and Ione Water Treatment Plants
B. Includes all wholesale and raw water demands

Table 12 – Projected Water Loss Reduction from Projects to Reduce Losses in AWS

<table>
<thead>
<tr>
<th>Project</th>
<th>Projected volume of loss reduction in normal water year (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unimin Pipeline Replacement</td>
<td>73</td>
</tr>
<tr>
<td>Lower Amador Canal Project</td>
<td>500</td>
</tr>
<tr>
<td>Ione Canal Replacement (with Piping)</td>
<td>190</td>
</tr>
<tr>
<td><strong>Sum of Improvements by 2020</strong></td>
<td><strong>763</strong></td>
</tr>
</tbody>
</table>
| Small Diameter Pipeline from Amador Canal to New York Ranch (1,800 AF of savings per year added incrementally at 5% per year from 2021-2040) | 2021 (5%) 90  
2025 (25%) 450  
2030 (50%) 900  
2035 (75%) 1,350  
2040 (100%) 1,800  
**Sum of Improvements by 2040** 2,563 |
Table 13 – AWS Water Loss Percentages Used for Projections

<table>
<thead>
<tr>
<th>Year</th>
<th>2010-2012 Average Total Demands (AF)</th>
<th>2010-2012 Average Unaccounted-For Water (AF)</th>
<th>Projected Volume of Water Loss Reduction (AF)</th>
<th>Projected Volume of Water Loss (AF)</th>
<th>Projected Water Loss %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>4,355</td>
<td>3,184</td>
<td>763</td>
<td>2,421</td>
<td>35.73%</td>
</tr>
<tr>
<td>2021</td>
<td>4,355</td>
<td>3,184</td>
<td>853</td>
<td>2,331</td>
<td>34.86%</td>
</tr>
<tr>
<td>2025</td>
<td>4,355</td>
<td>3,184</td>
<td>1,213</td>
<td>1,971</td>
<td>31.16%</td>
</tr>
<tr>
<td>2030</td>
<td>4,355</td>
<td>3,184</td>
<td>1,663</td>
<td>1,521</td>
<td>25.88%</td>
</tr>
<tr>
<td>2035</td>
<td>4,355</td>
<td>3,184</td>
<td>2,113</td>
<td>1,071</td>
<td>19.74%</td>
</tr>
<tr>
<td>2040 and beyond</td>
<td>4,355</td>
<td>3,184</td>
<td>2,563</td>
<td>621</td>
<td>12.48%</td>
</tr>
</tbody>
</table>

2.5 Interpolating from Build-Out

It was assumed that the water demands based on land use correspond to a build out at 2100. Within the AWA current area served, the compounded annual growth rate for water demands from 2016-2100 is 1.12% which is within a typical expected growth range of 1-2% for similar types of long-term studies. While population is a key driver in water demand, in the past decade the evolution of demand in AWA current area served has not only been dependent on population. Weather, drought, income and employment, active and passive conservation measures have played a role in water use, including major system improvements in 2002 and 2007 which reduced system losses. Thus, it is difficult to compare the future 1.12% annual growth rate to historical growth in water demands in AWA’s area of service. However, the 1.12% projected growth rate based on 2100 build-out does match closely with the historical 1.11% compounded annual growth rate for AWA population served from 1995-2015.

Water consumption was interpolated linearly from 2016 to 2100 to determine interim projected water demands. While 2016 was used as the “current” year for interpolation purposes, note that 2008-2013 average demands were used as a baseline demand in 2016.

See Table 14 for a summary of the land use demand projections for AWA.
<table>
<thead>
<tr>
<th>Year</th>
<th>AWS Retail</th>
<th>AWS Wholesale</th>
<th>CAWP Retail</th>
<th>CAWP Wholesale</th>
<th>La Mel Heights</th>
<th>Lake Camanche Village</th>
<th>Consumptive Demands</th>
<th>Water Losses</th>
<th>Total Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>3,321</td>
<td>1,168</td>
<td>596</td>
<td>235</td>
<td>17</td>
<td>210</td>
<td>1,846</td>
<td>127</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>3,634</td>
<td>1,332</td>
<td>649</td>
<td>260</td>
<td>17</td>
<td>223</td>
<td>2,020</td>
<td>138</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>4,024</td>
<td>1,537</td>
<td>717</td>
<td>291</td>
<td>17</td>
<td>239</td>
<td>1,821</td>
<td>153</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>4,154</td>
<td>1,742</td>
<td>784</td>
<td>322</td>
<td>17</td>
<td>256</td>
<td>1,542</td>
<td>167</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>4,805</td>
<td>1,946</td>
<td>851</td>
<td>352</td>
<td>17</td>
<td>272</td>
<td>1,182</td>
<td>181</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>5,196</td>
<td>2,151</td>
<td>919</td>
<td>383</td>
<td>17</td>
<td>288</td>
<td>741</td>
<td>196</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>5,587</td>
<td>2,356</td>
<td>986</td>
<td>414</td>
<td>17</td>
<td>304</td>
<td>796</td>
<td>210</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>5,977</td>
<td>2,561</td>
<td>1,053</td>
<td>445</td>
<td>18</td>
<td>321</td>
<td>852</td>
<td>225</td>
<td>84</td>
</tr>
<tr>
<td>2020</td>
<td>6,368</td>
<td>2,766</td>
<td>1,121</td>
<td>476</td>
<td>18</td>
<td>337</td>
<td>908</td>
<td>239</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>6,758</td>
<td>2,971</td>
<td>1,188</td>
<td>507</td>
<td>18</td>
<td>353</td>
<td>963</td>
<td>253</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>7,149</td>
<td>3,176</td>
<td>1,255</td>
<td>538</td>
<td>18</td>
<td>369</td>
<td>1,019</td>
<td>268</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>7,540</td>
<td>3,380</td>
<td>1,323</td>
<td>568</td>
<td>18</td>
<td>386</td>
<td>1,075</td>
<td>282</td>
<td>101</td>
</tr>
<tr>
<td>2025</td>
<td>7,930</td>
<td>3,585</td>
<td>1,390</td>
<td>599</td>
<td>18</td>
<td>402</td>
<td>1,131</td>
<td>296</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>8,321</td>
<td>3,790</td>
<td>1,457</td>
<td>630</td>
<td>18</td>
<td>418</td>
<td>1,186</td>
<td>311</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>8,712</td>
<td>3,995</td>
<td>1,524</td>
<td>661</td>
<td>18</td>
<td>434</td>
<td>1,242</td>
<td>325</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>9,102</td>
<td>4,200</td>
<td>1,592</td>
<td>692</td>
<td>18</td>
<td>450</td>
<td>1,298</td>
<td>339</td>
<td>119</td>
</tr>
<tr>
<td>2030</td>
<td>9,493</td>
<td>4,405</td>
<td>1,659</td>
<td>723</td>
<td>18</td>
<td>467</td>
<td>1,353</td>
<td>354</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>9,883</td>
<td>4,610</td>
<td>1,726</td>
<td>754</td>
<td>18</td>
<td>483</td>
<td>1,409</td>
<td>368</td>
<td>127</td>
</tr>
</tbody>
</table>

Table 14 – Total Projected Land Use Based Water Demands for AWA Current Area Served (AF)

Table 14 Notes:
A. Assumes a 2100 build out
B. “2016” values were really an average 2008-2013 baseline used for interpolation.
3  Land Outside of the Current Water Area Served

The master future land use layer was clipped to remove land contained by AWA's current area served. Next, the remaining area was split between the CAWP service area boundary and the remaining county area (see Figure 1). Some slightly different assumptions and analyses were used when compared with the methodology for the demands from the current area served, which are described in each section.

See Figure 4 for a breakdown of future land use within the CAWP extent. See Figure 5 for a breakdown of future land use within the remaining county area.

Figure 4 – Breakdown of Land Use within Extent of CAWP service area boundary^A

Figure 4 Notes:

A. Note that this does not include land area within the current AWA area served
A similar three-part approach was used for calculating total water demand based on projected land use areas: Residential, Non-Residential/Non-Agricultural, and Agricultural. The methodology for each land use category is described further in the sections below.

### 3.1 Methodology: Residential Land Uses Outside of Current Area Served

Total Residential water demands were calculated in the same way as within the current area served using the following formula:

\[
\text{(Area of Land Use Type)} \times \text{(Dwelling units per acre density)} \times \text{(People per dwelling unit)} \times \text{(R-GPCD)}
\]

where R-GPCD represents the residential component of GPCD, or gallons per capita per day.

The same allowable dwelling unit densities per residential land use type were used from Table 1. People per household was pulled directly from the 2010 census block group layer.

For the CAWP potential service area boundary, the R-GPCD value of 0.148 AF/capita/year for CAWP was used from Table 2.

For the remaining county area, an average R-GPCD value was calculated for the entire county area by summing the total residential 2008-2013 baseline for each of the AWA water service areas and dividing by the total residential population in each respective year.
### Table 15 – Calculation of Overall R-GPCD

<table>
<thead>
<tr>
<th></th>
<th>Total Population&lt;sup&gt;A&lt;/sup&gt;</th>
<th>Total Residential Consumption (AF)</th>
<th>R-GPCD (AF/capita/yr)</th>
<th>R-GPCD (gal/capita/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>13,932</td>
<td>2,673</td>
<td>0.192</td>
<td>171</td>
</tr>
<tr>
<td>2009</td>
<td>13,770</td>
<td>2,334</td>
<td>0.169</td>
<td>151</td>
</tr>
<tr>
<td>2010</td>
<td>13,628</td>
<td>2,160</td>
<td>0.158</td>
<td>141</td>
</tr>
<tr>
<td>2011</td>
<td>13,638</td>
<td>2,287</td>
<td>0.168</td>
<td>150</td>
</tr>
<tr>
<td>2012</td>
<td>13,648</td>
<td>2,369</td>
<td>0.174</td>
<td>155</td>
</tr>
<tr>
<td>2013</td>
<td>13,658</td>
<td>2,509</td>
<td>0.184</td>
<td>164</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>0.174</td>
<td>155</td>
</tr>
</tbody>
</table>

*Table 2 Notes:*

A. Population for La Mel Heights was calculated by multiplying number of residential connections each year by the persons per household according to the 2010 U.S. Census block group data (2.17 persons per household).

Within the CAWP service area boundary, the total residential land use demands at build-out are 1,385 AF.

Within the remaining county area, the total residential land use demands at build-out are 5,440 AF. Note that residential demands from Agricultural Transition land use types (minimum parcel size of 5 acres according to zoning) were ignored in the remaining county area. Parcels of 5 acres or larger are not expected to be served by AWA. Additionally, the minimum parcel size for “Residential Rural” parcels is 5-acres with no public water supply or 1-acre with available public water supply. Residential Rural land use area was weighted by 50% to account for this difference, assuming that about half of rural residential homes will receive AWA public water service in the future.

### 3.2 Methodology: Non-Residential, Non-Agricultural Land Uses Outside of Current Area Served

Non-Residential, Non-Agricultural demands were calculated using the same methodology as the current area served.

Within the CAWP service area boundary, the total non-residential, non-agricultural water demands at build-out are 435 AF.

Within the remaining county area, the total non-residential, non-agricultural water demands at build-out are 4,799 AF.
3.3 Methodology: Agricultural Land Uses Outside of Current Area Served

Within the CAWP service area boundary, only agricultural demands from the Agricultural Transition land use type were included. It was assumed that 10% of the area of this primarily residential land use type would use water for agricultural purposes. This totaled 721 AF at build-out.

Within the remaining county area, agricultural demands expected to be met by AWA from both Agriculture and Agricultural Transition land use types are estimated to be 0 AF, with the exception of known agricultural areas which are considered water supply projects.

3.4 Additional Demands from Jackson Valley Irrigation District, Shenandoah Valley, and Willow Springs Irrigation District

Jackson Valley Irrigation District (JVID) and Shenandoah Valley are two existing agricultural regions in Amador County that do not currently receive water from AWA, but are experiencing growth in water demands that could exert potentially large demands on the Mokelumne River water supply in the future. Willow Springs Irrigation District is a small inactive irrigation district that may have demands in the future. See AWA’s Long Term Needs and Water Supply Study Appendix B for more detail on the following demand projections.

Currently, JVID’s water supply comes from a right to divert Jackson Creek at 110 CFS for storage of 36,000 AF in Lake Amador. JVID also can divert 3,850 AFY from the Mokelumne River at 50 CFS, but with no storage rights. It is expected that this will decrease to 2,800 AFY as AWA increases its diversion of the Mokelumne River upstream in the CAWP area. According to an ongoing study, JVID’s current demand is approximately 10,040 AFY and is expected to increase by 9,907 AFY to a total potential future demand of close to 20,000 AFY.

Currently, Shenandoah Valley is served by groundwater and some local stormwater capture. Some growers, especially larger ones, are having water supply issues with wells. Agricultural use is also growing in the Valley and many vineyards are converting from dry farming to irrigated grapes. An ongoing study by Toma and Associates estimates that current vineyard and walnut grove demands in Shenandoah Valley are 3,167 AFY and are expected to grow by 1,548 AFY to a total 4,715 AFY.

The same North County water demands study by Toma and Associates also shows that Willow Springs Irrigation District, which is currently inactive, may have demands of approximately 1,500 AFY in the future due to an expected 500 acres of irrigated pasture.

Together, the increase in demands expected from JVID, Shenandoah Valley, and Willow Springs Irrigation District is approximately 12,700 AFY. The future sources of supply to meet these demands are somewhat unknown and AWA does not expect to supply them, but it is important to be aware these potential demands on the Mokelumne River as a potential regional supply.

3.5 Water Losses Outside of Current Area Served

For the CAWP service area boundary, the percent water loss value of 17.57% for existing CAWP retail area was used from Table 10.
For the remaining county area, a single average water loss value was calculated by weighting the percent water loss for each system by total 2015 demands per system. Due to the changing percent water loss in the AWS system (as described in Table 13), this weighted calculation was done separately for 2016-2020 (constant), 2021-2039 (changes every year due to expected AWS improvements), and 2040-2100 (constant). Table 16 shows an example of how this was calculated for the 2016-2020 period while Table 17 reports the weighted water loss percentages used 2016-2100. Note that for simplicity, water losses are shown in 5-year increments for 2020-2040 but were calculated and applied annually in the land use model.

Table 16 – Example Calculation of County-Wide Water Loss – 2016-2020

<table>
<thead>
<tr>
<th>Water Service Area</th>
<th>2015 demands, including all raw and wholesale (AF)</th>
<th>2015 demands as percent of total</th>
<th>% Water Loss Used in AWA current area served</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWS</td>
<td>2,988</td>
<td>80%</td>
<td>35.73%</td>
</tr>
<tr>
<td>CAWP</td>
<td>587</td>
<td>16%</td>
<td>17.57%</td>
</tr>
<tr>
<td>LMH</td>
<td>12</td>
<td>0%</td>
<td>0.31%</td>
</tr>
<tr>
<td>LCV</td>
<td>152</td>
<td>4%</td>
<td>20.83%</td>
</tr>
<tr>
<td>Weighted average % water loss</td>
<td></td>
<td></td>
<td>32.16%</td>
</tr>
</tbody>
</table>

Table 17 – Projected County-Wide Water Loss Percentages

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>Projected Weighted Average Percent Water Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2020</td>
<td>32.16%</td>
</tr>
<tr>
<td>2021</td>
<td>31.47%</td>
</tr>
<tr>
<td>2025</td>
<td>28.50%</td>
</tr>
<tr>
<td>2030</td>
<td>24.29%</td>
</tr>
<tr>
<td>2035</td>
<td>19.38%</td>
</tr>
<tr>
<td>2040 and beyond</td>
<td>13.58%</td>
</tr>
</tbody>
</table>

3.6 Interpolating from Build-Out

The same assumption of build out at 2100 was used for areas outside of the current area served (see Section 2.5). Water consumption was interpolated linearly from 2016 to 2100 to determine projected water demands. 2016 demands are zero, since the area is not currently served.
AWA Land Use Based Water Demand Projections

See Table 18 for a summary of the land use demand projections for the CAWP service area boundary and Table 19 for the remaining county area.

Table 20 shows a summary of total land use demands projections for all three study areas, shown graphically in Figure 6.

<table>
<thead>
<tr>
<th>Year</th>
<th>Demands</th>
<th>Water Losses</th>
<th>Total Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2020</td>
<td>121</td>
<td>26</td>
<td>147</td>
</tr>
<tr>
<td>2025</td>
<td>272</td>
<td>58</td>
<td>330</td>
</tr>
<tr>
<td>2030</td>
<td>423</td>
<td>90</td>
<td>514</td>
</tr>
<tr>
<td>2035</td>
<td>575</td>
<td>122</td>
<td>697</td>
</tr>
<tr>
<td>2040</td>
<td>726</td>
<td>155</td>
<td>881</td>
</tr>
<tr>
<td>2045</td>
<td>877</td>
<td>187</td>
<td>1,064</td>
</tr>
<tr>
<td>2050</td>
<td>1,028</td>
<td>219</td>
<td>1,248</td>
</tr>
<tr>
<td>2055</td>
<td>1,180</td>
<td>251</td>
<td>1,431</td>
</tr>
<tr>
<td>2060</td>
<td>1,331</td>
<td>284</td>
<td>1,614</td>
</tr>
<tr>
<td>2065</td>
<td>1,482</td>
<td>316</td>
<td>1,798</td>
</tr>
<tr>
<td>2070</td>
<td>1,633</td>
<td>348</td>
<td>1,981</td>
</tr>
<tr>
<td>2075</td>
<td>1,784</td>
<td>380</td>
<td>2,165</td>
</tr>
<tr>
<td>2080</td>
<td>1,936</td>
<td>413</td>
<td>2,348</td>
</tr>
<tr>
<td>2085</td>
<td>2,087</td>
<td>445</td>
<td>2,532</td>
</tr>
<tr>
<td>2090</td>
<td>2,238</td>
<td>477</td>
<td>2,715</td>
</tr>
<tr>
<td>2095</td>
<td>2,389</td>
<td>509</td>
<td>2,899</td>
</tr>
<tr>
<td>2100</td>
<td>2,541</td>
<td>542</td>
<td>3,082</td>
</tr>
</tbody>
</table>
### Table 19 – Projected Land Use Based Water Demands for County Area Outside of Current Area Served and CAWP Service Area (AF)

<table>
<thead>
<tr>
<th>Year</th>
<th>Demands</th>
<th>Water Losses</th>
<th>Total Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2020</td>
<td>488</td>
<td>231</td>
<td>719</td>
</tr>
<tr>
<td>2025</td>
<td>1,097</td>
<td>437</td>
<td>1,534</td>
</tr>
<tr>
<td>2030</td>
<td>1,706</td>
<td>548</td>
<td>2,254</td>
</tr>
<tr>
<td>2035</td>
<td>2,316</td>
<td>557</td>
<td>2,873</td>
</tr>
<tr>
<td>2040</td>
<td>2,925</td>
<td>460</td>
<td>3,385</td>
</tr>
<tr>
<td>2045</td>
<td>3,535</td>
<td>555</td>
<td>4,090</td>
</tr>
<tr>
<td>2050</td>
<td>4,144</td>
<td>651</td>
<td>4,795</td>
</tr>
<tr>
<td>2055</td>
<td>4,754</td>
<td>747</td>
<td>5,501</td>
</tr>
<tr>
<td>2060</td>
<td>5,363</td>
<td>843</td>
<td>6,206</td>
</tr>
<tr>
<td>2065</td>
<td>5,973</td>
<td>938</td>
<td>6,911</td>
</tr>
<tr>
<td>2070</td>
<td>6,582</td>
<td>1,034</td>
<td>7,616</td>
</tr>
<tr>
<td>2075</td>
<td>7,192</td>
<td>1,130</td>
<td>8,322</td>
</tr>
<tr>
<td>2080</td>
<td>7,801</td>
<td>1,226</td>
<td>9,027</td>
</tr>
<tr>
<td>2085</td>
<td>8,411</td>
<td>1,321</td>
<td>9,732</td>
</tr>
<tr>
<td>2090</td>
<td>9,020</td>
<td>1,417</td>
<td>10,437</td>
</tr>
<tr>
<td>2095</td>
<td>9,629</td>
<td>1,513</td>
<td>11,142</td>
</tr>
<tr>
<td>2100</td>
<td>10,239</td>
<td>1,609</td>
<td>11,848</td>
</tr>
</tbody>
</table>
### Table 20 – Summary of Projected Land Use Based Water Demands

<table>
<thead>
<tr>
<th>Year</th>
<th>AWA Current Area Served</th>
<th>CAWP Service Area Boundary</th>
<th>Remaining County Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>7,576</td>
<td>0</td>
<td>0</td>
<td>7,576</td>
</tr>
<tr>
<td>2020</td>
<td>8,333</td>
<td>147</td>
<td>719</td>
<td>9,199</td>
</tr>
<tr>
<td>2025</td>
<td>8,862</td>
<td>330</td>
<td>1,534</td>
<td>10,726</td>
</tr>
<tr>
<td>2030</td>
<td>9,311</td>
<td>514</td>
<td>2,254</td>
<td>12,079</td>
</tr>
<tr>
<td>2035</td>
<td>9,680</td>
<td>697</td>
<td>2,873</td>
<td>13,250</td>
</tr>
<tr>
<td>2040</td>
<td>9,967</td>
<td>881</td>
<td>3,385</td>
<td>14,233</td>
</tr>
<tr>
<td>2045</td>
<td>10,752</td>
<td>1,064</td>
<td>4,090</td>
<td>15,906</td>
</tr>
<tr>
<td>2050</td>
<td>11,536</td>
<td>1,248</td>
<td>4,795</td>
<td>17,579</td>
</tr>
<tr>
<td>2055</td>
<td>12,320</td>
<td>1,431</td>
<td>5,501</td>
<td>19,252</td>
</tr>
<tr>
<td>2060</td>
<td>13,104</td>
<td>1,614</td>
<td>6,206</td>
<td>20,924</td>
</tr>
<tr>
<td>2065</td>
<td>13,888</td>
<td>1,798</td>
<td>6,911</td>
<td>22,597</td>
</tr>
<tr>
<td>2070</td>
<td>14,673</td>
<td>1,981</td>
<td>7,616</td>
<td>24,270</td>
</tr>
<tr>
<td>2075</td>
<td>15,457</td>
<td>2,165</td>
<td>8,322</td>
<td>25,944</td>
</tr>
<tr>
<td>2080</td>
<td>16,241</td>
<td>2,348</td>
<td>9,027</td>
<td>27,616</td>
</tr>
<tr>
<td>2085</td>
<td>17,025</td>
<td>2,532</td>
<td>9,732</td>
<td>29,289</td>
</tr>
<tr>
<td>2090</td>
<td>17,809</td>
<td>2,715</td>
<td>10,437</td>
<td>30,961</td>
</tr>
<tr>
<td>2095</td>
<td>18,594</td>
<td>2,899</td>
<td>11,142</td>
<td>32,635</td>
</tr>
<tr>
<td>2100</td>
<td>19,378</td>
<td>3,082</td>
<td>11,848</td>
<td>34,308</td>
</tr>
</tbody>
</table>
Figure 6 – Total Projected Land Use Based Water Demands

- AWA Current Area Served
- CAWP Potential Service Area Boundary
- Remaining County Area

Year

Demands (AF)
4 Demands Including Conservation

The demand projections described in Chapters 2 and 3 of this memorandum utilize historical water use information to project water use in the future. Given that residential conservation is likely to increase in the future, a R-GPCD of 107 was used to reflect an anticipated decrease in indoor residential water use of 15 GPCD and in outdoor residential water use of 20%. Using a R-GPCD of 107 leads to an overall reduction in residential water demand across the parcels anticipated to be served by the Agency of about 20%. No other assumptions or changes were made to the model, and the model was re-run with this decreased R-GPCD determine demand with that level of residential conservation.

4.1 Total Demands With and Without Conservation

Table 21 shows a summary of total land use demand projections for all three study areas including conservation. For reference, total demands using the without conservation are listed in the final column.

<table>
<thead>
<tr>
<th>Year</th>
<th>AWA Current Area Served</th>
<th>CAWP Service Area Boundary</th>
<th>Remaining County Area</th>
<th>Total with Conservation</th>
<th>Total without Conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>7,576</td>
<td>0</td>
<td>0</td>
<td>7,576</td>
<td>7,576</td>
</tr>
<tr>
<td>2020</td>
<td>8,000</td>
<td>123</td>
<td>461</td>
<td>8,584</td>
<td>9,199</td>
</tr>
<tr>
<td>2025</td>
<td>8,530</td>
<td>277</td>
<td>1,038</td>
<td>9,845</td>
<td>10,726</td>
</tr>
<tr>
<td>2030</td>
<td>9,060</td>
<td>431</td>
<td>1,615</td>
<td>11,105</td>
<td>12,079</td>
</tr>
<tr>
<td>2035</td>
<td>9,590</td>
<td>584</td>
<td>2,192</td>
<td>12,366</td>
<td>13,250</td>
</tr>
<tr>
<td>2040</td>
<td>10,120</td>
<td>738</td>
<td>2,768</td>
<td>13,626</td>
<td>14,233</td>
</tr>
<tr>
<td>2045</td>
<td>10,650</td>
<td>892</td>
<td>3,345</td>
<td>14,887</td>
<td>15,906</td>
</tr>
<tr>
<td>2050</td>
<td>11,180</td>
<td>1,046</td>
<td>3,922</td>
<td>16,147</td>
<td>17,579</td>
</tr>
<tr>
<td>2055</td>
<td>11,710</td>
<td>1,199</td>
<td>4,498</td>
<td>17,408</td>
<td>19,252</td>
</tr>
<tr>
<td>2060</td>
<td>12,240</td>
<td>1,353</td>
<td>5,075</td>
<td>18,668</td>
<td>20,924</td>
</tr>
<tr>
<td>2065</td>
<td>12,770</td>
<td>1,507</td>
<td>5,652</td>
<td>19,929</td>
<td>22,597</td>
</tr>
<tr>
<td>2070</td>
<td>13,300</td>
<td>1,661</td>
<td>6,229</td>
<td>21,190</td>
<td>24,270</td>
</tr>
<tr>
<td>2075</td>
<td>13,830</td>
<td>1,814</td>
<td>6,805</td>
<td>22,450</td>
<td>25,944</td>
</tr>
<tr>
<td>2080</td>
<td>14,360</td>
<td>1,968</td>
<td>7,382</td>
<td>23,711</td>
<td>27,616</td>
</tr>
<tr>
<td>2085</td>
<td>14,890</td>
<td>2,122</td>
<td>7,959</td>
<td>24,971</td>
<td>29,289</td>
</tr>
<tr>
<td>2090</td>
<td>15,420</td>
<td>2,276</td>
<td>8,535</td>
<td>26,323</td>
<td>30,961</td>
</tr>
<tr>
<td>2095</td>
<td>15,950</td>
<td>2,429</td>
<td>9,112</td>
<td>27,492</td>
<td>32,635</td>
</tr>
<tr>
<td>2100</td>
<td>16,480</td>
<td>2,583</td>
<td>9,689</td>
<td>28,753</td>
<td>34,308</td>
</tr>
</tbody>
</table>
5 Demands Included in CAWP Water Right Application

In 2017, AWA applied for an additional water right for the CAWP system to meet anticipated growing demand. Future demands within the CAWP Service Area Boundary, including the current CAWP system, were used to provide a buildout demand estimate for the Environmental Impact Report (EIR) associated with this water right application. The demand estimate, including conservation, for the CAWP Service Area Boundary was combined with demand projected for the parcels within the AWA Current Area Served that are part of the existing CAWP system. The area analyzed is shown in Figure 7.

Figure 7: Current Parcels Served and Anticipated Parcels Served at Buildout in CAWP System

The results of this analysis are presented in Table 22. Note that these demands do not include projected water losses. An increase of 16% was applied to the demand projections to account for the anticipated potential impact of climate change.
Table 22: Projected CAWP Demands at Buildout as Included in the CAWP Water Right EIR

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Current CAWP (AF)</th>
<th>CAWP Service Area Boundary (AF)&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Total (AF)</th>
<th>Total Including Climate Change (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,609</td>
<td>1108</td>
<td>2,717</td>
<td></td>
</tr>
<tr>
<td>NonResidential, NonAgricultural</td>
<td>149</td>
<td>435</td>
<td>584</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>320</td>
<td>721</td>
<td>1,041</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,078</td>
<td>2,264</td>
<td>4,342</td>
<td>5,036</td>
</tr>
</tbody>
</table>

1. Does not include current CAWP customers
Appendix F – Agreement between PG&E and AWA
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FOURTH AMENDED CONTRACT
BETWEEN
PACIFIC GAS AND ELECTRIC COMPANY
AND
AMADOR WATER AGENCY

This fourth amended contract (hereinafter, "the Contract") is dated as of December 13, 2012, between PACIFIC GAS AND ELECTRIC COMPANY, a corporation organized and existing under the laws of the State of California (hereinafter, "PG&E"), and AMADOR WATER AGENCY, a public entity established by the Amador Water Agency Act (hereinafter, "AWA").

WITNESSETH:

WHEREAS, PG&E is concerned with and interested in the development of the water resources of the State of California; and

WHEREAS, AWA has the power to provide for flood control and for the reclamation, conservation, development and storage of water within Amador County; and

WHEREAS, pursuant to its Federal Power Commission license for Project No. 137-California, PG&E owns and operates a constructed hydroelectric project, known as the Mokelumne River Project, including among its project works Lower Bear River Reservoir, Tiger Creek Regulator, Tiger Creek Afterbay Dam and Reservoir, and Tiger Creek, West Point and Electra power plants, which project uses water of the North Fork Mokelumne River and its tributaries for the generation of electric power; and

WHEREAS, AWA wishes to use storage capacity at Lower Bear River Reservoir, pursuant to water rights AWA has acquired and will acquire for the storage of water so as to provide a firm supply of water for diversion by AWA from Tiger Creek Regulator and Tiger Creek Afterbay for beneficial use throughout the year; and
WHEREAS, in order to be able to use the storage capacity and the water to be made available as intended by this Contract, AWA must obtain financing and construct works and facilities and must make various arrangements and agreements with others; and

WHEREAS, this Contract is intended to supersede the contract dated April 26, 1966, between PG&E, the County of Amador, and Pioneer Community Services District, which provides for the diversion of water by said district from Antelope Creek, as well as the Amended Contract between Pacific Gas and Electric Company and Amador Water Agency, dated February 13, 1978, and the amendments thereto, the Second Amended Contract between the parties hereto, dated February 29, 2000, and the Third Amended Contract between the parties hereto, dated January 31, 2004.

NOW, THEREFORE, the parties agree as follows:

Definition of "Year."

1. Except as may be otherwise expressly provided, the word "year" as used in this Contract shall mean calendar year.

2. Financing and Construction of Facilities by AWA.

AWA shall be responsible for obtaining financing and constructing works and facilities and making arrangements and agreements with others necessary to enable AWA to divert water from Tiger Creek Regulator and convey water to AWA's place or places of use, and to increase its right to store water in Lower Bear River Reservoir up to a maximum of 3,000 acre-feet, as contemplated by this Contract. When such activities have been completed, AWA shall so notify PG&E promptly in writing.

3. AWA's Right of Storage.

AWA shall have the contractual right to store up to a maximum of 1,600 acre-feet of water each year in Lower Bear River Reservoir, of which 400 acre-feet will be required to
meet a dry year condition. AWA has elected, by giving PG&E at least one year's advance written notice of such election, to enlarge its contractual right to store water in Lower Bear River Reservoir to 3,000 acre-feet, of which 710 acre-feet will be required to meet a dry year condition and 90 acre-feet will be required for evaporation and conveyance losses; provided that AWA's right to such enlarged storage in Lower Bear River Reservoir shall not be effective until AWA obtains the water rights necessary for such enlargement in accordance with paragraph 13, a pre-condition of which is AWA compliance with the California Environmental Quality Act (“CEQA”).

4. AWA’s Water Account.

A water account shall be maintained by PG&E for AWA concerning AWA’s storage of water in Lower Bear River Reservoir. Said account shall be (a) credited by PG&E at the beginning of each year for 1,200 acre-feet of water AWA may store in Lower Bear River Reservoir during such year pursuant to paragraph 3 above (or 2,290 acre-feet of water, if AWA obtains the water rights necessary therefor in accordance with paragraph 13 (“AWA account water”), and (b) debited by PG&E (i) at the end of each month for a total quantity of water diverted by AWA during such month, whether by direct diversion or re-diversion from storage, from Tiger Creek Regulator and Tiger Creek Afterbay pursuant to paragraph 5 below, and from Antelope Creek, and (ii) at the end of each calendar year for 50 acre-feet (or 90 acre-feet if AWA obtains the water rights to store an additional 1,400 acre-feet of water in Lower Bear River Reservoir in accordance with paragraph 13), to cover evaporation and conveyance losses during such year with respect to the water AWA is entitled to store in Lower Bear River Reservoir pursuant to paragraph 3 above. Any additional rules or procedures which may be necessary or desirable as to the manner that entries shall be made to said account shall be as agreed upon by the parties in writing. It is agreed that the amount of stored water to AWA’s credit at any given time shall be the balance in said account at such time.

5. AWA’s Right to Divert.

a. To the extent AWA has water credited to its account referred to in paragraph 4 above, AWA may divert water from Tiger Creek Regulator, Tiger Creek Afterbay or Antelope Creek; provided, that AWA’s diversions from Tiger Creek Regulator are subject to the
terms and conditions set forth in subparagraphs b through g of this paragraph 5, and all AWA diversions hereunder shall be subject to the limitations set forth in paragraph 6 below, and shall be made pursuant to schedules submitted to PG&E as provided in paragraph 7 below; provided, further, that AWA's combined diversions from Tiger Creek Regulator and Tiger Creek Afterbay shall be at a contractual rate not to exceed five (5) cubic feet per second, but should AWA obtain the water rights necessary to store an additional 1,400 acre-feet per year in Lower Bear River Reservoir as provided in paragraph 3, said combined five (5) cubic feet per second maximum contractual diversion rate from Tiger Creek Regulator and Tiger Creek Afterbay shall be increased to a combined maximum contractual diversion rate of ten (10) cubic feet per second subject to reasonable terms and conditions to be agreed upon by the parties at the time AWA obtains its rights to additional storage; provided, however, AWA shall not divert at a rate in excess of five (5) cubic feet per second from the Tiger Creek Regulator. AWA's diversion shall be made with as little fluctuation in flow as reasonably possible.

b. AWA shall not commence construction and operation of the Tiger Creek Regulator diversion facilities until the following have occurred:

i. The Federal Energy Regulatory Commission ("FERC") approves AWA's diversion of water from Tiger Creek Regulator in the event that PG&E and AWA determine such an approval is necessary;

ii. AWA, at its cost, has secured all other federal, state, county and other governmental approvals needed to authorize the diversions from Tiger Creek Regulator and for the associated facilities and has completed the environmental review thereof in accordance with all requirements of CEQA and NEPA, if applicable; and

iii. AWA's design and construction responsibilities have been addressed and resolved pursuant to the conditions of this Contract.

c. In the event FERC approval is determined necessary pursuant to subparagraph b. i. above, AWA shall prepare and provide PG&E with the necessary application for the approval. PG&E shall be responsible for processing the application, but AWA shall reimburse PG&E for any application fees and reasonable costs incurred for such processing.
AWA shall cooperate with PG&E in all respects during the application process. PG&E shall have the right to withdraw the application if conditions of the approval directly related to AWA's diversion works at Tiger Creek Regulator would materially harm PG&E's operations of Project No. 137 or materially increase the costs thereof; provided, however, PG&E, before withdrawing the application, shall meet and confer with AWA, if so requested by AWA, to negotiate and reach agreement on terms that reduce the impact of such conditions to PG&E to a level of non-materiality.

d. PG&E shall cooperate with AWA in applying for whatever approvals are necessary to permit the diversions from Tiger Creek Regulator, and generally shall do all things that may be necessary, including, without limitation, the execution of all documents which may be required, in order to effectuate AWA's diversions from Tiger Creek Regulator. AWA shall reimburse PG&E for its reasonable costs incurred in providing such cooperation.

e. AWA, at its cost, shall be responsible for all aspects of design, acquisition, construction, operation, repair, maintenance and replacement, including environmental mitigation costs, of the diversion facilities at Tiger Creek Regulator. AWA shall prepare, and provide PG&E with, the plans and specifications for the diversion facilities for its review and comment. The facilities shall not be constructed until any PG&E comments are resolved to PG&E's satisfaction which satisfaction shall not be unreasonably withheld. If PG&E does not provide comments to the submitted plans and specifications within 60 days after the date of submittal, PG&E shall be deemed to have no comments. When AWA provides PG&E with the plans and specifications for the diversion facilities, it shall notify PG&E of the aforesaid deadline for submitting comments.

f. PG&E shall convey easements to AWA for any AWA facilities related to AWA's diversions from Tiger Creek Regulator to be located on PG&E fee property or shall grant approval for any such AWA facilities to be located within PG&E exclusive easements or within other lands under the control of PG&E, provided granting such easements does not materially harm PG&E's operation of its Project No. 137 or materially increase the costs of its operations.
There shall be no charge by PG&E to AWA for such easements and approval; and the easements shall be free of any adverse encumbrances or liens.

g. It is understood by AWA that PG&E, in permitting AWA to divert water as provided herein, (i) is not selling water to AWA, but rather is allowing AWA to use, under the terms of this Contract, storage at Lower Bear River Reservoir; and (ii) is not providing storage space to AWA in Tiger Creek Regulator or Tiger Creek Afterbay.

6. **Limits on Monthly Diversions.**

   Unless otherwise agreed to by PG&E, AWA's monthly diversions in any year pursuant to paragraph 5 above shall be kept within the following percentages of AWA's total maximum diversion for such year:

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<thead>
<tr>
<th>Month</th>
<th>Percentage Range</th>
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<tbody>
<tr>
<td>January</td>
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<td>February</td>
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<td>November</td>
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<tr>
<td>December</td>
<td>0-8</td>
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</tbody>
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7. **Schedules of Storage and Diversions.**

On or before January 1 of each year, AWA shall submit to PG&E a written schedule which sets forth the amount of water it wishes to store in Lower Bear River Reservoir during such year (which shall not be less than the amount for which it gave notice the preceding year) and the total quantity of water, together with the estimated range of monthly distribution thereof, which AWA wishes to divert during such year. Said schedules shall conform to the limitations set forth in paragraphs 3, 5 and 6 above.

8. **AWA's Obligations Respecting Diversion and Conveyance Works and Facilities.**

AWA shall construct, install, own, operate and maintain at no expense or risk to PG&E all works and facilities required to divert water from Tiger Creek Regulator, Tiger Creek Afterbay or Antelope Creek, and to convey said water from said points of diversion to AWA's place or places of use. AWA shall be deemed to have received delivery of said water at said points of diversion and, thereafter, all risk of delivery of said water to its place or places of use, whether arising from seepage or other conveyance losses, misappropriation by others, or any other cause, shall be borne by AWA. The location and proposed method of construction or installation of all such works and facilities on land owned by PG&E or within the FERC Project No. 137 boundary shall be subject to PG&E's approval prior to such construction or installation which approval shall not be unreasonably withheld. PG&E shall allow AWA reasonable access over and across such land, and to the extent it may do so over and across land not owned by PG&E, for purposes of constructing, installing, operating, and maintaining such works and facilities and the measuring devices referred to in paragraph 9 below. AWA shall construct, install, operate, and maintain all such works, facilities, and measuring devices in a manner so as not to interfere in any way with PG&E's operations.

9. **Measuring Devices.**

AWA shall obtain, install, operate and maintain at no expense to PG&E a measuring device or devices of a type or types and at a location or locations satisfactory to PG&E so that the quantities of water diverted by AWA from Tiger Creek Regulator, Tiger Creek Afterbay or Antelope Creek can be determined at any time. AWA shall provide PG&E with a
record of such diversions made by AWA each month on or before the 25th day of the following month. PG&E shall have the right to inspect and test said measuring device or devices at any time and, with AWA's concurrence, make corrections in its record to adjust for any inaccuracy disclosed by such inspection or test. The correction in billing resulting from such correction in records shall be made in the next bill rendered to AWA by PG&E, and such correction, when made, shall constitute full satisfaction of any claim between the parties arising from such inaccuracy.

PAYMENTS BY AWA


To compensate PG&E for the right to store water in Lower Bear River Reservoir as provided in paragraph 3 above, AWA shall pay PG&E each year that AWA has such right hereunder, the sum of $5.58 for each acre-foot of water diverted, whether by direct diversion or re-diversion from storage, from Tiger Creek Regulator or Tiger Creek Afterbay by AWA pursuant to paragraph 5 above during such year as disclosed by the measuring device or devices referred to in paragraph 9 above.

b. Payments for Diversions of Water to Compensate PG&E for Lost Generation Revenues at West Point and Electra Power Plants.

To compensate PG&E for the diversion of water by AWA, whether by direct diversion or re-diversion from storage, from Tiger Creek Regulator or Tiger Creek Afterbay pursuant to paragraph 5 above or Antelope Creek pursuant to water right Permit No. 17579, AWA shall pay PG&E the sum determined by the product of:

1. 0.561 -which represents the long term average water operation of the Mokelumne River, including water flow in excess of 560 cubic feet per second at West Point Powerhouse and spills at Electra Diversion;

2. The number of acre-feet diverted;
3. PG&E's water duty below Tiger Creek Afterbay (currently 1284 kilowatt-hours per acre-foot); and

4. The partial-peak energy price for qualifying facilities published by PG&E on a monthly basis and filed with the California Public Utilities Commission (“CPUC”) (“QF Energy Prices”).

If this price determination is revised by the CPUC, the parties shall meet and establish an equivalent energy price.

The amount of water so diverted will be determined by the measuring device or devices referred to in paragraph 9 above.

Said water duty may be revised by PG&E, as agreed to by AWA, to reflect permanent changes by PG&E which may increase or decrease the water duty below Tiger Creek Afterbay.

c. Payments for Standby Storage Space.

For each acre-foot of water less than 1,200 acre-feet that AWA diverts from Tiger Creek Regulator and Tiger Creek Afterbay pursuant to paragraph 5 above in any year, AWA shall pay PG&E $0.38.

d. Payments for Diversions of Water to Compensate PG&E for Lost Generation Revenues at Tiger Creek Powerhouse.

In addition to the payment set forth in subparagraph b. above and to compensate PG&E for lost generation revenues at Tiger Creek Powerhouse due to AWA diversions of water from Tiger Creek Regulator, whether by direct diversion or re-diversion from storage, AWA shall pay PG&E the sum determined by the product of:

1. The number of acre-feet diverted at Tiger Creek Regulator;
2. PG&E’s water duty at the Tiger Creek Powerhouse (currently 1038 kilowatt- hours per acre-foot); and

3. The partial-peak energy price for qualifying facilities published by PG&E on a monthly basis and filed with the CPUC (“QF Energy Prices”). If this price determination is revised by the CPUC, the parties shall meet and establish an equivalent energy price.

The amount of water so diverted will be determined by the measuring device or devices referred to in paragraph 9 above.

Said water duty may be revised by PG&E, as agreed to by AWA, to reflect permanent changes by PG&E which may increase or decrease the water duty below Tiger Creek Regulator.

e. Bills.

Bills for the annual amount payable by AWA under subparagraphs a. and c. above shall be submitted to AWA by PG&E as soon as practicable after January 15 of each year for the preceding year. Bills for amounts payable by AWA under subparagraphs b. and d. above shall be submitted to AWA by PG&E each month as soon as convenient after receipt by PG&E of records of diversions from AWA under paragraph 9. All bills shall be paid by AWA within 45 days after receipt.


Subject to the limitations set forth in paragraphs 3, 5 and 6 above, PG&E shall use due diligence to make storage space available to AWA as provided in paragraph 3 above and to transport and make water available at Tiger Creek Regulator and Tiger Creek Afterbay to meet AWA’s schedules referred to in paragraph 7 above; provided, that notwithstanding any such schedule and without incurring liability to AWA or to those to whom AWA distributes water, PG&E may, upon advance notice to AWA except in an emergency, schedule outages in any of its facilities which in PG&E’s sole judgment are necessary or desirable for the purpose of cleaning, repair, maintenance, operation, or construction of such facilities even though PG&E thereby renders itself unable to provide for such storage or to meet any such schedule of AWA;
provided, further, that PG&E shall incur no liability to AWA or to those to whom AWA distributes water for any interruption or reduction in the delivery of water to AWA not covered by the foregoing proviso which is attributable to an unavoidable accident, act of God, fire, flood, strike or other labor disturbance, riot, war, storm, earthquake, earthslide, sabotage, act or order of any court or other public authority or agency, or any other condition or situation beyond PG&E's control; provided, further, that nothing contained in this Contract shall obligate PG&E to continue in operation any works or facilities required to make water available to AWA, if those works or facilities become uneconomic for power generation purposes. In the event reasonable cause exists to discontinue, temporarily or permanently, the operation of any such works or facilities, PG&E shall be excused from its obligations under this Contract during the period of such discontinuance without liability to AWA or to those to whom AWA distributes water; and provided, further, that nothing contained in the foregoing proviso shall preclude AWA from objecting to appropriate public agencies that any such discontinuance should not be permitted.

LIMITATION OF AWA'S RIGHTS

12. a. No Dedication of Water by PG&E.

It is understood that by entering into this Contract and by permitting AWA to store and divert water as provided herein; (i) PG&E does not intend to, and does not, dedicate any water to which it is entitled to AWA or to anyone to whom AWA distributes water; (ii) PG&E's vested water and other rights shall not be adversely affected in any manner; (iii) PG&E is making storage space and water available to AWA solely as an accommodation and not as a public utility service and does not intend to, and does not, dedicate to public use any of its property or any water to which it is entitled, or hold itself out to furnish like or similar service to any other person or entity; and (iv) AWA's right to store water in Lower Bear River Reservoir and to divert water from Tiger Creek Regulator, Tiger Creek Afterbay or Antelope Creek is as the result of this Contract and AWA's water rights and not otherwise.

b. No Right of AWA to Electric Power Values.

Nothing set forth in this Contract shall give AWA the right, and AWA shall not have the right, to electric power generated, or the value of electric power generated, by use of
water credited to AWA's storage account at Lower Bear River Reservoir through generating facilities of PG&E's Mokelumne River Project.

AWA'S OBLIGATIONS PRIOR TO WATER STORAGE

13. Acquisition of Water Rights.

Prior to increasing the storage of water at Lower Bear River Reservoir beyond 1,600 acre-feet and to diverting water from Tiger Creek Regulator, as provided in paragraphs 3 and 5 above, AWA shall obtain all water rights satisfactory to PG&E which are necessary to permit such storage and diversion and shall have complied with CEQA. AWA represents that the Supplementary Agreement dated March 14, 1978, and the Agreement dated August 23, 1977, by and between EBMUD, AWA, and other parties, provides for the concurrence of EBMUD for the water diversion and storage contemplated by this Contract.


It is understood that the water to be made available to AWA hereunder is untreated water, and that PG&E does not represent or guarantee it fit for domestic use. If any such water is used or made available by AWA for such use, PG&E shall assume no risk or liability in the event AWA should fail to make such water potable.

15. AWA Indemnification of PG&E.

AWA shall indemnify PG&E, its officers, agents, and employees, against loss, damage, expense, or liability incurred by PG&E arising out of or in any way connected with the AWA's performance of this Contract (including but not limited to all loss, damage, or expense incurred (a) by persons who use such water for domestic purposes, for death, injuries or sickness resulting from such use; (b) by other water users who assert a claim to, or the right to receive, all or a portion of the water stored at Lower Bear River Reservoir for AWA's account or the water diverted by AWA at Tiger Creek Regulator, Tiger Creek Afterbay or Antelope Creek; and (c) by PG&E with respect to works or facilities of its Mokelumne River Project as a result of the construction, installation, operations, or maintenance of the works or facilities of AWA referred to in paragraphs 8 and 9 above), except for any loss, damage, expense, or liability that is caused
by the negligence or willful misconduct of PG&E. AWA shall, upon PG&E's request, defend any suit asserting a claim covered by this indemnity. AWA shall pay all costs, including reasonable attorneys' fees, that may be incurred by PG&E in enforcing this indemnity.


This Contract shall inure to the benefit of, and be binding on, the successors, transferees and assigns of the parties hereto.

17. Notices.

All notices and schedules to be given under this Contract shall be in writing. Notices and schedules to be given to PG&E shall be directed to:

Manager, Power Generation  
Pacific Gas and Electric Company  
P. O. Box 770000  
Mail Code N11 C  
San Francisco, CA 94177

Notices to be given to AWA shall be directed to:

President of the Board  
Amador Water Agency  
12800 Ridge Road  
Sutter Creek, CA 95642


The parties agree that the contract dated April 26, 1966, between PG&E, the County of Amador, and Pioneer Community Services District concerning diversions of water by Pioneer Community Service District is terminated.


This Contract shall become effective on the date first above-stated and shall continue in effect until the date of the expiration of the Federal Power Commission License for Project No. 137-California, as such license may be extended, renewed, relicensed, or amended.
20. **Contract Supersedes Prior Writings.**


IN WITNESS WHEREOF, the parties hereto have executed this Contract on the date set forth above.

PACIFIC GAS AND ELECTRIC COMPANY

By: 
Carrell J. Gill
Manager, Central Area Hydro

AMADOR WATER AGENCY

By: 
President, Board of Directors

Attest: 
By: 
Clerk, Board of Directors