INTEGRATED REGIONAL WATER MANAGEMENT PLAN

A COLLABORATIVE EFFORT OF STAKEHOLDERS WITHIN THE KAWEAH RIVER BASIN

JULY 2018

REGIONAL WATER MANAGEMENT GROUP
KAWEAH RIVER BASIN

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CHAPTER 1

PLAN DOCUMENT DESCRIPTION

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1.1 PURPOSE

The purpose of an Integrated Regional Water Management Plan (IRWMP) is to document and detail the approach of participants within a watershed as to their methodologies for coordinating and integrating management of available water resources. The IRWMP is to detail how an area's management methodologies will improve available water supplies, manage flood and drought related events, document existing water quality and methods to improve that water quality, conserve and enhance habitat and detail how efforts related to land use planning will be coordinated with water resources planning. In addition to providing written documentation of a region's water management goals and implementation procedures, the development of a written plan is in satisfaction of the requirements of funding programs which are designed to assist in the implementation of policies and projects seeking to improve water management.

This IRWMP is designed to address the need for a written document detailing an integrated approach to the management of water resources within the Kaweah River Basin. The IRWMP recognizes the interconnections between land uses, social systems, economic forces and water resources specific to the subject region. The history associated with water management within the Kaweah River Basin provides an example of how seemingly different interests can work together to improve water management to the degree that the end result is a series of process outcomes which are of benefit to these seemingly disparate interests. Efforts within the Kaweah River Basin to address water management issues from a single-purpose perspective have long been left by the wayside, replaced by a collaborative process which takes into account differing perspectives, over time, as additional participants have been added to the mix of parties interested in improving water management objectives. One of the principal purposes of the IRWMP is to provide a flexible water management system which takes into account the ever changing hydrologic and governance parameters within the Kaweah River Basin. These changes not only include periodic significant changes in cropping patterns, but also changes in water quality objectives, agricultural to urban development trends and regulatory and environmental changes impacting the quantities of available surface and groundwater supplies.

1.2 COOPERATING PARTNERS

While the Kaweah Delta Water Conservation District (KDWCD) initially took the lead role in Kaweah River Basin water management related activities, including acting as the lead member of the IRWM Stakeholder Advisory Group, a number of other entities that manage water have joined together to form the Kaweah River Basin Regional Water Management Group. They have done so through execution of a Memorandum of Understanding, with participation of the majority of the entities taking place prior to any external funding project activities occurring related to IRWM activities. The members of the Kaweah River Basin Regional Water Management Group (Members) currently include the County of Tulare, the Exeter Irrigation District, the City of Visalia, the City of Lindsay, the Lakeside Irrigation Water District, the Tulare Irrigation District, the City of Tulare and the City of Farmersville. The KDWCD is designated in the

Memorandum of Understanding as the Lead Party for purposes of developing and initially managing the IRWMP.

An initial planning process of approximately eight (8) years in length occurred, coordinating each of the entities noted above, along with interested parties from a multiple number of disciplines. These have included representatives from Self-Help Enterprises, private non-profit groups representing disadvantaged communities, including the Community Water Center, Tulare Basin Wetlands Partners and representatives of multiple agencies of jurisdiction from both the Federal and State levels. The representatives have formed an advisory group which has worked through the processes of governance, project submittal, project scoring, development of plan goals and objectives and defining purpose and needs. Agreement has been reached amongst all participants, on a consensus basis, with respect to the critical foundation issues related to the IRWM process.

1.3 ACKNOWLEDGEMENTS

The members wish to acknowledge the countless hours invested by the Stakeholder Advisory Group in developing policies and procedures associated with expansion of area water management processes and procedures beyond those traditionally associated with management and delivery of water supplies for irrigated agriculture and urban consumption. It is with gratitude that the Members acknowledge not only the number of hours which the representatives of the different interest groups and parties have dedicated to the process of the development of the outline of this written IRWMP, but also for having the patience and understanding to work through the various and disparate points of view which competing interests have when the topic of water management is at hand. By the very nature of the topics addressed in this IRWMP, the reader will soon appreciate the fact that the document addresses a number of issues, in detail, far beyond that of the typical agricultural or urban water management plan.

1.4 ACRONYMS/ABBREVIATIONS

AF – acre foot (of water)

AF/AC – acre-feet per acre

BMP – Best Management Practices

California/EPA – California Environmental Protection Agency

CD – Critically Dry (water year)

CDF – California Department of Forestry

CDFW – California Department of Fish and Wildlife

CFS – cubic feet (per second)

CERES – California Environmental Resource Evaluation System

CEQA – California Environmental Quality Act

CNDDB – California Natural Diversity Database

CVP – Central Valley Project

CWA – Clean Water Act

DC – Disadvantaged Community

DFW – State Department of Fish and Wildlife

DWR – State of California Department of Water Resources

EIR – Environmental Protection Agency (also referred to as United States EPA)

ESA – Endangered Species Act

FERC – Federal Energy Regulatory Commission

FS – Forest Service (United States Department of Agriculture)

FWS – Fish and Wildlife Service (United States Department of Interior)

GIS – Geographic Information System

HCP – Habitat Conservation Plan

IRWM – Integrated Regional Water Management

IRWMP – Integrated Regional Water Management Plan

JPA – Joint Powers Authority

K&SJRA – Kaweah and St. Johns Rivers Association

KDWCD – Kaweah Delta Water Conservation District

KW – kilowatt

LCMMP – Land Cover Mapping and Monitoring Program

LMIC – Land Management Information Center

MGD – million gallons per day

MHI – median household income

MOU – Memorandum of Understanding

MW – mega watts

NEPA – National Environmental Policy Act

NGO – Non-Governmental Organization

NHI – National Heritage Institute

NPDES – National Pollutant Discharge Elimination System

NPS – Nonpoint Source (Pollution)

PAEP – Performance Assessment and Evaluation Program

PGE – Pacific Gas and Electric Company

PME – Protection, Mitigation & Enhancement

RCD – Resource Conservation District

ROD – Record of Decision

RWQCB – Regional Water Quality Control Board

SCE – Southern California Edison

SEIS – Supplemental Environmental Impact Statement

SHE – Self-Help Enterprises

SNC – Sierra Nevada Conservancy

SRT – Sequoia Riverlands Trust

SWAMP – California's Surface Water Ambient Monitoring Program

SWP – State Water Resources Development System (State Water Project)

SWRCB – State Water Resources Control Board

USACOE – United States Army Corps of Engineers

USR – United States Bureau of Reclamation

USDA – United States Department of Agriculture

USFS – United States Forest Service

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

UWMP – Urban Water Management Plan

WTP – water treatment plant

CHAPTER 2

HISTORICAL PERSPECTIVE

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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2.1 BACKGROUND OF THE KAWEAH RIVER BASIN IRWMP

2.1.1 Governance

The Kaweah Delta Water Conservation District (KDWCD) is a public agency covering approximately 340,000 acres in the Counties of Kings and Tulare. The KDWCD initially acted as the lead agency in the coordinated management of water resources available to the Kaweah River Basin, particularly as they have applied to groundwater resources and flood and storm waters control. Joining together with multiple agencies for management of pre-1914 water rights purposes, groundwater management and development of a formalized Integrated Regional Water Management Plan (IRWMP) the KDWCD initially directed water management activities undertaken by the cooperating agencies within the Kaweah River Basin. Joining together with other agencies with similar goals, the KDWCD provided formal notice to the public and agencies of jurisdiction of the preparation of an IRWMP. Based on the approval of the outcome of the Regional Acceptance Process by the Department of Water Resources of the State of California, an IRWMP was prepared in parallel to a plan prepared for the Tule River Basin with the governing bodies of the two (2) IRWM areas initially electing to share a common Stakeholders Advisory Group. Acting as the lead agency for a coordinated group of participants with specific proposed water management projects, the KDWCD executed a contract requiring the development of a written IRWMP. The KDWCD accepted the requirement to prepare a formalized plan within a defined two (2) year period of time, following the execution of a grant agreement with DWR for Proposition 84-Round 1, Implementation Funds. As with that original IRWMP, it is the intent of this IRWMP to document, in detail, all of the existing relationships, policies, procedures and agreements which have both been historically in place, as well as in place at the time of the submission of this IRWMP update to DWR for acceptance through the Plan Review Process of said agency.

The governance of this IRWMP resides with the Governing Board put into place as a result of the executed MOU. The Board of Directors is comprised of elected or appointed individuals with specific relationship to each MOU signator and one (1) individual selected by the Stakeholder Advisory Group. Actions taken by the governing Board are done in conjunction with input from the Stakeholders Advisory Group. The entities which are signator to the restated MOU, dated November 30, 2010, with the KDWCD specifically related to IRWM matters, are those entitled to hold a voting seat on the Board.

As the MOU is comprised of public agencies within the State of California, the business of the Board is conducted pursuant to the provisions of the Brown Act wherein specific notice of meetings, topics to be discussed and actions proposed to be taken are contained in a published agenda and conducted in open session which is subject to public comment during a general comment period, as well as when a particular item is specifically taken up by the Board of Directors. Rules and procedures have been developed for conduct of the public and input from the public and interested parties paralleling those of the KDWCD. Meetings of the Board of Directors are currently scheduled to be held on a regular monthly basis in a facility which is fully compliant with the Americans with Disabilities Act standards.

Minutes of prior meetings are available to the public, upon request, as well as relevant documents pursuant to the Group’s document request process. In addition, the

Group has a web site, maintained current with applicable information and with appropriate links to locations containing appurtenant support and related documents.

2.1.2 Historical Plan

KDWCD acted, prior to formal IRWMP development, as the lead agency in the development of IRWM policies and implementation of projects, in cooperation with other Kaweah River Basin partners, projects which have had as their underlying nature, integrated regional water management. In the early 1990s, the KDWCD began to take steps to formally establish partnerships and develop procedures and projects in cooperation with other participating water management agencies. A significant number of documents have been executed, over time, providing example of the integrated approach to water management within the Kaweah River Basin.

Presented, as Table 2-1, is the participation structure and elements of the current IRWMP. The information provided is segmented into the various elements of the coordinated efforts of parties actively involved in cooperatively managing water resources within the Kaweah River Basin. A graphic presentation of the myriad of relationships which currently exist is presented on Figure 2-1. Each of the agreements and elements detailed on the table and in the figure are current active components of the existing IRWMP. This formal written and adopted IRWMP is structured around these agreements and activities and is augmented by additional elements developed by the Stakeholders Advisory Committee of incorporation of efforts to address disadvantaged community needs and concerns into the KDWCD IRWM process, as well as project evaluation and scoring.

TABLE 2-1

PARTICIPATION STRUCTURE AND ELEMENTS

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN

SURFACE WATER ELEMENT

- Kaweah and St. Johns Rivers Association Agreement
  - Kaweah River Association Agreement
  - St. Johns River Association Agreement
- Friant Water Authority JPA
- State Water Project Water Users JPA
- City of Visalia – KDWCD Facilities O&M Agreement
- Tulare I.D. – KDWCD Agreement
- Tulare I.D. – City of Visalia Agreement
- Tulare I.D. – City of Tulare Agreement
- KDWCD/Ivanhoe I.D. Resources Exchange Agreement
- USBR Water Management Plans
- AB 3616 Water Management Plans
- Lake Kaweah Initial and Expansion Storage Agreements

GROUNDWATER ELEMENT

- Kings County Water District GWMP
- KDWCD GWMP
- Tulare I.D. GWMP
- Tulare Lake Basin Coordinated GWMP
- Stakeholder MOUs
  - California Water Service Company
  - City of Farmersville

City of Lindsay

City of Tulare

City of Visalia

City of Woodlake

Consolidated Peoples Ditch Company

Kings County Water District (AB 3030 Plan)

Lakeside Ditch Company

Lakeside Irrigation Water District

St. Johns Water District

Stone Corral Irrigation District

Tulare Irrigation District (AB 255 Plan)

Ivanhoe Irrigation District

California Water Service Company Import Program

California Water Service Company Urban Water Conservation Plan

City of Tulare Development Impact Policy

City of Visalia Development Impact Policy

Groundwater Model Elements Master Basin Model

KDWCD/CWSCo/City of Visalia Upgrade

DCTRA Basin Model Intertie

STORM WATER ELEMENT

KDWCD/City of Visalia Agreements and Facilities

CPDCO/City of Exeter Agreements and Facilities

CPDCO/City of Farmersville Agreements and Facilities

Evans Ditch Co/City of Visalia Agreement

Modoc Ditch Co/City of Visalia Agreements

Persian-Watson Ditch Co/City of Visalia Agreement

Tulare Irrigation Co/City of Visalia Agreement

KDWCD 404 Permit

KDWCD 1601 Permit

City of Visalia/KDWCD Management Committee

WATER QUALITY ELEMENT

Kaweah Sub-watershed Water Quality Coalition

Southern San Joaquin Valley Water Quality Coalition

City of Exeter WDRs

City of Farmersville WDRs

City of Lindsay WDRs

City of Visalia WDRs/NPDES

City of Woodlake WDRs

Ivanhoe P.U.D. WDRs

County of Tulare Abandoned Well Program

ENDANGERED SPECIES RECOVERY/PROTECTION ELEMENT

KDWCD HCP/NCCP

- Workplan Approval
- Biological Inventories

City of Visalia Mini HCP

KDWCD/Sierra-Los Tulares Land Trust Projects (Sequoia Riverlands Trust)

- Artesia Mining Site Restoration
- Herbert Preserve
- Kaweah Oaks Preserve

Paregien Parcel

GOVERNANCE ELEMENT

Surface Water

- Multiple Water Management Agency Boards of Directors
- Multiple Water Management Agency Advisory Committees
- Multiple Water Management Agency Technical Committees
- Interbasin Water Management Coordinating Groups
  - Kings-Kaweah
  - Kaweah-Tule
  - Kaweah-Tulare Lake

Groundwater

- GWMP Stakeholder Committees
- KDWCD/City of Visalia Coordination Committee
- KDWCD/Tulare I.D./City of Visalia Coordination Committee
- Groundwater Model Technical Committee

Storm Water

- KDWCD/City of Visalia Management Committee
- KDWCD/City of Farmersville – Paregien Facilities

Endangered Species

- Stakeholders Committee

Water Quality

- Steering Committee
- Technical Committee
- Legal Committee

Proposition 84-IRWMP

- Joint Efforts with the Tule River Basin Managers' Advisory Committee

2.1.3 Consistency with State of California Planning Efforts and Statutory Requirements

The "deemed equivalent" IRWMP of the KDWCD was in effect for in excess of twenty years. Steps were then taken to memorialize a Plan in writing and were undertaken in a fashion to comply with the IRWM Plan Standards and were designed to fully comply with Part 2.2 of Division 6 of the California Water Code, commencing with Section 10530. The Plan was submitted to DWR, subjected to the 2012 IRWM Guidelines, including the Addendum to said Guidelines issued in draft form in August, 2013, and approved. This update was accomplished in concert with the outline of changes to the 2012 IRWMP Standards detailed in Appendix H of the 2016 IRWM Grant Program Guidelines. The Appendix was used as a cross-check instrument to ensure compliance with adopted IRWMP Guidelines.

2.2 HISTORICAL DEVELOPMENT OF A FORMAL, WRITTEN PLAN

2.2.1 Stakeholders Advisory Group

As a part of the initial effort to expand the reach of the KDWCD IRWMP, the KDWCD expanded the number of parties invited to participate in the water management planning efforts within the Kaweah River Basin. A number of urban purveyors who had historically not participated in the planning efforts were invited, as well as a number of stakeholders and representatives of disadvantaged community areas and rural hamlet areas, underserved from the perspective of both adequate water supply and inadequate water quality. The group was also expanded to include the County of Tulare, which had historically participated from a flood control standpoint, but parties were added to specifically address public health concerns, including well construction and well abandonment.

2.2.2 Memorandum of Understanding Group

In the late summer of 2007, discussions took place with a stakeholder’s group surrounding steps to formally add additional parties of interest to the efforts of the KDWCD. Lengthy discussions of governance models took place at that time, including a form of governance which would have other than the KDWCD as the lead agency. Following a number of meetings and lengthy discussions, it was determined to leave the plan organization with KDWCD as the lead and to add additional parties to the effort utilizing a Memorandum of Understanding instrument. Work was completed on the initial draft of the Memorandum of Understanding on August 30, 2007. At that time, the signators were the County of Tulare, the Exeter Irrigation District, the City of Lindsay and KDWCD.

The number of participants to the Memorandum of Understanding has increased since the initial signing. Current members of the KDWCD IRWM Group are:

County of Tulare
Exeter Irrigation District
Kaweah Delta Water Conservation District
Lakeside Irrigation Water District
Tulare Irrigation District
City of Farmersville
City of Lindsay
City of Tulare
City of Visalia

A copy of the current Memorandum of Understanding, dated November 30, 2010, is enclosed herewith as Appendix B.

2.2.3 Coordination with Tule River Basin Plan Development

For a number of years, the IRWMP Stakeholders Advisory Group included at least one (1) representative from the Tule River Basin. At times, there was more than one, depending on the issue at hand and the specific elements of coordination to be accomplished. The normal attending party was a representative of the Deer Creek & Tule River Authority, with almost perfect attendance.

In addition to coordination with respect to water management issues, a principal matter of discussion was the potential for merging the Tule River Basin into a single IRWM with the Kaweah River Basin. Consideration of this issue and the discussions and governing Board meetings surrounding the issue culminated in a decision to prepare separate plans, each paralleling the other with respect to process, procedure and goals and, most importantly, sharing a common Stakeholders Advisory Group. This process and the conclusions are discussed in greater detail in Chapter 9.

2.2.4 Coordination with Tulare Basin JPA Development

Based on a regional stakeholders meeting called by DWR and held at the office of the Semitropic Water Storage District, significant effort was put into the formation of a regional Joint Powers Authority. Meetings were initiated and have been held on a monthly basis since. These meetings are currently being held on the first Monday of each month in the offices of Provost & Pritchard Engineering Group in Visalia. Stakeholders from the region continue to attend with participation from the Kings River Basin, Kern County IRWM groups including the Poso IRWM, the Kaweah River Basin, the Tule River Basin and the Southern Sierra IRWM. There is periodic attendance from parties considering formation of an organization covering the Tulare Lake bed area.

The initial efforts to form were pursued to the extent of developing a formal Joint Powers Authority with an outline for development of that Authority being developed and agreed to by the participants. A copy of that outline is presented in Appendix C.

This effort culminated in the preparation of a Joint Powers Agreement which was specific to Tulare Lake hydrologic region water-related entities. The initial formal parties to this agreement included the KDWCD, the Kings River Conservation District and the Semitropic Water Storage District. A copy of the subject JPA is included herewith as Appendix D.

Several parties having input to the participants to this proposed JPA have weighed the value of this broader regional effort and how it might improve, or reduce opportunities in the project evaluation process and whether it might pit one region within the JPA area against another. Formal action has been taken by some participants to memorialize this position, while still providing instruction to participate in regional JPA related activities. Movement beyond the ad-hoc level which currently exists will probably be dependent, to a significant degree, on state-wide related funding activities, principal of which are those administered by the State Department of Water Resources.

2.2.5 Coordination with Southern Sierra Plan Development

Initiated at a later point in time than the valley floor IRWM efforts, the organizational efforts of the Southern Sierra IRWM have nonetheless been coordinated with the efforts of the Kaweah River Basin and the Tule River Basin. In addition to providing support to the development of an IRWMP covering the upper foothill and mountain area portions of the Kaweah River and Tule River watersheds, specific coordination has occurred with respect to boundary issues and joint planning efforts. While far greater effort is directed at integrated water management between valley floor water managers than that associated with private stock ditch companies located above the area's flood control reservoirs, there are a number of areas where specific water management efforts have been appropriate. Included in this array of areas of concern have been water quality, sediment generation management and brush clearing efforts. While brush clearing efforts take place in the foothill and lower mountain areas specifically for fire related purposes, the efforts yield water supply otherwise consumed by non-beneficial vegetation which can most often be put to beneficial use on the valley floor.

As previously noted, the Southern Sierra IRWM group representatives attend the monthly JPA coordination meetings, as well as the Kaweah River Basin Stakeholders Advisory Group meetings. Encouragement for attendance and participation continues to date.

2.2.6 Technical Analyses

There have been numerous technical analyses and evaluations over time within the Kaweah River Basin that have been instrumental in shaping the direction, emphasis and priorities of water management activities of the IRWM Plan. These studies have then contributed to the rationale of the IRWM Plan objectives and their contribution to Kaweah

River Basin understanding from the perspective of science and management. The Stakeholder Advisory Group utilized this wealth of information in the establishment of objectives, in the decision of which water resource management strategies were incorporated into the IRWMP and the evaluation method of projects that adequately address the IRWMP needs. Although there have been numerous studies of this nature that have influenced development of the IRWMP there are a few key efforts that should be emphasized by a summary of activities and contributions. Additionally, a table has been provided to list the variety of technical analyses that contributed to the IRWMP. (Each of the following technical analysis examples are noted numerous times throughout the IRWMP.)

The Corridor Study: In 1992, the KDWCD decided to address certain critical water management issues and a multi-agency Task Force was formed and initiated the Kaweah River Delta Corridor Enhancement Plan. The Task Force identified three long-term goals: groundwater recharge, stormwater protection and environmental habitat enhancement. The original study, prepared by Camp Dresser & McKee, was initiated due to the following issues and concerns:

- Years of groundwater pumping
- Steady population growth
- Significant depletion of the groundwater basin
- City of Visalia's need to pump stormwater into local creeks already at capacity
- Valley oak tree stress from dropping groundwater levels
- Exacerbation of the water table from several years of drought
- Conflicting interests with parties at odds with each other in water management needs

The technical analyses involved the following:

- Determination of areas of benefit
- Identification of riparian corridor habitat areas
- Definition of water management issues
- Investigation of specific possible demonstration sites
- Analysis of topography, hydrogeology, surface water hydrology and other physical factors

This project not only concluded with a specific multi-use project that benefited the City of Visalia and KDWCD with recharge, stormwater and environmental enhancement elements, but additionally set a standard for solution based investigation and problem solving based on a cooperative pooling of experience and expertise, needs and resources.

This Corridor Study and its objectives eventually transitioned in 2006 to the current process of developing a Habitat Conservation Plan and a Natural Communities Conservation Plan that have defined habitat protection and enhancement for sites owned by KDWCD that will be reserved for environmental mitigation for the next twenty years of comprehensive projects anticipated for the Kaweah River Basin.

<u>The Water Resources Investigation (WRI)</u>: This is an ongoing process that began in 1972 with an evaluation performed by Bookman-Edmonston Engineering, then was updated by Fugro West, Inc. in 2004 and was recently updated by Fugro West, Inc. The WRI is intended to provide the Kaweah River Basin, public water agencies and overlying landowners and water users with a better understanding of the Kaweah River Basin by answering questions related to the quantity of groundwater, the hydraulic movement of groundwater, sources and volumes of natural recharge and trends in water levels in the Kaweah River Basin. The investigations have examined the KDWCD's hydrological and hydrogeological conditions and quantified its water supply capability, or safe yield and degree of groundwater overdraft.

The conclusions of the WRI identified areas that required additional evaluation to improve the accuracy of the results and lead to two additional technical analyses in the form of numeric groundwater modeling and a crop model study.

Groundwater Modeling: In 2004, the KDWCD developed a Numeric Groundwater Flow Model For the Kaweah Delta Water Conservation District. Development of the City of Visalia Numerical Groundwater Model and the Deer Creek and Tule River Association Basin Model Intertie followed. The three models individually focus on different spatial scales, though all calculate storage changes and groundwater flow which enable a better understanding of surface water management and use options and the resulting impacts.

The initial model, the Numerical Groundwater Flow Model For The Kaweah Delta Water Conservation District, performed by Fugro West, Inc., consisted of four tasks that resulted in the development of an interactive groundwater model that was effective in evaluating whether the chosen scenarios of water supply and demand change could provide measurable benefits to local groundwater storage and water levels. As part of the study, the groundwater model was used to evaluate the impacts on KDWCD groundwater resources under five different scenarios of future water use and water supply availability. The conclusion was that the model could be applied to many other such scenarios to help guide implementation of groundwater management strategies or to evaluate impacts of various projects and evaluate impacts of various patterns of urban growth.

The Crop Water Use Model: The most recent technical analysis is the Normalized Difference Vegetation Index (NDVI) Crop Water Use Model initiated in 2011. A weak area identified in the Water Resources Investigation was the determination of crop water use and this valuable data has historically been estimated using sporadic crop data and previous study estimations in an equation to approximate the data. The NDVI Crop Water Use Model, performed by Davids Engineering, calculates evapotranspiration (ET) using reflective energy data from Landsat satellite imagery on a unit scale necessary to distinguish variations in vegetation types. This data is combined with simulation of irrigation events using a daily rootzone water balance model. The results are unique enough to correlate with agricultural usages as identified through available crop surveys.

The modeling provides:

- Monthly cropping identification by crop type and acreage
- Regionalized crop coefficients of water demands for agriculture occurring within the KDWCD
- Monthly crop water demands from years 1999 through 2009 and annually thereafter

Groundwater Management Plan: Responding to then recent Groundwater Legislation, in 1995 the KDWCD and participating local entities formally adopted the KDWCD's Groundwater Management Plan (GMP). The GMP states "The goal of the Plan is to offer efficient and effective groundwater management an effort to provide a sustainable, high quality supply of groundwater for agricultural, environmental, and urban use for the future." The GMP evaluated groundwater conditions and challenges, identified solutions and established goals for the participating stakeholders to best manage this critical resource. Five elements shape the GMP:

1. Monitoring Program,
2. Resource Protection,
3. Sustainability,
4. Stakeholder Involvement, and
5. Planning and Management.

At the core of the GMP is the recognition that the conjunctive management of water supplies within the GMP area must be continued and that achieving hydrologic equilibrium requires the management of both surface and groundwater supplies. The GMP is a vital element of the KDWCD IRWMP as it is one of the strongest stakeholder efforts and with proven results within the Kaweah River Basin.

Water Management Plan: In 2010, after receiving a contract from the United State Bureau of Reclamation (Reclamation) for Central Valley Project (CVP) water from the Friant Kern Canal (an effort of KDWCD since 1951), the KDWCD developed an Agricultural Water Management Plan (WMP) with Reclamation. The objective of the WMP is to evaluate, identify, establish and describe best management practices that will result in efficient use and best conservation/management of water by setting policy and practice of use of devices, equipment or facilities from receiving and best use of CVP water. This WMP will be reevaluated and updated every 5 years in order to continually search for the best available cost-effective technology and best management practices to achieve the highest level of delivery water management.

Each of these technical analyses were directly influential in the development of this IRWMP in that they informed the stakeholders with key aspects of the Kaweah River Basin and defined effective objectives and resource management strategies based on science instead of speculation and influenced the emphasis of the project scoring developed by the Stakeholder Advisory Group.

2.3 GOVERNANCE STRUCTURE

2.3.1 Memorandum of Understanding/Cooperative Agreements

The current Memorandum of Understanding, previously introduced and a copy of which is presented in Appendix B, has been modified a number of times as additional parties have requested to be added. The most recent addition was based on the request of the City of Farmersville to participate as a full member.

As shown in Table 1 and on Figure 2-1, there are a significant number of cooperative agreements which are a part of the IRWM structure. For the sake of publication, copies of these agreements are not reproduced in this document, but are available from the KDWCD, upon request. These cooperative agreements are the heart of day-to-day activities related to water management within the Kaweah River Basin. The specifics of the water management strategies embodied in these agreements will be presented in greater detail in Chapter 9.

2.3.2 Governance Structure Evaluation

As discussed earlier in the introduction portion of this IRWMP, consideration of the continuation of the KDWCD as the lead agency for IRWMP purposes has been visited a number of times. A process was agreed to by the MOU Participants and the Stakeholders Advisory Group. The process called for the preparation and submittal of the formal IRWMP by KDWCD with KDWCD as the lead agency. Meetings of the IRWM Stakeholders Advisory Group were held, in order to provide input to the Board of Directors.

As part of the long-term planning process, the KDWCD applied for and received award of a Round 2-Proposition 84 Planning Grant. The purpose of a portion of said grant was to update the IRWMP in several specific areas including those required by Proposition 1. Foremost amongst those areas was a thorough review of the current governance structure and a detailed evaluation of the alternatives to the current structure. These alternatives included continuing with KDWCD as the lead agency, and evaluation of other area water management entities assuming the lead role for the formation of a joint effort, such as under the umbrella of a Joint Powers Agreement, as constructive alternatives. The results of the evaluation have led to a transition to an MOU based governance structure.

2.3.3 Relationship to Future Tulare Basin Joint Powers Authority Governance Structure

The relationship of the IRWMP efforts will continue to be coordinated with the balance of the area IRWM groups through the informal JPA organization which has been generated. The KDWCD continues to support attendance and participation by attending the coordination meetings, with no change anticipated in the near-term with regard to pursuit of a formal JPA structure. The participation of the Kaweah River Basin entities in a formalized JPA structure will be addressed by the Board of Directors at such time as a change in direction necessitates revisiting the participation issue.

2.4 FUNDING

2.4.1 IRWMP Funding

Initially, the majority of funding activities directly related to the IRWMP was born by the KDWCD. Organizational efforts and costs related to same associated with the Stakeholders Advisory Group were at the call of KDWCD, with meetings being held at the office of said entity. All costs related to the preparation costs of the initial IRWMP were funded by KDWCD with the exception of $3,000 each collected from each of the other eight (8) MOU Participants. The cost support has now transitioned to the MOU Participants, in identical percentage participation.

2.4.2 Funding of Project Applications

Specific water management project funding is dealt with in a separate fashion from the IRWMP funding. Applicants for specific funding programs are required to fund their pro-rata share of the cost of development of project specifics and project funding applications. Each of the participants in these efforts, over recent history, have benefitted by cost sharing a number of common elements of applications which have been shared on an equal division basis. Specific agreements for obligation to cover such costs have been developed on a funding effort-by-funding effort basis with this arrangement anticipated to continue into the future. Of significance in this regard, the funding activities of the Visalia Water Management Committee are noted. In this case, funding of application costs is often to be of value to all projects within a given application with not just a project-by-project division of costs occurring.

2.4.3 Projects Funding

On a parallel with project application funding, funding of the local matching share of individual projects has been a responsibility of the project advocate. In several cases, projects for which application has been made have more than one (1) beneficiary and, in such cases, a division of local share of costs occurs. The basis for this division of cost is founded in negotiations specific between the project advocates.

The MOU governing Board, based on the MOU terms, has required financial assurance procedures prior to submittal of any funding application. In this fashion, the applicant agency, its participants and the body to which participation application is being made, can have reasonable assurance that the project applicant has the financial capability to satisfy the local share of funding requirements. The specifics of these funding procedures have been revisited on an application-by- application basis and it is anticipated that that procedure will continue into the future.

SUMMARY OF DATA OR STUDIES SUPPORTING THE IRWMP

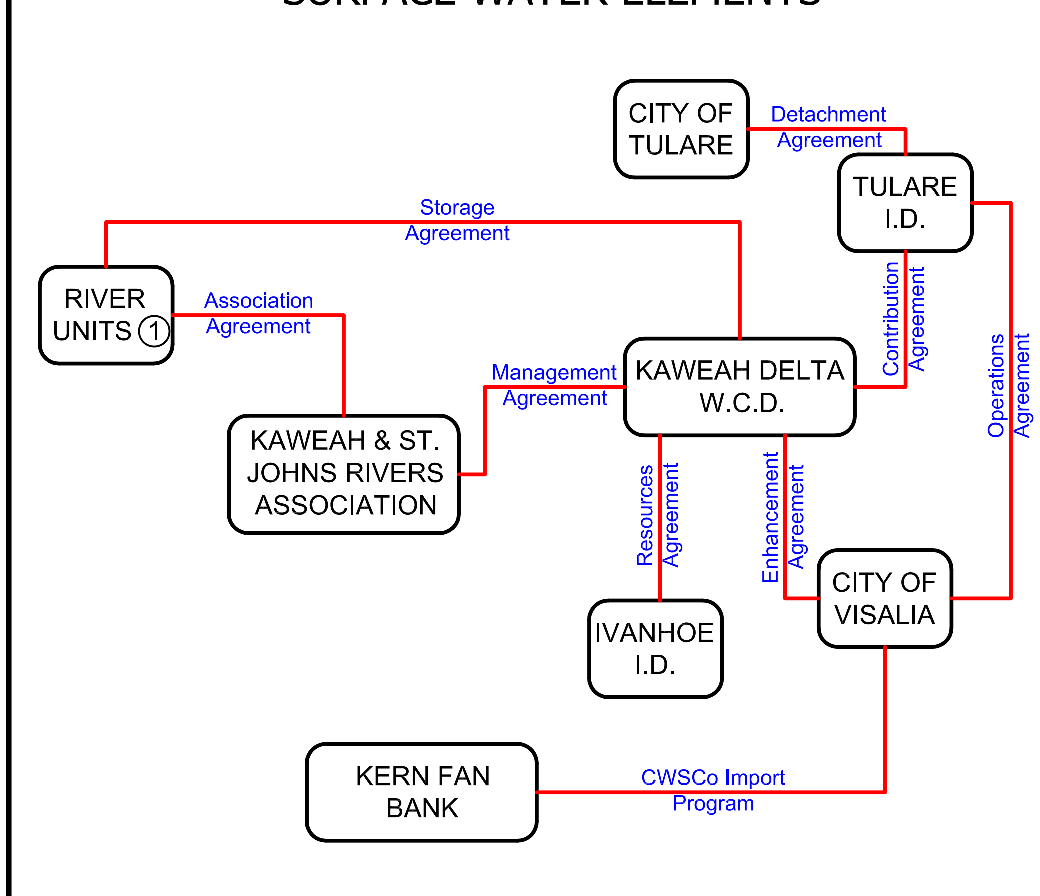
*KDWCD IRWMP Desc.**	*Data or Study*	*Year Initiated*	*Results or Contribution*	*Use in KDWCD IRWMP*	*Source/ Provider*
Yes	Water Resources Investigation	1972	Core of hydrological & hydrogeological data for Basin	Refined water supply and demand facts for clarifying objectives	KDWCD/ Bookman Edmonston & Fugro West, Inc.
Yes	Kaweah River Delta Corridor Enhancement Plan	1992	Multi-agency objectives for recharge, stormwater, & environment	Established multi-agency coordination structure. Fed objectives	KDWCD/ Camp Dresser & McKee
Yes	KDWCD Groundwater Management Plan	1995	Defines groundwater monitoring, protection, sustainability, involvement & management	Directly relates to defined objectives and selected RMS	KDWCD/ Keller Wegley Engineering
No	Kaweah River Basin Investigation – Feasibility Study, California	1996	Evaluation of the feasibility of the Lake Kaweah Enlargement Project	Provided basis for water supply and lake management	U.S. Army Corps of Engineers
No	Stormwater Master Plans: City of Tulare, Visalia, and Tulare County	Various	Identification of operations & physical works for stormwater management	Defined stormwater issues, capacities, abilities, project need	Multiple

*KDWCD IRWMP Desc.**	*Data or Study*	*Year Initiated*	*Results or Contribution*	*Use in KDWCD IRWMP*	*Source/ Provider*
Yes	Numerical Groundwater Flow Model For The Kaweah Delta Water Conservation District	2004	Ability to simulate groundwater impacts based on water mgmt	Tool for evaluating potential projects & their benefits	KDWCD/ Fugro West, Inc.
Yes	Agricultural Water Management Plan	2010	Identifies best management of surface water	Provides basis for import water supply management	KDWCD/ Keller Wegley Engineering
Yes	Normalized Difference Vegetation Index (NDVI) Crop Water Use Model	2011	Estimates crop water use and improves extraction data accuracy	Refined water demand and use facts for clarifying objectives	KDWCD/ Davids Engineering
No	Tulare Lake Basin Disadvantaged Community Water Study	2012	Defines drinking water & wastewater needs of DAC's	Clarifies DAC needs. Validated DAC position	Tulare County/ Multiple Consultants

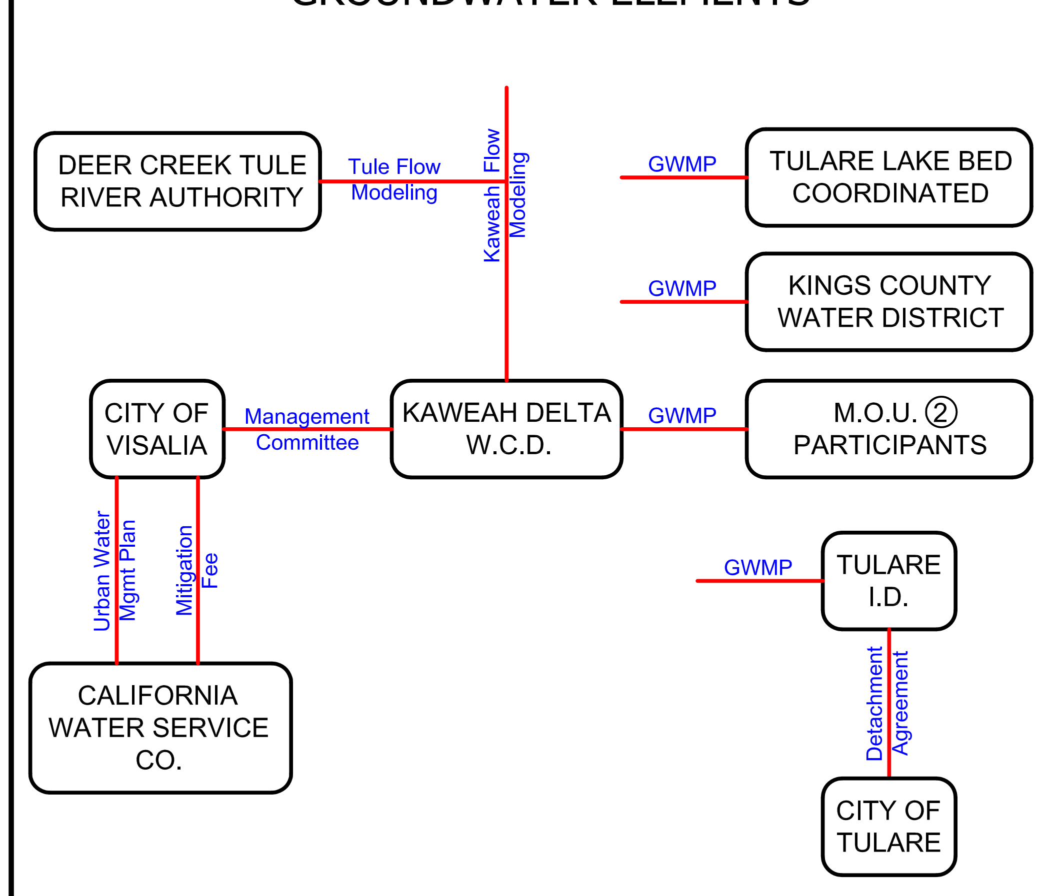
FIGURE 2-1

KAWEAH RIVER BASIN INTEGRATED REGIONAL WATER MANAGEMENT PLAN

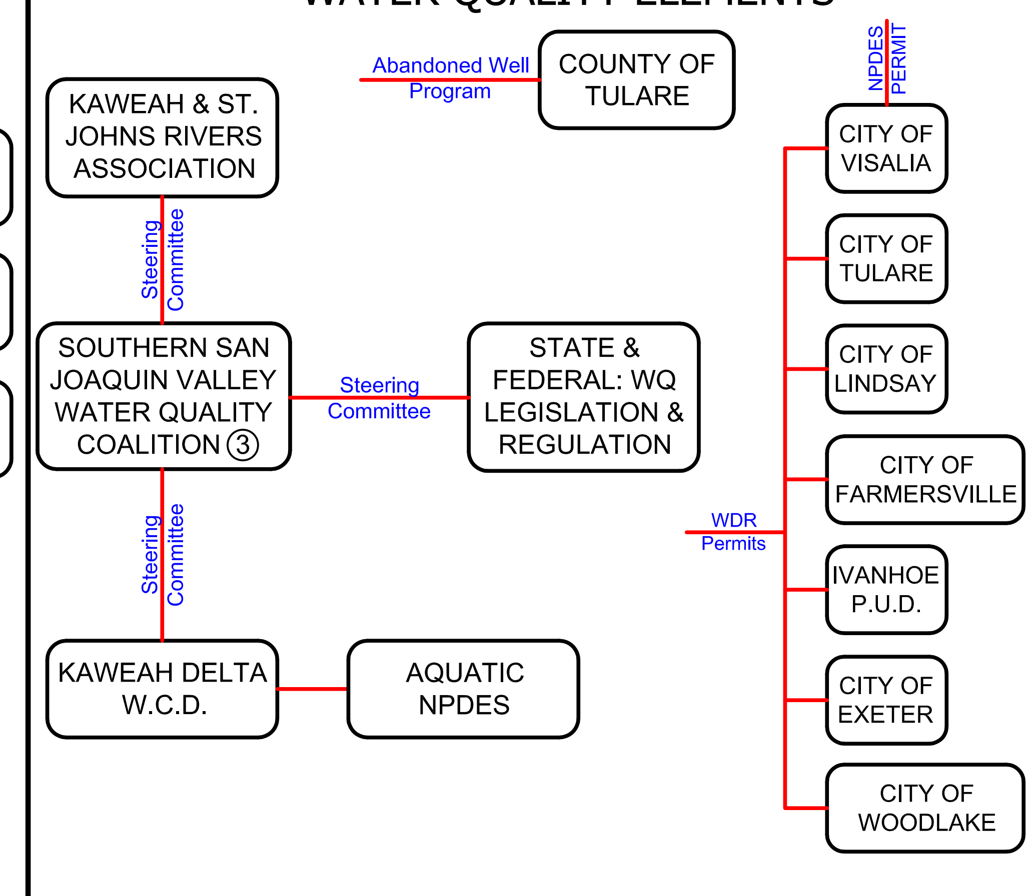
SURFACE WATER ELEMENTS



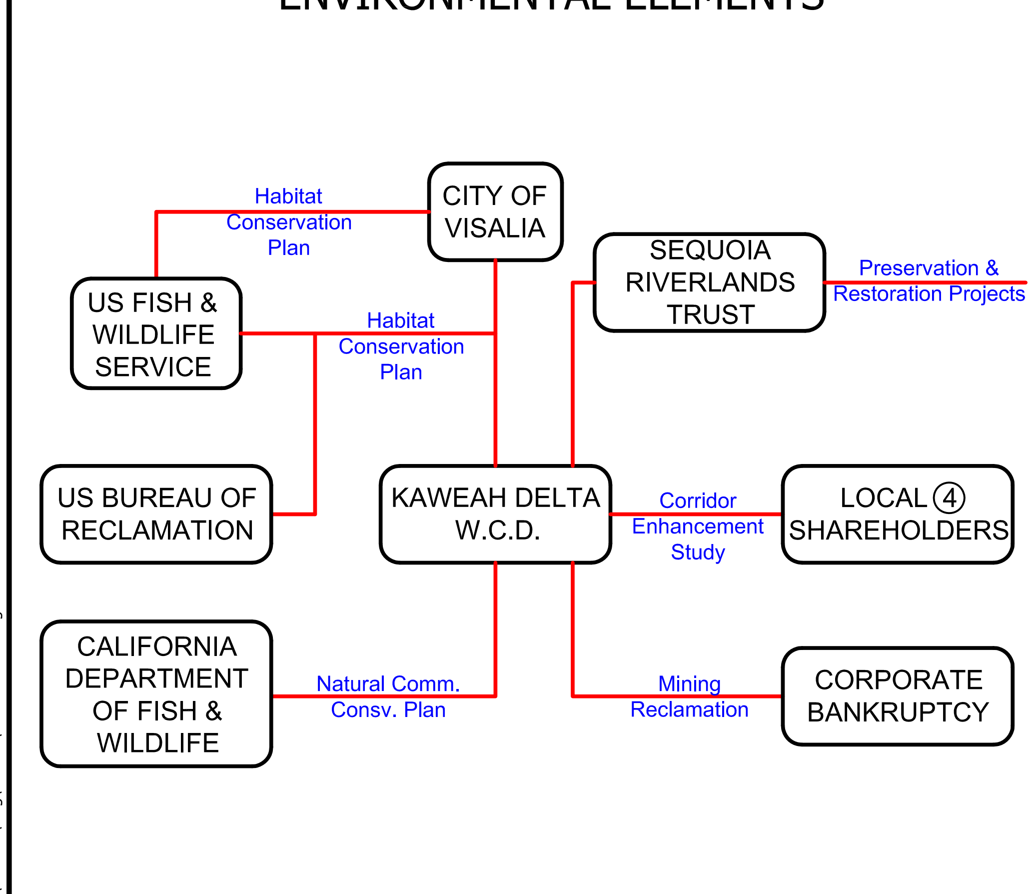
GROUNDWATER ELEMENTS



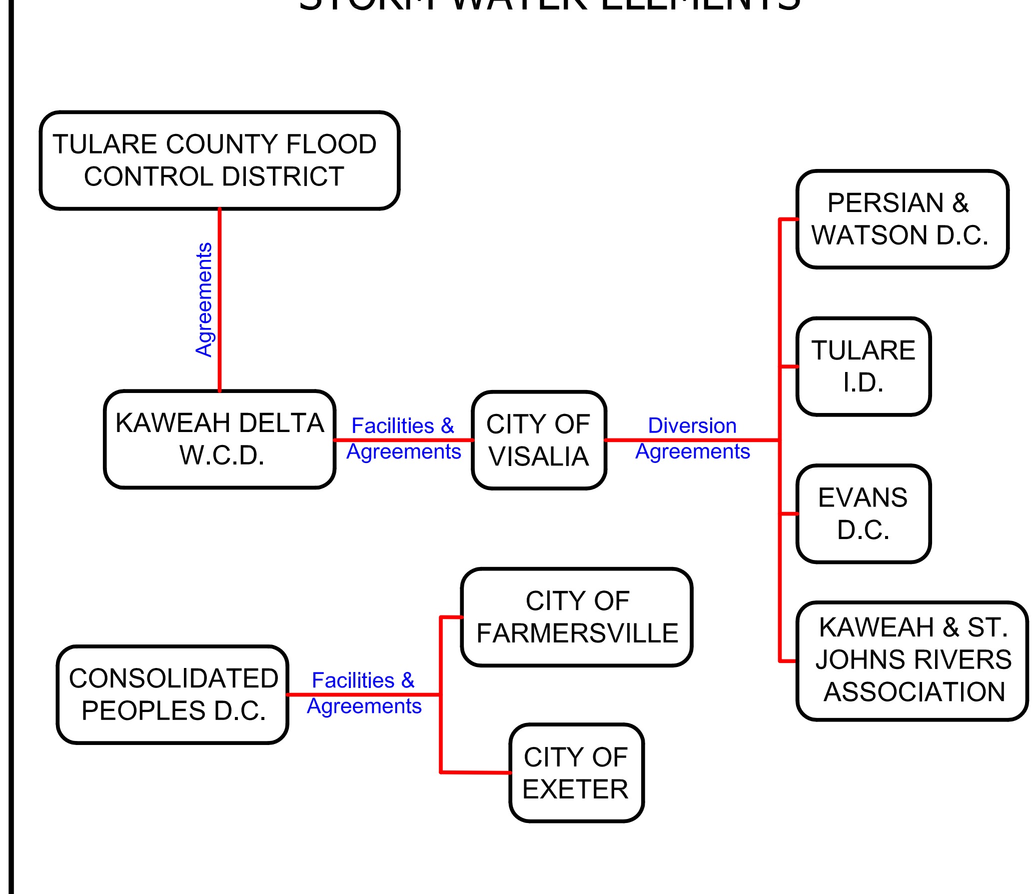
WATER QUALITY ELEMENTS



ENVIRONMENTAL ELEMENTS



STORM WATER ELEMENTS



NOTES:

① RIVER UNITS

Hawkeye Ditch, Lemon Cove D.C., Foothill D.C., Hamilton D.C., Consolidated Peoples D.C. & Elk Bayou D.C., Farmers D.C., Tulare I.D., Tulare I.C., Visalia & Kaweah W.C. (Fleming D.C., Oakes D.C., Evans D.C., Watson D.C., Persian D.C.), Longs Canal, Sentinel Butte M.W.C., Sweeney Ditch, Mathews D.C., Uphill D.C., Modoc D.C., St. Johns D.C. and Harrell J. Harrell.

② MOU Participants

Consolidated Peoples Ditch Company, Tulare Irrigation District, Lakeside Irrigation Water District, City of Visalia, City of Farmersville, City of Tulare, City of Lindsay and Exeter Irrigation District.

③ Southern San Joaquin Valley Water Quality Coalition

Kings River Conservation District, Kings River Water Association, Buena Vista Water Storage District, Deer Creek and Tule River Water Association, Kaweah and St. Johns Rivers Association, Kaweah Delta Water Conservation District, Kaweah Basin Water Quality Association and Kern Water Quality JPA.

④ Local Stake Holders

Sequoia Riverlands Trust, City of Visalia and County of Tulare.

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CHAPTER 3

PLAN INTRODUCTION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

3.1 PLAN OBJECTIVES

The intent of this section is to specifically establish the intent of the Kaweah River Basin Regional Water Management Group's (Kaweah Basin RMG) Integrated Regional Water Management Plan (IRWMP). The intent is to demonstrate to the interested public and to agencies of jurisdiction which regional water management issues the IRWMP is designed to address. The expanded objectives for this IRWMP were formulated in the meetings of the Kaweah Basin RMG IRWMP Stakeholders Advisory Group. These objectives have been ratified, over time, by the Board of Directors of the Kaweah Basin RMG. Evidence of action with respect to these items is evident in the motions of said Board, the annual budgets established by said Board and the nature of the projects both completed and on the priority list for the IRWMP. These objectives were established independent of any specific project plans or plan related studies. Rather, the development basis is in conjunction with the underlying basis for water management projects and studies leading to either the feasibility of or planning for water management projects. The objectives have not been established in any priority sequence, as flexibility has been demonstrated to need to exist between these items and issues based on either acknowledged current need for specific implementation of an element or a unique opportunity existing related to a particular objective such as a partnership opportunity or funding opportunity. In this random order, therefore, the objectives are set forth and described as follows, along with a specific example of the implemented objective:

3.1.1 Work Toward Achievement of Sustainable Balanced Surface and Groundwater Supplies

The issues of watershed conditions, water storage, water diversion, water delivery infrastructure and groundwater maintenance need to be addressed. As water demands are continuously evaluated, the need to augment naturally occurring groundwater recharge is evident and therefore additional water recharge capacity will be needed to meet future water demands. Existing diversion methodologies and delivery infrastructure will need to be as efficient as possible and balanced with conservation and recycling opportunities. Groundwater, the principal source of water supply for the entire Kaweah River Basin, is increasingly being pumped to meet agricultural, municipal and industrial demands. Included in this extraction process is that supply necessary to meet rural needs, both community and individual. Therefore, groundwater resources must be managed to ensure sustainability which is the expression of balance between extraction and recharge. As a significant step in the pursuit of this objective, the KDWCD has developed and implemented a groundwater management plan which is SB1938 compliant.

3.1.2 Protect and Improve Water Resources through Land Use Practices

The nexus between land use planning, land use practices and water management, particularly with respect to water quality, is evident within the Kaweah River Basin. The issues of surface and groundwater contamination, flooding, groundwater overdraft, habitat alteration and erosion are all issues related directly to land use and land use planning. Pursuit of the objective to protect and improve water resources such as flows of the Kaweah River, sustaining historic levels of importation of Friant Division, CVP supplies, storm water and flood waters management, actions contrary to maintenance of the quality of ground and surface waters and decisions related to the location of housing stock are all of paramount importance. Improved land use practices, maintenance and enhancement of riparian habitats and farm practices and urban runoff practices which seek to minimize sedimentation associated with erosion, are elevated objectives. Sound land use planning which avoids placement of households and locations where the drinking water supply is known to be non-compliant with State and Federal drinking water standards is being highlighted as a land use practice which needs improved and more diligent implementation. Likewise, sound land use planning involves proper placement of industrial and commercial land uses that, done improperly, could jeopardize the viability of a currently compliant and viable water supply. In pursuit of this objective, land use planning policies have been developed and included in the completed Tulare County Disadvantaged Communities Study, an effort covering the counties of Fresno, Kings, Kern and Tulare. The report effort was supported by significant citizen input including individuals in both elected and appointed positions having significant interface with land use policy development and enforcement.

3.1.3 Protection of Life, Structures, Equipment and Property from Flooding

While devastating flooding, as experienced in 1955, has a potential to be significantly reduced as the result of construction of both Terminus Dam and the groundwater recharge basins of KDWCD and other water management agencies within the IRWM boundary, the potential for flooding still exists. Issues related to flooding are damage to infrastructure, equipment and property from flood flows from uncontrolled channels such as Dry Creek and Lewis Creek and land and habitat alteration associated with those flood flows. While outside of the IRWM boundary, projects designed and managed to provide flood control to downstream landowners extending into the historic Tulare Lake bed, are of significance. The alteration of the spillway of Terminus Dam to incorporate spillgates, resulting in a significant increase in the flood storage capability of the reservoir is an example of the implementation of this objective.

3.1.4 Provide Multiple Benefits of Management of Water Resources and Related Diversion and Conveyance Infrastructure

The involvement of KDWCD as the lead agency in both initial investigations of the Kaweah River Corridor enhancement procedures and, in recent history, development of specific projects designed to implement Corridor Study related objectives is a priority for KDWCD and its IRWM partners. The specific goals within the Kaweah River Corridor structure include water management, habitat restoration and storm water control. Pursuit of these goals in each project developed related to management of water resources is an objective of this IRWMP. The Paregien Basin Project, currently being constructed implements each of the elements of this Plan objective.

3.1.5 Reduction of Contamination of Surface and Groundwater Resources

Reducing contaminants throughout the Kaweah River Basin will depend on improved methods of materials application and use of pesticides and herbicides, improved treatment and reuse of domestic and industrial wastewater from POTW systems and land use and development practices that incorporate Best Management Practices to deal with issues such as disposal of wastes from septic tank treatment systems and urban and roadside runoff. Multiple IRWM MOU agencies are involved in the Southern San Joaquin Water Quality Coalition. The principal purpose of said Coalition is to identify and either reduce below a harmful level or eliminate sources of contamination which jeopardize beneficial uses of both surface water and groundwater resources.

3.1.6 Meet Applicable Regional Water Quality Control Board Basin Plan Objectives

The numeric standards and the narrative objectives contained in the Basin Plan for Basin 5F are currently accorded significant status in project planning within the Kaweah River Basin. While all surface water directly diverted from the Kaweah River and its distributaries is diverted for beneficial purposes for either agricultural purposes or groundwater recharge, water quality parameters meeting beneficial use criteria are sought to be protected and enhanced by the water management planning activities conducted within the Kaweah River Basin. Improving and maintaining surface water quality requires coordination with procedures ongoing pursuant to the Irrigated Lands Regulatory Program of the Regional Water Quality Control Board and the implementation of Best Management Practices, both as they relate to irrigation related discharges and urban and County and State roadway systems related discharges. In addition, coordination with the County of Kings and the County of Tulare and the incorporated cities with respect to solid waste management is necessary in order to satisfy Basin Plan standards and objectives.

3.1.7 Management of Recreational Activities to Minimize Impacts on Water Resources

Recent water quality testing has demonstrated frequent, elevated and increasing occurrence of coliform contamination within the surface waters arriving at and coursing through the waterways within the IRWM planning area. While not of historic priority relative to planning activities, increased emphasis by regulatory agencies regarding coliform contamination is elevating the need to begin to address human related impacts, such as those related to recreation, on surface water quality. It is anticipated that future efforts related to this objective will focus on education. To this end, this topic has been added to the current educational outreach topics of the KDWCD.

3.1.8 Conserve, Enhance and Regenerate Riparian Habitats

One of the three (3) main objectives of the KDWCD's Corridor Enhancement process is to conserve, enhance and create native habitats. As such, each of the current projects under development by KDWCD has elements of conservation and enhancement of existing and development of new riparian habitats. Based on the KDWCD's development of a District-wide Habitat Conservation Plan and Natural Communities Conservation Plan, these objectives will continue to be in the forefront of the planning and construction activities related to water resources within the IRWMP planning area. The Work Plan documents related to both the Habitat Conservation Plan and the National

Communities Conservation Plan and the Natural Communities Conservation Plan have been approved by both the Federal Fish and Wildlife Service and the State Department of Fish and Wildlife. The KDWCD has currently budgeted $1.5 million dollars of KDWCD funds to pursue completion of these plans.

3.1.9 Reduce Impacts and Optimize Benefits from Assisting Other Drought-Related Areas with Basin-to-Basin Transfers of Water

Multiple MOU signatories are member units of the Kaweah & St. Johns Rivers Association (Association) and, as such are signator to a policy related to impact reduction resulting from out-of-basin water transfers. While it is the policy of the Board of Directors of the Association to assist other areas in need during times of extended drought, these agencies have executed the policy document of the Association related to mitigation of impacts and the approval process related to water transfers to out-of-basin entities. Adherence to this policy and ensuring that adequate facilities exist to accept return transfers in above-normal and wet conditions is and remains an objective of this IRWMP. In prior years of extreme drought, a dry-year transfer of water program is being facilitated by the KDWCD. These programs benefitted seven (7) specific Friant Division, CVP contract entities with a dry-year supplemental supply and allowed for the return of a multiple of the exchanged supply in future years, providing a supplemental benefit to the Kaweah Basin groundwater reservoir.

3.1.10 Evaluation of the Need for Supplemental Water Management Strategies Related to the Effects of Climate Change

The groundwater management efforts of the MOU signatories are focused on the management of the variable flows from the Kaweah River watershed. These flows range from extreme drought conditions, such as that which existed in 1977, to extreme flood conditions such as that which existed in 1983. The objectives of the planning activities conducted by MOU participants and their partners under this IRWMP are examples of methodologies to deal with the variability of the Kaweah River hydrology, not respecting the basis. From its inception in 1927, to date, the KDWCD and its partnering entities have sought to implement projects which would augment groundwater supplies during less than normal to drought conditions and, in addition, to manage above-normal to extreme flood conditions which occur within the watershed. Whether the basis is climate change, or variability of the hydrology of the watershed, it is the objective of the KDWCD and its IRWM partners to manage to both of the extreme conditions, as well as the intervening conditions. The KDWCD, for example, currently has in excess of 5,000 acres of developed groundwater recharge basins and is working to develop another approximately 1,000 acres currently in owned inventory.

3.1.11 Optimize Efficient Use, Conservation and Recycling of Water Resources

Based on its enabling legislation, the KDWCD has sought to implement policies and procedures incorporating conservation as the main focus. Whether through education, demonstration such as xeriscape landscaping and objective groundwater recharge procedures, KDWCD has sought out both policies and projects which optimize efficient use of available water resources, including conservation procedures. With respect to recycling, MOU participants have and will continue to, pursue projects and programs with their partners, which encourage recycling of both treated effluent and urban storm water related flow sources. As example, the KDWCD has developed and maintains the landscaping around the KDWCD office as a water efficient landscape example, educational tours are scheduled and conducted to provide interface opportunity to interested parties. The City of Visalia and the Tulare Irrigation District have a cooperative exchange program of tertiary treated effluent for Kaweah River entitlement.

3.1.12 Identify and Promote Strategies for Hydroelectric Generation Facilities

The KDWCD, in partnership with the Tulare Irrigation District, has formed the Kaweah River Power Authority (KRPA). KRPA currently has one (1) generating unit off of Terminus Reservoir and is in the planning stages for a second unit. A copy of the most current study is available by contacting KRPA. While the hydroelectric facilities are mandated to run on irrigation release schedules, they nonetheless have the opportunity to generate electrical power based on the flow and head characteristics occurring on any given day. KDWCD and TID, as both an IRWM objective and as a partners in KRPA, will continue to explore opportunities to enhance the production of hydroelectric power while protecting the beneficial use of the water employed in generating such power. It will be a continuing objective of the MOU participants, through the implementation of the objectives contained in this IRWMP, to continue to seek those opportunities.

3.1.13 Evaluate and Modify Water Diversion and Conveyance Infrastructure

As an adjunct to one of its primary purposes of maintenance of natural channels for storm and flood waters conveyance capability, the KDWCD also looks for opportunity to improve the water conveyance infrastructure for member units of the Kaweah and St. Johns Rivers Association (Association) and for its IRWM partners. It is an objective of this IRWMP to continue to seek out and implement such evaluation and improvement opportunities. As example, KDWCD manages its own Kaweah River and Friant Division, CVP water supplies and it also manages, under contract, the pre-1914 entitlements of the member units of the Association.

3.1.14 Promote City, Community and Regional Storm Water Management Plans

In cooperation with the Tulare County Flood Control District, multiple MOU signatories have as their objective, the promotion of the creation and implementation of adequate storm water management plans. Directing agricultural, roadside and urban generated storm water flows to beneficial uses is an objective of this IRWMP. Planning related to evaluation of the impacts of pollutants carried with the storm waters is of ever increasing concern, particularly with respect to the potential beneficial use of the diversion of these waters for agricultural irrigation and also with regard to the impacts of the pollution on groundwater quality. It is an objective of this IRWMP to seek out reliable, cost-effective and pollution-reducing actions. The KDWCD has assisted in the preparation of several urban stormwater management plans. In particular, the KDWCD has contracted to develop Phase I of several such plans, dealing with water rights and flood release management issues, particularly release impacts on available channel capacity.

3.1.15 Increase Knowledge Regarding Groundwater Related Conditions and Establish Groundwater Management Practices

The KDWCD has an adopted Groundwater Management Plan (GWMP). In addition, the Tulare Irrigation District, wholly located within the KDWCD boundaries, has a separate Groundwater Management Plan, but is also signator to the KDWCD GWMP. Both the KDWCD and the Tule River Basin have developed numeric groundwater models designed to offer a tool for management of water resources within each basin, to evaluate boundary conditions between the two (2) watersheds and to allow for specific impact analysis of proposed developments within the IRWMP boundary. It is an objective of this IRWMP to further enhance understanding of groundwater and to further develop the tools necessary to improve that knowledge base. Ongoing activities with the City of Tulare and the City of Visalia, in conjunction with the California Water Service Company, are examples of opportunities to further enhance the groundwater modeling within the area, often specific to the land use and water planning efforts of IRWM partners. It is an objective of KDWCD to maintain its numeric groundwater model, its related database and to share same with water management partners within the Kaweah River Basin for the benefit of the groundwater resource.

3.1.16 Conserve and Restore Native Species and Related Habitats

As documented in Corridor Study related efforts of KDWCD, significant habitat alteration and loss of habitat has occurred, particularly along the corridor of the Kaweah River and its distributaries, over time. Distinct objectives have been established by Board of Directors of KDWCD and augmented in IRWM related partnerships with other signator entities to the MOU to reverse this trend and incorporate into water management related projects, project elements to conserve, enhance and generate new habitats. As a result, benefits are envisioned to accrue to species listed as both endangered and threatened as additional habitats will be developed, along with conserved areas for said species' use in both maintenance and augmentation of their levels of existence.

The established and operable Corridor Study objectives have three (3) principal components. These components build upon chosen property characteristics of being in the Kaweah River corridor, on soils with above-average to outstanding percolation characteristics and capable of diverting water from and returning water to the River or one of its distributaries. The components consist of the site functioning as a groundwater recharge site, a flood impact reduction site and a habitat restoration location. The flood impact reduction function principally involves urban and/or transportation facility flood/flood damage reduction capabilities. The initial site chosen to work through the issues related to development of such a site was the Oakes Basin, now expanded to include the Paregien site.

3.1.17 Sustain Agricultural and Urban Viability through Effective Water Management

Given the significant competition for available surface and groundwater supplies, meeting of future water demands for both agricultural and urban uses will require changes in the existing water supply system. These changes potentially involve storage mechanisms, modifications of delivery infrastructure and improved on-farm and urban use efficiencies. It is the objective of this IRWMP to act as a catalyst for continued evaluation of the efficiencies of the storage and delivery systems and further to act in a responsible agency role to encourage and implement improved on-farm and urban use efficiencies. As example, historical reclamation plans associated with sand and aggregate mine sites have focused on development of lakes. As the principal source of water supply for these impoundments is groundwater, the evaporative losses from the lake surface offset other efforts of KDWCD to import and recharge water to the groundwater reservoir. Through the CEQA process associated with the issuance of permits applied for under the Surface Mining and Reclamation Act, KDWCD has been able to have these sites developed as "dry" sites, thus eliminating evaporative losses. In addition, the sites can then be utilized to capture non-storable storm and flood flows, detaining some until capacity develops in downstream recharge basins.

3.1.18 Provide Avenue to Identify Drinking Water Quality Problems, Establish and Evaluate Solution Sets and Identify Opportunities for Funding and Pathways to Pursue Funding Assistance

Numerous agencies of jurisdiction are and have been involved in identification and pursuit of resolution of drinking water quality problems. These efforts have been taken on by single agencies, by multi-agency collaborative efforts and by the County of Tulare for localized efforts, as well as for multi-county efforts. As considerable funding effort by the State of California is focused on IRWM coordinated efforts, it is logical for the IRWM Plan to provide both an avenue and a mechanism to pursue solutions to identified drinking water quality problems. The IRWM Plan currently contains an identified outreach program with specific alterations contained in a completed report identifying problems and solution sets within the geographic region defined as the East Kaweah River Basin Area. The IRWM Plan, through its defined project process, is poised to provide a specific, coordinated avenue to achieve this objective. Specifically, the capability to coordinate efforts to identify drinking water quality problems and specific solution sets to resolve those identified problems exists. The IRWM process offers a unique vehicle to pursue and secure funding for the capital elements of projects meeting the goals and objectives of this IRWM Plan.

3.1.19 Provide Participation Alternatives for Disadvantaged Community Participants and Project Specific Pathways for Project Identification through Implementation

Through the current form of outreach program, developed at the outset of the conversion of the Kaweah River Basin IRWM Plan from a “deemed equivalent” format to a format complying with IRWM Plan Guidelines constructed with countless hours of coordinated effort by the Stakeholders Advisory Group, an instrument exists to provide a participation pathway for disadvantaged community participants. A draft modification of this outreach program, currently under review by the Department, seeks to improve on the original participation process. The outreach program improvement seeks to expand the project pathway process specifically for those unincorporated communities with no existing governance structure outside of that offered by the County of Tulare.

3.1.20 Vulnerability Impacts Analysis Response Policies Development

An Imported Surface Water Reliability and Vulnerability Impacts Analysis (Impacts Analysis) has been performed and completed. The principal purposes of this Impacts Analysis were to explore and document existing and potential impacts and vulnerabilities associated with reduction in volumes of imported surface water supplies into the Kaweah River Basin. The results of the Impacts Analysis are presented in a series of Task Memorandums contained in Appendix L.

As significant impacts are already demonstrated to be in effect as a result of consistent reductions in south of Delta water supply declarations for both the State and federal water supply projects (State Water Project and Central Valley Project), the need for specific imported surface water supplies response policies and procedures exists and will be required in order for the IRWM Plan to be supportive of projects designed specifically to address the identified areas of primary and secondary impacts to Kaweah River Basin water supplies and the lands and people that are supported by those supplies.

3.1.21 Assist in the Improvement of Water Management Spreadsheet and Computer Models

The passage of time develops additional water related data which reflects impacts of weather conditions, water management policy changes, new legislation, new rules and regulations and the setting aside of some degree of then existing policies, rules and regulations. Model run outcomes are based on inputs and assumptions which, as to California water matters, are in a constant state of flux. It is therefore a stated objective of the Plan to constantly strive to improve water management model capabilities and to have models reflect the most current protocols reflective of the then existing conditions. The

Resource Management Group will take steps to coordinate efforts to review and modify models employed as water management tools. In doing so, it is with recognition that some models have specific application to the Kaweah River Basin, while others have application to areas which relate to the Kaweah River Basin, but have as their principal focus areas such as the San Joaquin River watershed, or the Sacramento – San Joaquin Rivers delta, for example. With respect to these models, it is a goal of the Plan to insure that engagement exists from within the Kaweah River Basin with the individuals and entities possessing or operating these models and to offer support and input with respect to maintaining those models and their related databases in as current a form as is reasonably possible.

3.1.22 Encourage and Support Engagement in Sacramento – San Joaquin Rivers Delta Planning, Operations and Legislative Activities

Irrigated agriculture, municipal water supply agencies purveying treated surface water and groundwater augmentation efforts, each involving imported surface water, are intimately tied to planning, operational activities and legislative proposals and actions centered on the Sacramento-San Joaquin Rivers delta. Frequently referred to as simply “the Delta,” surface waters made available to Contractors within the Friant Division of the Central Valley Project are laced directly to the Delta and the operational, political, social and legal world which surrounds the Delta region. Models have been developed and are continuously in use around which movement of water into, within and from the Delta are controlled, put to reasonable beneficial uses and fought over. Based on the nexus between Delta operations, upstream operations and policy decisions involving Delta operations, it is the stated objective of this Plan to encourage and support the engagement of individuals, water users and agricultural and urban entities in Delta planning, operations and legislative activities. It is a further objective of the Plan to engage in the development and utilization of an educational oriented information program specifically designed to complement existing educational outreach elements, all in an effort to better acquaint the population within the Kaweah River Basin as to the importance of the health of the Delta and Delta operations to the existence of an importable surface water supply into the Plan area.

3.2 PLAN SCOPE

The purpose of this IRWMP is to delineate the pathways whereby potentially feasible opportunities, initiatives, programs or projects to improve water quality, augment water supply, conserve and improve habitat and deal with land use issues are presented in a fashion which represents the current manner in which these issues are being addressed. It is to further demonstrate the extent to which coordinated efforts take place in the implementation of local and State IRWMP goals and objectives.

The IRWMP further presents characteristics of the IRWMP area, its sub-watersheds, the geology and hydrogeology, the hydrology, the water storage and water delivery components information related to water demands, water quality and the underlying nature of water rights. The IRWMP also presents the manner in which present and potential future policies, programs and projects are brought forward and evaluated and the relationship of these policies, programs and projects to the preservation and enhancement of the water resources available in the IRWMP area.

3.2.1 Water Resource Management Strategies

As the objective of the Kaweah Basin RMG Board of Directors is to continue to have the water management process be dynamic in nature, the water resource management strategies element of this IRWMP is designed to not only include those management strategies which are currently employed, but to look into the future as to both alternative and augmented strategies to optimize the management of available water resources. Specific details related to the vision for this process are as detailed in Chapter 9.

3.2.2 Evaluation of Water Supplies

The evaluation of water supplies takes on numerous forms within the IRWMP planning region. The KDWCD has an ongoing Kaweah River Basin-wide process, updated in approximate five-year increments, identified as its Water Resources Investigation. This process began in 1972 with an evaluation performed by Bookman-Edmonston Engineering with the current update just completed by KDWCD's current geotechnical consultant, Fugro West, Inc. As will be detailed specifically later in this IRWMP, considerable attention has been given to the land use inventory element of the evaluation process which has resulted in improved accuracy of the water balance for the Kaweah River Basin. This updated land use instrument was utilized by the consultant in the update to the Water Resources Investigation, improvements pursued in order to allow for more accurate determination of the water balance conditions existing within the Kaweah River Basin.

The City of Lindsay, utilizing a grant from the Department of Water Resources, expanded the KDWCD groundwater model to the east to the Sierra Nevada foothills and southeasterly beyond the Urban Area Boundary of the City. This expanded model area was calibrated for accuracy. The expanded model area was utilized in the update to the Water Resources Investigation.

3.2.3 Water Quality Protection and Improvement

Agricultural landowners/growers within the Kaweah River Basin are members of the Kaweah Sub-watershed of the Southern San Joaquin Water Quality Coalition (Coalition). The efforts of the Coalition are to track and provide comment with respect to regulations and legislation being generated related to both groundwater and surface water quality. The Association previously was the lead agency in the implementation of the Irrigated Lands Regulatory Program which has been handed off to a newly formed non-profit corporation entitled the Kaweah Basin Water Quality Association. Said non-profit corporation has received acknowledgement as the third-party representative of the landowners/growers irrigating within the Kaweah River Basin and related upslope irrigated lands areas above the valley floor. This IRWMP will detail the efforts, goals and objectives of these parties as they pursue fulfilling their roles related to the various aspects of both surface and groundwater quality within the Kaweah River Basin.

3.2.4 Flood Control Planning

Along with groundwater management, a fundamental authorized activity of KDWCD is management of the flood channels within the KDWCD boundaries and acting as the principal in contracting for conservation space within Terminus Reservoir, which is principally a flood control facility. This IRWMP will detail the activities of the KDWCD with respect to its principal channel maintenance purpose, its ancillary activities related to both regulated and non-regulated storm and flood flows, as well as its involvement with the County of Tulare through the Tulare County Flood Control District. In addition, work with the incorporated cities within the KDWCD boundaries will be described, including those activities related to seeking to put to beneficial uses the waters generated in the form of urban storm water flows.

3.2.5 Planning Process, Public Education and Administration

Important to any regional water resources management structure are the considerations of the planning process, public education and plan administration. This IRWMP provides detail with respect to the planning process in a number of arenas. Be it adequacy of water supplies available to the Kaweah River Basin, both surface and groundwater related, processes related to land use planning or the planning of current and future activities, detail related to these activities are spelled out in specific sections of the chapters of this IRWMP. Likewise, efforts related to public education, both in planning and implementation are detailed herein. As one of the principal functions of the KDWCD is education related to water management, it is relegated to a position of significance within this IRWMP.

3.3 REGIONAL PLANNING PROCESS

3.3.1 Resource Management Strategies

While normally exercised in an integrated fashion as a matter of practice within the Kaweah River Basin IRWMP area, the DWR IRWMP guidelines and Plan Review

Process mandate visiting resource management strategies (RMS) as separate topics, prior to integration. As a result, the strategy specific to water management within the IRWM area will be visited within the IRWMP on both an individual, as well as integrated, basis. The RMS topics are structured by the referenced Guidelines around the California Water Plan Update. This IRWMP has been structured to satisfy the requirements of the referenced Guidelines with regard to the RMS, which are a part of current IRWMP activities.

3.3.2 Integration

Historically, the three (3) types of integration required by the IRWM Guidelines have existed within the conduct of the Kaweah River Basin IRWM structure. Specifically, IRWMP elements, be they governance, stakeholder outreach, data management, project review or project selection, have been subjected to stakeholder and agencies of jurisdiction involvement, through a thorough dissection and summary of resources and project implementation. Previously, the employed review and decision making processes were performed in accordance with the structure of the “deemed equivalent” IRWMP. Specifically, issues and items were brought to the table for discussion by KDWCD staff and consultants and IRWMP Stakeholders Advisory Group members, with the issues being addressed to a satisfactory conclusion. Recommendations then flowed to the Board of Directors of KDWCD where adjustments to stakeholder and agency of jurisdiction inputs were considered in the IRWM structure and performance arenas. Similar pathways were established for issues related to RMS and project related funding and implementation procedures. The position of KDWCD has been replaced with the RMG and it is the opinion of the Board of Directors of the RMG that the IRWM Stakeholders Advisory Group continue forming, coordinating and integrating their separate positions and efforts to function in a unified basis in providing input and recommendation to the RMG.

3.3.3 Study Grants

This updated IRWMP has been prepared by the RMG. A parallel plan has been prepared for the Tule River Basin as many of the elements of the two (2) Plans are common. Based on input from signator parties to the IRWM Memorandum of Understanding and with the recommendation of the Stakeholders Advisory Group, a topic specific application was submitted for a planning grant under Round 2 of the Proposition 84 funding process. This update to the Plan reflects the results of those Round 2 efforts.

3.3.4 IRWMP's Relationship to Existing Water Management Plans

Additional coordination efforts take place on a frequent basis with the Kings River Basin group formed under a Joint Powers Authority agreement with their Plan being identified as the Upper Kings Basin Integrated Regional Water Management Plan. Recent adjustments in boundaries were discussed between the Upper Kings Basin IRWMP and the Kaweah River Basin IRWMP in order to address representation and project related concerns of participating entities in the IRWM process. Boundary adjustments have also occurred based on these specific areas where water management activities take place and, more particular, the specific source of the water being managed.

3.3.5 Consulting Team

Historically, review, modification and implementation of issues appurtenant to this IRWMP have involved a number of consultants to KDWCD. The KDWCD's consulting geologist, Fugro West, Inc. has played a specific and significant role in the continued evaluation of Kaweah River Basin project related activities and maintains both the database associated with the numeric groundwater model and runs the numeric groundwater model. Input from Provost & Pritchard Consulting Group and Keller/Wegley Engineering is employed on a regular basis, both with respect to policy development and input, as well as project development. Consulting activities are also undertaken by both firms with respect to ongoing IRWMP activities and Tulare Basin JPA IRWM activities.

This documentation of the existing IRWM policies, procedures and actions was accomplished by Keller/Wegley Engineering. The preparation of the original written plan involved only documentation of that which was then currently of record. Additional policies and procedures have now been generated as a result of the updates to the original written form of the Plan.

3.3.6 Stakeholder Participation

As previously referenced earlier in this IRWMP and acknowledged with gratitude by the Board of Directors of the RMG, literally hundreds of man hours have been invested by the IRWMP Stakeholders Advisory Group in addressing issues specific to the Kaweah River Basin and in developing, for consideration of action by the Board of Directors of both KDWCD and the RMG, draft policies and procedures, actions related to participation and funding and project evaluation and ranking.

The standing RMG IRWMP Stakeholders Advisory Group consists of representatives from the following entities:

California Water Service Company
Center for Irrigation Technology, CSU-Fresno
City of Farmersville
City of Lindsay
City of Tulare (administrative and public works representatives)
City of Visalia (resource management and Engineering representatives)
City of Woodlake
Community Water Center
County of Tulare (Environmental Health, Executive Officer and Resource Management Agency representatives)
Deer Creek & Tule River Authority / Tule River Association
Department of Fish and Wildlife
Department of Water Resources
Exeter Irrigation District
Ivanhoe Public Utility District

Keller/Wegley Engineering

Kings County Water District

Provost & Pritchard Engineering Group

Quad-Knopf Engineering

Regional Water Quality Control Board

Santa Rosa Tachi Tribe

Sequoia Rivers Land Trust

Self-Help Enterprises

Tulare Basin Wildlife Partners

Tulare Irrigation District

3.4 REPORT ORGANIZATION

Initially, utilizing a number of other IRWM prepared plans as a basis and the State IRWMP Guidelines wherein specific plan elements are prescribed and the evaluation of draft IRWMPs are outlined, a draft IRWMP Table of Contents was developed. Over the course of several meetings of the KDWCD IRWMP Stakeholders Advisory Group meetings, a Table of Contents was worked on and there was consensus reached with regard to same. The organization of the first IRWMP was based upon that agreed to Table of Contents. With this update, the Plan has been structured to be fully compliant with Department of Water Resources Guidelines up to and including Proposition 1 related requirements.

CHAPTER 4

DESCRIPTION OF PLAN AREA

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 4
DESCRIPTION OF PLAN AREA

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

4.1 ORIGINAL PLAN EFFORTS

Chapter 2 introduced the original Integrated Regional Water Management Plan (IRWMP) efforts, explaining that they were collaborative water management efforts led by the Kaweah Delta Water Conservation District (KDWCD) and were based on a multiple number of formal agreements between voluntary participating parties. When the initial formal IRWMP was written and approved by the State Department of Water Resrouces, the lead agency for the IRWMP was the KDWCD. The IRWMP area was an continues to be the KDWCD boundary augmented by additions which have occurred over time, principally by specific agreements entered into by Kaweah River Basin water management entities. The development of the IRWMP area is described herein in its progression of additions, over time.

ORIGINAL AREA

The KDWCD was formed in 1927 under provisions of the Water Conservation District Act of 1927. The purposes enumerated in the formation documents of KDWCD include conserving and storing waters of the Kaweah River and of conserving and protecting the underground waters of the Kaweah River delta.

KDWCD is located in the south-central portion of the San Joaquin Valley of California and, as shown on Figure 4-1, identified as the KDWCD Location Map, lies both in Tulare and Kings Counties. The total land surface area of the District is about 340,000 acres, with approximately 255,000 acres located in the valley floor portion of Tulare County and the balance, or about 82,000 acres, in the northeasterly corner of Kings County. The KDWCD boundaries are, for the most part, coincident with the Department of Water Resources Kaweah Sub-basin (Number 5-22.11) which is a subset of the larger San Joaquin Valley Hydrologic Unit. The Kaweah Basin groundwater unit boundaries are generally similar to the KDWCD boundaries, except for areas to the east and a small portion in the southwest corner near Corcoran, which falls within the Tulare Lake groundwater basin. It should be noted that the KDWCD boundaries are administrative and political in nature. They fall for the most part along township lines, county lines and adjacent surface water distribution entity boundaries. For the most part, they have no hydrogeologic significance. For purposes of this IRWMP, it should be noted that the IRWM functions are now carried on outside of the boundaries of KDWCD, as certain of the Memorandum of Understanding signators, such as the City of Lindsay, are external to the boundaries of the KDWCD. Figure 2 presents the current boundaries of the IRWMP (Plan Area).

Lands within the KDWCD boundaries are primarily agricultural in nature, although the cities of Tulare and Visalia constitute significant areas of urbanization. Exeter, Farmersville, Lindsay and Woodlake are other incorporated areas. Smaller unincorporated rural communities include Goshen, Ivanhoe and Waukena. A high degree of development exists in the KDWCD with approximately 250,000 acres presently devoted to the production of a variety of irrigated crops and in excess of 46,000 acres of urbanized land.

U.S. Highway 99 is a principal traffic artery through the San Joaquin Valley. It crosses KDWCD in the middle in a north-south direction. The main line of the Union Pacific Railroad similarly crosses in a north-south direction, adjacent to Highway 99. The main line of the Atchison-Topeka and Santa Fe Railroad also traverses KDWCD in a north-south direction near its westerly boundary, as does State Highway 43.

The boundaries of KDWCD encompass the alluvial fan of the Kaweah River, extending about 40 miles in a southwesterly direction from the foothills of the Sierra Nevada Mountains on the east, to the central axis of the San Joaquin Valley, in the vicinity of the Tulare Lakebed on the west. The service area of the Kings County Water District lies at the west boundary of KDWCD and the Lower Tule River Irrigation District adjacent to the south. Its maximum dimension in the north-south direction is about 24 miles.

At McKay Point, a significant geographical feature immediately to the east of the eastern KDWCD boundary and about 1-1/2 miles west of the community of Lemon Cove, the Kaweah River divides into the St. Johns River and the Lower Kaweah River branches. It enters the KDWCD boundary as these two (2) channels. Within the KDWCD, the Lower Kaweah River branch divides into several distributaries. The main channel divides into Mill Creek and Packwood Creek just to the east of the City of Visalia easterly city limits.

Numerous public and private entities within the KDWCD divert water for irrigation from the Kaweah River and its distributaries. About 250,000 acres within the KDWCD have access to surface water supplies from the River System. Because of the erratic nature of flow of the Kaweah River, which varies substantially in magnitude from month to month and from year to year, nearly all of these lands obtain supplemental irrigation from groundwater. All municipal and industrial uses within the KDWCD are supplied solely from groundwater.

Terminus Dam and Reservoir, located on the Kaweah River about 3-1/2 miles to the east of the east boundary of the KDWCD, was completed in 1961 by the U.S. Corps of Engineers. This project was constructed for purposes of flood control just below the confluence of the Middle, North and South forks of the Kaweah River with the East Fork feeding upstream into the Middle Fork. The reservoir does not include or receive water from the Dry Creek watershed which runs, uncontrolled, into the Kaweah River between

Terminus Reservoir and McKay Point. The dam/reservoir project also provides River control for irrigation purposes outside of the flood control months. The dam is an earth filled structure about 250 feet in height and had an initial reservoir capacity of about 142,500 acre-feet. KDWCD, acting as lead agency on behalf of the parties contracting for conservation space in the reservoir has satisfied a contract with the United States for repayment under Reclamation Law for the portion of the project costs allocated to conservation purposes. Several years ago, fusegates were retrofitted into the Terminus Dam spillway, enlarging the storage capability of Terminus Reservoir. The reservoir currently will hold approximately 186,500 acre-feet. The enlargement provides an estimated additional 8,500 acre-feet per year of average annual yield for irrigation water supply for the member units of the Kaweah & St. Johns Rivers Association.

The Friant-Kern Canal, a feature of the Federal Central Valley Project (CVP), traverses the easterly portion of KDWCD, delivering San Joaquin River water stored in Millerton Lake, located to the north. IRWMP related entities which are contractors within the Friant Division, CVP include the KDWCD, the Exeter Irrigation District, the City of Lindsay and the Tulare Irrigation District. The City of Visalia also has the capability to receive delivery of water from the Friant-Kern Canal as a subcontractor to the County of Tulare. The County of Tulare is a contractor for an in-delta supply from the Sacramento-San Joaquin Rivers Delta, a portion of which can be delivered to the Cities of Visalia and Lindsay and the Stone Corral Irrigation District by means of an exchange agreement with the Arvin-Edison Water Storage District. This delivery is enabled by virtue of ownership of capacity in the Cross Valley Canal and by virtue of a wheeling agreement for the in-delta supply with DWR.

In common with other areas along the east side of the San Joaquin Valley, the lands within the IRWM boundary historically have experienced the anomaly of flood control problems, coupled with water deficiency. From time-to-time, flows in the Kaweah River reach damaging levels within the KDWCD boundaries, with substantial volumes of water escaping to flood vulnerable agricultural land in the Tulare Lake bed. Since the construction of Terminus Reservoir, a high degree of river control has been achieved, thus substantially reducing the frequency of flood damage and by regulating seasonal runoff to satisfy peak summer irrigation demands. The recent addition to Terminus Reservoir improves the flood damage reduction capabilities, while improving the yield of the River for conservation purposes. The flood control system has yet, however, not been developed to a level where it will achieve a base 1 in 100 year return frequency level of protection.

4.2 RELATED COUNTY STUDY AREAS

For land use planning purposes, the County of Tulare (County) has developed several areas of differing geography for which they have developed land use plans. Two (2) of these areas interface with the IRWM planning process. The first of these is the valley floor area which consists of the significant majority of the IRWMP area. This area includes all of the valley floor up to the 660 foot contour. The County planning area immediately above the 660 foot contour is designated as the Foothill Growth Management Area. The County has prepared a specific land use plan with its own established set of rules and procedures to deal with land use proposals in these foothill areas. The IRWMP does not contain any lands in planning areas other than these which are noted. The IRWMP for the Southern Sierra Nevada IRWM area interfaces with the balance of the land use planning instruments which the County has created and adopted.

4.3 BASIS FOR NON-AGRICULTURAL WATER DEMANDS

For purposes of this IRWMP, the basis of water demands remains identical to that developed by KDWCD for each of their adopted management plan elements. Whether the Groundwater Management Plan or the Water Resources Investigation, for example, is the plan-at-hand, the basis for non-agricultural water demands remains consistent.

This non-agricultural demand basis is divided into three (3) specific categories. It is noted here that each of these three (3) categories utilizes groundwater as either the sole, or principal source of supply. The first of these categories is urban demand. This demand has been defined as that which occurs in the incorporated cities of Exeter, Farmersville, Lindsay, Tulare, Visalia and Woodlake. The City of Lindsay is the only entity of these which incorporates treated surface water into their delivered supply.

The second category is that of public water system demand. The basis for the analysis of water demand for this category is the records of the Counties of Kings and Tulare and the State Department of Public Health. Each of the water purveyors in this category has a water supply permit from either a county jurisdiction or the State and is required to report total amounts of water produced from their various sources. With exception of the rural unincorporated community of Tonyville, each of these systems has groundwater as its sole source of supply. Tonyville is supplied with treated surface water from the Friant-Kern Canal, processed through a treatment facility owned by and operated under State permit by the Lindsay-Strathmore Irrigation District. As with the urban water suppliers, detailed records are kept of water produced and delivered for each of these entities.

The balance of the non-agricultural demand falls into the category of rural domestic water demand. This demand consists of that from residences not served by a municipal connection, a mutual water company or another small public water system. Most such residences are served by small-capacity individual wells. Work has been accomplished, principally in the KDWCD Water Resources Investigation, to determine the number of rural residences in this category. While this work has resulted in an approximation of the water demand, work remains to be accomplished to refine this number to a level which can be considered to be an accurate estimate. At the current level of work accomplished, the information can, at best be categorized as satisfactory.

4.4 TOPOGRAPHY

The IRWMP Plan Area area is located on the east side of the south-central portion of the San Joaquin Valley. The area is characterized by low topographic relief, with variations rarely exceeding 10 feet, except in stream channels. Elevations of the Plan Area area vary from about 800 feet above sea level at the boundary with the Southern Sierra Nevada IRWM planning area, to about 200 feet at the westerly boundary. Lands within the IRWM Plan Area generally slope in a southwesterly direction at about 10 feet per mile, with this slope lessening as the westerly boundary is approached.

The southern end of the San Joaquin Valley, also identified as the Tulare Basin, is a closed feature without external surface drainage, except for extreme flood event occurrences. Tributary streams drain to depressions, the largest of which is the Tulare Lake bed, located west of the IRWMP boundary. The Kings, Kaweah and Tule Rivers and, on occasion, the Kern River discharge into Tulare Lake. These discharges occur at times when flows exceed the capacity of foothill reservoirs, the groundwater recharge basins and irrigation delivery systems and satisfaction of what irrigation demand exists during those event periods.

The east side of the San Joaquin Valley constitutes a broad plain formed by large coalescing alluvial fans of streams draining the western slope of the Sierra Nevada. The Kaweah River alluvial fan or delta, is separated from the larger Kings River fan on the north by Cross Creek. On the south, Elk Bayou separates the Kaweah River fan from the Tule River fan. Cottonwood Creek, an intermediate stream between the Kings and Kaweah Rivers, discharges onto the inter-fan area of the Kings and Kaweah systems. The Kaweah River fan is characterized by a network of natural channels of the Kaweah River and its distributaries, as well as numerous canals constructed for irrigation purposes.

4.5 CLIMATE

The climate of the IRWMP Plan Area is typical of the San Joaquin Valley, that being semi-arid and characterized by mild winters and hot, dry summers. Mean annual temperature for the City of Visalia is 62.5 degrees Fahrenheit. The average annual minimum and maximum temperatures are 50.3 and 75.5 degrees, respectively. For a central location within the IRWM Plan Area, such as the City of Visalia, the average yearly rainfall is 11.06 inches. A defined period of climate information appurtenant to the IRWMP is presented in Table 4-1.

TABLE 4-1
CLIMATE DATA
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
2.10	2.09	1.87	0.92	0.39	0.14	0.01	0.04	0.22	0.59	1.22	1.47	11.06
45.8	51.4	55.9	60.9	67.8	74.7	79.3	77.9	73.1	64.9	53.0	45.2	62.5
54.7	61.6	67.3	73.9	82.0	89.7	94.6	93.1	87.8	78.7	62.6	54.7	75.3
38.4	41.9	45.6	49.1	54.9	60.8	65.3	64.1	59.5	52.1	41.6	37.3	51.0
0.76	1.67	2.88	4.15	5.75	7.01	8.07	7.19	5.05	3.30	1.78	0.78	48.39

Weather station ID 049367 Visalia — *Data period: Year* 1971 *to Year* 2010 (1)
(86) Lindcove 1/05 12/10 (2)

Average wind velocity 7.5 — *Average annual frost-free days:* 255
(Ivanhoe Irrigation District, 2003)

4.6 LAND USE

Of significant value in water management planning, accurate data related to land use and, in particular, cropping types and number of crops per year are of extreme importance. Historically, the basis for computation of water demand for agricultural areas has been the information generated periodically by the Department of Water Resources (DWR). The last verified land use inventory for the KDWCD boundary was accomplished in 2007. Presented, as Table 4-2, is a comparison of historical land use data for the KDWCD for a period beginning in 1958 and concluding with information for 2007. A more specific breakdown for the years 1981 and 2007 is presented in Table 4-3.

TABLE 4-2
COMPARISON OF HISTORICAL LAND USE DATA
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Land Use Category	**1958[(1)] (acres)**	**1968[(2)] (acres)**	**1981 (acres)**	**1996 (acres)**	**2007 (acres)**
Irrigated	224,800	255,900[(3)]	263,255	278,555	248,142
Idle or Fallow (including roads and canals)	39,100	27,900[(3)]	15,968	8,895	26,391
Urban	7,500	10,700	21,352	29,815	46,232
Farmsteads	3,500	4,500	10,397	12,008	10,730
Undeveloped	61,800	37,700	28,833	9,723	9,497
Totals:	336,700	336,700	341,786[(4)]	340,992[(4)]	340,992[(4)]

(1) By USBR and DWR.
(2) By KDWCD.
(3) Gross area; net cropped area is 245,680 acres.
(4) Total area based on GIS output does not equal calculated total. Difference is within 0.5%. KDWCD boundary data.

TABLE 4-3
SUMMARY OF HISTORICAL LAND USAGE
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

	1981		2007	
Category of Land Use	Acres	%	Acres	%
Irrigated				
Cotton	94,229	28%	19,048	6%
Alfalfa	33,977	10%	47,027	14%
Grain	65,062	19%	7,952	2%
Deciduous and Nuts	36,502	11%	57,747	17%
Pasture	8,873	3%	2,117	1%
Miscellaneous Field	2,911	1%	91,883	27%
Sugar Beets	1,869	1%	0	0%
Grapes	9,187	3%	6,742	2%
Citrus	6,337	2%	10,832	3%
Rice	313	0%	0	0%
Truck	3,995	1%	4,794	1%
Subtotal, Irrigated	263,255	79%	248,142	73%
Non-Irrigated				
Urban, Commercial and Industrial	21,352	6%	46,232	14%
Farmsteads, Dairies, Feed Lots	10,397	3%	10,730	3%
Idle (Fallow)	13,923	4%	20,906	6%
Roads, Channel and Canals	2,045	1%	5,485	1%
Undeveloped	28,833	8%	9,497	3%
Unknown	246	0%	0	0%
Subtotal, Non-Irrigated	76,796	23%	92,850	27%
Total	**340,051**		**340,992**	

(1) KDWCD Boundary Data.

Due to the importance of this information to an accurate determination of total irrigation demand and its related linkage to total groundwater extracted in satisfaction of that demand, the KDWCD recently undertook a sensitivity investigation principally dealing with field and row crops and a determination of the number of crops per year grown of each type. This investigation has resulted in a determination that the historic basis of agricultural water demand computation utilizing of DWR land use data is not reflective of actual land use characteristics and is the principal reason for water demand computations not reflecting observed groundwater conditions within the IRWMP Plan Area. The sensitivity analysis procedures utilized satellite imagery, with a significant level of ground truthing, to determine if this alternative basis would result in a more accurate determination of agricultural demands and thus a more accurate determination of groundwater conditions within the KDWCD boundary. This sensitivity analysis was completed in 2013 and resulted in additional work to determine if utilization of satellite imagery would result in more accurate information being available on a year-to-year basis, not just the single year which was initially evaluated. The conclusion of the second level of investigation was that it appeared that such accuracy and continuum of data would exist and the KDWCD Board of Directors directed that this basis be utilized for the current update to the Water Resources Investigation. This update has been completed and reflects the new basis.

4.7 SUB-WATERSHEDS

While the Kaweah River and its distributaries are the dominant water feature in the IRWMP Plan Area, numerous sub-watersheds exist. Each of these sub-watersheds is located such that the fetch is exclusively in a rainfall area with snowfall typically not a regular occurrence and when occurring, limited to the upper several hundred feet of the tops of the sub-watersheds. These sub-watersheds, listed north to south geographically include Cottonwood Creek, Dry Creek, Mehrten Creek, Yokohl Creek and Lewis Creek. The only sub-watershed with any appreciable annual flow is Dry Creek and the flows of said creek are added to the flows of Kaweah River in the apportionment of pre-1914 water rights to the member units of the Kaweah & St. Johns Rivers Association. While much less frequent in extending to any appreciable distance on the valley floor, flows of Cottonwood Creek which reach the confluence with the St. Johns River are also added to the Association's schedule and apportioned, but only to those member units downstream of what is referred to as the beginning of the "Cross Creek" segment of the river system.

4.8 GEOLOGY

4.8.1 General

The rocks that crop out in the IRWMP Plan Area include a basement complex of pre-Tertiary age consisting of consolidated metamorphic and igneous rocks and unconsolidated deposits of Pliocene, Pleistocene and recent age, all of which contain fresh water. Consolidated marine rocks of Pliocene age and older do not crop out in this area, but are penetrated by wells in the subsurface. Because the water from these wells generally is brackish or salty, the marine rocks are not considered as part of the fresh-water reservoir and constitute the effective base of fresh water or, what is commonly referred to, as permeable sediments. Most of the groundwater pumped within the IRWMP Plan Area is from the unconsolidated deposits.

Geologic units that affect the occurrence and movement of groundwater in the IRWMP Plan Area are generally classified and described as follows:

1. Basement Rocks: Non-water bearing granitic and metamorphic rocks;
2. Marine Rocks: Non-water bearing marine sediments including the San Joaquin Formation;
3. Unconsolidated Deposits: Non-marine, water bearing material comprised of the Tulare Formation and equivalent units;
4. Alluvial Deposits: Coarse-grained, water bearing alluvial fan and stream deposits including older oxidized and reduced units and younger alluvium; and
5. Lacustrine and Marsh Deposits: Fine-grain sediments representing a lake and marsh phase of equivalent continental and alluvial fan deposition.

A summary of the main geologic and hydrogeologic units adapted from a variety of sources is provided as Table 4-4.

TABLE 4-4
GEOLOGIC AND HYDROLOGIC UNITS, SAN JOAQUIN VALLEY
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Generalized section of geologic units. Reported maximum thickness, in feet, is in parenthesis (adapted from Page 1986, table 2)		**Hydrologic unit used in many reports such as Polan and Lofgren (1984)**	**Layers in digital flow model (Williamson and others, 1989)**
Quarterly	**Flood basin deposits (100)** – Primarily clay, silt and some sand; include muck, peat and other organic soils in Delta area. Restrict yield to wells and impede vertical movement of water. **River deposits (100±)** – Primarily gravel, sand, and silt; include minor amounts of clay. Among the more permeable deposits in valley.	Upper water bearing zone(1), unconfined to semiconfined Principal confining unit (modified E Clay) Absent	**Layer 4** Many wells tap this layer; unconfined storage
Tertiary and Quarterly	**Lacustrine and marsh deposits (3,600±)** – Primarily clay and silt; include some sand. Thickest beneath Tulare Lake bed. Include three widespread clay units – A, C and modified E clay. Modified E clay includes the Corcoran Clay Member of the Tulare Formation. Impedes vertical movement of water. **Continental rocks and deposits (15,000)** – Heterogeneous mix of poorly sorted clay, silt, sand and gravel; includes some beds of mudstone, claystone, shale, siltstone and conglomerate. Form major aquifer system in valley.	Lower water-bearing zone semiconfined to confined. Extends to base of freshwater which is variable **Base of Freshwater**	**Layer 3** Many wells tap this layer; elastic and inelastic confined storage **Layer 2** Some wells tap this layer; elastic and inelastic confined storage
Tertiary	**Marine rocks and deposits** – Primarily sand, clay, silt, sandstone, shale, mudstone and siltstone. Locally yield fresh water to wells, mainly on the southeast side of the valley but also on the west side near Kettleman Hills.	Below the depth of water wells. In many areas, post-Eocene deposits contain saline water	**Layer 1** No wells; elastic confined storage

(1)The upper and lower water-bearing zones are undifferentiated where the modified E clay exists (includes Corcoran Clay Member of the Tulare Formation).

4.8.2 Basement Complex

The basement complex of the pre-Tertiary age consists of metamorphic and igneous rocks. They underlie the Sierra Nevada and occur as resistant inliers in the alluvium and as linear ridges in the foothills east of the IRWMP planning area. In the subsurface, they slope steeply westward from the Sierra Nevada beneath the deposits of Cretaceous age and younger rocks that compose the valley fill. Information is in the GIS database indicating the altitude above or below sea level at which bedrock (presumably basement complex) has been reported by drillers or interpreted from electric logs. Additional database information indicates escarpments that are interpreted as buried fault scarps associated with the Rocky Hill fault. West of the escarpments, the slope of the basement complex steepens. In the Tulare Lake area, an oil-test well failed to penetrate the basement complex at 14,642 feet below sea level (Smith, 1964).

The basement complex is at shallow depths in the Lindsay, Strathmore and Ivanhoe areas and in the intermontane valleys where it is penetrated by many water wells. Near Farmersville and Exeter, the basement complex forms a broad, gently westward-sloping shelf overlain by 100 to 1,000 feet of unconsolidated deposits. In T17S/R24E (near Ivanhoe), the basement complex drops abruptly to about 2,000 feet below land surface, presumably due to faulting.

4.8.3 Marine Rocks

Along the east border of the San Joaquin Valley, Tertiary rocks, mainly of marine origin, overlap the basement complex and underlie the unconsolidated deposits. Croft (1968) suggests this unit may locally include beds of continental origin in the upper part. Inside the IRWMP boundary, the marine rocks do not crop out. The Tertiary marine rocks have locally been penetrated by oil- and gas-test wells in the east part of the Plan Area, range in age from Eocene to late Pliocene and consist of consolidated to semiconsolidated sandstone, siltstone and shale. They have traditionally been locally divided into several formations by geologist (Park and Weddle, 1959), but they generally contain brackish and saline connate or dilute connate water, unsuitable for most uses.

4.8.4 Unconsolidated Deposits

The unconsolidated deposits in the IRWMP Plan Area are divided into several geologic units. In the Kettleman Hills, west of the Plan Area Woodring et al. (1940) divided the unconsolidated deposits into the Tulare Formation and into older and younger alluvium. The Tulare Formation in the Kettleman Hills overlies the upper Mya zone (Woodring et al., 1940, p. 13), a fossil horizon at the top of the San Joaquin Formation. The Mya zone is reported in well logs beneath Tulare Lake bed and is a prominent marker bed outside of the Plan Area that separates the marine rocks from overlying continental deposits. The base of the unconsolidated deposits is projected by electric log correlation from the upper Mya zone beneath Tulare Lake bed, eastward to the top of marine rocks. The unconsolidated deposits of this report are equivalent to the continental deposits from the Sierra Nevada of Klausing and Lohman (1964) and to the unconsolidated deposits as used by Hilton et al. (1963).

The unconsolidated deposits thicken from zero along the western front of the Sierra Nevada to a maximum of about 10,000 feet at the west boundary of the Plan Area. The unconsolidated deposits are divided into three (3) stratigraphic units: continental deposits, older alluvium and younger alluvium.

In the subsurface, the younger alluvium interfingers and/or grades laterally into the flood-basin deposits and into alluvium, undifferentiated. The older alluvium and continental deposits interfinger and/or grade laterally into the lacustrine and marsh deposits or into alluvium. In the subsurface, the older alluvium and continental deposits are also further subdivided into oxidized and reduced deposits on the basis of environmental deposition.

Unconsolidated deposits, which locally crop out at the IRWMP east boundary and extend beneath the valley floor, were eroded from the adjacent mountains, then transported by streams and mudflows and deposited in lakes, bogs, swamps or on alluvial fans. The lithologic and water-bearing characteristics of the deposits are dependent upon several controlling factors, which include 1) environment of deposition, 2) the type of rock in the source area and 3) competence (or energy) of the streams.

According to Davis et al. (1957), oxidized deposits generally represent subaerial deposition and reduced deposits generally represent subaqueous deposition. Oxidized deposits are red, yellow and brown, consist of gravel, sand, silt and clay and generally have well-developed soil profiles. Reduced deposits are blue, green or gray, calcareous, and generally are finer grained than oxidized deposits and commonly have a higher organic content than the oxidized deposits. In some cases, the separation between the oxidized and reduced deposits can be identified on well logs based on lithologic color. Such delineation can of course be highly subjective. The coarsest grained reduced deposits were laid down in a flood plan or deltaic environment bordering lakes and swamps. Because of a high water-table in the east side of the IRWMP Plan Area, the sediments have not been exposed to subaerial weathering agents. The finest grained reduced deposits were mapped as flood basin, lacustrine and marsh deposits.

The oxidized deposits underlie the older and younger alluvium and throughout most of the Plan Area with the oxidized deposits being 200 to 500 feet thick. Based on work by Croft (1968), a structural contour map of the approximate base of the oxidized deposits has been prepared.

The oxidized deposits consist mainly of deeply weathered, reddish brown, calcareous sandy slit and clay and can, in most well completion reports, be readily identified when present. Beds of coarse sand and gravel are rare, but where present, they commonly contain significant silt and clay. The highly oxidized character of the deposits is the result of deep and prolonged weathering. Many of the easily weathered minerals presumably have altered to clay and, as such, are poorly permeable.

4.8.5 Lacustrine and Marsh Deposits

The lacustrine and marsh deposits of Pliocene and Pleistocene age consist of blue-green or gray gypsiferous silt, clay and fine sand that underlie the flood-basin deposits and conformably overlie the marine rocks of late Pliocene age. In the subsurface beneath parts of Tulare Lake bed, these beds extend to about 3,000 feet below land surface. Where the equivalent beds crop out in the Kettleman Hills on the west side of the valley, they were named the Tulare Formation by Anderson (1905, p. 181). The lacustrine beds and fossils of the Tulare Formation were mapped and described in detail by Woodring et al. (1940, p. 13-26) who considered the top of the Tulare Formation to be the uppermost deformed bed. Therefore, by this definition, all the deformed unconsolidated deposits would form the Tulare Formation.

In the subsurface around the margins of the Tulare Lake bed, the lacustrine and marsh deposits form several clay zones that interfinger with more permeable beds of the continental deposits, alluvium, undifferentiated and older alluvium. Because of contained fossils and stratigraphic relations to adjacent deposits, these clays are considered to be principally of lacustrine origin. Clay zones are generally indicated by characteristic curves on electric logs and thereby facilitate some areal correlations between adjacent logs as shown in hydrogeologic cross sections. Although as many as six (6) laterally continuous clay zones have locally been defined in the southern San Joaquin Valley, only the most prominent of these clay zones known as the “E” Clay (or Corcoran Clay member) of the Tulare Formation is found within the IRWMP boundary. Clay deposits are nearly impermeable and yield little water to wells and that which is obtained is generally of poor chemical quality.

The E Clay is one of the largest confining bodies in the area and underlies about 1,000 square miles west of U.S. Highway 99. The beds were deposited in a lake that occupied the San Joaquin Valley trough and which varied from 10 to 40 miles in width and was more than 200 miles in length (Davis et al., 1957). The first wide-scale correlation of the Corcoran Clay was made by Frink and Kues (1954).

The E Clay extends from Tulare Lake bed to U.S. Highway 99 and is vertically bifurcated near Goshen. It is about 140 feet thick near Corcoran and the average thickness is about 75 feet. The deposits near Corcoran are probably the thickest section in the San Joaquin Valley.

4.8.6 Reduced Older Alluvium

As previously mentioned, the reduced older alluvium is a moderately permeable arkosic deposit that is not exposed in the IRWMP Plan Area. It overlies the continental deposits, interfingers with lacustrine and marsh deposits beneath Tulare Lake bed and interfingers with alluvium, undifferentiated, north of Tulare Lake bed. Around the margin of Tulare Lake bed, the reduced older alluvium interfingers with lacustrine deposits.

The reduced older alluvium consists mainly of fine to coarse sand, silty sand and clay that were probably deposited in a flood plain or deltaic environment. Gravel that occurs in the oxidized older alluvium is generally absent. The deposits are sporadically cemented with calcium carbonate, according to logs of core holes made by geologists of the Bureau of Reclamation. Those descriptions imply, however, that the calcium carbonate is probably less abundant than in the underlying reduced continental deposits.

4.8.7 Oxidized Older Alluvium

The oxidized older alluvium unconformably overlies the continental deposits. The beds consist of fine to very coarse sand, gravel, silt and clay derived for the most part from granitic rocks of the Sierra Nevada. Beneath the channels of the Kaweah, Tule and Kings Rivers, electric logs indicate that the beds are very coarse. In the interfan areas, metamorphic rocks and older sedimentary units locally contributed to the deposits and, in those areas, the beds are probably not as coarse as the beds beneath the Kaweah, Tule and Kings Rivers. Fine-grained deposits occur in the channel of Cross Creek.

East of U.S. Highway 99, the contact of the older alluvium with the underlying oxidized continental deposits is well defined in electric logs. Structure contours, based on electric log data, show the altitude above or below sea level of the base of the unit. The older alluvium thickens irregularly from east to west and probably has filled gorges cut by the ancient Tule River in the underlying oxidized continental deposits near Porterville. The base of the deposits occurs 195 feet below land surface near Exeter and declines to 430 feet below land surface near Visalia and Goshen.

4.8.8 Younger Alluvium

Younger alluvium consists of gravelly sand, silty sand, silt and clay deposited along stream channels and laterally away from the channels in the westerly portion of the Plan Area. Younger alluvium is relatively thin locally, reaching a maximum depth below ground surface of perhaps 100 feet. Except in the extreme easterly portion of the IRWMP Plan Area, it is generally above the water table and does not constitute a major water-bearing unit.

Soils developed on younger alluvium show little or no profile development and are generally free of underlying clay subsoil or hardpan. Because percolation rates through the younger alluvium are moderate to high, this deposit serves as a permeable conveyance system for recharge to underlying water-bearing materials.

4.9 GEOHYDROLOGY

In cooperation with the DWR, the KDWCD and the Tulare Irrigation District measure, tabulate and publish water level data for as many as 400 water wells. Records for some wells extend back to the 1920s with most records for wells included in the KDWCD's groundwater monitoring program beginning in the 1950s. The quality of the data is considered excellent. From these data, changes in groundwater and storage can be estimated along with an analysis of water level conditions and trends within the IRWM Plan Area. The KDWCD is divided into hydrologic units for ease in management of the data and analysis process which will be discussed later in this IRWMP.

A GIS database has been constructed, principally to be utilized in the operation of the KDWCD numeric groundwater model wherein calculations of storage changes and groundwater flow can be accomplished by integrating groundwater level elevation contour maps with specific yield data, aquifer properties and specific surface water delivery information by hydrologic unit area. A tabulation of the GIS layers is presented in Table 4-5. The IRWMP benefits from a long-term water level measurement program of key wells in the IRWM Plan Area. Information from the KDWCD and Tulare

Irrigation District monitoring programs are provided to DWR for use in preparation of spring, unconfined aquifer system contour maps which are a routine DWR publication.

The water level database is posted on the DWR website and allows downloading of compiled hydrographs of key wells in the IRWMP Plan Area for purposes of graphical display and analysis.

4.9.1 AQUIFER CHARACTERISTICS

4.9.1.1 Availability of Data

Hydrogeologic parameters of the aquifers and aquitards in the IRWMP Plan Area include average specific yield values for the upper 200 feet of sediments and numerical values of transmissivity, hydraulic conductivity and specific capacity. For the most part, reliable coefficients of aquifer storage (storativity) can only be generated from controlled pumping tests with observation wells; few such data exist within the IRWMP boundaries.

TABLE 4-5
CONTENTS OF GIS DATABASE
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Theme	Source	Scale
County Boundary	USGS	1:100,000
Land Use(1)	CA DWR	1:24,000
District Boundary	KDWCD	Unknown
Urban Areas	TIGER(3)	Varies
Roads	TIGER	Varies
Water Features (arc)	USGS	1:100,000
Water Features (poly)	USGS	1:100,000
Soils (STATSGO)	NRCS(4)	1:250,000
Soil Survey Geographic Database (SSURGO)	NRCS	1:24,000
Precipitation	USGS et al.	1:1,000,000
Precipitation Stations	Fugro	1:1,000,000
Well Sites	CA DWR	Unknown
Wildcat Sites	Fugro	Unknown
Aerial Imagery	CA DWR/Fugro	N/A
Groundwater Basins	CA DWR	1:250,000
Cal Water Watersheds	CA DWR	1:24,000
Hydrologic Untis	Fugro	1:220,000
Public Land Survey (sec)	CA DWR	1:100,000
Public Land Survey (t/r)	Fugro	1:100,000
Elevation	USGS/Fugro	1:24,000
Topographic Map	USGS	1:100,000
Topographic Map	USGS	1:250,000
Bovine Operations	Tulare County	Unknown
Poultry Operations	Tulare County	Unknown
Goat Operations	Tulare County	Unknown
Swine oeprations	Tulare County	Unknown
Dairy Operations	Tulare County	Unknown
Dairy Operations(2)	Kings County	N/A

(1) Land use data available by county for several years.
(2) Kings County dairy data in image format.
(3) TIGER: United States Census Bureau TIGER file.
(4) NRCS: Natural Resources Conservation Service.

Regional aquifer system numerical properties can be found in reports by Bertoldi et al. (1991), which provides average hydraulic conductivity values and storage coefficients for the entire Central (San Joaquin) Valley. For the most part, such data provide a broad range of aquifer numerical values that can be used for comparative purposes only. Within the KDWCD, focused studies at the Visalia Landfill (Malcolm Pirnie, Inc., 2001), for Tulare Irrigation District canal lining (B&E, 1997), for aggregate mining applications (Jones & Stokes Associates, Inc., 1997) and studies of the adjacent Tule Basin area (Naugle, 2001) provide a more applicable and narrower range of aquifer parameters. Harter (2002) also analyzed Southern California Edison (SCE) data (efficiency tests) for several hundred wells within the Tule and Kaweah River Basins and converted well-specific capacity data (typically based on a 1-hour pump test) to transmissivity using a conversion factor of 1,500 (Driscoll, 1987).

For purposes of calculating the seasonal volumes of subsurface groundwater flow within the IRWMP boundaries, the aquifer parameter of interest is that of horizontal hydraulic conductivity, typically expressed in feet per day (ft/day) or gallons per day per square foot (gpd/ft^2). For an area as large as the IRWMP, which contains a heterogeneous mixture of aquifers, aquitards and aquicludes, the published values fall within several orders of magnitude (particularly considering the aquitard deposits). A summary of reference hydraulic conductivity values (or permeability) is provided in Table 4-6, Summary of Aquifer Hydraulic Conductivity Values.

TABLE 4-6
SUMMARY OF AQUIFER HYDRAULIC CONDUCTIVITY VALUES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Reference	**Aquifer System**	**Representative Horizontal Hydraulic Conductivity Values (gpd/ft^2)**
CH2M Hill/Fugro West, Inc. (in Dames & Moore, 1999)	Semiconfined	750
Naugle (2001)	Alluvial unconfined Continental deposits, confined	70 to 1,000 7 to 80
Croft & Gordon (USGS, 1968)	Alluvial unconfined Continental deposits, confined	10 to 100 1 to 270
Alta Irrigation District Groundwater Model (Kings River Conservation District, 1992)	Semiconfined aquifer	80 to 1,270
USGS Central Valley Model (Bertoldi et al. 1991)	Confined aquifer	About 20
Ludorff & Scalmanini (in Jones & Stokes, 1997)	Alluvial unconfined	15 to 20
Schmidt (1994)	Semiconfined	10 to 200
Harter (2002)	Unconfined to Confined	1 to 750
Southern California Edison (July 2002)	Unconfined to Confined	About 100 to 1,000

As indicated in Table 4-6, the horizontal hydraulic conductivity values range from about 1 gpd/ft^2 for the confined aquifer found in hydrologic units west of U.S. Highway 99 to as high as 1,000 gpd/ft^2 in the easterly part of the IRWMP Plan Area. The published values are clearly gross estimates of this aquifer parameter.

Specific yield volumes for the IRWMP Plan Area range from about 6.5 to as high as 13.7 percent. Calculations of the annual changes of groundwater in storage under the IRWMP Plan Area rely on these values. Estimates of the *total* volumes of groundwater in storage were similarly based on work by Davis, weighted according to the thickness and distribution of aquifers and aquitards throughout the Plan Area. The application of such “average” values is considered an approximation only.

4.9.1.2 Aquifer Numerical Values

Most wells within the KDWCD's water level measurement program provide excellent records of both Spring and Fall water level conditions and many contain measurements that extend back to the 1950s.

B&E (1972) provides some distinction between unconfined and confined water elevation surfaces within the KDWCD. The basis for such separation and which wells were used for contouring is not known. B&E also noted that "it was found that many of the wells measured drew from more than one aquifer system and water level measurements therein reflected a composite of the water levels." As noted by Bertoldi et al. (1991), the regional groundwater flow pattern in the Central Valley is strongly influenced by numerous clay and silt lenses. Two concepts of flow are advanced that apply to the Plan Area. The concepts of flow consider: 1) an unconfined and confined aquifer system separated by a regional aquitards (such as the Corcoran clay) and 2) a flow system consisting of a single heterogeneous aquifer with varying vertical leakage. The latter concept is accepted to prevail based on the hydraulic response of the aquifers to pumping.

Many wells in the IRWMP boundary west of U.S. Highway 99 penetrate and perforate aquifers above and below the Corcoran clay and provide significant vertical leakage and hydraulic communication, which affects the pattern of groundwater movement and rates of regional recharge and discharge. An example of the significance of such direct leakage and communication between aquifers can be found in Malcolm Pirnie, Inc. (2001). The natural groundwater flow system has also been greatly altered by large-scale diversions and redistribution of surface water and conjunctive use programs.

For that portion of the Plan Area west of U.S. Highway 99, confined and semiconfined groundwater conditions also exist and, to the extent the piezometric surface in the confined aquifer (beneath the "E" clay or Corcoran clay) differs significantly from the unconfined water level surface, the total change of groundwater in storage considers storage changes in the confined (pressure) aquifer. The DWR prepared annual "pressure" system water level maps for the San Joaquin Valley through 1988. Pressure system contours were drawn by the DWR for the area surrounding and north of Corcoran; typically, only several pressure system contour lines were present for each year in this area. The KDWCD's database information supports a more or less common water level between the two aquifer systems. Considerable interaquifer groundwater flow must occur between the two systems (via wells with perforations in both systems). Storage change calculations for the unconfined system is accepted as appropriate for both systems and for the purpose of the water balance and perennial yield calculations.

4.9.1.3 Water Level Fluctuations

Specific to the IRWMP Plan Area, aquifers occur in unconfined and confined states. Water levels in an unconfined aquifer system coincide with the top of the zone of saturation, where hydrostatic pressure is equal to atmospheric pressure. Seasonal water level variations in such systems are typically subdued. In confined or artesian aquifers, waterbearing materials are completely saturated and are overlain by confining materials of low permeability, such as clay and fine silt, and water within the aquifer is under hydrostatic pressure. The hydrostatic head, or pressure, in such an aquifer is reflected by the height above the confining stratum to which water will rise in a well drilled to the aquifer. With the exception of the eastern portion of the IRWMP Plan Area, water level variations display confined aquifer responses.

Because the alluvial and continental deposits in the IRWMP Plan Area are characteristically heterogeneous in composition, containing individual strata of low permeability that generally exhibit little or no continuity, most aquifer systems are, in fact, semiconfined. Such aquifers respond to pressure changes over short periods of time, but hydrostatic heads reach equilibrium with unconfined water table over extended periods of static, nonpumping conditions.

B&E (1972) provides a discussion of average coefficients of hydraulic conductivity values for "typical" aquifer systems in the KDWCD. These aquifer systems include the younger alluvium and older alluvial deposits associated with Kaweah River fan deposits and continental deposits both above and below the Corcoran clay (E-clay).

Average coefficients of horizontal hydraulic conductivity in gpd/ft2 were derived by B&E from a tabulation of pump test data from various sources including the USGS and from an independent review of SCE pump efficiency or hydraulic efficiency tests for about 200 wells in the KDWCD. The locations of such wells used by B&E are not provided. The USGS data referenced by B&E presumably derive from Croft and Gordon (1968). Aquifer parameter values used to evaluate subsurface flow are provided below in Table 4-7, Aquifer Numerical Values.

TABLE 4-7
AQUIFER NUMERICAL VALUES
KAWEAH RIVER BASIN
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

KDWCD Hydrologic Unit No.	Aquifer System	Average Thickness of Saturated Aquifer (feet)	Average Coefficient of Permeability (gpd/ft^2)
I	Older alluvium (oxidized)	150	750
	Older alluvium (residual)	50	500
II, III, IV	Older alluvium (oxidized)	250	500
	Older alluvium (residual)	250	250
	Younger continental deposits	150	150
	Older continental deposits	800	70
V	Older alluvial deposits	150	250
	Younger continental deposits	150	150
	Older continental deposits	800	70
VI	Older alluvial deposits	100	250
	Younger continental deposits	200	150
	Older continental deposits	1,000	70

The values above were used with the KDWCD GIS database to calculate volumes of subsurface flow.

4.10 ECOLOGICAL PROCESSES AND ENVIRONMENTAL RESOURCES

4.10.1 Aquatic Sensitive Species

As the Kaweah River system is an ephemeral system, no fishery of any type exists in the River system below Terminus Dam. As the upper boundary of the IRWMP coincides with the axis of Terminus Dam, aquatic species are limited to invertebrates inhabiting the River system and the man made water distribution systems existing on the valley floor. As a part of the management of the requirements of the Irrigated Lands Regulatory Program, routine samples have been taken of sediments throughout the IRWMP area and tested for toxicity. While these invertebrate species can tolerate some degree of physical disturbance, they have a very low tolerance for chemical molestation which has generated the need for periodic toxicity testing.

Throughout the entire historical test period extending from July, 2004, to date, a single location within the entire River distributary system has been identified as to having had a toxicity problem effecting invertebrates. This location is identified as Cross Creek immediately west of Highway 99. It has been determined that the toxicity occurrences were not as a result of irrigated agriculture operations, but rather herbicide application programs related to either the State of California and/or the Union Pacific Railroad. Studies are ongoing with respect to the source(s) of the contamination.

4.10.2 Freshwater Habitats

As previously noted, the climate characteristics of the IRWMP Plan Area are semi-arid. This fact, coupled with the ephemeral stream nature of the Kaweah River system, has led to freshwater habitats existing in only a few locations. In the easterly portion of the IRWMP Plan Area, sand, gravel and hard rock mine areas in their reclamation phase provide the most significant freshwater habitat. In these areas, groundwater flows into the prior mine site areas and creates the subject habitat. The acreage of this type of habitat is likely to stabilize at the current level moving forward in the future, as current reclamation plans call for mine sites to be configured in a “dry” condition in reclamation, principally to avoid the negative impact of the considerable evaporation of groundwater which occurs off of these water surfaces, in perpetuity. A number of mine sites either are currently planned with this “dry” form of reclamation or are being planned in that configuration.

The second form of freshwater habitat which exists within the IRWMP Plan Area is that related to golf course water hazards. The acreage of these hazards is relatively small and in some cases, these hazards are dried up in all but wet years due to the cost of the water to place in the hazards, as well as being a Best Management Practice as delineated in a particular area’s Urban Water Management Plan.

4.10.3 Areas of Special Biological Significance

A few areas of special biological significance exist within the IRWMP Plan Area. Notably amongst these is the 324 acre Kaweah Oaks Preserve, managed by the Sequoia Riverlands Trust. This area is a remaining remnant of the Valley Oak Riparian forest and is managed to be preserved in that state. Complimenting that area is an 80 acre parcel on the south side of State Highway 198 which is owned and managed by KDWCD. It also is a remnant of the Valley Oak Riparian Forest, however, a portion of said site has been historically farmed. Construction was recently completed to restore the farmed portion of the site back to a riparian condition with the site to be utilized as a groundwater recharge and flood management facility, specifically to benefit the downstream areas of the City of Farmersville and the Linnell Farm Labor Camp. To the northeast of the Kaweah Oaks Preserve, a 1,440 acre site owned by the Lindsay-Strathmore Irrigation District and identified as Kaweah de Ranchos is a similar remnant of the Valley Oak Riparian Forest. Utilized by said irrigation district historically as its well field where water was extracted to satisfy agricultural demands in the Lindsay-Strathmore area, litigation over groundwater mining and export ceased that operation with the advent of the Friant Division of the Central Valley Project. The irrigation district continues to own the property, maintaining it in its riparian state where the only activities are grazing of cattle on native pasture and a small area recently planted to walnut trees.

In the easterly portion of the IRWMP Plan Area, a few small examples exist, on private property, of the historic hog wallow, or mima mound characteristics which were typical of that area prior to land grading operations associated with irrigated agriculture.

The final example of an area biological significance is the 725 acre J.K. Herbert Wetlands Prairie which is located south of the Tulare-Lindsay Highway and is also owned and maintained by the Sequoia Riverlands Trust. This area is described as a Wetland Prairie Grassland Habitat which also contains, in the southeastern portion, a number of vernal pools.

4.11 NATURAL HAZARDS REQUIRING EMERGENCY PLANNING

4.11.1 Severe Storms and Flooding

Compared to the balance of the continental United States, the IRWMP Plan Area is blessed with few natural disaster based events. Flooding events, however, do occur and are attenuated through two (2) basic management techniques. The first of these is the construction and recent enlargement of Terminus Reservoir and its related dam which has reduced the flooding impact on the Kaweah River fan to an infrequent and reduced – damage basis. Uncontrolled stream group related flooding, such as occurs during significant rainfall events on the Dry Creek and Lewis Creek watersheds brings rise to the call for assistance from the State Office of Emergency Services coordinated with the like services division of the counties of Kings and Tulare. The KDWCD is in alert mode during these events as the entity operates, under contract with the Association, the management of flows in the valley floor natural channel system.

4.11.2 Earthquakes

While the IRWMP Plan Area experiences a periodic ground trembler, there are no identified active faults within the IRWMP boundary. Reliance on the early warning system and post-event notification process of the U.S. Geologic Survey is the most noted service related to earthquake based events. As with the flood events, emergency steps taken in response to damaging earthquakes would be coordinated through the Office of Emergency Services.

4.11.3 Fire

While the area easterly of the east boundary of the IRWMP is subject to fire threat and periodic fires of both human and natural origin, the actual IRWM area sees household and business structure fires and a periodic stacked hay fire. These events are controllable without area-wide catastrophic effects as would be experienced if the area were forested. Services of both the County of Tulare and the County of Kings through their county based systems, as well as the State of California through the CalFire Division are the principal responders for suppression of fires within the area.

4.11.4 Drought

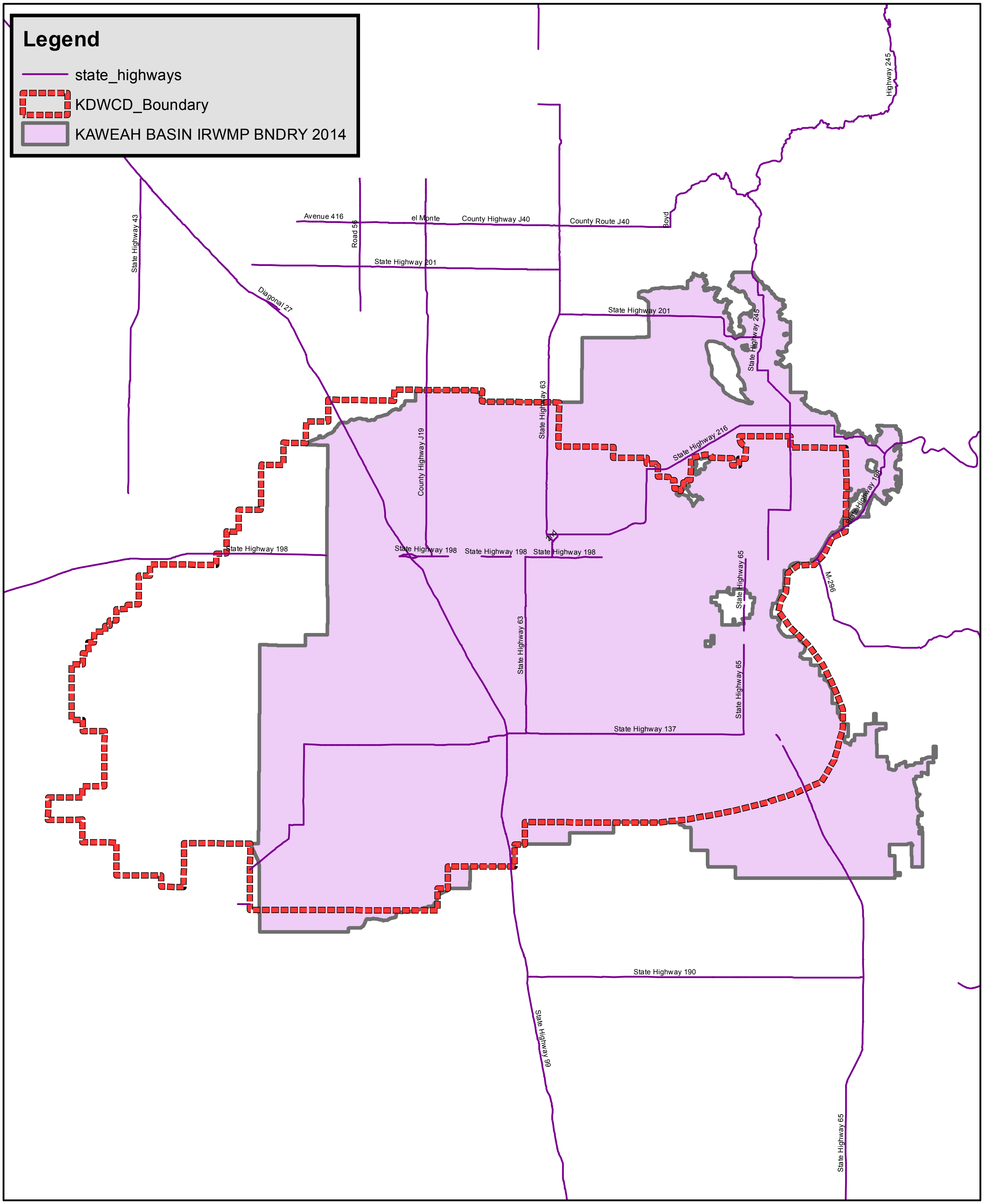
As demonstrated in recent years, the only proactive responders to drought conditions, from a management perspective, are the local water management agencies. No assistance is provided to the IRWMP Plan Area by any State agency, other than, based on the Governor's declaration of a drought situation, low interest loan financing for agricultural operations. The majority of drought related planning is the advance groundwater recharge efforts which are undertaken by the water management agencies within the IRWMP boundaries seeking to mitigate the effects of drought by having the maximum volumes of water in storage in the groundwater reservoirs during a drought condition period.

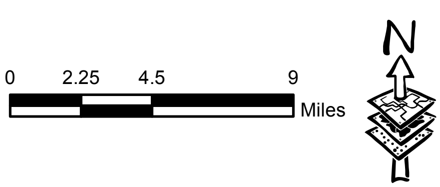
Consideration of lack of surface water supply is typically only taken into account with respect to the individual agricultural operator, as there is no land use planning in the agricultural segment by an agency of jurisdiction which considers the adequacy of water supply as a management consideration.

Only recently and based on invoking State-level legislation, has the issue of adequacy of water supply for subdivision, commercial and industrial development proposals been a consideration. Current requirements call for indication to be given to land use planning decision makers with respect to the adequacy of water supplies for proposed developments, prior to development plan approval.

Instruments currently exist, previously thought to be of adequate capability, to be incorporated into local groundwater management plans to address water supply adequacy issues during drought conditions. It is only of late that serious discussion has taken place with regard to initiating an evaluation of the adequacy of the base from which groundwater control decisions would be made by local governing agencies. It is specifically for this reason that the KDWCD Board of Directors has embarked on improved methodologies for estimating water use and water balance within the Kaweah River Basin and look to provide additional information to water users within the Kaweah River Basin with respect to water use and water balance. Completion of initial organizational steps to implement the Sustainable Groundwater Management Act is approaching and full implementation is sure to change the management of groundwater supplies moving forward into the future.

FIGURE 4-1





DISTRICT BOUNDARY

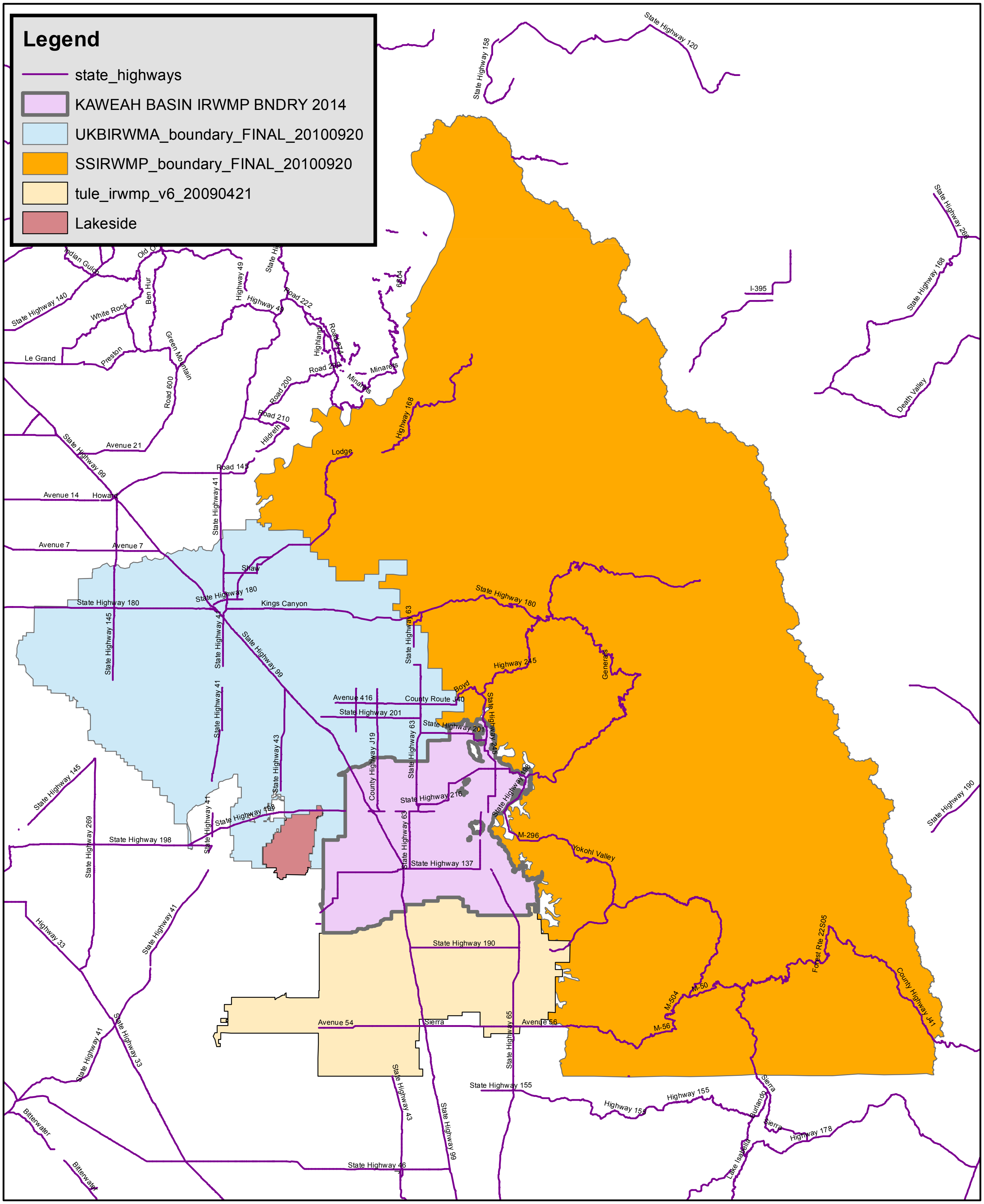
KAWEAH RIVER INTEGRATED WATER MANAGEMENT PLAN

KAWEAH DELTA WATER CONSERVATION DISTRICT

KELLER/WEGLEY

S:\KDWCD\IRWMP\Figure 4-1 District Boundary.mxd

FIGURE 4-2



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ADJACENT PLAN BOUNDARIES
KAWEAH RIVER INTEGRATED WATER MANAGEMENT PLAN
KAWEAH DELTA WATER CONSERVATION DISTRICT

KELLER/WEGLEY

S:\KDWCD\IRWMP\Figure 4-2 Boundary Comparison.mxd

CHAPTER 5

HISTORY OF WATER AND WASTEWATER MANAGEMENT

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 5
HISTORY OF WATER AND WASTEWATER MANAGEMENT

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

5.1 KEY WATER MANAGEMENT MILESTONES

5.1.1 Terminus Reservoir

Lake Kaweah is located on the main branch of the Kaweah River about 20 miles east of Visalia. Terminus Dam, built in 1962 by the U.S. Army Corps of Engineers (USACOE), provides flood protection and irrigation water to downstream interests. The earthfill dam is 250 feet high and has a gross pool elevation of 694 feet mean sea level (m.s.l.), originally providing 142,000 acre-feet of storage capacity. Lake Kaweah inundated approximately 1,945 acres at maximum pool, flooded nearly 5 miles of river and varied from 700 to 9,000 feet wide.

The Southern California Edison Company owns and operates three (3) small hydroelectric plants upstream from Terminus Dam. In addition, the Kaweah River Power Authority operates a 17-megawatt hydroelectric power plant which was retrofitted to Terminus Dam in 1990.

Terminus Dam was authorized by the 1944 Flood Control Act. The total gross reservoir capacity at construction was 150,000 acre-feet with 142,000 acre-feet reserved for flood control and irrigation water supply and 8,000 acre-feet to store sediment. When constructed, the frequency of uncontrolled spills from Terminus Dam was at about a 60-year event. Revised hydrologic information, however, showed that the frequency of uncontrolled spills from the Dam was about a 46-year event.

As a result of that analysis, a project was undertaken, recently completed and now in operation which raised the water level of Lake Kaweah by 21 feet. This was accomplished by retrofitting the dam spillway with tilting concrete fusegates, six (6) in number. When flows cause the level of Lake Kaweah to rise to 715 feet m.s.l., the first fusegate tilts and is displaced from its position and swept downstream. In the process, the fusegate is destroyed, breaking up into smaller sections. Relief is provided to the dam by the increased area for flows to be directed. If flows continue to increase and the water elevation continues to rise, the remaining five (5) fusegates tilt and are displaced in a sequential fashion until the spillway is back to its original configuration.

As a result of the construction, total lands acquired were approximately 620 acres, including 370 acres which is inundated in the reservoir area. The Highway 198 bridge over Horse Creek was rebuilt at a higher elevation immediately upstream of the then existing bridge. Vault toilets were relocated, existing boat ramps extended and a new launching ramp area was created and constructed. Additional property related activities were undertaken including acquisitions, protection levees, road elevation increases and dwellings purchased and removed.

The project resulted in an additional gross storage increase of 42,600 acre-feet. Downstream flood protection levels were increased to above the 60-year event and an additional safe yield of 8,500 acre-feet was developed.

5.1.2 Friant Division, CVP

In 1933-34, when the State of California could not find enough takers to buy revenue bonds to complete the California Central Valley Project Act, it went to Washington seeking assistance. The passage of the Rivers and Harbors Act of 1935 by the Congress put funding under Federal direction and construction under the USACOE. By order of the President, $20 million was transferred from the Emergency Relief Act Fund to the Department of the Interior, Bureau of Reclamation (Reclamation), for construction of Friant Dam and other initial features on September 10, 1935. The President signed the Act later that year.

Between 1935 and 1940, the population of the San Joaquin Valley exploded: Tulare County increased by 38.4 percent, Kings County by 38.5 percent and Kern County by 63.6 percent. Reacting to a wartime demand, cotton became California's outstanding crop by the mid- 1940s, displacing citrus. The lands of the Friant Division were no different, as cultivating and picking cotton drove each of the four counties' economies. Almost a half-century later, by the 1990s, approximately 15,000 small farms, averaging 63 acres each, were spread throughout the Friant Division.

Estimated cost of the Friant Dam and Reservoir came in at $14 million, the Friant-Kern Canal came in at $26 million and the Madera Canal was $3 million. The Water Project Authority represented the State of California in negotiations with the Federal Government. In March, 1936, the Authority signed a cooperative agreement with the United States creating three (3) divisions, including Friant, for the Central Valley Project. Six (6) months later, the Authority approved Reclamation's prospective location of the Friant Dam and the Bureau's design of the dam and canals. Central Valley Project legislation was reauthorized as the Rivers and Harbors Act of 1937. Along with Friant Dam and the Friant-Kern and Madera Canals, initial major features authorized were Shasta and Keswick Dams, the Tracy Pumping Plant and the Delta-Mendota Canal. The amendment transferred a $12 million authorization from the 1935 Rivers and Harbors Act earmarked for flood control and navigation to Department of the Interior. More importantly, the 1937 Act placed the CVP under Reclamation law. Additional funding under the Rivers and Harbors Act of 1940 allowed for improvement of certain rivers and harbors in the interest of national defense.

To capture and control the San Joaquin River, Reclamation, in the mid-1930s, designed a straight, 319-foot high concrete gravity dam that would impound a half-million acre-feet of flows from the River. The first surveys for the Friant Dam commenced in November, 1935 and studies of where to excavate for two (2) delivery canals followed in early 1936.

Because of the dual complexities of moving water from one watershed to another and diverting the natural flow of the San Joaquin, a number of water rights claims had to be settled before construction progressed. California water law provides for riparian rights entitling a land owner on a stream to the full beneficial use of the stream's natural flow. Reclamation could not divert water away from a stream until it settled the question of downstream water rights. Reclamation settled negotiations with the holders of the largest water rights claims on the San Joaquin in the spring of 1939.

Friant Dam was located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. The dam controls the San Joaquin River flows, provides downstream releases to meet requirements above Mendota Pool and provides flood control, conservation storage and diversion into the Madera and Friant-Kern Canals. It allows for delivery of water to a million acres of agricultural land in Fresno, Kern, Madera and Tulare Counties in the San Joaquin Valley. The reservoir, Millerton Lake, first stored water on February 21, 1944. It has a total capacity of 520,528 acre-feet, a surface area of 4,900 acres and is approximately 15 miles long. The amount of flood control storage space is dictated by a USACOE Reservoir Regulation Manual.

In the Friant Division, there are three (3) separate River and canal outlets: the River outlet works, the Friant-Kern Canal and the Madera Canal. The River outlet works consist of four (4) 110-inch-diameter steel pipes through Friant Dam that are controlled by four (4) 96-inch-diameter hollow-jet valves at the outlet ends. The valves release water down a chute and into a stilling basin, which dissipates the water's energy. The capacity of the four (4) hollow-jet valves is 16,400 cfs, however, the flow through the valves seldom exceeds 100 cfs. Small releases to the River flow through two (2) 24-inch-diameter steel pipes branching from Penstocks 3 and 4. Releases are controlled by two (2) 18-inch-diameter needle valves at the outlet ends.

The Friant-Kern Canal outlet works are located on the left side of the spillway. They consist of a stilling basin and four (4) 110-inch steel pipes through the dam. These pipes are controlled by four (4) 96-inch-diameter hollow jet valves at the outlet ends. The hollow-jet valves release water down a chute and into a stilling basin, which dissipates the water's energy.

The Friant-Kern Canal carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four (4) miles west of Bakersfield. The water is used for supplemental and complete irrigation supplies in Fresno, Tulare and Kern Counties. Construction of the canal began in 1945 and was completed in 1951. The canal has an initial capacity of 5,000 cubic feet per second that gradually decreases to 2,000 cubic feet per second at its terminus at the Kern River.

More than 350 overhead and underground telephone lines, telegraph lines, power lines, and oil and gas lines were moved to higher elevations or relocated during construction of the Friant-Kern Canal. Heavy crawler tractors and bulldozers that were equipped with attachments to cut roots below the surface burrowed through vineyards and orchards. Along a 113-mile reach between the dam and the White River, more than 500 different structures, including overchutes, drainage inlets, irrigation crossings and turnouts were built. During construction, placement of concrete lining was aided by the use of a traveling gantry. Almost 85 percent of the canal is concrete-lined. In those sections, the canal's maximum top width is 128 feet, decreasing to a bottom width of 24 feet, with water depth dropping from 19.9 to 11 feet. In the earth-lined sections, water depth varies and the canal bottom width ranges from 64 to 40 feet.

5.1.3 State Water Project

The California State Water Project, commonly known as the SWP, is a state water management project under the supervision of the California Department of Water Resources (DWR). The SWP is the world's largest publicly built and operated water and power development and conveyance system. It provides water for drinking purposes to more than 23 million people and generates an average of 6.5 MWh of hydroelectricity annually. It is also the largest single consumer of power in the State with a net usage of 5.1 MWh.

The SWP collects water from the Feather River in Northern California and conveys it to water scarce, but populous areas to the south through a network of aqueducts, pumping stations and power plants. Approximately 70 percent of the water provided by the SWP is used for urban areas and industry and, Southern California and in the San Francisco Bay area. The remaining 30 percent is used for irrigation in the Central Valley and the Central Coastal Range. The SWP shares several facilities with the Federal CVP. Water is often interchanged between SWP and CVP facilities, as needed, to meet peak requirements for the separate project constituents.

With construction beginning in 1960, the SWP required the construction of 21 dams and more than 700 miles of canals, pipelines and tunnels. To date, the SWP has only delivered an average of 2.4 million acre-feet annually, as compared to total contractual entitlements of 4.23 million acre-feet. Environmental concerns caused by the dry-season removal of water from the Sacramento-San Joaquin Rivers Delta have often led to further reductions in water delivery declarations.

In development for a number of years, ground was broken for Oroville Dam in 1961 and, in 1963, work began on the California Aqueduct and San Luis Reservoir. First deliveries to the South Bay area were made in 1962 with irrigation deliveries to the San Joaquin Valley by 1968. In 1973, the pumps and East and West branches of the California Aqueduct were completed and the first water delivered to Southern California. A Peripheral Canal, which would have carried SWP water around the Sacramento-San Joaquin Rivers Delta, was rejected in 1982 by voters due to a combination of environmental and economic concerns. The Coastal branch was completed in 1997.

5.2 HISTORY OF WASTEWATER MANAGEMENT

5.2.1 Cities

In the late 1940s and early 1950s, population concentrations and single-family residential adjacencies worked to create a basis for review of use of septic tanks and subterranean disposal systems for the purpose of wastewater treatment and disposal. The primary agency of jurisdiction during the decade plus of initial planning was the Department of Public Health of the State of California. The agency acted in an advisory and assistance role to bring about elimination of adverse contamination situations and, to a minor extent, the avoidance of new conditions of that type. Initial treatment processes utilized were typically primary in nature, with the majority employing Imhoff Tanks and ponding prior to either land spreading or discharge to adjacent waterways. The construction of collection systems associated with these treatment and disposal facilities were the primary objective as they conveyed sanitary sewerage and commercial wastewaters away from the sources of domestic supply which were predominantly individual groundwater extraction wells for small, stock mutual water companies. Groundwater levels, for the most part, were shallow with many individual wells being point driven, in lieu of being drilled. If sanitary seals existed, they were almost exclusively of the surface type. Both drinking water facilities and subterranean effluent disposal facilities were frequently subjected to inundation and saturation due to surface flood flows which occurred frequently during the winter months due to the concentration of housing along waterways and the lack of any storm or flood management capability.

Over time, these facilities began to be modified due to increased population and related connections. The water source orientation of the Department of Public Health was replaced with the pollution prevention and beneficial use protection orientation of the State Water Resources Control Board and its associated Regional Water Quality Control Boards. Staffing of the RWQCB was very limited into the middle 1970s with the Fresno office of the RWQCB having three (3) engineers on staff covering an area from Merced County south through Kern County and from the coast range to the Sierra Nevada's. Introduction of objective standards and enforcement provisions embodied in waste discharge orders continued to take shape over time, bringing about changes in treatment methodologies which were utilized, curtailment of discharges to surface water bodies and brought the requirement and necessity for trained and experienced operators.

Availability of supplemental grant funding, beginning with Federal Public Law programs such as PL92-500 and supplemented with State grant funds, brought about an era of construction of treatment and disposal facilities not paralleled in any other time frame. In many cases, entities were able to secure funding for up to 97.5 percent of a total project's cost.

In addition to facilities planning, location planning also took a more prominent position beginning in the late 1970s. Facilities were located at a greater distance downslope from the city and/or community which they served in order to allow for growth between the population center and the treatment facilities. In some cases, this location was due to odor, fly and vector concerns which were all appurtenant to treatment and disposal facilities and their related operational procedures during this period of time. Over time, increased concern with respect to groundwater quality and receiving water quality has brought about improved treatment facilities, drastically altered facilities and procedures related to solids handling and disposal and the virtual elimination of discharge to receiving waters. In most cases, treated effluent is totally reused and put to beneficial use, in lieu of pumping groundwater.

This history applies to each of the cities within the Integrated Regional Water Management Plan (IRWMP) area of the Kaweah River Basin Regional Water Management Group. Advanced secondary facilities now serve each of the cities within the IRWMP Plan Area including Exeter, Farmersville, Lindsay, Tulare, Visalia and Woodlake. Taking the next step forward, the City of Visalia has recently completed contracts which provide tertiary treatment to a portion of the existing plant inflow, have eliminated their discharge to the water body identified as Mill Creek and, in conjunction with the Tulare Irrigation District, constructed an intertie pipeline to put the treated effluent to direct use for agricultural crop irrigation and groundwater recharge. In exchange for this treated supply, the Tulare Irrigation District has contractually assigned a portion of its rights to surface waters to the City to utilize for groundwater recharge purposes upslope of the City limits in order to offset a portion of the groundwater pumping which occurs as a result of the California Water Service Company’s extraction of groundwater to meet the demands of the City residents.

5.2.2 Rural Areas

Paralleling the activities of cities within the IRWMP Plan Area, aggregations of houses and related commercial and industrial activities in the smaller unincorporated communities have followed suit with the cities. Treatment and disposal facilities were constructed beginning in the early 1950s which have been modestly upgraded since that time. Qualified operational personnel are now a matter of fact, as is the relationship with the RWQCB with its related Waste Discharge Requirements. The facilities associated with these rural communities have been upgraded and enlarged on a much less frequent basis than the cities due, in large part, to the fact that most of the population growth has occurred within the cities. In some cases, the lack of size, but with adverse water quality issues to address, has brought rise to the County of Tulare constructing and operating facilities to the benefit of the residents of certain areas. The economics of these installations and of the dischargers is such that, however, the costs are currently being subsidized by the Tulare County General Fund, with costs reflecting the lack of economy of scale existing at either the city or larger special district operated systems level. At the current time, each of these systems is in compliance with the applicable orders which have been adopted governing both operational and discharge issues.

5.3 HISTORY OF INTEGRATED REGIONAL WATER RESOURCE MANAGEMENT

5.3.1 Interagency Planning and Integrated Water Supply Development

As introduced in Chapter 2 of this IRWMP, a significant level of cooperation, planning and joint water management exists. Many of the agreements which are in place call for routine meetings to take place, both of staff, as well as of elected officials and adequately funded budgets accompany each of these efforts. As the current drought situation is adequately demonstrating, the prominent position of water management of multiple types is front and center to parties such as elected officials, financing institutions, commercial and residential property developers and businesses looking to locate to or expand into the IRWMP Plan Area. As also discussed in Chapter 2, these efforts have been ongoing for decades and were not originally developed in an attempt to secure any available funding stream, but rather were constructed during a time when virtually no funds were available for water infrastructure development and local individuals felt that that paradigm was not going to change in the near-term. They proceeded to generate their own policies, procedures and efforts to implement structured water management within the IRWMP boundary. The same basis existed with respect to facilities construction with only those facilities related to flood control being funded by parties outside of the area. With respect to the development of facilities related to the availability of water from the San Joaquin River through the Friant Division of the CVP, significant debt was incurred by the property owners at the time when those contracts were signed. Now, some 60-70 years later, those debt instruments have been retired and new debt instruments are being generated as a result of the original infrastructure coming to the end of its useful life. Based on the critical nature of imported water supplies to the area, all elections to date to increase both land based assessments, and water based assessments pursuant to the implementing provisions of Proposition 218, have successfully passed providing a basis for development of adequate infrastructure in order to be able to enjoy the benefits of the imported water supply extending forward into the future.

5.3.2 Integrated Management of Resources and Operational Systems

As a result of costs associated with experienced personnel and, in some cases State licensed personnel, sharing of services is a routine matter, particularly with respect to the operations of many of the medium and small sized utilities. The cost of equipment and the proper maintenance of same has led to multiple sharing agreements wherein items of equipment such as sewer line cleaning machines, generators, backhoes and dump trucks are commonly shared between two (2) or more public agencies in order to have the equipment available, without the impact of having to bear the full cost.

Licensed operators, once solely dedicated to a single facility, now are being shared between facilities with several conducting ongoing education and experience programs in order to increase the number of operational personnel which are available.

A recent area of growth related to shared services is that associated with technology. Use of electricians experienced with the more sophisticated water pumping systems which are currently being installed, experienced machinists maintaining sophisticated metering equipment, cogeneration equipment and even in some cases, disinfection equipment, are significantly more common in recent years. The information technology segment exemplifies the most extreme of these situations wherein drastic changes have occurred in billing systems, accounting systems and human resources related systems, each of which is associated with software and hardware of varying generations, but moving toward obsolescence over time. Sharing of expertise with respect to each of these systems is increasingly common amongst the water management agencies within the IRWMP Plan Area.

5.3.3 Integrated Management of Emergency Operations

Often led by management personnel of special districts or supervisorial personnel at the city levels, coordinated operations plans and agreements have been put into place with numerous agencies. Inventories of available equipment distinctly associated with each entity are shared so that each party is fully informed of the resources which are available and, in many cases, interagency cooperating agreements have been put into place, for the most part, to ensure priority to access emergency pooled equipment in the event of an emergency or disaster situation. Most of these agreements exist outside of structured emergency services coordinators which exist at both the County and State levels. The resources available to these entities are also tracked, but are supplemental to the local resources, in most cases.

5.3.4 Interagency Adaptive Management Response to Changing Circumstances

Previously noted was the recent revamping of the City of Visalia wastewater treatment and disposal facilities and the relationship between the City of Visalia and Tulare Irrigation District. In determining to cease disposal of treated effluent into Mill Creek, the City sought out a program which would not only help offset some of the increased costs associated with going to tertiary treatment and ceasing the surface water discharge, but also to effect an exchange whereby high quality surface water could be directed to recharge upslope of the City for beneficial recharge purposes.

In a similar fashion, the recently completed resource exchange agreement between the Ivanhoe Irrigation District and the Kaweah Delta Water Conservation District (KDWCD) resulted in a multiple point resource exchange. Assignment of a portion of IID's Friant Division, CVP contract supply to KDWCD was accomplished, particularly the non-storable Class 2 supply. This supply is valuable to the KDWCD as one of its principal purposes is groundwater recharge and both the timing and cost associated with Class 2 supplies are in keeping with the financial capabilities of the KDWCD to continue these recharge efforts. In the exchange, IID received an assignment of a portion of KDWCD's storage rights in Terminus Reservoir, which they could utilize to store some of their entitlement from the Wutchumna Water Company, a supply which lacked capability to be stored from the springtime assignment of the entitlement until the summertime when growers preferred to take delivery of the supply to meet peak summertime demands. In addition, a portion of the water right of the KDWCD to Longs Canal Company was assigned to IID to further improve their normal, below normal and dry year supplies. In all cases, the combination of the exchanged resources resulted in an improved dry year to normal year condition for IID and an improved groundwater augmentation position for KDWCD.

The circumstances which brought about these changes are very different in nature. On one hand, increasing regulatory requirements and associated cost were a prime set of factors in determining to eliminate the City of Visalia's discharge to Mill Creek. In the other case, impacts related to San Joaquin River Restoration, decreasing groundwater availability conditions and augmentation of dry year supplies were major factors in the IID/KDWCD resources exchange. It is a given that additional interagency efforts will be pursued in the future and like the two (2) referenced here, will have their own set of special circumstances bringing the parties together for joint benefit outcomes.

CHAPTER 6

RESPONSIBLE ENTITIES, MAJOR INFRASTRUCTURE AND WATER SUPPLIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 6

RESPONSIBLE ENTITIES, MAJOR INFRASTRUCTURE AND WATER SUPPLIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

6.1 WATER SERVICE PROVIDERS

6.1.1 Domestic Water Service Providers

Based on the geographic coverage of the Integrated Regional Water Management Plan (IRWMP) of the Kaweah River Basin Regional Water Management Group (Kaweah River Basin), there are numerous providers of domestic water service within the IRWMP area. The nature of these providers varies from municipal agencies to special districts to private stock mutual water companies to for-profit corporations.

Listed in Table 6-1 are the municipal suppliers and in Table 6-2 are the special district providers. In Table 6-3 the mutual water companies are presented and in Table 6-4 the for-profit corporations are listed. In each of these cases, the noted suppliers operate under permit from the Department of Public Health. Corporations have to address agency related issues for their water supply permit and the California Public Utilities Commission for their financial affairs and rates. The same is true of the private stock mutual water companies.

TABLE 6-1
MUNICIPAL SUPPLIERS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

City of Exeter
City of Farmersville
City of Lindsay
City of Tulare
City of Woodlake

TABLE 6-2
SPECIAL DISTRICT PROVIDERS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Goshen Community Services District
Ivanhoe Public Utility District
Kaweah Delta Water Conservation District
Patterson Tract Community Services District
Tract 92 Community Services District

TABLE 6-3
STOCK MUTUAL PROVIDERS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Akin Water Company
East Tulare Villa
Lemon Cove Water Company
Linnell Farm Labor Center
Mooney Grove Mobile Manor
Mountain View Mobile Home Park
Sierra Shadows Mobile Manor
Soults Mutual Water Company
Sunrise Mutual Water Company
Tooleville Mutual Non-Profit Water Association
Tract 396 Mutual Water Company
Tulco Water Company (CWS)
West Goshen Mutual Water Company
Yokohl Mutual Water Company, Inc.

TABLE 6-4
FOR PROFIT PROVIDERS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

California Water Service Company

6.1.2 Irrigation Water Suppliers

As is the case with the domestic water suppliers, there are a myriad of entity types providing irrigation water. Some are public agencies and some are private stock mutual corporations. In the case of the private stock mutuals, they are governed by their stockholders, however, are subject to the payment of both State and Federal taxes for profits gained as a result of the company operations. In some cases, private stock mutual corporations hold water rights directly and in others, hold water rights through an overlying mechanism, such as an association. Further, within the IRWMP Plan Area, entities hold water rights on a pre-1914 basis to waters of the Kaweah River and/or have contractual rights to water made available through a contract with the United States for Central Valley Project water through the Friant Division. In addition, the City of Visalia is a subcontractor to the County of Tulare for water made available in the Sacramento-San Joaquin Rivers Delta which is exchanged into the area by virtue of the City's interest in the Cross Valley Canal.

Presented in Table 6-5 are the California Irrigation Districts, in Table 6-6 are the California Water Districts and in Table 6-7 are the mutual stock entities. The City of Visalia's position is not presented in tabular form as their delivered supply is to recharge in support of the systems operated by California Water Service Company.

6.1.3 Recreational Pools

As a part of the operations of both Terminus Reservoir and Success Reservoir, provision has been made for a portion of the conservation storage space to be assigned to a recreation pool designation. Water necessary to maintain each pool against evaporation losses is provided from the water rights held by the County of Tulare. While an in-depth presentation of current water rights is not an element of this IRWMP, the use of the County's rights for maintenance of these recreation pools is noted to be from rights which they hold which are of a pre-1914 nature. For the interested reader, the County of Tulare has previously directed the preparation of a

TABLE 6-5
CALIFORNIA IRRIGATION DISTRICTS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Exeter Irrigation District
Ivanhoe Irrigation District
Lindmore Irrigation District
Lindsay-Strathmore Irrigation District
Stone Corral Irrigation District
Tulare Irrigation District

TABLE 6-6
CALIFORNIA WATER DISTRICTS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Lewis Creek Water District
St. Johns Water District

TABLE 6-7
MUTUAL STOCK SURFACE WATER SUPPLY ENTITIES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Corcoran Irrigation Company
Evans Ditch Company
Farmers Ditch Company
Fleming Ditch Company
Foothill Ditch Company
Goshen Ditch Company
Hamilton Ditch Company
Hawkeye Ditch Company
Jennings Ditch Company
Longs Canal Company
Lemon Cove Ditch Company
Matthews Ditch Company
Modoc Ditch Company
Oakes Ditch Company
Peoples Ditch Company
Persian Ditch Company
Sentinel Butte Water Company
St. Johns Ditch Company
Sweeney Ditch Company
Tulare Irrigation Company
Watson Ditch Company
Wutchumna Water Company
Uphill Ditch Company

water rights inventory detailing their contractual and river related rights, a copy of which can be obtained from the County.

6.2 OTHER WATER MANAGEMENT AGENCIES

6.2.1 Kaweah Delta Water Conservation District

As was noted in the introductory portion of this IRWMP, the Kaweah Delta Water Conservation District (KDWCD) is the holder of a number of water rights, all of which are directed to the benefit of the groundwater underlying the KDWCD. The CVP contract rights which the District holds are in the form of a Class 1 contract in the amount of 1,200 acre-feet and a Class 2 contract in the amount of 7,400 acre-feet. These contracts are with the United States through the U.S. Bureau of Reclamation for supply from the Friant Division of the CVP. The District is also a pre-1914 water right holder on the Kaweah River, having purchased the Lower River rights in the 1960s, with a perpetual payment due to Tulare Lake bed interests for that acquisition. The KDWCD has entitlement to all of the historic Lower River rights. This right is divided into both a lower Kaweah River right and the right from the St. Johns River.

6.2.2 County of Tulare

In addition to the referenced pre-1914 water rights held by the County of Tulare on both the Kaweah River as well as the Tule River, the County also plays separate water management roles. The first of these is acting in a master contract capacity for 5,309 acre-feet annually of CVP water supply in the Sacramento-San Joaquin Rivers Delta which is allocated entirely to subcontractors within the County. All of these subcontract assignments are permanent in nature, with exception of an allocation of 100 acre-feet annually which is temporarily assigned to the Saucelito Irrigation District. The County retains the conveyance rights in the Cross Valley Canal associated with this supply. The County is in the process of working with the U.S. Bureau of Reclamation (Reclamation) to assign the subcontracted quantities on a permanent basis. The County would then withdraw from its contract position and each subcontractor would become a long-term contractor directly with Reclamation.

In addition, the County also acts in a role where they have worked to provide water supply, for domestic purposes, to specific disadvantaged rural areas. Within the KDWCD IRWMP Plan Area, the County performs this role for what is identified as the Wells Tract Zone of Benefit of County Service Area No. 1. This area is immediately easterly of the City of Woodlake and is provided with supply from said city. The responsibility, however, for maintenance of the distribution system and payment for the water supply, along with collection of monthly bills, has been assumed by the County. The County acts in this capacity for a number of other disadvantaged community areas within the County, however, the balance of the areas receiving this service are outside of the subject IRWMP boundaries.

6.2.3 County of Kings

While not a direct player within the IRWMP Plan Area, the County of Kings nonetheless performs a function which impacts water management within the IRWMP boundaries. Acting as a lead agency in the holding of contract water rights with the State of California, Department of Water Resources for State Water Project (SWP) supply, the County of Kings acts in an important position with respect to imported water. Groundwater conditions within the IRWMP boundaries improved markedly post-1972 when the first Water Resources Investigation of KDWCD was performed. Deliveries of water to the SWP service area westerly of the IRWMP boundary bolstered the declining water levels in that area and thus retarded the outflow of groundwater from the IRWMP region to the west. This trend is now being reversed as the historical levels of entitlement have ceased to be made available to the County of Kings for delivery due to a myriad of conditions ranging from water quality to endangered species to drought. It remains to be seen whether or not historical delivery levels can ever be achieved again and to what extent the groundwater underlying the IRWMP boundaries are impacted.

6.2.4 Friant Water Authority

At the time of the development of the Friant Division, CVP by the United States, the operation of Millerton Reservoir and the Friant-Kern Canal were conducted by Reclamation. Based on policy directives generated by the federal government and incorporated into the mission statement of Reclamation, private parties were sought out to take over the operation of federal facilities with the United States maintaining ownership. In the case of the Friant Division, the long-term contractors elected to form an organization specifically to contract for and deliver the administrative and operational functions associated with the operation of the canal and its related control facilities. The initial assumption of the Federal position was by the Friant Water Users Authority with the current organization, Friant Water Authority, being the successor organization. Under this paradigm, contractors have a direct relationship with the Friant Water Authority for day-to-day operations of the canal and the Authority has the day-to-day relationship with Reclamation. Reclamation continues to operate the Millerton facilities. A separate Authority has been formed by the Madera Irrigation District and the Chowchilla Water District to perform a similar function relative to the Madera Canal.

6.3 WASTEWATER SERVICE PROVIDERS

6.3.1 City Wastewater Systems

In a different fashion than a provision of domestic, commercial and industrial water supplies, the wastewater treatment and disposal facilities serving each of the cities within the IRWMP Plan Area are operated by these cities. In some cases, additional permits have been issued by the RWQCB for reclamation of treated effluent by individual parties acting under contract with a city for acceptance of treated wastewater for reclamation purposes. As detailed in Chapter 5 related to the history of wastewater systems development within the IRWMP area, these facilities are all under regulation of the RWQCB and are either of the secondary or advanced secondary treatment type, with the City of Visalia having recently converted a portion of their facility to a tertiary level of treatment. In each case, the collection system serving the specific city is owned by the particular city and operated and maintained by their permanent staff.

6.3.2 Rural Wastewater Systems

Few rural wastewater collection, treatment and disposal systems exist within the IRWMP Plan Area. The Lemon Cove Sanitary District, the Ivanhoe Public Utility District and the Linnell Farm Labor Camp facility of the Tulare County Housing Authority are the principal systems in this category. In many cases, rural areas have been tied in with municipal systems based on economic considerations, as well as staffing considerations. These areas include the El Rancho and Tonyville areas whose collection systems are tied into the City of Lindsay. The Goshen area is tied into the City of Visalia system with plans and studies underway related to other areas with this type of consolidation potential. The balance of the areas are on individual treatment and disposal systems, for the most part in the form of septic tanks and leach fields.

6.3.3 County-operated Wastewater Systems

The County of Tulare, as previously referenced with respect to providing governance for the Wells Tract area east of Woodlake in the form of County Service Area No. 2, operates a number of collection, treatment and disposal systems within the County. Among these systems, the system serving the hamlet of Tooleville, east of the City of Exeter, along with the sewer collection system of the Wells Tract area, tied to the City of Woodlake facilities, are administered by the County. Financial and day-to-day administrative duties are performed by County personnel, while field operations are performed under contract by for-profit licensed operators.

6.4 MAJOR INFRASTRUCTURE

6.4.1 Surface Water Storage Facilities and Associated Distribution Systems

The principal storage facility available to water rights holders within the IRWMP Plan Area is Lake Kaweah. Impounded by Terminus Dam, this facility allows for conservation storage beginning with a ramp up period in March of each year and extending to full storage by April 1. The entire reservoir storage is available for conservation purposes from that date until November 1 of each year. Beginning November 1, the flood control diagram goes into effect and storage operations are under the direction of the U.S. Army Corps of Engineers. Significant coordination exists between said entity and the water rights holders, along with officials representing urbanized areas and landowners in the Tulare Lake bed. With the recent modification of the spillway and the undertaking of the Lake

Kaweah Enlargement Project, the reservoir now has the capability to store approximately 186,500 acre-feet, an increase of approximately 42,500 acre-feet over the prior storage capability.

Winter storage is a function of the watershed rainfall index with the available storage capped at 12,000 acre-feet, except as allowed by the U.S. Army Corps of Engineers. At times, encroachment into flood space is allowed if lack of rainfall and snow accumulation dominate, with the capability to take the reservoir down to approximately 7,000 acre-feet in anticipation of extreme run-off conditions.

Additional storage is provided within the IRWMP Plan Area in certain identified basin facilities of water rights holders and in projects which are currently under construction. The capability to divert and temporarily retain flows has been mandated to be the reclamation plan for the Kaweah South Mining Project, the land title now having passed from private ownership to that of the KDWCD. Said project is located on the north side of the Kaweah River just to the east of State Highway 245.

Immediately to the south of said project on the other side of the Kaweah River, the KDWCD is constructing their Hannah Ranch Basin Project. Both of these facilities will have the capability to divert water from the Kaweah River and return said flows back to the river after a retention period. The entire diversion quantity to the Hannah Ranch Project site will be by gravity, with a portion of the Kaweah South site being able to be returned by gravity, with the balance having to be pumped back into the river, due to the depth to which the site is proposed to be mined.

The Tulare Irrigation District (TID) has incorporated balancing reservoirs into their system with the Creamline Basin being the principal facility. These basins are operated in conjunction with the KDWCD and also function as groundwater recharge basins. TID recently undertook expansion of this capability on in the form of the Plum Basin site, which is immediately to the south of the Creamline Basin site. The Plum Basin Project was a cooperative project between TID and the City of Tulare as water recharge to the groundwater reservoir through said site accrues to the benefit of the City water supply wells.

Numerous other surface water entitlement holders within the IRWMP boundaries have small balancing basins which also act as groundwater recharge facilities. The volume of water retained/detained on these sites is small, as recapture for downstream irrigation deliveries is sought to be accomplished by gravity, eliminating the consumption of power associated with pumping for water supply retrieval.

A complex and extensive distribution network exists for delivery of accrued entitlement waters and purchased waters for import. This network also drafts supplies from the Friant-Kern Canal for contract holders within the IRWM Plan Area. A schematic of the surface water diversion and delivery system is presented on Figure 6-1. As can be seen from an examination of Figure 6-1, flows can be intercepted for delivery from controlled sources such as the Friant-Kern Canal and Lake Kaweah, but the delivery system also has the capability to intercept flows from unregulated sources such as Dry Creek, Yokohl Creek and Lewis Creek for delivery for beneficial purposes. This includes diversion into delivery systems for further diversion into groundwater recharge facilities whenever crop demands are insufficient to utilize all of the available supply.

As a final storage and distribution element, several of the local urban and rural unincorporated community storm drain basins have been retrofitted with recovery pumps. In addition to being able to allow for recharge of storm water runoff to the benefit of the groundwater reservoir, in certain locations, water can be recovered from these basin facilities and put to immediate beneficial use in assisting to meet on-farm demands. Where this recovery capability exists, it is appurtenant to a surface water delivery system either under control of a public agency surface water delivery entity, or a private stock mutual ditch company.

6.4.2 Flood Control Infrastructure

The flood control infrastructure within the IRWMP Plan Area consists of two (2) principal components. The first of these is the stream groups component, of which the previously detailed Terminus Dam and Lake Kaweah are the principal components. The second component is channel capacity. As one of KDWCD's principal responsibilities includes maintenance of channel capacity of a number of the natural channels within the Kaweah River Basin, these waterways are integral to storm and flood waters management. For the most part, the maintenance activities are directed at maintaining channel capacity, eliminating interfering sediments and plant growth below the 50 percent depth of flow line, allowing flows to go further downstream. At that point, they are either available for diversion for beneficial use, or proceed to the Tulare Lake bed for storage until they can be retrieved for beneficial use. Long-term management of the uncontrolled stream groups has brought about diversion of these channels into other facilities for purposes of beneficial use. Yokohl Creek flows, for instance, are diverted into the intake system of the Consolidated Peoples Ditch Company where they are subsequently delivered for satisfaction of crop demand, or placed in groundwater recharge basins allowing the water to percolate to the groundwater reservoir for beneficial uses of enhancement of the available supply and increased elevation of the water level, thus reducing extraction related power costs.

In rural unincorporated communities and throughout the urban areas, discharges of stormwater to natural channels are augmented by storm water basins which are of both the detention and retention type. In some cases, storm waters are placed into basins to retain them where they are later vacated from the basins, over time, by the combined effects of recharge and evaporation. In other cases, the waters are detained until they are displaced into an adjacent channel regaining the stormwater capacity of the subject basin.

Facilities of this type also exist within the IRWMP Plan Area associated with the roads and highways system. CalTrans has numerous basins within the area to which they discharge highway and freeway accumulated waters to direct them away from the highway environment for safety purposes. Likewise, in certain locals, county roadway systems employ like basins where they receive water removed from county roadway environments, both for purposes of public safety and to extend the useful life of the associated roadway. In almost all cases, these roadway associated storm water basins are of the retention type where the waters are not removed from the basin by any man-based action.

Another flood water associated vehicle which is in place within the IRWMP Plan Area is the Warren Act Contract of Reclamation District No. 770. This contract was recently converted from an annual contract to a long-term contract between said reclamation district and Reclamation wherein waters which have been classified as damaging flood waters can be placed into the Friant-Kern Canal for delivery downstream to parties willing to accept said waters and put same to beneficial use. As the water rights subject to this removal from the Kaweah River Basin are those of KDWCD, their permission to pump these waters must be received, in addition to the consent of the Watermaster of the Kaweah River. Indication is to be given, by the Watermaster, that all beneficial uses within the Kaweah River Basin have been satisfied. Adjustments are included in the Warren Act Contract to compensate diverters from the Friant-Kern Canal for damages to groundwater recharge facilities if they are diverting for recharge purposes or compensation for increased treatment costs if a downstream contractor is diverting for purposes of treating water for drinking water deliveries.

6.4.3 State Water Project Facilities

No facilities of the SWP are located within the boundaries of the IRWMP. The nearest facilities are on the west-side of the San Joaquin Valley with the nearest distribution system facilities being those of the Tulare Lake Basin Water Storage District. They are, nonetheless, of significant importance to the IRWMP Plan Area as they provide the conveyance mechanism by which Feather River water is imported into the west-side of the Central Valley, offsetting the need to pump groundwater. Historical pumping in this area caused the condition of a strong groundwater gradient sloping to the west southwest, a condition which was abated when normal water deliveries were being made to the valley portion of the SWP service area. Recent curtailment of those deliveries has brought rise to increased west-side pumping again with results already coming to bear with respect to the return to aggravated groundwater slope conditions.

6.4.4 CVP Facilities

As shown on Figure 2-1 and schematically on Figure 6-1, the Friant-Kern Canal was constructed through the easterly portion of the IRWMP Plan Area. The highest percentages of annual delivery of San Joaquin River water are made into the contractor's

service areas located within Tulare County. KDWCD, Tulare Irrigation District, Exeter Irrigation District, Ivanhoe Irrigation District, Stone Corral Irrigation District, Lindmore Irrigation District and Lindsay-Strathmore Irrigation District each have the capability to divert. Approved locations for KDWCD diversions include Cottonwood Creek, the St. Johns River, the Kaweah River and Lewis Creek. Facilities exist at each of these locations to allow the KDWCD to divert federal project waters at those locations. Like diversion capabilities exist for the referenced contractors.

A number of check facilities exist within the Friant-Kern Canal which assists with both in-canal storage operations, as well as diversions. These include the Dodge Avenue Check, the Kaweah Check and the 5th Avenue Check.

6.4.5 Water Treatment Facilities

Surface water treatment facilities exist in two (2) locations within the IRWMP area. The first of these serves the City of Lindsay and is a facility which has been in operation since the mid-1970s. The facility was constructed in three (3) stages with the first two (2) being filtration plants. Due to changes in the Surface Water Treatment Rule, a clarifier was subsequently added. Disinfection is accomplished by way of chlorination.

Over time, pockets of housing concentrations previously on non-compliant surface water and wells within the Lindsay-Strathmore Irrigation District have been added to this system. These include the Page-Moore Tract and the El Rancho area. Service is now provided to these areas based on connection to the City of Lindsay system with residents of these areas being provided with water meeting State and Federal drinking water standards on a year-round basis. The second surface water treatment plant is located on the south side of the unincorporated community of Tonyville. This facility treats surface water off of the Lindsay-Strathmore Irrigation District which is a pre-chlorinated supply to the facility. Due to DBP formation issues, studies are underway to either change the location of the source of supply for the treatment plant, or to abandon the treatment plant and construct a pipeline tying the area into the City of Lindsay facility.

A number of well-head treatment facilities exist within the IRWMP Plan Area. The majority of these are located in the City of Visalia and are a part of the California Water Service Company system serving the City. These facilities are primarily granulated activated carbon facilities designed to remove specific contaminants, such as remnants of dry cleaning fluid and pesticide and herbicide residuals resulting principally from urban storm water discharges.

With the time frame established for setting a Maximum Contaminant Level for the contaminant 1,2,3-TCP, a number of other well-head treatment facilities will likely be constructed within the IRWMP Plan Area. Well facilities serving the Ivanhoe Public Utility District have been designed to avoid problems in the areas with nitrates, DBCP and EDB. Recent isolated aquifer construction designed to avoid these contaminants, however, was unsuccessful in avoiding contamination from 1,2,3-TCP. The Well No. 8 site contains an adequate footprint to locate treatment vessels and litigation related to the presence of this material in groundwater is currently in process.

6.5 WATER SUPPLIES

The practice of conjunctive use is employed throughout the IRWMP boundary. Groundwater is the principal source of supply for meeting all water needs within the Kaweah River Basin, however, has been proven to be insufficient, over time, to satisfy all demands. The utilization of surface water flows from the Kaweah River to augment groundwater provides a substantial additional supply to the conjunctive use operations, however, has still proven to be insufficient to meet demands without overdrafting the groundwater supply. Within and immediately external to the IRWMP boundaries are a number of Federal contractors to the Friant Division, CVP system. The importation of contracted San Joaquin River water allowed the KDWCD to come within 18,000 acre-feet annually of being in balance when SWP deliveries were being made to what was considered to be at that time, a normal level. With the decline in the declarations of water supply to the west-side SWP contractors and the parallel condition for the west-side CVP contractors, it is anticipated that the westerly portion of the IRWMP area is now in a more significant overdraft condition. The KDWCD Water Resources Investigation update, recently completed, confirms the degree to which the overdraft conditions exist.

Described herein are the current sources of supply employed to meet demands within the Kaweah River Basin. They are presented in an order reflecting the quantities supplied from each source in meeting the needs of water users within the IRWMP Plan Area.

6.5.1 Groundwater

Groundwater in all areas of the Kaweah River Basin represents the principal source of supply. Based on its fundamental charge, the principal activities of the KDWCD surround the groundwater conditions within the Kaweah River Basin and the augmentation, to the extent possible, of the groundwater reservoir. In order to have a basis on which to properly evaluate groundwater conditions, KDWCD has historically divided the area within the KDWCD boundary into hydrologic units. Figure 6-2 presents the current divisions of the hydrologic units, which were modified in 2007. This modification was brought about by the input and output characteristics of the KDWCD numeric groundwater model and related database. The changes, for the most part, allow the hydrologic boundaries to follow the boundaries of surface water purveyors within the KDWCD and to be able to direct water entitlement and delivery information directly from the database into the model, by hydrologic unit.

In addition to the maintenance of the GIS database associated with the numeric groundwater model, the KDWCD conducts annual spring and fall groundwater measurements for a monitor well network covering the entire IRWMP area. Recently, the area was expanded to the east and southeast as a result of cooperative work undertaken by the City of Lindsay, the State DWR and the KDWCD. Inventory work was accomplished on groundwater wells within the expanded area, including obtaining detailed well logs with sufficient lithology information to allow for expanded cell development within the model parameters. This effort not only resulted in the expansion of the capability to evaluate groundwater conditions, but also improved the boundary conditions associated with running the model to the east extending to the edge of the groundwater aquifer system. Wells have been added to the KDWCD's semiannual groundwater measurement effort and also to the State's CASGEM database.

The City Councils of both Tulare and Visalia have put into place policies dealing with the impacts on groundwater in agricultural to urban land use conversions. The majority of the lands surrounding both cities operate in a conjunctive use fashion and, when converted to urban development, change to exclusively being supplied by groundwater. While findings of both City Councils showed that the resulting per-acre water consumption is less in the urban configuration than the agricultural configuration, an impact nonetheless exists as the surface water is no longer delivered into the area. Impact fees, on a per-acre basis are now required at the time of annexation and are utilized by the cities to generate programs to construct facilities to introduce surface water into the groundwater in the impacted areas and to purchase surface water to introduce into these constructed facilities, along with natural waterways, if they exist in a location which impacts the developed area.

The already described project of the City of Visalia to exchange tertiary treated wastewater effluent with the Tulare Irrigation District for surface water entitlements to be recharged easterly of the City limits has been described, as has the programs of the City of Tulare to augment recharge east of the City in cooperation with TID.

As a demonstrable example of the extent to which conjunctive use is an important element within the Kaweah River Basin, the KDWCD currently has in excess of 5,000 acres of groundwater recharge capability. Not satisfied with that level of capability, the Board of Directors has purchased another approximately 1,000 acres and efforts are underway to develop said lands to recharge facilities to add those acres to the current 5,000 acre inventory. This acreage is exclusive of facilities of individual ditch companies and other surface water supply entities with regard to their specific recharge basins, unless they are joint operations with KDWCD. It also excludes urban and rural storm water control facilities which are used in the off-season as recharge facilities based on their availability, strategic location and soil characteristics.

6.5.2 Local Surface Water

The principal source of local surface water is directly from the Kaweah River. Added to the mean daily inflow of the Kaweah River in determining an allocation of daily entitlement, are flows of Dry Creek and Cottonwood Creek, if existing. The Kaweah River, as a designated tributary to the Tule River, has been declared to be fully appropriated by the State Water Resources Control Board. As such, unless a party can demonstrate the creation of new supply, the rights to the existing flow are held by the member units to the Kaweah & St. Johns Rivers Association and riparian landowners lying adjacent to the Kaweah River and its distributaries. As previously noted, the flows of Yokohl Creek, Lewis Creek and Mehrten Creek are all managed in a fashion whereby flows from these sources are incorporated into specific ditch company facilities and put to beneficial use. Except in extreme flood flow situations, no water is lost from the Kaweah River Basin and every drop is put to reasonable, beneficial use.

The entitlement to the flow of Kaweah River is allocated according to a schedule adopted by the member units of the Kaweah River Association and the St.

Johns Rivers Association. Presented in Table 6-8 is a tabulation of the entitlement holders and the respective area which they serve by KDWCD hydrologic unit. As a note to the serious reader, the total of the acreage listed in this table exceeds the total acreage within the KDWCD. This is due to the fact that, in several instances, service areas of individual surface water providers have overlap based on growers having the capability to deliver surface water from more than the facility of a single special district and/or water company.

Other than the previously referenced treatment of Friant Division, CVP water by the City of Lindsay and the Lindsay-Strathmore Irrigation District, none of the entitlement water of the local stream groups is made available for human consumption purposes. For the most part, this is due to the fact that the water is not available on a year- round basis and, in many cases, the flow of the river is for less than three (3) months and, periodically, even a shorter period of time. In its recent Master Plan Development, the California Water Service instructed the consideration of the inclusion of treated surface water as a potential source to meet future demands. It was concluded that, due to the distance from the Friant-Kern Canal to the City of Visalia and due to the lack of substantial volumes of water being available to satisfy even a six-month demand pattern, that surface water treatment was not a viable option.

TABLE 6-8
HYDROLOGIC UNIT ENTITLEMENT HOLDERS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Hydrologic Unit No.	Service Area Data	
	Entitlement Holder	**Area (acres)**
I (Eastern)	Exeter Irrigation District	565
	Hamilton Ditch Canal	348
	Ivanhoe Irrigation District	190
	Lindsay-Strathmore Irrigation District	1,043
	Longs Canal Area	948
	Sweeney Ditch Area	509
	Tulare Irrigation Company	371
	Unincorporated	11,430
	Wutchumna Water Company	930
	Unit I Total:	16,334
II (St. Johns)	Alta Irrigation District	2,045
	Goshen Ditch Canal	5,553
	Mathews Ditch Canal	1,824
	Modoc Ditch Canal	6,245
	St. Johns Water District	13,300
	Unincorporated	27,025
	Uphill Ditch Canal	1,812
	Wutchumna Water Company	319
	Unit II Total:	58,123
III (Visalia)	Evans Ditch Canal	3,975
	Fleming Ditch Canal	1,635
	Modoc Ditch Canal	214
	Oakes Ditch Canal	790
	Persian Ditch Canal	6,237
	Tulare Irrigation Company	4,447
	Unincorporated	19,177
	Watson Ditch Canal	3,308
	Unit III Total:	39,783
IV (Outside Creek)	Consolidated Peoples Ditch Canal	15,635
	Elk Bayou Ditch Canal	7,467
	Exeter Irrigation District	800
	Farmers Ditch Canal	12,329
	Lindsay-Strathmore Irrigation District	111
	Oakes Ditch Canal	309
	Tulare Irrigation District	420
	Tulare Irrigation Company	1,529
	Unincorporated	36,004
	Unit IV Total:	74,604

V (Tulare)	Elk Bayou Ditch Canal	1,825
	Evans Ditch Canal	377
	Tulare Irrigation District	69,732
	Tulare Irrigation Company	1,527
	Unincorporated	10,953
	Unit V Total:	84,414
VI (Western)	Alta Irrigation District	510
	Corcoran Irrigation District	10,220
	Kings County Water District	24,821
	Lakeside Irrigation Water District	32,147
	Melga Water District	3,298
	Salyer Water District	3,678
	Unincorporated	8,782
	Unit VI Total:	83,456
	Total Acres	**356,714**

6.5.3 Imported Surface Water

Recent adjustments to the IRWMP boundary have resulted in the Lakeside Irrigation Water District being removed from this Planning Area to be included in the Kings River JPA IRWMP planning area. As that district receives delivery of surface water supplies from the Kaweah River, as well as the Kings River, it leaves the balance of the entities within the IRWMP being served with either only water from the Kaweah River or imported from the Friant Division, CVP.

Historically the KDWCD has been a short-term and temporary contractor to Reclamation for Friant Division, CVP supplies. With the Ivanhoe Irrigation District resource exchange, the KDWCD became a long-term Friant Division, CVP contractor for both Class 1 and Class 2 supplies. CVP contracting entities within the boundaries of the IRWMP include the Lewis Creek Water District, the Lindmore Irrigation District, the Lindsay-Strathmore Irrigation District, the City of Lindsay, the Tulare Irrigation District, the Exeter Irrigation District, the Ivanhoe Irrigation District and the Stone Corral Irrigation District. Deliveries are also made to immediately adjacent Lower Tule River Irrigation District. Inputs of the imported water quantities are constructed into the GIS database for the numeric groundwater model of KDWCD. It should be noted and will be discussed in greater detail later in this IRWMP, the Tule River Basin has a parallel numeric groundwater model and companion GIS database. These models operate with a boundary condition appurtenant to each model between the basins, with it being a long term objective to amend the model configurations to eliminate the problems associated with the boundary conditions.

6.5.4 Water Conservation

Water conservation measures undertaken within the IRWMP Planning Area take various forms. These forms cross over the line of urban/agriculture and over the line of groundwater/surface water. Each is important in its own right and it would be difficult to characterize one form of conservation as being more important than another.

Principal among the efforts is the conversion of agricultural lands which are characterized as poor to marginal due to their high water demand characteristics. In many cases, these lands have been retired from agriculture and have become the sites upon which groundwater recharge facilities have been constructed. The nature of the soil type having the capability to consume large amounts of water and be in a geographic position to contribute supplied water to the groundwater reservoir is certainly a significant conservation measure. Where these facilities are able to capture nonstorable flood flows from the Kaweah River, from local stream groups or from the San Joaquin River, they all provide example of conserved supplies.

Competing with this effort are the efforts of individual farmers to modify their irrigation application methods, often at great personal expense, to improve application efficiency. While this procedure has the parallel benefit of improving crop yield, which assists in paying for the system modifications, water conservation benefits are also demonstrated. In times of curtailed availability of surface supply, the ability to control the timing and amount of water application is critical to sustaining the investment in permanent plantings. While in many years, water conserved by virtue of the installation of the systems is dedicated to additional crop yield, and the fact that there is a resulting decrease in the leaching fraction contribution to groundwater, the overall conservation benefits are still apparent.

The third conservation component of significance is that of education. Programs of the KDWCD which reach out to schoolchildren, schoolteachers and water supply professionals offer opportunities to expand the knowledge base of those who have influence over water consumption habits and opportunities for water savings through conservation. Presented in Appendix F are the recent outreach efforts of the KDWCD in this regard. While these programs vary from time-to-time, they are nonetheless ongoing and are a critical element in the KDWCD program to optimize management of the groundwater reservoir.

As a companion program to the agricultural outreach programs, the urban and rural water purveyors are heavily invested in both conservation education and conservation procedures. Through the mechanisms of written education documents, water conservation retrofit kits and retrofit incentives for plumbing fixtures, urban water suppliers are able to effect reductions in water use impacting not only groundwater extractions, but the economics associated with the production and delivery of water for human consumption.

6.5.5 Recycled Water

As noted under the prior discussions related to wastewater treatment and disposal, each of the permitted wastewater treatment and disposal facilities within the IRWMP Planning Area recycle their entire treated discharge. While some of the recycling accrues to the groundwater reservoir, most are in-lieu of groundwater pumping programs wherein treated effluent is delivered to satisfy crop evapotranspiration demand, in lieu of pumping groundwater. This leaves the groundwater supply in place, a procedure which not only conserves the groundwater supply in a usable position, but also avoids the costs associated with power to pump the groundwater to the surface. Modification of this program to include a surface water exchange with a relocated target area for the surface water is a demonstrated alternative for the City of Visalia tertiary facilities discharge exchange with TID.

6.5.6 Cloud Seeding

In an attempt to wring every drop of water out of passing storms prior to exiting the Kaweah River Basin, the KDWCD conducts a cloud seeding program with a private operator based out of the Fresno Air Terminal. The contract for these services is reviewed continuously by the Board of Directors of the KDWCD, along with estimates prepared of the benefit of participation in the program. Similar programs are conducted on the San Joaquin River Basin by the Southern California Edison Company and periodically on the Kings River Watershed by Pacific Gas & Electric, often in concert with the Kings River Conservation District. Estimates of improved yield as a result of the cloud seeding program range from a low of two (2) percent to a high of five (5) percent.

6.5.7 Banking Programs

There are currently no long-term banking programs which exist within the Kaweah River Basin. While the area has often been mentioned as having the potential for such participation, no long-term banks have been put into place. At the current time, review is being conducted of the initial Banking Guidelines of Reclamation to determine if any potential exists for such banks within the IRWMP Planning Area.

A significant number of questions have been raised and directed to the Regional Office of Reclamation with responses to those questions likely determining any interest in pursuing such arrangements in the future. One of the obstacles which has yet to be overcome is the value of timing of puts and takes to a given bank and, in particular, the exchange of winter supplies for summer supplies. Current guidelines call for a 1:1 exchange, with a small leave-behind to benefit the exchanging basin. This ratio basis, however, ignores the significant value of exchanging a surface water supply available during peak summer months for a supply moved to groundwater storage during above-normal and wet winter months. Until understanding can be gained with those parties generating the guidelines for the use of, in particular, CVP supplies for banking, banking programs are not likely to be actively pursued.

6.6 HISTORICAL WATER DEMANDS

6.6.1 Agricultural Water Consumption

Agricultural water consumption within the IRWMP boundaries has been historically estimated based on land use information provided by the DWR. This land use data has been incorporated into each Water Resources Investigation that the KDWCD has completed, starting in 1972. Estimates of groundwater overdraft have been the principal motivating factor behind accomplishing each of the investigation updates and throughout the history of accomplishing the water balance computations, a difference has existed between observed conditions of depth to groundwater and computed depths to groundwater. This has been particularly true in the hydrologic units on the west side of KDWCD.

As a result of this continued differential computation, it was determined to undertake a sensitivity investigation related to several parameters in the computation methodology, starting with the land use element. Determination was made that the sensitivity analysis should utilize a data stream which was available on a year-round basis, thus reflecting not only crop types, but also the number of crops planted in a given year. It was a known deficiency of the use of the DWR data that multiple cropping in a given time frame was not picked up by their surveys to the same extent that multiple crops were observed by local water distribution entities.

It was determined to use satellite based imagery as the trial basis to see if same would provide a more adequate foundation for a determination of demand than the DWR basis. The sensitivity analysis has now been completed with the conclusion being that the use of satellite imagery does provide a far more reliable basis than the DWR information and a report has now been completed providing an adequate land use base from which to conduct the current update to the Water Resources Investigation.

That update has just been completed with the results being evaluated. As a result, the only demand information which currently exists for use herein is the last update to the Water Resources Investigation which did use the DWR land use data. It, therefore, has an inherent defect. The reader should understand that with respect to the consumptive use of applied water for the satisfaction of irrigation demands, the estimates are understated. Based on Kaweah River Basin balance calculations which were accomplished, this differential is at least on the order of 16,000 acre-feet per year.

Excerpted from the July, 2007, Water Resources Investigation, Table 6-9 provides a multiple year history of both the estimate of cropped acres and the gross and net applied water estimates. Caution is again noted with respect to the fact that the cropped acres are low, not reflecting as much multiple cropping as existing in several of the referenced years, thus resulting in both gross and net applied irrigation water estimates which are low. This fact is further born out in the gross applied water expressed in a per acre-foot per acre form. This figure would reflect a low level of double cropping with no triple or quadruple cropping. It is known that each of those cropping patterns existed during the years referenced in the table.

In the evaluation process of trying to determine why the empirical methodology was not resulting in a modeled outcome which was supported by actual depth-to-water measurements, water consumed by confined animals was determined to be a factor which should be considered. Steps were therefore undertaken to estimate the number of milking cows, replacement heifers, milk cow calves, goats and swine and to estimate the consumption of the animals. While the feed for same which was being grown within the KDWCD boundary had been taken into account, the actual animal consumption quantity had not. The modeling effort, therefore, took into account and continues to take into account animal unit counts and computations of annual quantities of water consumed for those demands. Just as a point of reference, for 1999 when there were an estimated

193,492 cows being milked within the boundaries of KDWCD, the water use per year was estimated to be 16,255 acre-feet. This demand is on the order of one-half of the municipal demand estimated to exist within the District.

TABLE 6-9
CONSUMPTIVE USE OF APPLIED IRRIGATION WATER
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Calendar Year	Total Cropped Acreage (acres)	Total Crop Etc (af)	Total Rainfall (af)	Effective Rainfall (af)	Gross Applied Irrigaiton Water (af)	Percolation of Rainfall (af)	Percolation of Irrigation Water (af)	Net Applied Irrigation Water (af)	Gross Applied Irrigation Water (af/acre)
1981	263,255	674,778	165,783	63,621	872,475	60,062	217,694	654,781	3.314
1982	263,564	647,879	223,612	78,475	812,877	76,521	202,828	610,049	3.084
1983	263,866	605,706	322,939	108,048	710,434	149,523	177,254	533,180	2.692
1984	264,173	720,316	73,722	21,933	997,011	22,277	248,777	748,234	3.774
1985	264,478	678,322	136,761	47,651	900,352	55,922	224,664	675,688	3.404
1986	264,788	644,957	246,328	86,627	774,735	113,083	177,666	597,069	2.926
1987	265,090	686,343	190,169	73,471	850,387	77,853	194,996	655,391	3.208
1988	265,398	670,493	149,732	45,273	867,503	46,848	198,909	668,594	3.269
1989	265,702	674,160	154,346	51,473	864,008	53,749	198,120	665,888	3.252
1990	266,007	692,662	176,201	56,106	883,217	63,841	202,502	680,715	3.320
1991	266,313	690,165	177,700	64,257	844,462	83,412	176,331	668,131	3.171
1992	268,762	655,471	147,608	58,798	805,027	58,616	168,103	636,924	2.995
1993	271,211	657,074	258,222	85,570	771,034	134,701	160,978	610,056	2.843
1994	273,659	647,896	177,626	49,675	807,094	61,043	168,519	638,575	2.949
1995	276,108	629,361	339,431	104,140	708,547	172,165	147,898	560,649	2.566
1996	278,557	680,690	239,577	83,725	782,259	102,905	146,180	636,079	2.808
1997	281,005	661,555	150,407	49,552	801,882	83,612	149,781	652,101	2.854
1998	283,454	573,918	491,329	134,959	574,898	275,012	107,193	467,705	2.028
1999	285,900	648,194	263,793	79,449	744,883	136,898	138,894	605,989	2.605
Maximum	285,900	720,316	491,329	134,959	997,011	275,012	248,777	748,234	3.774
Minimum	263,255	573,918	73,722	21,933	574,898	22,277	107,193	467,705	2.028
Average	270,068	659,997	215,015	70,674	809,110	96,213	179,331	629,779	3.003

6.6.2 Urban and Rural Non-agricultural Water Consumption

In contrast, the estimates of urban and rural water demand have a far more adequate foundation. That being said, the total consumptive demands for municipal and industrial purposes, including rural household consumption, is much lower than the agricultural demand. Adequate records exist from each of the municipalities within the IRWMP boundary, as well as the rural permitted systems within the same boundary, to accurately determine their annual consumption levels. Those figures also provide an improved basis for estimating the demands of the rural single-family homes which exist in the IRWMP Planning Area. It should be noted that the numbers which have been generated are for the entities within the boundaries of the KDWCD. These numbers do not reflect the demands associated with areas which have recently been added to the IRWMP boundary. This deficiency is addressed in the current update to the KDWCD Water Resources Investigation. This inadequacy will, therefore, not be left to a remedial list of things to be done in this IRWMP, as steps are already being taken to address the issue.

Please refer to Table 6-10, Table 6-11 and Table 6-12 for the water system demands for urban areas, rural areas and small water systems, respectively. The years presented correspond to the years presented in Table 6-9, allowing for a direct additive process to secure a total for any given year.

6.6.3 Groundwater Extraction Estimate

With the caution again of the underestimating which was felt to exist as a result of the planting and harvest of multiple crops in a given year, computations have been made of estimates of groundwater extraction, for all uses. Based on the last update for KDWCD of their Water Resources Investigation, the average annual groundwater pumping totaled 557,800 acre-feet. The minimum quantity estimated to have been pumped was for 1998 at a quantity of 176,447 acre-feet. In contrast, 1990, during an extended dry hydrologic period, the annual estimate was 827,200 acre-feet.

TABLE 6-10
URBAN GROUNDWATER PUMPAGE
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Calendar Year	Hydrologic Unit No. I	Hydrologic Unit No. II	Hydrologic Unit No. III	Hydrologic Unit No. IV	Hydrologic Unit No. V	Hydrologic Unit No. VI	Entire District
1981	325	2,305	12,294	1,717	7,525	0	24,167
1982	336	2,173	11,588	1,753	7,780	0	23,630
1983	347	2,288	12,201	1,891	8,036	0	24,762
1984	358	2,751	14,674	2,242	8,291	0	28,317
1985	369	2,720	14,506	2,128	8,547	0	28,270
1986	380	2,932	15,635	2,243	8,802	0	29,992
1987	391	3,046	16,246	2,405	9,058	0	31,146
1988	402	2,991	15,950	1,871	9,314	0	30,527
1989	699	2,953	15,748	2,495	9,370	0	31,265
1990	777	3,068	16,363	2,532	10,207	0	32,947
1991	235	2,881	15,366	2,416	10,747	0	31,646
1992	349	3,153	16,818	2,548	10,460	0	33,329
1993	676	3,185	16,984	2,692	10,011	0	33,547
1994	276	3,411	18,190	2,846	13,515	0	38,237
1995	210	3,552	18,943	2,685	11,470	0	36,860
1996	475	3,745	19,974	2,810	12,640	0	39,644
1997	653	3,897	20,786	2,951	12,995	0	41,283
1998	414	3,480	18,559	2,758	9,652	0	34,863
1999	415	3,977	21,208	2,947	13,912	0	42,458
Maximum	777	3,977	21,208	2,951	13,912	0	42,458
Minimum	210	2,173	11,588	1,717	7,525	0	23,630
Average	426	3,079	16,423	2,417	10,123	0	32,468

Note: Quantities in acre-feet per year.

TABLE 6-11
SMALL WATER SYSTEM GROUNDWATER DEMAND
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Calendar Year	Hydrologic Unit No. I	Hydrologic Unit No. II	Hydrologic Unit No. III	Hydrologic Unit No. IV	Hydrologic Unit No. V	Hydrologic Unit No. VI	Entire District
1981	0	0	3,195	384	1,159	693	5,431
1982	0	0	3,279	394	1,189	711	5,573
1983	0	0	3,363	404	1,220	729	5,716
1984	0	0	3,447	414	1,250	747	5,858
1985	0	0	3,531	424	1,280	765	6,000
1986	0	0	3,614	434	1,311	783	6,142
1987	0	0	3,698	444	1,341	802	6,285
1988	0	0	3,782	454	1,372	820	6,428
1989	0	0	3,866	465	1,402	838	6,571
1990	0	0	3,950	475	1,432	856	6,713
1991	0	0	4,021	483	1,458	871	6,833
1992	0	0	4,092	492	1,484	887	6,955
1993	0	0	4,163	500	1,510	902	7,075
1994	0	0	4,234	509	1,535	918	7,196
1995	0	0	4,305	517	1,561	933	7,316
1996	0	0	4,376	526	1,587	948	7,437
1997	0	0	4,447	534	1,613	964	7,558
1998	0	0	4,518	543	1,638	979	7,678
1999	0	0	4,589	551	1,664	995	7,799
Maximum	0	0	4,589	551	1,664	995	7,799
Minimum	0	0	3,195	384	1,159	693	5,431
Average	0	0	3,919	471	1,421	850	6,661

TABLE 6-12
RURAL DOMESTIC GROUNDWATER DEMAND
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

	Hydrologic Unit No. I	**Hydrologic Unit No. II**	**Hydrologic Unit No. III**	**Hydrologic Unit No. IV**	**Hydrologic Unit No. V**	**Hydrologic Unit No. VI**	**Entire District**
Houses Per Square Mile	7.81	1.70	2.60	1.92	1.70	1.80	2.27
Percentage of Total	45	10	15	11	10	10	100
Rural Domestic Demand Per Year (af)	835	182	278	205	182	193	1,876

6.7 COMPARISON OF WATER DEMAND AND SUPPLY

Without going through the exercise of computing the difference between supply and demand, the declining groundwater table within the IRWMP Planning Area is demonstrative of demand exceeding supply. It should be noted that, however, while this is true on a Basin-wide basis, it is not true for all areas within the IRWMP area. The hydrologic units on the east side of KDWCD have been demonstrated to be in balance and, in a number of years, actually in a net gain position. Characteristics of this area are such that they enjoy a senior right to diversion of natural flows of the Kaweah River, are planted to permanent crops which have a modest seasonal irrigation demand and the vast majority of farms utilize the most current and sophisticated irrigation water application methods. Such is not the case across all of the hydrologic units. In addition, dramatic and pronounced effect occurs on the westerly portion of the IRWMP Planning Area due to problems with delta diversions associated with both the SWP and the CVP. As long as the response to reduced diversions from the delta is to pump groundwater to satisfy crop demand, the overdraft will continue to exist.

6.8 CLIMATE CHANGE

6.8.1 General

The topic of climate change has received considerable attention at the IRWM level, not in the context of whether it exists or not, but in the context of the hydrology which is currently experienced and what the potential responses from a water management point of view, might be. For example, the hydrology already experienced within the Kaweah River Basin swings from critically dry years when runoff is less than thirty-three percent of normal to extreme wet conditions when runoff swings to in excess of 200 percent of normal. In addition, runoff comes into the IRWMP Planning Area in the form of rainfall runoff, snowmelt runoff and snowmelt runoff accelerated due to warm weather and rainfall conditions accelerating runoff. The RMG Board of Directors have difficulty envisioning a broader set of circumstances to deal with unless there was a condition of no snowmelt runoff at all.

An additional factor of concern in dealing with this issue is the length of time necessary to transition from planning a water management project to its full implementation. A relatively simple project, at least in engineering terms, was the effort to raise the level of Lake Kaweah by 21 feet. There were no modifications to the dam, expendable fusegates were placed into the existing spillway and a modest level of property negotiations and peripheral site modifications were associated with the project. It nevertheless took in excess of 25 years from inception until completion, the final costs were more than double the initial cost estimate and the environmental costs, at one point in time in the project development, exceeded the actual construction costs. Conceiving of a project of such magnitude to transition to a condition of little or no snow melt runoff is, as one Stakeholders Advisory Group member put it, “impossible to conceive.”

In response more to current conditions than anticipated conditions, the KDWCD has proceeded with developing the 5,000 acres of groundwater recharge facilities, with another 1,000 acres currently under development. Other surface water purveying entities, particularly those with Class 2 Friant Division, CVP contract supplies have likewise developed groundwater recharge areas and are continuing to expand on those areas. Local mutual stock ditch companies have also invested in water balancing and recharge facilities to benefit their stockholders and to deal with, in some cases, the lower elevation rainfall fed watersheds, runoff from which they intercept to bring into their systems for direct beneficial use and recharge.

The public agencies within the IRWMP Planning Area are subject to the air quality rules established by the San Joaquin Valley Air Pollution Control District. They continue to examine their equipment fleets to ensure that they are compliant with the latest rules established by said District, not only because it is required, but in reflection on doing their part to reduce contributions to atmospheric conditions which are contributory to increased air temperature patterns and the resulting impacts on being able to store water in the mountains in the form of snow and ice pack, in lieu of trying to manage the runoff from the precipitation if it fell in the form of rainfall.

In preparing to respond to the Tulare Lake Hydrologic Region Report volume of the California Water Plan Update of 2013, considerable attention was given to the segment on Climate Change beginning on page TL-59. The report concludes that "enough data exists to warrant the importance of contingency plans, mitigation (reduction) of greenhouse gas (GHG) emissions, and incorporating adaption strategies; methodologies and infrastructure improvements that benefit the region at present and into the future." The report goes on to state that there is a sufficient enough trend established that current levels of GHGs, already in the atmosphere, will continue to impact climate through the rest of the century. The IRWMP Stakeholders Advisory Group feels that steps currently being taken to expand groundwater recharge areas on the valley floor are part of the response to the observed increasing temperature trend. In addition, increased emphasis on flood plain mapping has drawn attention to the risks which currently exist relative to runoff patterns, providing a basis for further evaluation of flood impacts under warmer precipitation paradigms. It has been noted more than once, that the extreme peak flows experienced within the Kaweah River Basin have been as a result of warm precipitation conditions on a significant low-elevation snow pack. Whether those conditions would continue in an increased atmospheric temperature paradigm remains to be evaluated.

6.8.2 Vulnerability Assessment

Introduction

As noted, climate change has significant potential to impact water resources in the Kaweah River Basin. Increases in temperatures from climate change can affect the timing, amount and quality of runoff thus requiring appropriate adaptation measures. Climate change impacts could increase competition for resources, cause damage to infrastructure and personal property, and lead to significant health and safety concerns, environmental decline, and fiscal impacts. It is widely recognized that climate change projections are not precise, yet climate change planning should be acknowledged and incorporated to the greatest degree possible into IRWMP planning efforts.

This section includes a climate change vulnerability assessment and discussions of potential changes to runoff and recharge, prioritized vulnerabilities, adaptation measures, future data gathering and analysis and consideration of climate change and greenhouse gas emissions in the project review process.

Vulnerability Assessment

A vulnerability assessment was performed for the Kaweah River Basin using the ‘Vulnerability Assessment Checklist’ found in the *Climate Change Handbook for Regional Water Planning* (DWR and EPA, 2011). The assessment, provided below, offers a practical evaluation of climate change vulnerabilities related to water demand, water supply, water quality, flooding, ecosystems, habitats and hydropower.

1. Water Demand

1.a - Are there major industries that require cooling/process water in your planning region?

Yes. The region includes fruit, vegetable, cheese and meat processing plants, but the temperature of the process water is not likely a major factor and in many cases groundwater is used. No major powerplant or industrial/processing plants that rely on cool water are found in the region.

1.b - Does water use vary by more than 50% seasonally in parts of your region?

Yes. Seasonal water use varies substantially (greater than 50%) in the Kaweah River Basin. Most of the water is used from late spring to the end of summer for crop irrigation and urban landscape irrigation. Approximately one-third of urban water demands occur in the winter, with the other two-thirds in the summer. Irrigation water demands are typically low in the winter since effective precipitation can provide most of the needed water. Some of the crop land is also idled in the winter, or is planted to permanent crops that are dormant in winter.

1.c - Are crops grown in your region climate-sensitive? Would shifts in daily heat patterns, such as how long heat lingers before night-time cooling, be prohibitive for some crops?

The region experiences hot, dry summers. As a result, many of the crops grown have good resistance to heat. Therefore, changes in heat patterns would probably only impact crop yields if there is a significant increase in temperature. The primary concern with higher temperatures is that it will increase evapotranspiration and thus increase water demands. Freezing temperatures are sometimes a problem and can damage crops, but they are also beneficial to some permanent crops that need a certain number of chilling hours for an effective dormancy and to kill certain pests. Therefore, a reduction in the number of freezing days could negatively impact some crops.

1.d - Do groundwater supplies in your region lack resiliency after drought events?

No, groundwater supplies have generally been resilient over the long-term. The region experiences years where almost 100 percent of demands are met with groundwater and other years when the vast majority of demands are met with surface water. After dry periods, the groundwater has generally recovered after a sufficient wet period, aided by a large network of groundwater recharge basins and natural groundwater recharge. The region experienced historic groundwater level lows in the 1930's and 1940's, but fully recovered by the 1980's due to surface water development and wet periods. Recently, with consecutive dry years, impacts from the San Joaquin River Restoration, and reductions in State Water Project (SWP) reliability, groundwater levels have been in a state of decline.

1.e - Are water use curtailment measures effective in your region?

Urban agencies, such as the City of Visalia, have a variety of conservation measures, and these are effective at reducing demands in dry years.

Agricultural water supplies are ultimately controlled by the hydrology and less surface water is delivered in dry years. This does not actually reduce water demands since growers pump groundwater to satisfy the remaining demand. If groundwater levels continue to decline, however, then groundwater will become less reliable as the primary supply. The area has some hardened demand due to a large number of permanent plantings, so new (additional) water conservation programs may have to be implemented in the future if less surface water is available. Future curtailments may also be necessary due to recent State legislation that will require groundwater supplies to be managed for long-term sustainability.

1.f - Are some instream flow requirements in your region either currently insufficient to support aquatic life, or occasionally unmet?

All rivers and streams in the region are ephemeral and have never maintained year-round fisheries. There are no minimum environmental releases to the local rivers or streams.

2. Water Supply

2.a - Does a portion of the water supply in your region come from snowmelt?

Yes, the majority of surface water comes from snowmelt in the Kaweah River watershed. The watershed extends up to a maximum elevation of 12,400 feet and much of the precipitation occurs as snowfall. As a result, the region is vulnerable to climate change impacts on snow including earlier spring runoffs, less water storage as snowpack and more frequent rain-on-snow events that could result in more reservoir flood releases.

2.b - Does part of your region rely on water diverted from the Delta, imported from the Colorado River, or imported from other climate-sensitive systems outside your region?

No water is imported from the Colorado River into the Region.

Water is imported from the San Joaquin River watershed, which generally has the same climate change vulnerabilities as the Kaweah River watershed.

Delta water is not directly used in the region, but Delta water curtailments do have an important indirect impact on local groundwater supplies. Several water agencies located just west of the IRWMP Planning Area use Delta water. When Delta water deliveries are reduced growers increase their reliance on large well fields located near the western border of the IRWMP Planning Area. These large well fields have notable impacts on groundwater levels in the region. Furthermore, several water contractors on the lower San Joaquin River, called the San Joaquin River Exchange Contractors, were given Delta water contracts in exchange for San Joaquin River water that was diverted for the Friant Division of the Central Valley Project. If Delta supplies are insufficient, then per contract terms, they have rights to some San Joaquin River water over Friant contractors.

This has occurred in the last few years and has a significant impact on local water reliability.

2.c - Does part of your region rely on coastal aquifers? Has salt intrusion been a problem in the past?

No. The region does not rely on coastal aquifers.

2.d - Would your region have difficulty in storing carryover supply surpluses from year to year?

Storage reservoirs that serve the region include Kaweah Lake (Kaweah River) and Millerton Lake (San Joaquin River).

Kaweah Lake is operated by the USACE primarily for flood control. The reservoir volume is typically reduced to around 12,500 AF in the fall to provide space for floodwater. As a result, there is little to no potential for carryover storage.

Millerton Lake has some limited capacity to store carryover water from year to year. The space to store the water, and ability to keep it in storage, depends on the hydrology. In some years, agencies can carry over water, but in many years they can not.

The only real potential for improving carryover storage is through groundwater recharge and banking projects, unless new additional surface storage is developed.

2.e - Has your region faced a drought in the past during which it failed to meet local water demands?

No. Surface water supplies are reduced during droughts, but groundwater is generally used to meet shortfalls. As a result, almost all water demands have been met in past droughts. Recently, groundwater levels have reached close to historic lows and some wells have gone dry. Due to a very high demand for well drillers, some landowners have had to endure without a well for a period of time.

2.f - Does your region have invasive species management issues at your facilities, along conveyance structures, or in habitat areas?

White Bass have been found in Kaweah Reservoir and eradication efforts have been undertaken to help prevent its spread. Some invasive plant species, such as Arundo Donax, can clog natural channels and canals if they are not properly managed, so most agencies include this as part of their maintenance activities. Agencies in the area have also been alerted to the potential for invasive species such as quagga mussels and how to help prevent their spread.

3. Water Quality

3.a - Are increased wildfires a threat in your region? If so, does your region include reservoirs with fire-susceptible vegetation nearby which could pose a water quality concern from increased erosion?

No major reservoirs are located in the IRWMP Planning Area, but the Kaweah Reservoir is located just east of the Kaweah Basin. Wildfires around the reservoir and in the Kaweah River watershed could result in flooding or water quality problems in the River and its distributaries.

3.b - Does part of your region rely on surface water bodies with current or recurrent water quality issues related to eutrophication, such as low dissolved oxygen or algal blooms? Are there other water quality constituents potentially exacerbated by climate change?

Excessively low and high flows, changes in temperature and declining water supplies can affect the health and quality of water supplies. During high flows, runoff from surrounding farms and urban area increase the probability that sediments, nutrients and other pollutants are washed into streams and rivers. Turbidity also increases during periods of flood. When flows are low, concentrations of chemicals and heavy metals may increase. Low levels of water and warm temperatures may also increase the risk of algal blooms and stratification of water bodies. Local districts use algaecides such as copper sulfate to control algae in conveyance facilities. These efforts are effective, but may have to be increased if climate change creates conditions that promote more algae growth.

3.c - Are seasonal low flows decreasing for some waterbodies in your region? If so, are the reduced low flows limiting the waterbodies' assimilative capacity?

The region has experienced very dry years, where groundwater meets all water demands, to very wet years, where surface water meets most demands. Changes in annual low flows from climate change would be difficult to identify since low flows already vary due to natural climate variations and management of reservoir releases. The region will, however, continue to monitor and evaluation hydrologic data for long-term trends.

3.d - Are there beneficial uses designated for some water bodies in your region that cannot always be met due to water quality issues?

No. Generally the surface waters have excellent quality, largely because they are derived from Sierra snowmelt. In a few isolated areas the water has had quality problems from anthropogenic sources, such as herbicides.

3.e Does part of your region currently observe water quality shifts during rain events that impact treatment facility operation?

Yes. Surface waters in the region generally have good to excellent quality, but during storms turbidity values can increase substantially and can affect operations at groundwater recharge facilities.

4. Sea Level Rise

The Kaweah Basin is approximately 100 miles from the ocean and several hundred feet above existing sea level, so sea level rise is not a concern.

5. Flooding

5.a - Does critical infrastructure in your region lie within the 200-year floodplain? DWR's best available floodplain maps are available at: http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/best_available_maps/.

Significant infrastructure, including some critical infrastructure, lies within the 200-year floodplain of the St. Johns and Kaweah Rivers.

5.b - Does part of your region lie within the Sacramento-San Joaquin Drainage District?

No.

5.c - Does aging critical flood protection infrastructure exist in your region?

The possibility of increased frequency and intensity of flooding may prove to be devastating considering the State's aging infrastructure. Roads, water and wastewater treatment facilities, buildings, bridges and many other types of infrastructure are at risk of damage due to flooding. Aging levees are found along the St. Johns River. These levees are not certified and currently no agency has responsibility for maintaining them. A portion of the levee system was formerly maintained by a levee district which is now inactive. The levees provide flood protection for the City of Visalia. Terminus Dam was constructed in the 1960's, but is considered to be in good condition.

5.d - Have flood control facilities (such as impoundment structures) been insufficient in the past?

No. Flood control facilities have performed adequately in the past. A large flood in 1955 prompted the construction of Terminus Dam, whose primarily function is flood control. Since then the dam has prevented large scale flooding in the Kaweah River Basin, although the reservoir would still be undersized for a very large flood. Localized flooding does commonly occur along creeks and due to poor drainage in some areas.

5.e - Are wildfires a concern in parts of your region?

Wildfires are generally not a concern in the region. They are, however, a concern in the Kaweah River watershed which provides almost all the surface water to the region. Wildfires can result in flooding, severe short-term erosion and surface water quality degradation.

6. Ecosystem and Habitat Vulnerability

6.a - Does your region include inland or coastal aquatic habitats vulnerable to erosion and sedimentation issues?

No.

6.b - Does your region include estuarine habitats which rely on seasonal freshwater flow patterns?

No.

6.c - Do climate-sensitive fauna or flora populations live in your region?

Yes. A large variety of flora and fauna are found in the Kaweah Basin and some are likely climate sensitive. The region is highly developed, so some have limited ability to migrate as a means of adapting to climate change.

6.d - Do endangered or threatened species exist in your region? Are changes in species distribution already being observed in parts of your region?

Yes, a number of threatened and endangered species are found in the Kaweah River Basin. It is unknown if species distribution is occurring due to climate change since little data is available on the topic.

6.e - Does the region rely on aquatic or water-dependent habitats for recreation or other economic activities?

There are limited recreational opportunities on the local distributaries including swimming, canoeing and bird watching. These activities have a relatively small impact on the local economy.

6.f - Are there rivers in your region with quantified environmental flow requirements or known water quality/quantity stressors to aquatic life?

The Kaweah River has historically been an ephemeral stream and does not have minimum flow requirements. It has never supported a year-round fishery.

6.g - Do estuaries, coastal dunes, wetlands, marshes, or exposed beaches exist in your region? If so, are coastal storms possible/frequent in your region?

No.

6.h - Does your region include one or more of the habitats described in the Endangered Species Coalition's Top 10 habitats vulnerable to climate change (http://www.itsgettinghotoutthere.org/)?

The Kaweah River Basin is not included in the list of 'Top 10 Habitats Vulnerable to Climate Change' referenced above. The Kaweah River watershed, however, is located in the Sierra Nevada Mountains, which is on the list.

6.i - Are there areas of fragmented estuarine, aquatic, or wetland wildlife habitat within your region? Are there movement corridors for species to naturally migrate? Are there infrastructure projects planned that might preclude species movement?

The area is largely developed with agriculture, ranches and urban areas. Habitat is generally fragmented in the Kaweah River Basin. Wildlife could, however, feasibly travel between habitat areas through agricultural land, ranch land or along the River corridors. No large infrastructure projects are currently planned that would further preclude species movement.

7. Hydropower

7.a - Is hydropower a source of electricity in your region?

Hydropower is generated at Terminus Dam, but it is located just outside (upstream) of the IRWMP Planning Area. No hydropower facilities are located in the Kaweah River Basin.

7.b - Are energy needs in your region expected to increase in the future? If so, are there future plans for hydropower generation facilities or conditions for hydropower generation in your region?

Energy demands will likely increases due to population growth. Energy conservation could help to reverse this trend. A second unit expansion of the Kaweah Power Plant at Terminus Dam is currently in feasibility level planning. Some small hydropower projects might be developed along canals, but these would be very small and produce only a small amount of energy.

<u>Potential Changes in Runoff and Recharge</u>

<u>Climate Change Modeling and Analysis</u>

Several technical studies have been published evaluating climate change factors and their effects on water supplies and water management. These studies evaluated the probability of increased temperatures, changes in precipitation, frequency of atmospheric rivers, the duration of rainfall and intensity of storms, snow pack in the Sierra Nevada, increase in rapid snowmelt from rain on snow events and the potential for flooding.

Region specific climate change studies have been performed that predict changes in precipitation and temperature across the Central Valley. In the 2014 *Sacramento and San Joaquin River Basin Climate Impacts Assessment*, CH2MHill evaluates a range of climate change scenarios. These included a no climate change scenario (NoCC), decreased temperatures and decreased precipitation (Q1), increased temperatures and decreased precipitation (Q2), increased temperatures and increased precipitation (Q3), decreased temperatures and increased precipitation (Q4), central trending climate (Q5), and others. The results clearly represent a wide range of potential outcomes, but scenario Q2, increased temperatures and decreased precipitation, presents the worst-case scenario for future water supplies.

Water Supply

Surface water and groundwater are both important to the Kaweah River Basin region and both are assumed to be affected by climate change. Surface water, accumulating to the Kaweah and San Joaquin Rivers, is dependent on snow pack that falls in the Sierra Nevada Mountains during winter months and the rate of snow melt, which typically occurs between April and July. Groundwater supplies, although more difficult to model, will also be affected by climate change. Water supplies may be subject to increased shortages due to lack of precipitation in the region, declining snow pack in the Sierra Nevada Mountain Range, decreased soil moisture and increased evapotranspiration.

Precipitation

Precipitation in California has been projected to vary greatly in response to Climate Change according to climate models presented by CH2MHill (2014a). The Tulare Lake Basin is projected to experience changes in precipitation that range from approximately a 35% decrease in annual average precipitation to a 13% increase from 2012 to 2099 for all climate change scenarios. Because of this uncertainty in precipitation, it is important to prepare for a range of possibilities. The U.S. Global

Change Research Program's *Climate Change Impacts in the United States* projects that average annual precipitation will experience an overall decrease in the Southwest.

Precipitation extremes will also be affected as a result of climate change. Extended droughts are projected to be complemented by extreme precipitation events, each experiencing increasing duration and intensity. This equates to longer, hotter, drier periods followed by storms that produce more precipitation for extended periods, with extreme events occurring more frequently. Extreme storms are often the result of atmospheric rivers, which push warm, moist air from the tropics to California. Projections for increases in occurrence of atmospheric river storms are summarized in *Climate Change, Atmospheric Rivers, and Floods in California – A Mulitmodel Analysis of Storm Frequency and Magnitude Changes* (Dettinger, 2011). This paper analyses the increased frequency and intensity of severe rain events. Dettinger's paper projected an average increase of 2.5 days per year or a 30% increase in severe rain events over all climate models. Increased intensity, which is defined as the increase in precipitation for any one storm, is predicted using the product of integrated water vapor and upslope wind speed and is projected to increase by roughly 10 percent or less for each climate scenario.

<u>Snowpack</u>

Surface water supply reliability in California is largely dependent on snow in the mountains and the ability to store water during the year and from year to year. Snowpack in the Sierra Nevada Mountains acts as a natural reservoir for surface water that feeds both the San Joaquin and Tulare Lake Hydrological Regions. The Kaweah River watershed extends up to a maximum elevation of 12,400 feet. Temperature and magnitude of precipitation, as well as variance in precipitation event timing, are the driving factors in snowpack and the ability to retain water as snow. Snowpack is measured as snow water equivalence (SWE), fraction of precipitation that remains in snowpack on April 1 (SWE/P) and snowfall or total snow from October to April 1.

Projected increases in temperature and changes in seasonal precipitation will alter the snow regimes in the United States and California. As temperatures increase, more precipitation will fall as rain, melting existing snow and decreasing the total snowpack that acts as a primary reservoir for surface water. Reductions in the amount of late winter precipitation falling as snow will adversely impact reservoir operations and surface water distribution timelines to communities and water districts. According to *The Uneven Response of Different Snow Measures to Human-Induced Climate Warming (Pierce and Cayan, 2013),* climate change models show substantial changes in SWE (unmelted snow on April 1) and increases in snowmelt by 2100. Figure 1 shows minimal changes in total precipitation. Precipitation falling as rain in the Sierras is, however, projected to increase by 51 percent, snowmelt is projected to increase 62 percent, and SWE is projected to decline by 30 percent by 2100.

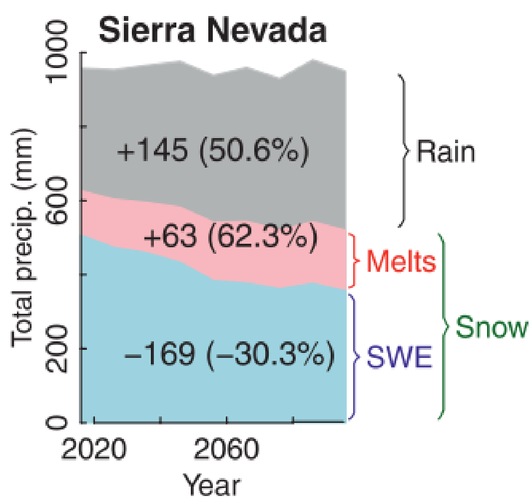

Figure 1 – Predicted Impacts to Snow from Climate Change

Source (*Pierce and Cayan, 2013)*

<u>Runoff</u>

Annual precipitation falls as both rain and snow in the Tulare Lake and San Joaquin hydrological regions. The majority of precipitation occurs during the winter months, falling as snow in higher elevations and rain in lower elevations. As temperature increases and storms become more extreme, precipitation will trend toward rain rather than snowpack causing increased runoff rates.

CH2MHill (2014a) prepared climate change models that project runoff from 2012 to 2099. Table 6-13 shows predicted change in streamflows in the San Joaquin River System and Tulare Lake Region. These values are based on a drier and warmer scenario.

TABLE 6-13
PROJECTED CHANGE IN RUNOFF FOR SAN JOAQUIN RIVER SYSTEM AND TULARE LAKE BASIN
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Region	Period	Change in Annual Streamflow
San Joaquin River System	2012-2040	-19%
	2041-2070	-31%
	2071-2099	-33%
Tulare Lake Region	2012-2040	-21%
	2041-2070	-38%
	2071-2099	-42%

Notes: 1) Values are for a drier and warmer climate change scenario.
2) Source: CH2MHill, Sacramento and San Joaquin River Basin Climate Impact Assessment, 2014.

Peak runoff and average monthly runoff are also important characteristics of watershed dynamics. Warming climates may shift peak runoff earlier in the year. This is often due to the impacts of rain on snow events, increasing runoff during winter months and decreasing snowpack retention time. Snowpack acts as a primary reservoir, holding water until the late spring months and allowing reservoirs to distribute water from lower elevation rainfall and runoff prior to snowpack thaw. Runoff variability is used to project potential droughts and flood probability.

Runoff projections in Figure 6-3 are shown for a range of climate change scenarios. They show deviation from the historic runoff that typically increased rapidly from April to mid-May, peaked in mid-May and decreased more gradually from mid-May to July. On the other hand, projected runoff increases gradually from January to mid-May, with peak runoff in mid-May similar to historic projections, but then a sharp decline in runoff during the summer months when the majority of water consumption occurs and snowpack is used to replenish depleted sources.

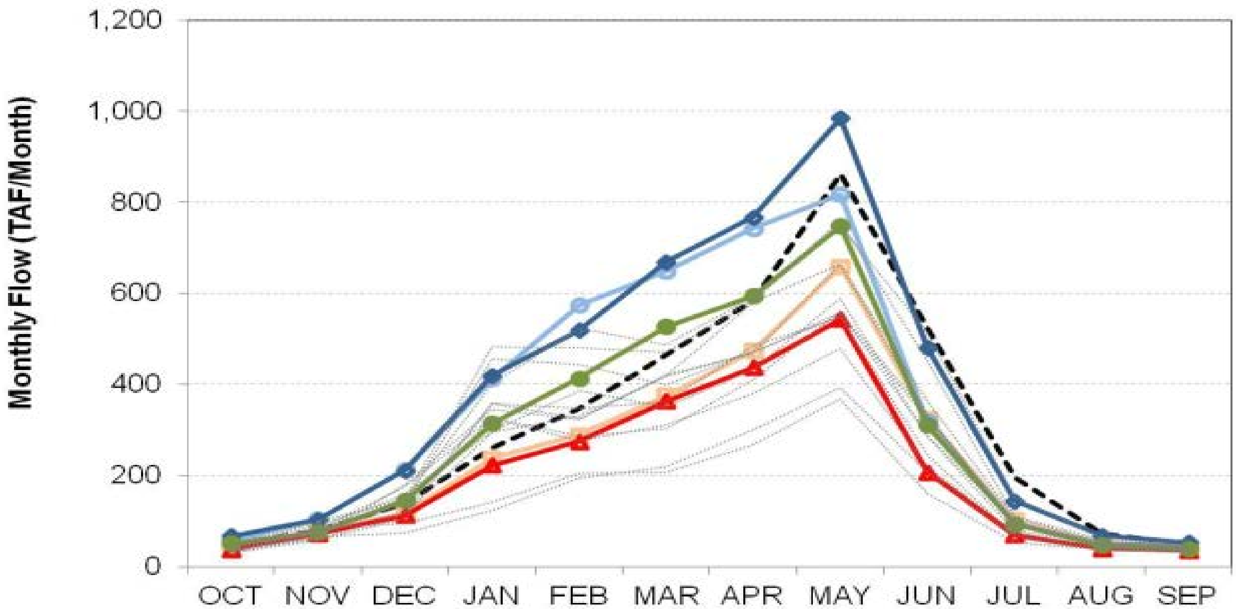

Figure 6-3: Tulare Lake Basin – Projected Monthly Runoff

<u>Groundwater Recharge</u>

Groundwater recharge is dependent on precipitation duration, intensity and timing, as well as meteorological variables, soil properties such as soil moisture and makeup, topography and vegetation. This makes development of accurate groundwater models a challenge.

A study, by Ng et. Al (2010), simulates groundwater recharge in the semi-arid climate of New Mexico and Texas. Findings show that groundwater recharge is more significant during winter and spring, while humidity and soil moisture are high and temperature and ET are low. Another significant factor to groundwater recharge is precipitation prior to crops fully establishing a mature root system. Higher ET, lower soil moisture and mature root systems inhibit precipitation from passing below the root zone making summer months less ideal for groundwater recharge. It was also found that increased intensity of rainfall events are likely to result in increased recharge for all seasons.

Droughts and Floods

Changes in the magnitude, timing, and type of precipitation due to climate change can directly affect water users in the form of droughts and floods. Table 6-14, adapted from the Department of Water Resources, by Christian-Smith, et.al, shows historic droughts and percent of historical average runoff. Although drought has persisted through the period of recording, climate change is projected to increase the severity and frequency of drought conditions in the southern Central Valley. Hence, future drought could be significantly worse than those shown in Table 6-14. Increased drought conditions will deplete reservoirs, intensify reliance on groundwater supplies and affect the ability of water agencies to fulfill water demands.

TABLE 6-14
HISTORIC CENTRAL VALLEY DROUGHTS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Drought period	Sacramento Valley runoff		San Joaquin Valley runoff	
	MAF/ year	% of average 1901–2009	MAF/ year	% average 1901–2009
1929–1934	9.8	56	3.3	56
1976–1977	6.6	38	1.5	26
1987–1992	10.2	58	2.8	48
2007–2009	11.2	64	3.7	63

Source: DWR (2010)

Conversely, increases in temperature and precipitation can create flood conditions that cause damage to crops, infrastructure and personal property, as well as causing dangerous conditions. As described previously, the frequency and intensity of atmospheric river conditions and the likelihood of increased rain on snow events could increase the risks of flood.

Prioritized Vulnerabilities

The assessment above has identified many climate change vulnerabilities in the Kaweah River Basin. These all need to be addressed to some extent, but the higher priority vulnerabilities are described below. These vulnerabilities are listed in their order of importance.

1. **Reductions in Surface Water Supplies.** Climate change could cause a reduction in surface water supplies from the Delta, San Joaquin River watershed (Friant Division, CVP water) and the Kaweah River watershed through changes in precipitation patterns and/or a shift to more rain and less snow. This problem is exacerbated by reductions in CVP and Delta water supplies to protect endangered

fish species. CVP water is directly delivered to local districts and SWP is used in adjacent areas who rely heavily on groundwater when SWP deliveries are curtailed. Climate change could also impact delivery of Delta water to the San Joaquin River Exchange Contractors, which could divert some San Joaquin River water away from the Kaweah River Basin area to the Exchange Contractors. Climate change could exacerbate issues with the endangered fish species and result in even more cut backs. The Kaweah Basin RWMG has performed a detailed vulnerability assessment of CVP and Delta water supplies with a Proposition 84 Planning Grant. The long-term reliability of these supplies have been incorporated into future climate change analysis. The specific evaluation and results are presented in the Task 6 Memorandum entitled "Climate Change Overlay" contained in Appendix L.5 of this Plan.

2. **Limited Water Storage Capacity.** Additional water storage may be needed if a greater portion of precipitation occurs as rainfall, or if there are more rain-on-snow events. Terminus Dam was raised in 2004 and there are currently no reasonable options for increasing surface storage at the reservoir. Storage could be increased by constructing Temperance Flat Dam upstream of Friant Dam, but the future of the proposed project is uncertain, and it would require several decades to permit, design and construct. The region must therefore currently rely on groundwater storage to increase water reserves and reliability. Recharge basins are not as effective as surface storage in capturing water supplies since they can only accommodate limited flows, thus large areas of recharge basins need to be developed.

These vulnerabilities will be re-evaluated periodically to reflect changes in hydrology and water supplies.

Addressing the reductions in surface water supplies has limited feasibility, but increasing the limited storage capacity would be feasible and is a primary focus for the region. The region will continue efforts to protect their surface water rights, but also realize that surface water supplies are fully allocated and there are few to no opportunities for new water contracts. Increasing surface water is restricted to a limited number of short-term surface water transfers. However, increasing groundwater storage is a viable alternative to deal with climate change impacts. While the area has significant recharge capacity, more could be developed. This would require time and considerable funding, but it remains a priority for the region. Groundwater recharge facilities can serve multiple purposes including addressing climate change, conserving water supplies, and addressing the Sustainable Groundwater Management Act.

The region already deals with a wide range of hydrologic conditions from severe drought to serious flooding. The Region is attempting to better adapt to these natural conditions, which would complement adaptation to climate change. The Region does not believe, at this time, that planning for the most severe circumstances, zero snowfall and all rainfall in the Kaweah River watershed is practical or necessary at this time.

It should also be recognized that climate change could have some positive impacts. Warmer temperatures could increase growing seasons, increase crop yields, allow new crops or crop varieties to be planted, and reduce frost damage to crops. Nevertheless, the negative impacts from climate change will likely outweigh the benefits. The Kaweah Basin water system has been designed and managed based on past hydrology, and large changes will challenge the water managers and users. The risks to the region from no action are clear, and the Kaweah Basin is committed to making continual improvements in their ability to address droughts and floods.

Adaptation Measures

Climate change adaptation is a response that seeks to reduce the severity of climate change impacts to humans, facilities and natural systems. Adaptation measures can also help the region to improve resiliency, which is defined as the ability to return to original conditions after an impact or disturbance.

The California Department of Water Resources (DWR) defines ‘no-regret’ strategies as actions that provide measurable benefits today while also reducing vulnerability to climate change (DWR, 2011). In other words, they are strategies that provide benefits with or without climate change. No-regret strategies are key to the Kaweah Basin, since the impacts from climate change cannot be precisely known. An example of a ‘no regret’ strategy is constructing groundwater recharge basins. Recharge basins are needed now to increase groundwater supplies, reverse overdraft, improve water reliability and provide flood control benefits. They can also address some anticipated impacts from climate change, such as the increase in rain-on-snow events and more variable precipitation. As a result, constructing recharge basins is a positive strategy to address present and anticipated future conditions.

The following strategies are deemed the most practical and effective for adapting to climate change in the Kaweah Basin. Specifically, these strategies could help the region adapt to changes in the amount, timing, intensity, quality and variability of runoff and recharge. All of these are also considered ‘no-regret’ strategies.

- Construct new groundwater recharge and groundwater banking facilities.
- Import surface water supplies from outside of the region, when feasible and economical. These would be delivered primarily through the Friant CVP system.
- Improve urban and agricultural water efficiency.
- Increase use of recycled water.
- Develop surface water treatment plants for municipalities to reduce groundwater pumping and utilize surface water when available.
- Revise land use planning policies to encourage conservation (e.g. low impact development or water efficiency standards).
- Cooperate with the Southern Sierra IRWMP group, and other agencies in the upper Kaweah watershed, to develop watershed management projects that will

improve forest health and reduce fire risk, while at the same time increasing water supply and improving water quality in the Kaweah River Basin. The Tulare Basin Watershed Connections Group, which is a group of the Tulare Bain Wildlife Partners, is currently exploring such opportunities.

- Engage in planning, operations and legislative activities related to the Sacramento-San Joaquin Rivers delta (the Delta).

The Region has already made substantial progress in reducing vulnerabilities to droughts and flooding through the raising of Terminus Dam and construction of new recharge basins. The Terminus Dam was raised 21 feet, thus increasing the water yield to the Kaweah River Basin by 8,500 AF, and providing significant flood control benefits. The KDWCD currently has in excess of 5,000 acres of developed recharge basins and is working to develop another 1,000 acres. In addition, Central Valley Project contractors and local ditch companies are also investing in new recharge facilities. Groundwater recharge will remain one of the primary climate change adaptation strategies for the region.

Future Data Gathering and Analysis

Future data gathering and analysis will fall under three broad categories: 1) hydrologic and meteorologic data to characterize climate change trends; 2) analysis of prioritized vulnerabilities, and 3) climate change literature and related legislation. Hydrologic and Meteorologic Data. The Kaweah River Basin includes an extensive monitoring network that provides data on streams, rivers, reservoirs, groundwater and climate. This data will continue to be evaluated on a regular basis and potential trends will be identified. Changes in hydrology and climate can be caused by climate change or simply natural variability, but long-term consistent changes could point towards climate change. These monitoring programs are evaluated on a regular basis, and, if needed, they will be expanded so they can adequately assess climate change.

Analysis of Prioritized Vulnerabilities. Prioritized vulnerabilities include 1) Reductions in surface water supplies, and 2) Limited water storage capacity. Data will be gathered on a continuous bases to document how the vulnerabilities change, and how mitigation actions help to improve them. This will include records on surface water available, surface water deliveries, groundwater recharge capacity (including construction of new facilities), and actual volume recharged. Long-term trends will also be evaluated.

Climate Change Literature and Legislation. A substantial number of climate change publications are produced each year, including some that assess local climatic conditions in the Kaweah River area. These studies are performed by various government agencies, non-governmental organizations, academic institutions and graduate students. The Regional Water Management Group will take advantage of these efforts and regularly review literature that comes from reputable sources.

The Regional Water Management Group will also monitor climate change related legislation that could impact project operations, regulatory requirements, project funding and greenhouse gas emissions.

Consideration of Greenhouse Gas Emissions in Project Review Process

Climate change mitigation can be achieved by reducing energy demands, improving energy efficiency, and carbon sequestration. These will help to reduce greenhouse gas (GHG) concentrations in the atmosphere. Climate change mitigation will require global cooperation, but the Regional Water Management Group supports reasonable efforts to make their own local contribution. As a result, it is sensible to consider impacts to GHG when selecting and prioritizing projects. This criterion will generally be a lower priority than water supply or water quality, but it is still considered important.

When projects are reviewed and prioritized the project proponents will need to answer the following questions:

1. Will this project increase greenhouse gas emissions? If yes, explain how, for how long, and please quantify.

2. Will this project result in reduced greenhouse gas emissions? If yes, explain how, for how long, and please quantify.

Consideration of Climate Change in Project Review Process

As previously discussed, climate change could have many adverse effects on the region including changes in the timing and amount of precipitation, higher evaporation and transpiration from higher temperatures, increased frequency of droughts and floods, reduction in water quality, increased wildfires, and increased presence of certain pests. Developing projects that can address these issues is important. When projects are reviewed and prioritized their contribution to addressing climate change will be considered. In particular, project proponents will need to answer the following questions:

1. Will the proposed project reduce vulnerability to anticipated impacts from climate change? If yes, explain and quantify.
2. Will the proposed project help the region to adapt to climate change impacts, or increase resiliency to climate change impacts? If yes, explain and quantity.
3. Will the proposed project help to increase the region's understanding of climate change impacts and local vulnerabilities? If yes, please explain.

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FIGURE 6-1

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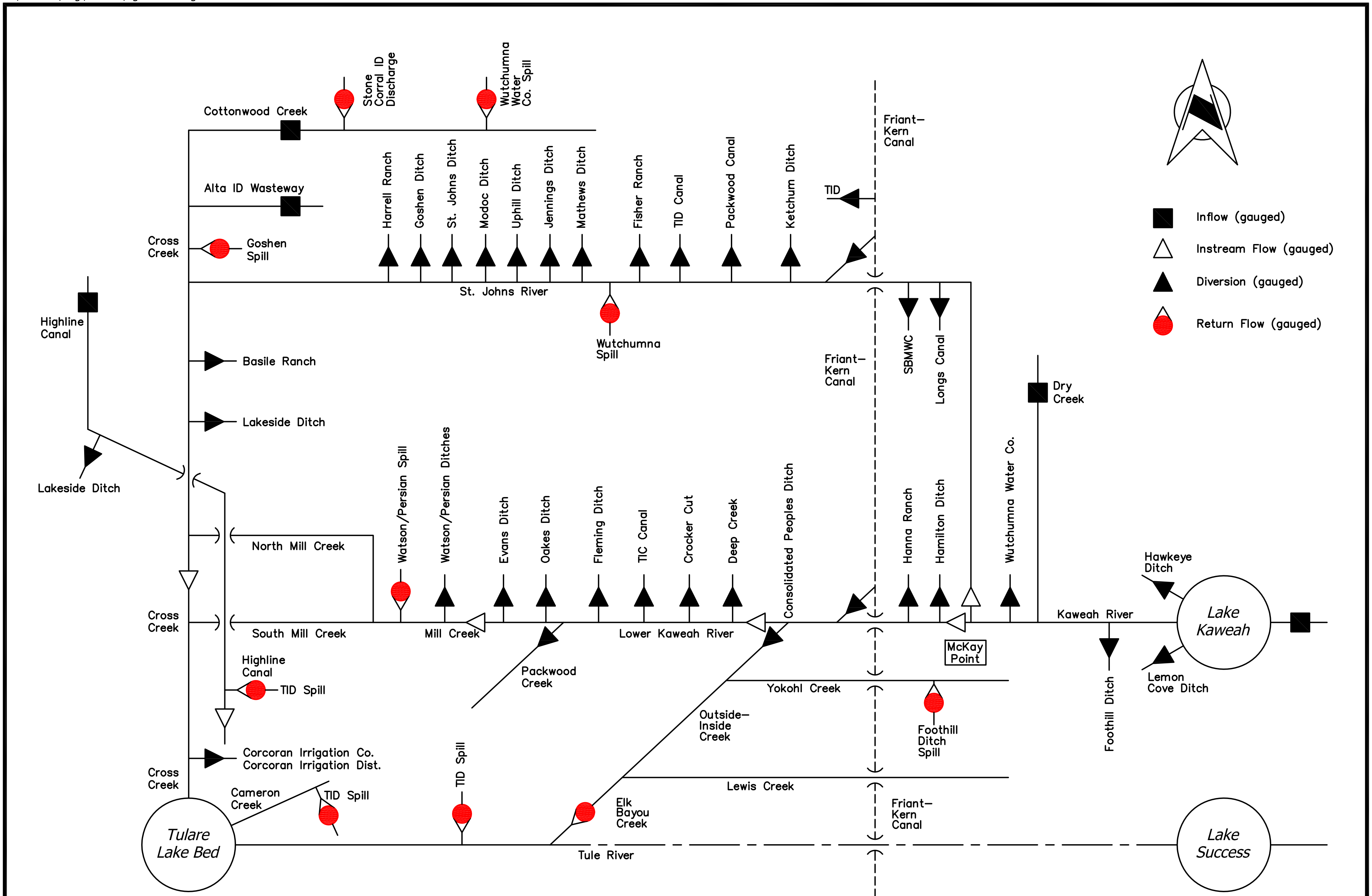
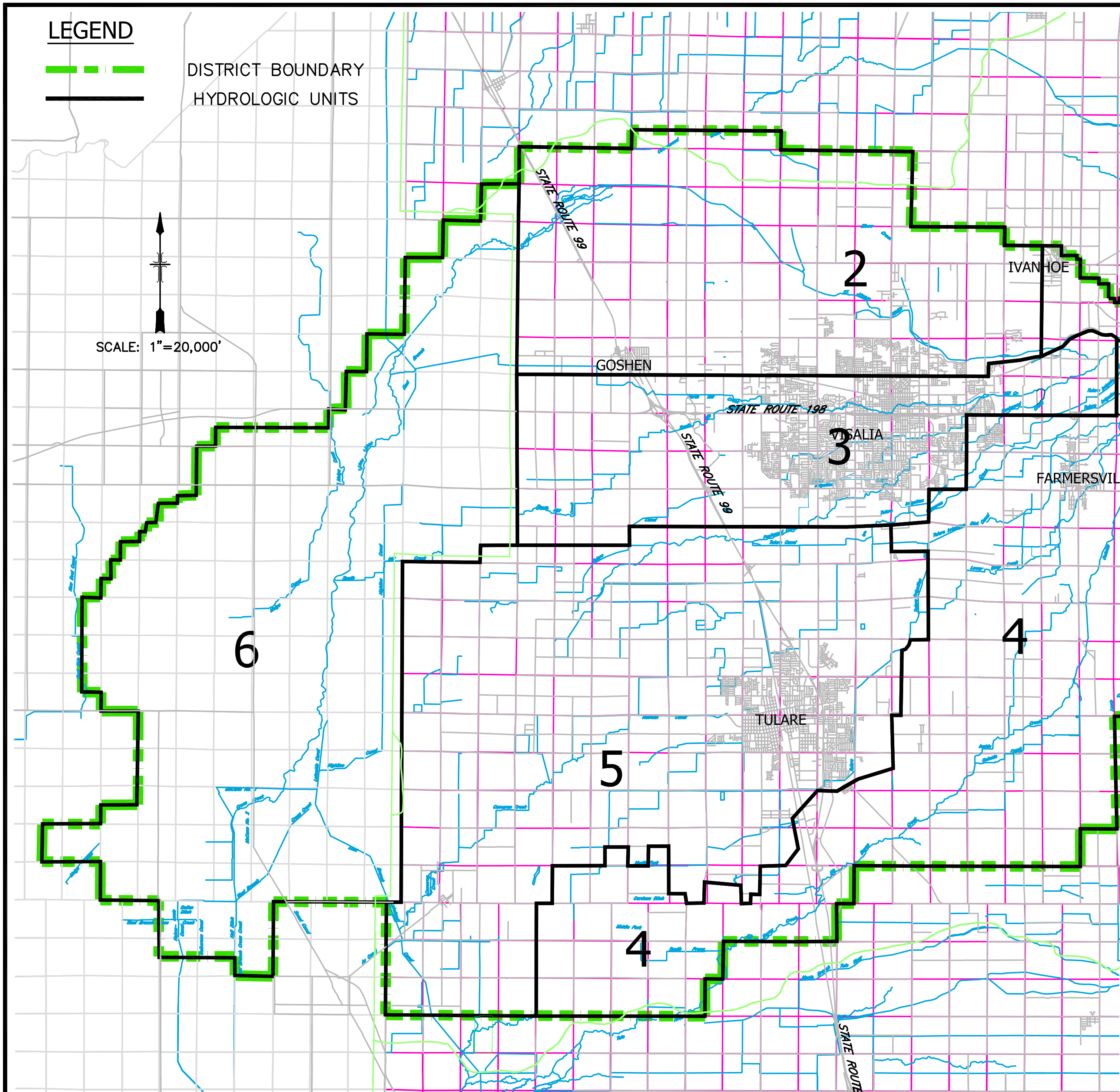


KAWEAH RIVER SYSTEM SCHEMATIC
KAWEAH DELTA WATER CONSERVATION DISTRICT

FIGURE 6-2



HYDROLOGIC UNITS
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KAWEAH DELTA WATER CONSERVATION DISTRICT

CHAPTER 7

WATER QUALITY

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 7
WATER QUALITY

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

7.1 GROUNDWATER QUALITY

Groundwater quality within the Kaweah River Basin Integrated Regional Water Management Plan (IRWMP) area is generally considered in two (2) different contexts. The first of these is agriculture with the second being municipal and industrial. Of principal concern in the municipal and industrial category, is the capability of the supply to satisfy State and Federal drinking water standards and, for industrial users, is the capability to satisfy requirements for manufacturing and processing of related products.

Historically, pursuit of the evaluation of the quality capability of groundwater in a particular area to satisfy agricultural related needs has been left to individual landowners/growers. As there are no agricultural water delivery districts within the IRWMP Area extracting groundwater for delivery to their landowners/growers, with the exception of the Lindsay-Strathmore Irrigation District, sampling and testing to determine suitability for agricultural purposes has been undertaken by the landowner/grower. In the case of the Lindsay-Strathmore Irrigation District, as their wells are utilized for incidental residential consumption during periods of time of outage of the Friant-Kern Canal, their wells are tested on a routine basis.

As a result of the pursuit of quality related information on an individual basis, a limited amount of information exists in the public arena as to the general water quality of the area. Older studies by the U.S. Geological Survey provides some insight as to water quality parameters, however, many of the investigations performed by said agency were specifically targeted to either problem areas or problem constituents, such as Boron and Arsenic. More recent studies, completed under contracts with the County of Tulare, have identified areas with identified contamination and the types and degrees of contaminants. These studies have been completed on a general Tulare County wide basis, as well as specific areas within the eastern portion of the Valley portion of the Kaweah River watershed. Specific contaminants have been identified including Nitrates, 1,2,3 TCP, perchlorates, Chromium VI and iron. For the eastern Kaweah River watershed, specific projects have been identified, scoped and cost elements developed to assist in implementation of solution sets. Funded budgets are currently in place to assist in the pursuit of funded solutions.

This trend is being reversed as the Irrigated Lands Regulatory Program (ILRP) General Order has been adopted and brings with it a groundwater water quality investigation and evaluation component. Very controversial in its nature, parties have applied to represent landowners within the RWQCB's jurisdiction and that is the case within the Kaweah River Basin. The Kaweah Basin Water Quality Association been recognized by the RWQCB as the third-party representative of growers in the area. Initial steps required under the General Order, now completed, include an initial Groundwater Assessment Report which was prepared with principal emphasis on the vulnerability of the groundwater reservoir to impacts from agricultural related discharges. Of particular importance, nutrient related impacts and pesticide related impacts are of high significance.

In the current agricultural arena, efforts associated with the Dairy Industry General Order, also adopted by the RWQCB, have been in place for some time. The groundwater component associated with said order is specifically related to the private wells located on dairies and monitor wells designed and constructed in locations adjacent to sumps containing dairy waste prior to land application. A substantial amount of information is currently in inventory and, while significant in nature, is restricted to those areas where dairies exist.

In contrast to the agricultural areas, characterization of groundwater supplied for municipal and industrial and rural drinking water purposes has historically generated a significant quantity of information related to its quality related parameters. This data is available from the individual purveyors and is lodged, by electronic transmittal, by testing laboratories directly to the State Water Resources Control Board, Division of Drinking Water (SWRCB, DDW) database. Public access to this database is available electronically, with the exception of well log information. For each agency to whom the SWRCB, DDW has issued a water supply permit, they are required to issue, no later than July 1 of each year to each customer, a Consumer Confidence Report. Identified as the CCR, this document must meet specific format requirements and is designed to not only provide the drinking water customer with specific information with regard to the numeric test results related to their drinking water, but also is to provide information with respect to allowable limits and potential health effects of certain contaminants. In some cases within the IRWMP Area, this CCR is provided in a bilingual format.

7.2 SURFACE WATER QUALITY

In diametric opposition to groundwater quality, significant information exists with respect to surface water quality in the agricultural regions of the IRWMP area, with little information related to water quality associated with the urban and rural developed areas. What little storm water related water quality testing takes place, is frequently in concert with the agricultural related water quality program, seeking to identify principally any introduced contaminants from urban areas which may be identified otherwise as having agricultural origins.

The ILRP program of the RWQCB, prior to the adopted General Order, required a surface water quality oriented program for each watershed within its jurisdiction. For the Kaweah River Basin, this program was undertaken by the Kaweah & St. Johns Rivers

Association and information related to surface water quality under this program was developed over a period of time in excess of a decade. The data from this program is reported by each watershed to the RWQCB with test result information specifically transmitted to the State Water Resources Control Board database, which is electronically accessible to the public. Formatting requirements for information submittal have been changed from time-to-time related to this database and when those changes have been made, conversion requirements have existed to reformat prior information to satisfy the new format requirements.

In addition to submittal of the information to the SWRCB database, annual reports are prepared for each watershed which contain the specific test information generated over the subject year period of time and responses which were generated to observed water quality failures.

Specific to the Kaweah River Basin IRWMP Area, the Association identified core locations for sampling which are presented on Figure 7-1. The core sample locations indicated on Figure 7-1 are identified as “SP.” Sampling and testing at these sites has been consistent with the orders issued by the RWQCB since the inception of testing. Additional sites have been added over time based on either identified water quality concerns or seeking out clarity on whether or not contamination exists at those locations. On the subject figure, for the current testing period, the sites have identifiers that are other than “SP”, often an identifier associated with the surface water conveyance facility. An example would be Foothill Ditch, identified as “FD.”

For the most part, surface water quality within the IRWMP Area is of very high quality. Whether the source is the Kaweah River, a local stream group or the Friant-Kern Canal, water quality parameters not only indicate water of a high quality, but waters that are only slightly altered by the activities of man.

Where contamination has been shown to exist, steps have been taken to identify the source of the contamination and where found, to work with the landowner/grower(s) to initiate actions to bring about a change in discharge or the presence of adverse contaminants in the discharge.

Where water quality problems have been discovered and have not been quickly resolved, Management Plans have been generated to deal with the specific area where contamination was found and the specific contaminant. In some cases, where Management Plans have been developed, it has still not been determined if the contaminant source is from irrigated agriculture, household use of pesticides and herbicides, or commercial spraying operations such as those associated with State highways and county roads. In several cases, discoveries of contamination have been found to be associated with activities other than irrigated agriculture.

The conduct of this surface water program has transitioned to the Kaweah Basin Water Quality Association. As the General Order now contains both a surface water element and groundwater element, it was determined by the Kaweah & St. Johns Rivers Association that they did not have the authority to conduct the groundwater portion of the program as required by the current General Order and, had they elected to do so, problems were identified that did not have resolution, such as those associated with the Internal Revenue Service.

7.3 POTENTIAL SOURCES OF CONTAMINATION

Several potential sources of contamination exist within the IRWMP Area. For some of these potential sources, such as irrigated agriculture, programs are in place to not only identify contaminants and the source of contaminants and to work on cessation of discharge of such contaminants, but also have structured regulatory requirements associated with the efforts. For others, such as septic tanks and subterranean leach field systems, requirements exist in some areas for monitoring of the condition of the systems and remedying identified problems, while in other areas, such regulation is totally absent. In some of the potential contaminant arenas, such as abandoned wells, there is no organized program to abate the problems associated with the problem. The following is a discussion of each of the current identified potential sources of contamination within the IRWMP Area.

7.3.1 Failing Septic Systems

In certain areas covered by the IRWMP, such as Badger Hill Estates, the RWQCB has issued a specific order to deal with design, inspection and operational considerations related to the systems. The Badger Hill Association is required to report information from each homeowner related to the frequency of their septic tank pumping and, as dual leach field systems are required, the frequency of rotation between those systems.

The design of new systems is under the jurisdiction of the Counties of Kings and Tulare with soil percolation tests often required to accompany the design to ensure proper performance of the subterranean disposal system. Once installed, however, unless adverse conditions are noticed by an agency of jurisdiction, or complaints are received by same, no oversight exists with respect to these systems. In no cases within the IRWMP Area have there been or are there studies related to the specific impacts of septic tank and subterranean disposal systems on the accumulation of contaminants to groundwater. Septic tanks are designed as biological reactors to reduce the pollution strength of certain contaminants within the waste stream delivered to the septic tank. They are not, however, designed to reduce nutrient loads, such as nitrates, which is a task often left to the soil structure which exists from the disposal area to first encountered groundwater. The adequacy of the soils to accomplish any degree of nitrate reduction is not an initial design consideration, nor are the programs to determine the efficiency of the systems in this regard. Thus, these systems have been identified as potential sources of contamination.

7.3.2 Abandoned Wells

Recent attention has been given to the issue of lack of destruction of abandoned wells within the IRWMP Area. A recently completed project of the IRWMP, being conducted under a grant to the Kaweah Delta Water Conservation District (KDWCD) and allocated to the County of Tulare, was to initiate a program of identification of areas where abandoned wells exist, which placed in jeopardy existing water production facilities and to take steps to properly destroy those wells in concert with applicable State and County ordinance requirements.

While the requirements of the State and of each county within the IRWMP Area which have standards and ordinances related to well destruction, the standards employed were related to the abandonment procedure strictly and not to the identification of the location of these wells, or conditions under which wells must be properly destroyed. Any number of circumstances can be referenced in which abandoned wells have been discovered in locations where proper destruction should have taken place, but did not. In addition, there is no identified program at any level of government to routinely seek out these locations and effect abandonment. For these reasons, abandoned wells have been identified as a potential source of contamination. These wells are of particular concern as they are drilled across water-bearing strata and act as a conduit to draw water from one aquifer to another, transporting with this water contaminants from one aquifer to another.

7.3.3 Landfills

Historically, dump operations were located with transport distance from the source to the repository being the principal locating factor. Dump closure, including landfill closures, were often conducted without consideration to downslope groundwater contamination. Brought about by regulatory change, investigations began to occur wherein it was required of dump and landfill owners to identify whether or not the subject facility was contributing to groundwater contamination. Where identified to be the case, clean-up operations were undertaken and continue to be undertaken to abate any further contribution to the groundwater reservoir of contaminants from the subject facilities. Of particular concern has been the migration from these facilities materials for which the soil mantle lacks the capability to provide reduction of the harmful effects of the material. In this family are materials such as pharmaceuticals and petroleum wastes, coupled with the household disposal of unwanted pesticide and herbicide materials. Disposal of these materials has led to Vadose Zone contamination downslope of the disposal facilities. Frequently observed at both closed sites and operating sites are extraction facilities designed to abate the effects of these contaminants. As considerable oversight exists from local, State and Federal regulatory levels, the IRWMP does not call for an increased level of scrutiny and oversight with respect to this source of contamination.

7.3.4 LUFT

In a similar fashion to the landfill category, the program to abate the effects of leaking underground fuel storage tanks is well developed. A state-wide program, covered by a per-gallon fuel tax, collected at the pump, has been utilized successfully for several years in cleaning up and abating the effects of leaking underground fuel storage facilities. In addition to this successful program, new standards have been brought to bear for tank installations requiring double-walled tanks, sensors located between the tank walls to detect leakage from the first storage facility, elimination of underground tanks and movement to above-ground tanks and movement toward total containment systems wherein a leak is totally confined to a secondary area upon failure of the first. In many cases, these new regulations have eliminated the number of tanks which existed with farmsteads and individuals who previously had tanks for their use eliminating the option and fueling at commercial locations.

Based on the current State clean-up program and the current requirements related to new facility installation, this IRWMP does not call for additional oversight consideration related to fuel storage tanks.

7.3.5 Irrigated Agriculture

As previously noted in this Chapter, considerable attention has been given for some time to the potential contamination of groundwater and surface waters from sources identified as being associated with irrigated agriculture. As programs are in place, in addition to regulatory and statutory requirements, it is accepted by this IRWMP that irrigated agriculture is a potential source of contamination. Efforts will continue to be expended to track the results of the ongoing programs, particularly as any adverse water quality occurrences may affect not only the beneficial use of available surface water and groundwater sources available to the IRWMP area, but may also affect land uses and land use planning.

7.3.6 Confined Animal Facilities

On a similar, but earlier pathway to the ILRP, the RWQCB identified confined animal facilities as potential sources of contamination affecting both surface water and groundwater. As a result, the RWQCB has placed confined animal facilities in a category to be regulated specific to certain findings of the RWQCB and with dedicated staff associated with oversight on the orders issued by the RWQCB. Unlike the General Order related to irrigated lands, the General Order related to confined animal facilities does not address representation by a third-party. Each individual operator has to respond to the General Order and while some monitoring is conducted on an area-wide or region-wide basis, reporting is still accomplished on a by-operator basis.

In addition to State oversight and regulation, the County of Kings and the County of Tulare both require Conditional Use Permits for confined animal facilities. The process of issuing these permits involves a significant degree of scrutiny and oversight often requiring an in-depth and extensive environmental document which first must be considered, prior to any permit-related action.

As with the ILRP, it is a practice of the IRWMP process to track RWQCB actions related to confined animal facilities, county actions with regard to same and monitoring for trends the reported outcomes of groundwater sampling and testing. These activities of the IRWM are envisioned to continue with the same, oversight by the RMG.

7.3.7 Publicly Owned Treatment Works

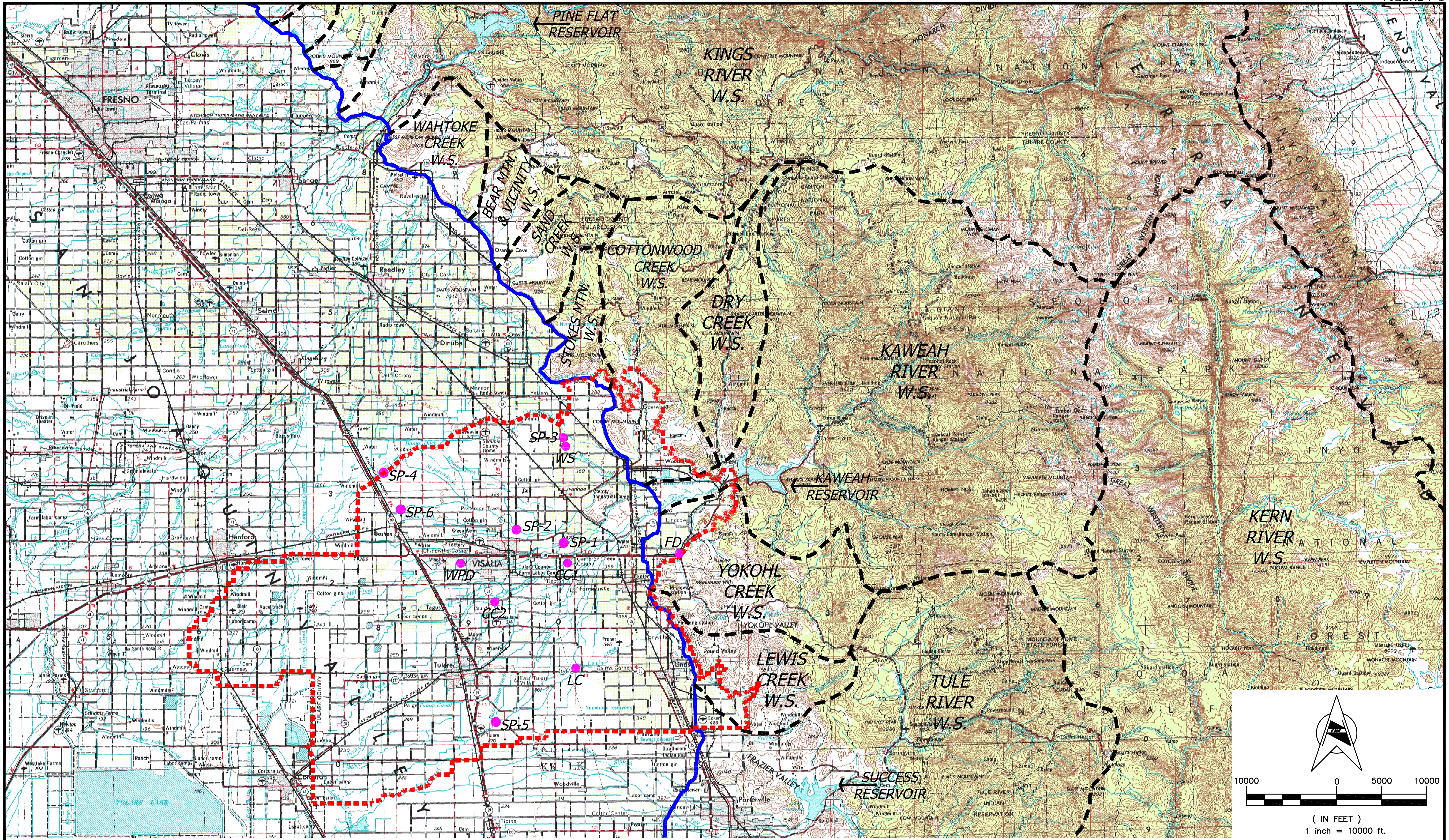
Wastewater treatment and disposal systems serving urban and rural areas are subject to the Waste Discharge Requirements process of the RWQCB. Discharges to surface water require not only that action, but an additional action of the issuance of a permit under the National Pollution Discharge Elimination System (NPDES) which, in California, allows for primacy to be exercised by the RWQCB under agreement with the Federal Environmental Protection Agency. As a part of adopted and issued permit processes for both Waste Discharge Requirements and NPDES permits, a substantial monitoring and reporting program is a part. In addition, the RWQCB has instituted a spill notification program associated with sanitary sewer collection systems which require monthly reporting, at a minimum and short-term reporting of any spill incident. In addition to written reports being required to be submitted to the RWQCB, monthly test result information is required to be submitted to the SWRCB database, which is accessible to the public electronically.

The siting of treatment and disposal facilities is a land use issue, not only for each of the counties of jurisdiction within the IRWMP, but also for the applicable Local Agency Formation Commissions. Issues related to spheres of influence, boundary expansions and types of development are given consideration in both the county arenas and those of their Local Agency Formation Commissions. A part of any of the major facility permit requirements is a Groundwater Monitoring Plan, with its separate requirements. Data from these programs is often required to be submitted monthly, and at most quarterly in order to allow for any adverse trends to be identified quickly and steps taken to identify and correct any adverse condition. At the current time, this information is not tracked, nor analyzed as a part of the IRWMP process.

7.3.8 Storm Water Runoff

Storm water runoff is generated from a number of sources including native pasture and irrigated lands, county and state highway systems, developed rural and urban areas and isolated commercial and industrial processing facilities, including packing sheds and cold storage facilities. For areas subject to structurally intense development procedures, county permit requirements typically mandate retention basins be developed as a part of the development package. The design characteristics associated with these facilities are such that they address retention of storms to a defined frequency in the on-site facilities.

In a similar fashion, rural concentrated development and urban development is accompanied with the design and construction of storm water collection and detention facilities designed to what has been identified as a level where, for most precipitation conditions within the IRWMP area, are considered to be the dominant pattern. In some cases, storm water systems discharge to ditch company facilities by agreement and to natural stream systems in order to eliminate the need for the acquisition and development of land for the purpose of retention of the developed waters. With very few exceptions, mostly associated with the ILRP, testing of the quality of these waters is not accomplished, certainly not on a schedule driven basis. The water quality test results associated with storm water discharges incorporated into the ILRP are monitored by the IRWMP as a normal activity of KDWCD staff and its consultants. As noted, beyond the ILRP efforts, and the aged efforts of the U.S. Geological Survey, water quality information associated with storm water discharges is virtually non-existent.



Revision	Date	Description
3	06/20/12	Added Core Monitoring Sites
2	01/23/06	Added SP-5 and SP-6
1	08/10/05	Relocated SP-4 upstream of Hwy. 99/R.R.

SOURCE:

U.S.G.S. 1°x2° SERIES QUAD SHEET, FRESNO, CA 1962

SAMPLING POINT LEGEND

- SP-1 KAWEAH RIVER
- SP-2 ST. JOHNS RIVER
- SP-3 STONE CORRAL I.D. DISCHARGE
- SP-4 CROSS CREEK @ HWY. 99
- SP-5 ELK BAYOU
- SP-6 GOSHEN DITCH

LEGEND

- FRIANT-KERN CANAL
- WATERSHED BOUNDARY
- SUB-WATERSHED BOUNDARY
- SAMPLE POINT

KAWEAH RIVER SUB-WATERSHED

2004 ANNUAL MONITORING REPORT

KAWEAH & ST. JOHNS RIVERS ASSOCIATION

KELLER/WEGLEY

CHAPTER 8

FLOOD CONTROL

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 8
FLOOD CONTROL

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

8.1 CURRENT FLOOD CONTROL PROGRAMS

8.1.1 Federal Flood Control Program

The administration of the elements of the Federal flood control program within the Integrated Regional Water Management Plan (IRWMP) Area is administered by the Sacramento District of the U.S. Army Corps of Engineers. The Sacramento District is extensive, covering areas of eight (8) individual states. It covers the trough of the great Central Valley extending from above Lake Shasta on the north to the Tehachapi Mountains on the south and extending to the crest of the Sierra Nevada adjacent to the IRWMP Area and northerly into the Klamath Basin in Oregon. Originally a part of the San Francisco District, it was formed in 1866 with boundaries including the rivers and waterways within areas drained by the Sacramento and San Joaquin Rivers extending to Suisun Bay. Reformed into the Sacramento District in 1968, it is the second largest district in the United States and has an area of coverage of 290,000 square miles. The District is under military leadership, typically in the form of an Army Colonel, who carries the title of District Commander.

In the context of the IRWM, Terminus Dam was constructed under the jurisdiction of the U.S. Army Corps of Engineers and was completed in 1962. The recent reservoir enlargement project was also conducted under its jurisdiction. The USACE, as it's known, takes its direction from Congress, for example, utilized the authorization of Congress in the Flood Control Act of 1944 to build Terminus Dam. The USACE has day-to-day responsibility for the operations of the dam and Lake Kaweah, subject to local participant agreements, wherein non-federal flood control components are addressed as to their interface with the flood control aspects of a given project.

Utilizing single-purpose legislation, the USACE initiated studies in 1992 for the Lake Kaweah enlargement project which resulted principally in a spillway modification. Also operated under the umbrella of an agreement with the USACE is the hydroelectric generation facility of the Kaweah River Power Authority which has an intake penstock bored through Terminus Dam, a powerhouse on the downslope face and a discharge into the dam afterbay. Close and well-managed cooperation exists between the local water supply and power generation entities, including that of the Watermaster of the Kaweah & St. Johns Rivers Association.

8.1.2 State Flood Control Program

The State of California Flood Control Program is managed under the guidance of the Central Valley Flood Protection Board. Previously known as the California State Reclamation Board, regulatory authority for the Board's business and actions were first authorized in 1911 and were intended to reduce the risk of flooding within California's Central Valley. The Board was restructured in both 2007 and in 2009 and has as its current principal task, the review, update and adoption of the Central Valley Flood Protection Plan.

Acting in a similar fashion to the IRWMP, the Central Valley Flood Protection Board now evaluates water issues, not just from a flood protection perspective, but also by including water management programs that combine flood management, ecosystem enhancement, water supply and land planning actions in an attempt to deliver multiple benefits, in lieu of a single flood protection benefit.

In 2013, the agency initiated a strategic planning process resulting in the adoption, in mid-year, 2013, of Governance Principals and a Strategic Plan. The Strategic Plan calls for the Central Valley Flood Protection Board to seek out new and innovative ways of managing flood risks, while at the same time attempting to reduce cost and maximize the per-dollar spent impact.

Within the IRWM Area, the interface with the Central Valley Flood Protection Board is as the State participant in flood control projects such as the enlargement of Lake Kaweah and issues related to floodway designation and floodway management on the Kaweah River and defined distributaries.

8.1.3 Tulare County Flood Control Program

Within the Tulare County portion of the IRWMP, local flood control issues in non-urban areas are under the jurisdiction of a special district identified as the Tulare County Flood Control District (District). While often confused as a function of the County of Tulare, as it is frequently staffed by County employees, it is nonetheless a special district, separate and apart from the County of Tulare.

A principal function of the District is to work on local flood control projects within the County and, at the current time, all of the projects which the District is working on are in the Tule River and White River watersheds. The District played a role in the recent enlargement of Lake Kaweah representing those property owners in the rural unincorporated areas potentially affected by flooding related to the Kaweah River.

Principal in their current functions is their part in the National Flood Insurance Program which has required the County of Tulare to agree to manage flood hazard areas by actively adopting minimum regulatory standards as set forth by the Federal Emergency Management Agency. Through this program, individuals are eligible to obtain flood insurance. The District is heavily involved with the Map Modernization Project of the Federal Emergency Management Agency and, since 2009, has adopted the new Digital Flood Insurance Rate Maps as a part of the flood insurance program. The District maintains a current and interactive website which is utilized principally in the map related programs.

8.1.4 City Flood Control Programs

For the most part, the storm water programs of the cities located within the IRWM boundaries are engaged in storm water management, in lieu of flood management. Due to its location associated with the westerly termination of the Kaweah River and the adjacent St. Johns River, the City of Visalia was a direct participant in the Lake Kaweah Enlargement Program. In a similar fashion, following the devastating flood of Christmas of 1955, the City and a number of influential City residents were the main drivers in succeeding to achieve the financing and construction of Terminus Dam. At the current time, the City is heavily engaged with the federal government in their floodway mapping programs and seeks to stabilize that program and make meaningful changes to the manner in which policies are established and enforced relative to flood map generation and flood zone determination.

The City of Farmersville has been a supporting agency in the Kaweah Delta Water Conservation District (KDWCD) Paregien Basin Project, a major element of which is to attenuate the flood flows of Deep Creek and reduce the flooding impact on the City resulting from non-attenuated Deep Creek flows. These flows have as their origins, principally the unregulated Dry Creek watershed. While not a financial participant in said project, the City's status as a disadvantaged community and the support of the City administration and City Council were instrumental in securing funding for project construction.

8.2 FLOODING PLANNING ISSUES

A number of flood planning issues have been and some continue to be in the forefront in the IRWMP implementation process. Beginning with the USACE dam seepage and seismic evaluation issues related to Terminus Dam, IRWMP stakeholders have been heavily involved in the issues and potential outcomes of both of these issues. The outcomes dictated whether or not Terminus Reservoir was to be allowed to operate at full storage, suffered restrictions for defined reasons or was to be modified physically. In addition, as a principal function of KDWCD is channel maintenance, maintenance of the flood channels downstream of Terminus Dam are an everyday occurrence. Whether in planning or implementation, manpower, equipment and expense is continually directed at these channel maintenance activities. The activities are carried out under permit authorities granted relative to the Federal 404 permit process and the State of California, Department of Fish & Wildlife 1601 permit process.

Activities related to the sufficiency of levees constructed years ago along principally the St. Johns River continue at the forefront, particularly with respect to flood mapping issues. These levees were apparently built, for the most part, without engineering design and related geotechnical studies. A policy adopted by the Federal Emergency Management Agency, sets forth that such levees are to be discounted as nonexistent in flood mapping procedures. This decision has led to a significant change of who is or who is not within a defined flood plain. Work continues on this issue at this time.

In discussion form, issues related to climate change and flood control concerns have recently intensified. As flood damage is envisioned to be at its greatest within the IRWMP Area based on rainfall events on unregulated watersheds and on high-elevation warm rainfall on top of significant snow pack, climate change intensifies one of these paradigms and drastically alters the other. It is envisioned that discussion will continue relative to this issue until sufficient direction is generated with respect to potential projects which can be designed and implemented to alter the effects of climate change and to address a change in runoff configuration from predominantly snowmelt to a mix of snowmelt and rainfall. It is envisioned that a paradigm shift completely to a rainfall pattern is of such draconian proportion so as not to be in the realm of reasonable discussion at the current time.

CHAPTER 9

KEY ISSUES, PLAN OBJECTIVES, REGIONAL PRIORITIES AND WATER MANAGEMENT STRATEGIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 9

KEY ISSUES, REGIONAL PRIORITIES AND WATER MANAGEMENT STRATEGIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

9.1 KEY REGION WIDE AND WATERSHED-SPECIFIC ISSUES

9.1.1 Overview

A number of issues are of key position within the Kaweah River watershed and a significantly reduced number at the region wide level. Of principal magnitude, is the governance leadership role associated with the IRWMP. Beginning in the early 1990s, coordinated water management became the focused issue of the Kaweah Delta Water Conservation District (KDWCD) Board of Directors and management. It was envisioned that far greater strides could be made with respect to program and project implementation if partnerships were forged between willing parties, than could be accomplished if individual parties pursued like issues on their own. Agreements and projects began to fall into with place with this changed paradigm of thinking which has resulted in the relationship between IRWM participants and stakeholders that exist today. The leadership position of KDWCD has been replaced with the Resource Management Group and a governing Board of Directors reflecting Kaweah River Basin water management participants and related stakeholders.

With the advent of the State of California recognizing the value of water governance management integration and structuring allocation of bond funds around integrated regional management concepts, interest in the governance issue and, in particular, the leadership model, has been rekindled. As to whether this interest is driven by water management related interests or project funding interests, the issue probably remains unanswered until a point in time when funding of projects falls once again to the local participants without any assistance from State and/or federal agencies.

To demonstrate the gravity of this issue, the topic is one of the paramount topics which was evaluated utilizing Round 2 – Proposition 84 funds leading to modifications to the original Plan. Subsidiary issues to the governance issue dealt with the IRWMP itself. Issues as to what type of plan it is, whose plan it is and the plan maintenance were specific issues. Debate and attention was directed to issues introduced into the IRWMP as a result of IRWM Plan review utilizing Guidelines established by the State Department of Water Resources (DWR). A number of issues which are included into the IRWMP structure as a result of the DWR review and approval process were felt to already be applicable water management elements in the Kaweah River Basin. Of particular note is the degree of required attention and response to the issue of climate change and the response to climate change from a water management standpoint. While there is little debate within the Kaweah River Basin with respect to whether climate change exists or not, considerable debate exists as to the extent that time should be spent trying to develop plans to respond to the issue, as compared to the historic IRWMP planning process that is complementary to the impacts expected to be experienced with climate change. Given the 20 year plus experience related to the project to add 21 feet to Terminus Reservoir and increasing the surface water yield to the Kaweah River Basin by 8,500 acre-feet, along with a significant improvement in flood control benefits, brings rise to the question of how quickly water development projects can be created and implemented which are of any sufficient magnitude. Whether or not the topic of planning for a climate change shift of predominantly rainfall runoff, as compared to snowmelt runoff, can be sustained over the near term remains to be seen, as does the response of land use planners to a situation wherein either considerable more storage infrastructure would have to be developed or considerably more land will experience flooding conditions than currently exists. The role which the U.S. Army Corps of Engineers has is major in this regard and the degree to which they respond will define the responsibility of others relative to climate change.

The Whose Plan? issue could have become an issue which pitted agricultural water users, who have rights to the majority of the surface water rights in the Kaweah River Basin, against rural and urban water users whose sole source of supply currently is groundwater. A high level of cooperation exists today between these disparate interests based on what is viewed as common interests. Whether time and declining groundwater conditions modify that relationship remains to be seen.

The final overview issue remaining is related to the relationship between water quality and land use planning. Even today, confrontation is beginning to develop over approval of land uses in locations where the end use being planned for necessitates a water supply which is compliant with state and federal drinking water standards. Approval of land uses in deference to water quality are continuing to proceed with the end result being the unavailability of compliant water quality sources to the end users, oftentimes not realized by end users until significant economic decisions have been made. Considerable improvement relative to this issue is being requested by a number of parties, not only from the discussion standpoint, but also from the implementation standpoint.

9.1.2 Region-wide Issues

In addition to the overview issues presented in 9.1.1, a number of other issues are at hand. Leading these issues are the conditions of the groundwater reservoir underlying the lands within the ILRP, the cost to extract water as groundwater levels decline and changes in water quality associated with both legacy land uses and current land use practices. The role of Groundwater Management Plans has changed wherein local control of groundwater has become centered in a Groundwater Sustainability Areas created in response to the Groundwater Sustainability Act. Accompanying this change are very active programs related to Basin Plan water quality objective changes, impacts related to implementation of the San Joaquin River Restoration, destruction/restoration of threatened and endangered species habitats, along with the recovery programs associated with threatened and endangered species, and, as previously mentioned, the interface between current water managers, principally in the agricultural realm and water managers in the urban setting, particularly those who are in declining groundwater areas.

The final issue deals with that of disadvantaged communities. While the IRWMP Area consists of predominantly agricultural land and urbanized areas, a number of population concentrations and rural residences exist for which the economic base of the home unit is considered to be disadvantaged. In a recent application submitted by KDWCD, as an approved IRWMP project, information was generated detailing how 51 percent of the population within the IRWMP Area is considered disadvantaged. Therefore, approximately one-half of the population of the IRWMP Area falls into the disadvantaged definition but, more importantly, a significantly high percentage of that population falls into the severely disadvantaged category. As will be discussed later in this chapter, response to this issue, in earnest, began several years ago with processes and procedures being agreed upon to initiate a proactive approach to resolving water management problems related to this disadvantaged segment of the IRWMP Area population.

Through the course of the last 25 years, progress has been made through the IRWM process in addressing issues such as surface water export and groundwater mining and export. As an example of the types of policies which are developed on an integrated water management based approach, the basin policy of the Kaweah & St. Johns Rivers Association is offered. A copy of this policy is contained in Appendix G. This policy was adopted in the early years of the approach to integrated water management and was based on the intent of the parties to the policy to retain waters of the Kaweah River and its tributaries within the Kaweah River hydrologic surface basin, now referred to simply as the “Basin.” Boundaries as to use of Kaweah River water were agreed upon, as were specific water management procedures, such as allowing water to leave the Kaweah River Basin during dry and critically dry situations. Such transfers were based in allowing relief to growers/landowners and urban users in other areas which do not enjoy the same conjunctive use capability as exists within the Kaweah River Basin.

As a dynamic planning document, this IRWMP is designed as a document to be flexible enough to deal with the fact that some of these issues will find resolution, while other issues will be brought to the table to be dealt with from the interactive process that exists between the Board of Directors of the KDWCD, its staff and consultants and the individuals participating in the IRWM Stakeholders Advisory Group. As always, public participation and public comment will be an integral element in the functioning of the IRWMP.

9.2 REGIONAL ACCEPTANCE PROCESS

In 2009, the KDWCD was invited to participate in a review process, utilizing guidelines developed by DWR, for what was designated as the Regional Acceptance Process (RAP). At that time, the DWR had previously found that the planning effort and the geographical boundaries of the KDWCD IRWMP to be a "deemed acceptable" plan covering the Kaweah River Basin. Documents were submitted at that time in support of concurrence by DWR of the KDWCD position relative to the RAP process.

For an approximately two (2) year period of time prior to the RAP application being submitted, the Stakeholders Advisory Group had been meeting to deal with a number of issues, particularly those related to water quality and water quantity issues. The process was designed to address those topics, whether the subject water user was agricultural in nature or was a domestic consumer. Coming out of the process were a number of conclusions and agreement as to processes which could be followed to change the circumstance, for instance, of a community with a water quality problem, no governance structure and a need to address the deficient quality conditions.

This information was provided to DWR who scheduled a formal review process with KDWCD and members of the Stakeholders Advisory Group. Coming out of this process, the DWR determined that all aspects of the IRWMP planning process were adequate, with one (1) exception and that the KDWCD plan was confirmed to be a "deemed equivalent" plan. Further, that KDWCD was an eligible applicant to apply for Round 1 implementation funding made available through the passage of Proposition 84.

The one (1) exception which the DWR desired to be pursued further was the potential integration of the IRWM efforts in the Kaweah River Basin with those in the Tule River Basin. Substantial confusion over the exact directive from the DWR over the RAP condition existed for a significant length of time. The matter was finally clarified when DWR issued language indicating that "the Kaweah River Basin and the Tule River

IRWM regions must explore options on how best to structure the regional boundaries in this area." With that clarification, intense effort began between the governing boards of the KDWCD and the Deer Creek & Tule River Authority to address the issue. Joint and independent work sessions were set with the governing boards with a joint meeting of the respective boards occurring where draft alternative positions were presented for consideration and instruction. Policy direction was given to staff and consultants to draft a formal position for consideration for adoption by both governing boards. An evaluation process occurred, culminating in a formal joint decision being made by both governing boards. A copy of the overview of the decision which was before the governing boards is attached hereto as Appendix H. In addition, Appendix H also contains a copy of the staff recommendation which was generated as a result of the joint board efforts. The recommended actions from the staff report were adopted in July, 2013, by both governing boards.

9.2.1 Recommended Response to RAP Process Recommendation

Ratified by both the governing boards of KDWCD and the Deer Creek & Tule River Authority, the following five (5) recommendations were instructed to be adopted. The adoption was as policy instruction and is as follows:

1. The Kaweah River Basin and the Tule River Basin would continue their existing Integrated Regional Water Management procedures and implementation of related policies as they apply to each specific basin;
2. That the IRWM Plan structures be developed on a DWR acceptable format specific to each river basin;
3. That the existing Kaweah River Basin Advisory Group be retained and expanded to include Tule River Basin membership. The Advisory Group meeting location would be rotated between the basins so as to encourage participation by water management entities and disadvantaged communities specific to each basin. A specific task given to the Advisory Group would be to address the project evaluation process and, in particular, the evaluation of projects from the perspective of improvement if projects were designed on a multi-basin format, in lieu of just a single basin format;

4. That specific steps be taken to update and expand the prior activity of the DCTRA to delineate needs and capabilities within the participating entities between both Plan areas; and

5. This structure should be reviewed in no more than five (5) years to allow for the opportunity of strengthening, confirmation or modification of the policies and procedures based on the success of implementation.

The policies instructed to be put into place as of the date of final Board action have been put into effect. Written plan development for the Kaweah River Basin is evidenced by this document and a parallel document has been completed, adopted by the Deer Creek & Tule River Authority and approved by DWR. Conformation of the acceptance of the actions of the governing boards relative to the integration considerations were formally accepted by the DWR. The letter evidencing that acceptance is also a part of Appendix H. Since that time, the Stakeholder Advisory Group has ceased being a common entity and each IRWMP has their own Stakeholder Advisory Group.

9.3 REGIONAL PRIORITIES

9.3.1 Short-Term Priorities

Within the IRWMP process, short-term priorities have been defined as those which can be implemented within a five (5) year time frame. In a review of the list of projects submitted to the Stakeholders Advisory Group for consideration for ranking for project funding, the priorities fall into three (3) focused areas. The first of these is addressing drinking water quality issues, on a basis that covers the entire IRWMP area. This includes urban suppliers, rural water suppliers and individual rural water systems.

The second priorities fall into the category of water supply reliability and the priority is effective for both agricultural suppliers, as well as municipal and industrial suppliers. It is acknowledged that a declining groundwater reservoir, expressed in terms of both elevation and storage volume, is not in the best interest of any type of supplier. The third category is related to improved water management. Expressions of these priorities are related to control systems, replacement of older and deteriorated distribution facilities and pumping facilities and improved coordination between water rights holders in the Kaweah River Basin. It is acknowledged that it is the latter category that has the most chance of success, however, recent changes at the State level related to the drinking water program, have generated expressed hope from disadvantaged community representatives that projects can be designed and implemented for the benefit of those with less than adequate quantity and/or quality within the five (5) year horizon.

Additional priorities for the initial five (5) year term included completing the update to the Water Resources Investigation which has been accomplished. The local Groundwater Management Plans were to further define the role of urban water suppliers utilizing groundwater in the Kaweah River Basin. Those efforts are now replaced with activities focused around Groundwater Sustainability Areas and agreements between adjacent Groundwater Sustainability Areas.

Additional priorities have been enhanced as a result of recently completed Proposition 84 – Round 2 activities related to analysis of impacts of the Settlement Agreement implementing San Joaquin River Restoration and identification of solution sets to address drinking water quality deficiencies in the East Kaweah River Basin.

9.3.2 Long-Term Priorities

In the planning horizon of five (5) to 20 years, the priorities turn to larger-scale items such as retarding the decline of groundwater elevations within the central and westerly portion of the IRWMP area. Central to this issue is participating in the resolution of a much larger issue, that being conveyance of water from Northern California river systems through the Sacramento-San Joaquin Rivers Delta and south to both State Water Project and Central Valley Project contractors. As is being demonstrated in the current paradigm, solution impact also extends to the San Joaquin River Exchange Contractors and the importance of making water available south of the delta for protection of the Friant Division, CVP supplies. Lacking a resolution to this problem on a 20-year horizon will change the groundwater dynamic within the IRWMP Planning Area considerably. There is an insufficient supply, under any hydrologic conditions, when coupled with storage and conveyance capacity restrictions on the east side of the valley to overcome the impact on the Kaweah River Basin groundwater to the degree necessary to prevent wholesale cropping and land development changes within the IRWMP Planning Area.

An additional long-term goal will be the determination of the success of the proposed pilot program within the IRWMP Area of providing assistance to those who have either inadequate drinking water quality or quantity and lack the sufficient resources to implement programs to effect changes in either parameter. This program will be described in greater depth later in this chapter, but is an integral component of the value of IRWM planning. Coupled with this issue will be the demonstrated success or failure to deal with land use policies such that developments, of any size, cease to be approved to be placed in locations with known water quality failure problems. The loop which is currently in evidence within the IRWMP area of creating drinking water problems faster than they are solved, will either be overcome or not in this planning horizon.

It is not envisioned that any major structural changes will occur within the IRWMP Area in this planning horizon with respect to either flood control related issues, or structural considerations designed to specifically address climate change in and of itself.

9.4 WATER MANAGEMENT STRATEGIES

9.4.1 Resource Management Strategies

9.4.1.1 Introduction

The California Water Plan Update of 2009 identified a litany of issues identified as Resource Management Strategies (RMS). Considerable attention is given in the IRWMP evaluation guidelines to the degree to which these RMS issues are addressed, both as separate topics, as well as integrated topics. While a few of the RMS topics are outside of the scope of this IRWMP, such as enhanced surface storage under CALFED, the majority of the RMS topics are embodied in everyday water management decisions and strategy developments within the IRWM planning structure.

RMS are defined in the 2009 update to the California Water Plan as projects, programs or policies that help local agencies and governments manage their water and related resources. RMS can include structural and non-structural solutions, or even a combination of both. Structural solutions involve development of constructed facilities such as conveyance structures, consisting of pipelines or canals, recharge ponds and water treatment facilities. Non-structural solutions include policy solutions or programmatic approaches to water management issues.

The aforementioned 2009 California Water Plan Update describes 33 different RMS. The IRWMP Guidelines increase the number to 37. It is not anticipated that all strategies are applicable to every region of the State, but encouragement is given to foster and implement as many strategies as practical to diversify water management efforts. This IRWM Plan evaluates all 37 strategies contained in the 2009 California Water Plan Update, plus the additions, with these evaluations including consideration of the following:

(1) Description of the RMS;

(2) Discussion of the current applicability to the Kaweah River Basin;

(3) Evaluation of the current use of the strategies in the Kaweah River Basin;

(4) Discussion of constraints to implementation or constraints to enhancement;

(5) Discussion of potential impacts of climate change on the strategy; and

(6) Ability of the strategy to help adapt to climate change impacts.

Presented in Table 9-1 are each of the RMS evaluated in the development of this IRWMP. A notation as to their current applicability to the Planning Area is noted. For those noted as not currently being applicable, they will be subject to periodic review as part of the IRWM Plan's implementation procedures. Currently, 26 of the RMS are applicable to the Kaweah River Basin which has resulted in a successful portfolio of resource management strategies. An additional RMS has been added by action of the RMG Board of Directors. It was directed to be added as a result of the completion of the tasks leading to the development of Appendix L to this IRWMP. It is specific to issues related to the Sacramento-San Joaquin Rivers Delta.

TABLE 9-1
RESOURCE MANAGEMENT STRATEGIES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Category	Strategy	Applicable to Region
Reduce water demand	Agricultural water use efficiency	X
	Urban water use efficiency	X
	Water and Culture	X
Improve operational efficiency and transfers	Conveyance – Delta	
	Conveyance – regional/local	X
	System reoperation	
	Water transfers	X
Increase water supply	Conjunctive management and groundwater storage	X
	Desalination	
	Precipitation enhancement	X
	Recycled municipal water	X
	Surface storage – CALFED	
	Surface storage – regional/local	X
	Sediment Management	X
Improve water quality	Drinking water treatment and distribution	X
	Groundwater remediation/Aquifer remediation	X
	Matching quality to use	X
	Pollution prevention	X
	Salt and salinity management	
	Urban runoff management	X
Improve flood management	Flood risk management	X
	Sediment Management	X
Practice resource stewardship	Agricultural lands stewardship	X
	Economic incentives (loans, grants & water pricing)	X
	Ecosystem restoration	X
	Forest management	
	Land use planning and management	X
	Recharge area protection	X
	Water-dependent recreation	
	Watershed management	X
Other strategies	Crop idling for water transfers	X
	Dewvaporation or atmospheric pressure desalination	
	Fog collection	
	Irrigated land retirement	X
	Rainfed agricultural	
	Waterbag transport/storage technology	
	Outreach and engagement	X
	Engage in Delta planning, operations and legislative activities (1)	X

(1) Not a State Guidelines RMS.

9.4.1.2 Agricultural Water Use Efficiency

Agricultural water use efficiency is applicable in three (3) areas within the IRWM Planning Area. These areas are distribution of source waters, distribution of entitlement by the water rights holding entity and on-farm efficiency. Agricultural water use efficiency in each of these areas can be improved through a variety of measures with the improvements occurring based on actions of the KDWCD or the Kaweah & St. Johns Rivers Association (Association) by the water rights holder which may be a public entity such as a water district or an irrigation district, or a private-stock ditch company and by local landowners/growers. The 2009 California Water Plan Update lists 16 Efficient Water Management Practices (EWMPs). These are as follows:

1. Water Management Plan;
2. Water Conservation Coordinator;
3. Water management services to water users;
4. Improved communication and cooperation;
5. Policy changes;
6. Facilitate alternative land use (drainage);
7. Facilitate use of recycled water;
8. On-farm irrigation system improvements;
9. Water transfers;
10. Canal lining and piping to reduce seepage;
11. Flexible water ordering;
12. Spill and tail-water recovery systems;
13. Conjunctive use of surface and groundwater;
14. Automate canal/control structure telemetry;
15. Water measurement and water use reporting; and
16. Pricing or other incentives.

Most of these EWMPs are employed throughout the Kaweah River Basin. Initial implementation and continual effort to analyze and employ these practices are an important component of water management. In some cases, an EWMP may not be applicable to the IRWMP Planning Area as for instance, no drainage problems exist to any significant degree within the Kaweah River Basin. As another example, where conveyance system piping occurs, it is often within an area converted to urban use where impact fees have been paid allowing for construction of an offsetting recharge area. In some areas where piping has been employed, the piping is actually laid in the prior open channel section. Only dry-year supplies are conveyed through the pipeline system, whereas normal and above-normal year supplies are still conveyed in the open channel sections, thus allowing for groundwater recharge to occur. For certain of the EWMPs, implementation is on a Basin-wide basis. These include water management services to water users wherein on-farm advice is made available to growers in the entire region.

Likewise, several entities within the Kaweah River Basin are signatory to the Memorandum of Understanding of the Agricultural Water Management Council. Said organization is a non-profit that promotes improvements in agricultural water efficiency and provides technical assistance in the preparation of plans which detail implementing policies, outlines the methods by which assistance is provided and documents efforts to implement the goals associated with EWMPs.

For those areas which have surface water supply service through a contractor from the Friant Division, CVP, Water Management Plans meeting the requirements of the U.S. Bureau of Reclamation and the Agricultural Water Management Council have been prepared. Annual reports and 5-year updates to these plans are required by the repayment contracts associated with the allocation of CVP Project Water.

As the majority of the water supply entities within the Kaweah River Basin are non- public in nature, obstacles exist to implementing EWMPs, as compared to areas which are principally served by public agencies. Funding and cost-effectiveness of efficiency related issues pose an obstacle, which is often only overcome by dry-year conditions. Local conditions such as topography, micro-climates and flood control channel maintenance issues also impede implementation of EWMPs.

9.4.1.3 Urban Water Use Efficiency

Principal to urban water use efficiency is the issue of behavioral improvements that lead to the decrease of indoor and outdoor residential, commercial, industrial and institutional water use. To a lesser degree, unlike agricultural water use efficiency, technological improvements are readily employed as only cash expenditures are required to be made, in lieu of modification of behavioral patterns. Best management practices (BMPs) or demand management measures (DMMs) are the measures typically set forth by regulatory and advisory authorities with the more common practices and measures being as follows:

(1) Water use survey programs;
(2) Residential plumbing retrofits;
(3) Water system audits;
(4) Water metering;
(5) Large landscape conservation programs;
(6) Clothes washing machine rebate programs;
(7) Public information programs;
(8) School educational programs;
(9) Conservation programs for non-residential users;
(10) Wholesale agency assistance programs;
(11) Inverse tiered conservation pricing procedures;
(12) Availability of Conservation Coordinator;
(13) Water waste prohibition ordinances; and
(14) Reduced-flow water closet replacement.

Most of these BMPs and DMMs are in place within the Kaweah River Basin. The level of implementation and the practice varies, however, based principally on the implementing agency. The City of Visalia, served by the California Water Service Company and the City of Tulare have extensive urban water conservation programs, well funded and properly administered. New conservation measures are constantly being examined and some, as demonstrated in current drought conditions, implemented with relative ease.

State legislation, in the form of SBx7-7, also known as the Water Conservation Act of 2009, established a goal of reducing per-capita water use of 20 percent by 2020. That goal has been required to be met earlier by implementing ordinances related to the recent drought situation, implemented principally by actions to require mandatory reduction in outside watering. Where landscape conversions are taking place in order to reduce consumption, most are being accomplished on a permanent basis which should result in a long-term reduction in water demand.

As with agricultural water use efficiency, obstacles exist to implementing efficiency measures in the urban setting. Principal amongst these conditions is still the attitude issue, exemplified in public acceptance, followed by issues such as lack of adequate funding programs, the economy of providing additional supply as compared to reduced use where the supply vehicle is groundwater and, where meters are employed, increased rates where lower water sales result and the revenues related to metered rate structures have been improperly constructed leading to increased rates when consumption is reduced.

9.4.1.4 Conveyance-Delta

Conveyance through the Sacramento-San Joaquin Rivers Delta includes the management, movement and diversion of water from that area. Approximately 5,309 acre-feet of Delta-based supply is applicable to the County of Tulare, with 300 acre-feet being contracted for by the City of Visalia. This contract supply is not currently being employed for other than groundwater recharge purposes and thus a significant reliance on Delta related diversions does not exist within the Kaweah River Basin. Less than 100,000 acre-feet annually of Class 1 supply is contracted for by the Tulare Irrigation District and irrigation districts on the periphery of the Kaweah River Basin. The majority of the supply coming into the Kaweah River Basin which is of a Friant Division, CVP nature, is Class 2 supply, from Purchased Water Contract supplies from the natural flows of the San Joaquin River and are not connected with diversions from the Delta.

9.4.1.5 Conveyance-Regional/Local

Conveyance is that action to move water from its source to areas of need. Conveyance within the Kaweah River Basin consists principally of utilization of natural channels and earthen constructed facilities, many of which incorporate significant elements of historic natural channels. At the district and ditch company level, constructed facilities, such as diversion facilities and canals, exist with, as previously noted, limited employment of pipelines and pumping facilities. These conveyance facilities range in size from larger systems employing relatively high capacity earthen channels to small, local, end-user distribution systems that deliver water to specific landowners/growers. Urban related deliveries are principally those associated with groundwater recharge as only three (3) surface water treatment facilities exist within the Planning Area. For the most part, larger conveyance systems utilized for delivery of agricultural supplies are also facilities utilized for flood control purposes and management and maintenance activities are principally oriented toward the flood control aspect. As a result, only during times of high Kaweah River releases are these facilities inadequate to convey water to areas for distribution for use and/or recharge and few problems exist distributing available volumes to meet peak summer demands.

The same systems are utilized to convey storm waters during the winter periods and coordination efforts must be employed to ensure proper conveyance and disposal of storm water related flows, along with Kaweah River entitlement flows mandated to be released from Terminus Reservoir for flood control purposes. Based on the fact that improved automation and controls can increase operational flexibility, significant steps have been made recently to begin to automate controls on the Kaweah River system and further, telemetry systems to monitor diversions to ensure that any losses associated with spills are reduced to as close to a zero level as possible.

Climate change may affect this paradigm wherein demand for higher conveyance capacity may increase if the timing and volume of flows changes due to atmospheric warming trends. In addition, increased capacity may be needed to deliver water during periods of the year which are not the prime growing season, as well as to deliver higher volumes of water than are currently experienced for short periods of time.

9.4.1.6 System Reoperation

System reoperation is defined as actions taken with respect to existing operational procedures related to reservoirs and conveyance facilities to alter water related benefits. System reoperation is typically examined in the context of improving the delivery of water to improve the efficiency related to existing uses or to impose improvement in one use over another. For instance, operation of reservoir releases for power production would be enhanced if releases were during a defined period of peak power use, as compared to running a generator on a run-of- the-river basis, where releases are dictated by agricultural water demands.

Water rights on the Kaweah River are managed by the Kaweah & St. Johns Rivers Association (Association). Agreements exist between all of the pre-1914 water users associated with the Kaweah River and the major riparian users of River water. These agreements define the operational policies for the member units and have proven to be instrumental in reducing conflicts between water users, in establishing guidelines for management of available supplies and to ensure compliance with State law relative to water rights priorities.

As the Kaweah River watershed is relatively small, a fishery does not exist below Terminus Reservoir. Unlike other stream systems where flow exists on a year-round basis, examination of system reoperations does not involve fisheries related impacts.

Significant system reoperation procedures are felt to be limited with respect to existing systems. Storage limitations associated with Terminus Reservoir exist, particularly from November 1 to April 1 of the following year as the reservoir is operated exclusively for flood control purposes. The balance of the year, system operations are tuned to the desires of the water rights holders and the demands of stockholders to meet the requirements of their existing demands. Individual entities currently are experimenting with operational changes, most due to power generation enhancement, as compared to water use efficiency modifications.

Changed conditions in the future could result in a basis for reoperations and, thus, the issue needs to be periodically evaluated. These changes could include impacts related to proposed changes in groundwater regulations, as well as climate change induced conditions.

9.4.1.7 Water Transfers

Established California legal statutes define water transfers as temporary or long-term changes in the point of diversion, place of use or purpose of use resulting from the transfer or exchange of water or related water rights. Water transfers are a recognized beneficial water management tool within the Kaweah River Basin, with specific guidelines established for both in-Basin and external Basin transfers and exchanges having been developed over the years. Such guidelines development has been based on the demonstrated capability of transfers and exchanges to accomplish the securing of new supplies, to increase supply reliability, to assist in maintenance of the groundwater basin and addressing associated overdraft conditions. In some cases it has been based on generating revenue during certain market conditions to be leveraged to future water purchases during the existence of more ample water supply conditions. For instance, a reduced period run during dry year conditions can result in income being generated sufficient to allow for purchase of external Basin supplies sufficient to run for weeks in length. Foregoing a few days of water run and associated loss patterns, in exchange for recovery of all water lost and a multiple supply imported with funds generated from the initial transfer, are recognized as significant water management tools within the Kaweah River Basin.

These transfers and exchanges are not without constraint. Many ditch companies with pre-1914 water rights have long established boundary restrictions for delivery of their water rights. Many are signator to a Basin Water Transfer Policy which imposes restrictions on the conditions under which transfers can take place and requires findings by the Watermaster and the Association Board of Directors prior to a transfer being approved. To a limited extent, additional constraints are imposed based on costs established for water being made available for transfer, Groundwater Management Plan Memorandum of Understanding constraints and restrictions and facility related issues. For out-of-Basin transfers, additional restrictions are imposed by the U.S. Bureau of Reclamation as Federal facilities are required to be utilized in out-of-Basin transfers. Mechanisms are currently in place to allow these transfers and exchanges to take place, to invite proposals related to water banking and to hopefully comply with requirements associated with recent groundwater legislation. In exchange, obtaining tangible, measurable water supply benefits is fundamental to any program of this nature.

9.4.1.8 Conjunctive Management and Groundwater Storage

Due to the variable nature of supply within the Kaweah River Basin, conjunctive use is the fundamental water management strategy which is employed. By definition, conjunctive use is the coordinated and planned management of both available surface and groundwater sources of water supply in order to most efficiently use both supplies. Conjunctive management is the device utilized to maximize water supply reliability, to reduce the impacts on the groundwater reservoir, to avoid subsidence associated with overdraft and to manage water quality related issues. Each of these issues involves the potential for conflicts. Managing supplies to optimize reliability can vary by crop type and soil type. Timing of delivery of available surface water supplies may be optimum for one landowner/grower, while not providing the same benefit to another. Timing of deliveries to lands on the east side of the Kaweah River Basin, where citrus crops are dominant, is often different than exists in the center of the Basin and even different yet for uses associated with the westerly lands within the Basin. Timing of deliveries to lands in the west portion of the Basin are critical with respect to dealing with overdraft and resulting subsidence impact issues. Reasons for management for water quality related purposes can range from reducing impacts of adverse conditions by virtue of quantity of flows available for dilution purposes and for purposes of managing salt accumulations below the root zone of permanent plantings.

In practice, conjunctive use involves numerous procedures and facilities, allowing for recharge during times of available surface water supplies, followed by groundwater extraction, either during times of reduced groundwater deliveries to supplement same, or as the entire supply during periods of time when surface water is unavailable for delivery.

Monitoring of groundwater conditions is a critical component to a properly conducted conjunctive use program. Specifically, monitoring of groundwater levels, accumulation of knowledge related to area lithology and performance runs of groundwater models are all required to provide a proper basis for groundwater management to occur. The need for adequate funds to conduct these programs is also of significance.

In an area such as the Kaweah River Basin, groundwater balance can only be achieved through the employment of proper conjunctive use procedures. Increasing storage in groundwater during times of available surface supplies, in excess of then current demands, is the only mechanism available to offset withdrawals during periods of time when insufficient surface water flows are available to meet demands.

Entities within the Kaweah River Basin have caused the creation of groundwater models to assist in the monitoring effort. A model exists for the entire basin with a smaller cell size model being available for use in urban areas. These models allow for changes in land use and crop types to be introduced into the input side of the models and variable supply inputs to be employed to determine the impact on the volume of groundwater in storage as a result of land use or cropping pattern change.

The KDWCD has also engaged in a process, beginning in 1972, to perform an overall examination and inventory related to water resources, identified as their Water Resource Investigation. Approximate 5-year updates have currently been mandated by the governing board of the KDWCD, thus allowing for the most current modeling technology to be employed. The current update, for instance, involves a complete re-examination of the input side related to crop demands and replaces the historic DWR land use inventory with a satellite-based land use inventory. This change allows for accurate computations involving crop type changes, but more importantly, an accurate accounting of multiple crops grown within a single year. Efforts to improve the basis for the groundwater resource inventory are anticipated to continue in the future based on policy and budget instructions provided by the KDWCD governing board.

To assist in the system balance efforts, KDWCD has currently in inventory, approximately 5,000 acres of groundwater recharge basins. This acreage is in addition to the natural channel acreage which is continuously employed as a recharge vehicle. Not satisfied with this level of facilities, KDWCD has in development, approximately 1,000 acres of additional area with funds budgeted, accompanied by outside grant funds and input from other participants in the form of land and/or funding to further augment recharge capabilities.

Currently the water management efforts within the Kaweah River Basin must allow for management of flows resulting from flood year events such as 1969 and 1983 and provide groundwater benefits in the driest of years. The extent to which climate change may affect the adequacy of the current facilities to deal with the variable nature of runoff, from both timing and volume of flow perspective is a challenge that the local water management entities feel they are up to. Active participation in response to hydrologic and regulatory change exists.

Notwithstanding the success of implementation of conjunctive use operations within the Planning Area, constraints do exist to development of additional conjunctive use facilities. Most obviously amongst these constraints is the availability of land on which to place recharge facilities. Historic efforts have oriented this effort toward lands which are marginal for agricultural purposes due to the high water requirement associated with same. As a significant portion of these lands has already been developed to recharge areas, additional effort must be undertaken to both identify additional areas and to examine incorporation of same into the existing development program without adverse impacts on the agricultural community. Issues associated with additional land purchases continue to rise in significance as land purchase prices have increased dramatically in the last several years and fuel, equipment and labor costs associated with construction of, or improvement to, conveyance facilities to bring water to recharge facilities have also escalated. In addition, power costs related to recovery of recharged water have significantly increased and risk continues to escalate that recharged water flows westerly to areas outside of the target area for benefit. This is principally as a result of significantly decreased entitlement allocations to State Water Project and Central Valley Project – San Luis Division, contract holders. Attention is directed to Appendix L for the most recent analysis of impacts related to State water Project and Central Valley Project surface water delivery impacts. Declining groundwater conditions, to a significant degree based on reduction of outflows to the west, are again returning and where groundwater balance was thought to be achievable a decade ago based on existing cropping patterns and water supply availability programs, it is now starting to diminish based on the drastic changes in opportunity to pump project supplies from the Sacramento-San Joaquin Rivers Delta. While deliveries of supply from the Delta are not made for the benefit of landowners specifically within the Kaweah River Basin, the withdrawal of deliveries from lands to the west has historically had a significant impact on groundwater conditions within the Basin and it appears that a return to those pre- westside project conditions is returning.

Additional constraints to recharge related programs include recognition of third-party impacts in any planning process and increased participants from local agencies and landowners/growers. Discussions are ongoing with local domestic water purveying entities with respect to altering their historic non-participation in groundwater recharge related efforts due to the quantity/quality impacts on their current supply. Principal among those impacts is the movement of contaminants from one area to another based on groundwater gradients introduced as a result of differential pumping based on available surface water supplies.

9.4.1.9 Desalination

The treatment process for water involving the removal of salts is identified as desalination. This practice involves treating a source of water high in salts to remove said salts and to have as a result, usable water. Within the Kaweah River Basin, neither sea water nor brackish water from groundwater exists. There currently is, therefore, no available source for desalination within the IRWMP Planning Area. The ability of this method to be a source of water supply is, therefore, not applicable.

9.4.1.10 Precipitation Enhancement

Weather modification in the form of precipitation enhancement, commonly called “cloud seeding,” has been utilized successfully within the Kaweah River Basin for decades. Utilizing this technology, clouds are artificially stimulated to produce more rainfall or snowfall than they would normally yield over a specific land mass. The technology employed with this enhancement methodology occurs by injecting particles which act as a nucleus into clouds, thereby seeding the clouds with a nucleus around which water molecules can form to enable snowflakes and/or raindrops to form. While cloud seeding has been employed within the area for decades, it has limited use in dry periods as storm containing water particles are absent and, in years of extreme precipitation, additional precipitation would only augment potential flood damaging flows. For the intervening weather conditions, however, the KDWCD has contracted for weather modification services involving aircraft seeding storms as they approach the foothills east of the Basin, upwind of the target area. These aircraft efforts are augmented by ground-level generators located in foothill and low elevation mountain locations. The primary target is the available low-altitude super cooled liquid water that develops in-cloud on the east side of the foothill and mountain slopes, those being the windward and upslope areas associated with foothill and mountain barriers. Current estimates of long-term additional runoff are in the neighborhood of five (5) percent and, at the current time, efforts in this regard are programmed to continue.

Of all of the current water supply augmentation steps, climate change could affect the weather modification program to the greatest degree. Disruption of the historic weather patterns around which cloud seeding activities are centered could be significant, thus destroying the forecasting base which has been established and further leading to changes in seeding conditions, the results of which are currently unknown. Of significant impact is the fact that the current nucleus forming agents which are utilized may no longer be applicable if high-altitude temperature patterns change. Nucleus forming agents which operate at temperature conditions well below freezing would be rendered ineffective if these temperature conditions cease to exist or diminished in their frequency.

9.4.1.11 Recycled Municipal Water

At the current time and for some time, discharges from municipally owned wastewater treatment works have been completely recycled into the environment.

For the most part, these supplies are utilized in substitution of groundwater pumping for agricultural purposes and little opportunity has been seen to further enhance the reuse paradigm as it has been complete. Recently, changes in discharge requirements, particularly to natural streams, have so changed that discharges to natural channels are in a phase of planned obsolescence. They are being replaced with either discharge patterns to adjacent lands where waters of the State are not involved or, in the alternate, discharges are being upgraded to a tertiary level and their use then directed toward new beneficiaries to the exclusion, for the most part, of the traditional pathways.

Significant in the Kaweah River Basin in this changed paradigm is a recent program wherein reclaimed wastewater is to be discharged to irrigation canals for direct reuse on a year- round basis. In exchange, entitlement waters of a local irrigation district, which is the recipient of the treated water, are to be rerouted and recharged upstream of the City of Visalia which is a contract position which has not historically existed. While the Kaweah River Basin, as a whole, remains in the same balance, the shifting of available surface supplies within the Basin will be altered with the benefits redirected to defined areas within the Basin. The extent to which withdrawal of the treated effluent will have on the historic place of use remains to be seen. In addition, the extent to which such programs will be pursued in the future by other discharging entities, remains to be seen.

9.4.1.12 Surface Storage-CALFED

The CALFED Bay-Delta Program, identified as CALFED, was a department within the government structure of the State of California that was focused on Sacramento-San Joaquin Rivers Delta water problems, both in-Delta, as well as export based. In 2009, CALFED was replaced by the Delta Stewardship Council. “CALFED Surface Storage” is a legacy title for a RMS designed to improve surface storage while improving conditions in the Delta on a parallel basis. The CALFED Surface Storage strategy includes five (5) potential surface storage reservoirs in California. Opinion is changing regarding the impact some of these efforts will have on the Kaweah River Basin and potentially on Friant Division, CVP

Contractors peripheral to the Kaweah River Basin. It has been determined that this element is now applicable to the subject IRWM Plan.

9.4.1.13 Surface Storage-Regional/Local

The Kaweah River Basin is the recipient of a recent modification to its surface storage capabilities. The addition of fuse gates to the spillway associated with Terminus Dam has resulted in an overall increase in storage in the reservoir, along with an additional yield estimate of approximately 8,500 acre-feet per year. The reservoir now provides improved downstream flood protection benefits, principally to the City of Visalia and the Tulare Lakebed areas. Additional storage opportunities have been evaluated on Dry Creek and Lewis Creek, said studies resulting in a lack of feasibility due to environmental constraints and/or economic constraints. While an off-stream storage site was initially investigated as a part of the East-Side Division-CVP, no additional feasibility studies have been initiated, nor are there any likely significant storage opportunities existing within the Basin. The water rights on the Kaweah River are fully appropriated, based on action by the State Water Resources Control Board and, as a result, additional storage may result in some reregulation capability, but little to no additional yield capability.

From a climate change perspective, a change in precipitation and/or runoff patterns may result in reduced snow pack and alteration of winter runoff. These changes would require a re- examination of the development of surface storage for water supply purposes during peak growing months and flood control purposes could also change. This would require a re- examination of potential sites, few of which exist based on examinations which have been undertaken to date.

9.4.1.14 Drinking Water Treatment and Distribution

Principal in Kaweah River Basin IRWM planning activities is that related to the provision of potable drinking water. Significant participation by both disadvantaged community and environmental justice representatives in the Stakeholder Advisory Committee structure has resulted in identification of drinking water problems and pursuit of solutions to these problems utilizing the IRWM structure as a potential solution vehicle. Within the Kaweah River Basin, few groundwater related treatment facilities currently exist and the single surface water treatment facility that exists is that of the Lindsay-Strathmore Irrigation District for the unincorporated community of Tonyville. Negotiations are currently underway to mothball this facility and connect the community to facilities of the City of Lindsay.

As noted later in this discussion, landowners within the Kaweah River Basin have instructed a paradigm shift with respect to their efforts related to groundwater quality. Whereas historic efforts have been related to water quality associated with discharges from agricultural uses, that program has been memorialized in the Irrigated Lands Regulatory Program of the Regional Water Quality Control Board. The local orientation is now changing to examining those opportunities which exist for construction of surface water treatment facilities in identified areas with poor groundwater quality characteristics and potential dedication of portions of agricultural surface water supplies to those facilities. The area which is the target for these efforts is that extending from the City of Exeter northeasterly to the unincorporated area identified as Lindcove. These efforts are in the infant stages and are being supplemented by efforts of the County of Tulare related specifically to the hamlets of Tooleville and Lindcove.

Primary constraints to pursuit of this method of altering the landscape of domestic water quality include the development of water treatment and distribution systems to serve the candidate areas, elevated operation and maintenance costs, opposition to higher water rates, or in this case, the payment of a water rate at all and the lack of qualified water treatment plant operators.

Factored into the surface water treatment plant equation will have to be impacts of climate change on mineralization and increased turbidity. In addition, if storage of water is required, elevated water temperatures, both as an aesthetic issue, as well as an adverse plant growth inducement cause, will be factors to be dealt with.

Based on experiences currently being generated through similar examinations in out-of- Basin areas, these facilities are felt to be economic to an acceptable degree only if they are regional in nature and resolve many of the adverse problems, such as operations problems on a collective basis.

9.4.1.15 Groundwater Remediation/Aquifer Remediation

Groundwater remediation takes place in specific and infrequent locations within the Kaweah River Basin. Virtually all of these locations are associated with a vadose zone consisting of a specific plume of contamination caused by a prior surface related activity. This contamination has traveled to free groundwater in the soil profile and requires extracting the contaminated groundwater from an aquifer, or multiple aquifers, treating it and then discharging to an approved location. These discharge locations vary from adjacent water courses, to re-injecting to the ground, to reuse for a beneficial purpose. Remediation does not provide for a new quantity of water, but does provide for a source of water from a previously contaminated source. While a remediated supply is made available, the principal purpose is to prevent the further spread of the specific contaminant, thus rendering additional supply unusable.

9.4.1.16 Matching Quality to Use

The strategy of matching water quality to specific beneficial use has little application in the Kaweah River Basin. Typically the strategy is to avoid utilizing a higher quality of water for a beneficial use than is required by that beneficial use. As agricultural is the major consumer of water within the Basin, the surface and groundwater currently available within the Basin are both suitable for agricultural use. Treated wastewater is directed toward lands which meet the requirements for reuse of said supply and surface waters are of very high quality, only requiring treatment for removal of turbidity and bacteriological contamination if utilized for human consumption. If such supplies were to become available in a recognized usable quantity, issues of acceptance of using a lower quality water than otherwise available and the matching of the location of use to the location of availability would become major issues to be evaluated.

9.4.1.17 Pollution Prevention

Current and applicable water quality guidelines, including Basin Plan criteria, are driven by avoidance of contamination as the principal objective. Reliance on treatment following contamination or pretreating water to allow for "space" to introduce contaminants are, for the most part, discouraged. Where pollution is unavoidable, such as the case with certain municipal and industrial related discharges, regulatory programs exist for removal or reduction of contaminants to an acceptable level based on the beneficial use objectives in existence related to the specific discharge. Current activities related to pollution prevention have started to extend up into the contributory watershed based on drinking water requirements and introduction of flood flows into facilities such as the Friant-Kern Canal, waters in which are utilized for human consumption, following conventional treatment. Extension of efforts into the upper parts of the watershed allows for avoidance of pollutants being introduced into the runoff, further avoiding any significant level of treatment being required.

9.4.1.18 Salt and Salinity Management

Importation of surface water into the Kaweah River Basin, domestic discharges such as those associated with home water softening units and certain agricultural practices result in additional salts being discharged, principally to groundwater. Given the very high quality of surface water available to the Basin and with discharge limits in place on discharges from municipal and industrial treatment facilities, contributions from these sources are significantly minimized.

Notwithstanding the limited impact from salts buildup, agencies are nevertheless engaged in several arenas designed to address salinity management. In particular, engagement in the CV Salts Program and in activities related to Basin Plan Modifications related to the salt topic takes place. The prior position of the Association with respect to the Irrigated Lands Regulatory Program (ILRP) has recently been handed over to the newly-formed Kaweah Basin Water Quality Association. Salts management is an issue within the structure of the ILRP to be addressed by the third-party coalition groups covering the irrigated lands within the jurisdiction of the Central Valley Regional Water Quality Control Board.

9.4.1.19 Urban Runoff Management

Runoff from urban areas is handled within the incorporated cities within the Planning Area by the specific governing municipality. While in all cases, irrigation water conveyance facilities play a major role in conveyance to disposal facilities of urban runoff, it is nevertheless the responsibility of the urban entity to properly address disposal of urban runoff. Urban runoff within the Planning Area typically is comprised of two (2) different sources. The first, and most obvious, is that of storm water runoff comprised principally of rainfall falling on impervious surfaces within the municipality and gathering of that runoff in facilities designed for that purpose with most disposal actions contributing to groundwater recharge. The second form of water to be managed is that related to nuisance discharges during dry weather periods. These flows are placed in the nuisance category for three (3) principal reasons. The first of these is that they have to be managed during a period of time when facilities utilized for irrigation purposes need the available capacity or occur at a time when maintenance activities need to be conducted and the nuisance flows interfere with such activities. The second issue related to these flows is that many accrue to urban storm water facilities where they pond in a shallow depth configuration and pose vector breeding problems which have to be managed at a significant cost, in comparison to the water involved with the discharge activity. The third issue is that related to contamination. While the volume of these flows is low, discharges from urban landscape have been demonstrated to carry significant elevations of contaminants and activities where water is washed into urban gutters carries with it petroleum and petroleum byproducts contamination which often accrues to groundwater. While principal actions are directed at preventing groundwater contamination, most actions, under current conditions, are limited in nature and, for the most part, ineffective as compared to the total contamination picture.

Land conversion based on increased development further exacerbates this condition, less specifically addressed in the new development as compared to the previous agricultural use. Several areas within the IRWMP boundary are currently in the process of updating their older storm water management plans. Input from those entities with groundwater quality concerns is anticipated to be generated during these plan update processes.

9.4.1.20 Flood Risk Management

The municipalities within the IRWMP boundary and the County of Tulare are signator to the Memorandum of Understanding providing the basis for the IRWMP and are part of the management structure. These agencies, in combination with the State and County Offices of Emergency Services, are those principally responsible for flood risk management. In this case, management is defined as assisting individuals and government infrastructure agencies and departments with assistance in and response to preparing for, responding to and recovering from a flood event. Solutions which are offered are structural in nature and include policy issues such as land use zoning and flood plain zoning. At the current time, considerable dialogue is at the forefront involving the activities of the Federal Emergency Management Agency (FEMA) with respect to their determination of what constitutes an adequate flood control levee. Many of the levees within the IRWMP Planning Area do not satisfy the FEMA definition, resulting in impacts on development with respect to both preparation procedures for structure construction and flood insurance requirements. At the current time, there is little involvement at the IRWM level with the topic. This could change in the future based on impacts related to climate change. Changes resulting in an increase in either the severity or intensity of flooding may require modifications to monitoring systems and improvements in flood plain protection structures. Land use planning policies may also need to be re-examined under this paradigm.

9.4.1.21 Agricultural Land Stewardship

In cooperation with landowners/growers, are water management agencies, along with the Agricultural Commissioners of the Kaweah River Basin Counties and the University of California Extension are heavily engaged in agricultural lands stewardship. In this context, agricultural land stewardship involves the conservation of natural resources and protection of environmental features associated with agricultural lands. The joint practice of conducting land operations for food production while recognizing considerations such as soil preservation, air quality, energy conservation and threatened and endangered species habitat development and maintenance, are all elements of agricultural land stewardship. The accepted definition also extends to protection of open space characteristics, as well as the buffer zone between agricultural operations and rural communities. As Kaweah River Basin lands are fully developed, the impacts associated with conversion of agricultural land to urbanized land further impacts agricultural lands to accommodate issues such as storm water management, flood control, water conservation, carbon sequestration and habitat preservation. Within the Basin, preservation of the remaining examples of riparian oak forest and riparian oak savannah have been undertaken, as well as vernal pool preservation.

Constraints obviously exist to further implementation of these stewardship activities. Principal among these is funding, not just for initial purchase and maintenance, but also for security related functions. Illegal drug activities and steps necessary to avoid intentionally set fires compete with the desire to utilize the settings for public access and related educational purposes.

9.4.1.22 Economic Incentives (Loans, grants and water pricing)

Economic incentives related to water management efforts run the gamut from policy development to implementation. Water marketing, water banking and water pricing policies are all driven by economic considerations and economic incentives play a significant role in the degree to which these activities take place. Direct financial assistance or water pricing, in conformance with the statutory requirements associated with Proposition 218, are fundamental to the offering of incentives. These criteria are typically deeply engrained in economic incentives associated with loans, grants and rebates. Other economic incentives can involve the granting of free services, timing of the use of power, availability of treated wastewater for reuse and costs associated with easements associated with access to sources of water supply. On the periphery, economic incentives can also produce benefits of an environmental or social type and influence the construction of new facilities through delay and/or avoidance alternative procedures.

Particular to the IRWMP Planning Area, specific incentive examples include tiered water pricing, rebate programs for installing conservation devices and exchanges of treated wastewater for high quality surface water for recharge and/or direct reuse. Additional incentives are available to landowners/growers relative to on-farm irrigation efficiency in the form of system conversion financial assistance.

9.4.1.23 Ecosystem Restoration

A principal water management element which exists within the IRWMP Planning Area is the implementation of the outcomes related to the Kaweah River Corridor Study. The focus of this study was on the development of lands within the Basin on which could be developed projects which were multi-purpose in nature. The targeted purposes included groundwater recharge, storm water control and habitat preservation/restoration. To date, a number of examples now exist within the Basin of multipurpose projects involving water management where habitat preservation, habitat development or a combination of both, are principal elements of project development. Under the leadership of the City of Visalia and the KDWCD, groundwater recharge and storm water basin design has left the era of the sterile engineered levee configuration for a design which accommodates re-vegetation of both trees and native grasses and incorporates significantly different maintenance activities than those associated with the sterile levee type of approach.

In addition to these efforts, the KDWCD has actively participated in the restoration of an abandoned mine project into an upland and wetland conservation area. They are also engaged in contract obligations related to restoration projects associated with sand and gravel mine sites which are now in the reclamation phase, or are anticipated to enter that phase in the near-term.

There are a number of recognized constraints to development of ecosystem restoration projects, which include sufficient funds to acquire property, high costs associated with property acquisitions, impacts on adjacent parcels which are farmed where introduction of endangered species may be a potential, rodent control and weed control activities. The degree to which protection and restoration has been implemented within the Basin demonstrates that the majority of these obstacles can be successfully overcome.

9.4.1.24 Forest Management

There are no forests located within the IRWMP Planning Area. A significant portion of the Kaweah River Watershed is, however, forested up to the high-altitude tree line. The management of these forest lands is split between the U.S. Forest Service and the National Park Service. As a result, water management entities located within the Kaweah River Basin have no governance authority over activities within these forests. Acknowledging, however, the fact that activities such as water management, timber management, native and invasive vegetation management, outdoor recreation and stock grazing occur within the forested areas, has led to an active input position to the agencies charged with overseeing watershed quality related issues. The input takes the shape of communication with the governing agencies with respect to their proposed policies and procedures and is anticipated to expand to include a cooperative effort in this regard with the newly formed Southern Sierra IRWM.

9.4.1.25 Land Use Planning and Management

Historically, land use planning has been conducted by different agencies, on different time schedules and was based on differing policy directives from governing bodies. To a significant extent, this remains the case. Attempts to integrate water management related concerns into land use planning is based on a recognition that there is a direct relationship to water supply and water quality, flood and storm water management and impacts on agricultural water conveyance facilities where urbanized development is involved. While history has proven that many of these relationships are contentious and do not always result in agreement with regard to policy development, the interface nonetheless exists. The principal tool utilized in the Kaweah River Basin to overcome these differences is education. Coupled with an attitude inviting cooperation, successes have been achieved which overcome the previously predominant aggressively opinionated and argumentative processes. Development of water management related tools such as the numeric groundwater model has offered a new forum for interface between water management agencies and land use planners. In addition, the IRWM forum has been open to the governmental agencies who carry the charge of land use planning as one of their principal purposes and their involvement in the IRWM process has led to improved relationships between the participants.

Also assisting in the barrier reduction efforts has been the requirement of State and local agencies associated with water supply planning related to land developments to reflect adequacy of supply. This requirement has caused an improvement in relationships between the water management entities and the land development participants as certification of adequacy of water supply is now statutorily required as part of the land development process.

The IRWM process offers a unique forum for this relationship to be further improved. The Stakeholder Advisory Group is currently includes of individuals responsible for land use planning policy development and implementation , as well as representatives of Disadvantaged Communities, where improvement is needed in the relationship between water managers and land use planners. The types of projects which have been developed and pursued through the IRWM process demonstrate the success of this cooperative approach.

9.4.1.26 Recharge Area Protection

Protection of land uses for specific purposes are enveloped in law for a number of topics. Most significant of these are policies related to mineral resources where lands containing identified mineral resources which have been determined to exist by the State are required to be protected from encroachment by land uses which may impede their development. To date, no such procedures exist within the IRWMP Planning Area for candidate water management sites, even though groundwater recharge and banking programs may be of benefit to the urban development of lands currently in agricultural production. No rules currently exist which would ensure that areas suitable for development for recharge purposes are protected from an agricultural to urban environment conversion. In addition, pollutant loads from urbanization are not currently subjected to the same water quality criteria as exists for agricultural areas. The potential thus exists for groundwater recharge areas to be subject to contamination. Examples exist in history within the Kaweah River Basin of groundwater recharge locations which have been contaminated as a result of development related storm water discharges and rendered unusable for groundwater recharge purposes.

The topic is one which was discussed during development of the recent General Plan update by the County of Tulare, however, policies were not introduced into said update reflecting requested area protection measures. Based on the current lack of policy development and implementation, entities developing recharge areas are left to their own devices with respect to protection of prime recharge areas.

This necessitates a significantly higher financial investment in land than would just basin site acquisition and development. Thus, the buying power of the funds associated with groundwater recharge are diminished as land must be purchased for protection of the recharge area from contamination, in addition to purchasing the recharge area itself. One of the current policy suggestions to improve this situation has been to begin development of mapping on which is depicted the prime recharge areas within the IRWMP Planning Area.

9.4.1.27 Water-Dependent Recreation

As the Kaweah River and its distributaries flow for only a portion of a given calendar year, little water-dependent recreational opportunity exists. The sole exception is tubing and rafting excursions on a portion of the Kaweah River and St. Johns River during irrigation release periods. Points of ingress and egress for these recreational opportunities are typically associated with public road rights-of-way, as little or no access is available through private lands.

With the exception of impacts of climate change which may modify this paradigm in the future, the opportunity is factually limited due to the limited quantity of surface water existing within the Basin. Future updates to the IRWM Plan will need to consider examination of this issue and a determination of whether or not opportunity events have changed to the point where the inclusion of this objective into IRWM planning needs to be accomplished.

9.4.1.28 Watershed Management

The watershed feeding Terminus Reservoir and forming the Kaweah River exists completely outside of the IRWMP Planning Area. As previously noted under the forest related section, planning in this area is almost exclusively under the control of the U.S. Forest Service and the U.S. Park Service.

Normal watershed management functions of evaluating policies, land use planning, management of land and resources and fire prevention and fire suppression efforts are all outside the purview of any participating entity in the IRWM process. Input with respect to watershed management from the standpoint of watershed management is virtually nonexistent. Vegetative management, controlled burns and water quality related impacts are dealt with by the agencies of jurisdiction with entities involved in the IRWM process only allowed input in a public forum approach. In most cases, responsible agency status is not invited, nor accepted when requested. The IRWM process is designed to continue to seek input with respect to the programs of the governing agencies and opportunities to coordinate efforts, when appropriate.

9.4.1.29 Crop Idling for Water Transfers

Crop idling is practiced within some private stock ditch companies within the IRWMP boundaries. In some cases, public agencies allow growers to fallow land for a season and transfer water to another grower within the same entity boundaries. Crop idling is typically an extreme measure within the Kaweah River Basin in response principally to drought conditions. As such, it does not exist on a large scale basis. As previously referenced under the transfers discussion of this chapter, procedures and agreements are already in place to deal with the transfer of entitlement generated from crop idling (single-year land retirement) related activities. It is acknowledge that there are a number of social and economic impacts associated with crop idling which have not been significant, to date, on the limited basis on which these retirement procedures have occurred. Expanding such activities to a larger basis will require examination of the social and economic impacts to determine if they must be addressed in the future.

9.4.1.30 Dewvaporation or Atmospheric Pressure Desalination

Dewvaporation is a specific process of humidification-dehumidification desalination. It involves the availability of brackish water which is subject to evaporation by heated air resulting in the deposit of fresh water as dew in a heat transfer process. As there are no saline or brackish water sources of supply in the IRWMP Planning Area, this strategy is not applicable.

9.4.1.31 Fog Collection

Winter months within the IRWMP boundaries brings numerous days of fog formation. The fog which is formed is sporadic in nature and is not typically consistent in its formation locations. Fog formation also occurs during the winter months when water demands are low. In addition, utilization of this source of supply would require a closed distribution system to be constructed due to the high cost associated with generation of supply from the fog source.

Unlike rainfall deficient coastal areas where copious fog is formed, the opportunities are virtually nonexistent within the Kaweah River Basin and therefore, this strategy is not applicable.

9.4.1.32 Irrigated Land Retirement

The U.S. Bureau of Reclamation, in conjunction with the Bureau of Land Management has retired a significant number of acres in the southwest corner of Tulare County, outside the boundaries of the IRWMP. No such land retirement steps have been taken within the IRWMP boundaries, nor are there any currently under discussion. As drainage impaired lands do not exist within the IRWMP Planning Area, funding for such land retirement steps does not currently exist.

As the objective of irrigated land retirement is the removal of farm land from irrigated agricultural production to provide water supplies elsewhere, or to take unproductive land out of production, examination has to be made of the value of the lands within the IRWMP boundaries for the productive differential between lands within the boundaries as compared to other lands where the water supply resulting from land retirement would be made available. As the lands within the IRWMP boundaries are all high-value, high-soil class and micro-climate lands, it is unlikely that lands within the Kaweah River Basin would be a replacement target for lands external to the subject boundaries. As some of the most significant agricultural land in the world exists within the IRWMP boundaries and as the gross farm gate receipts are reflective of the top counties in the nation, it is not likely that the area will be the subject target for this program in the short-term or long-term. The land parcels which have been identified to be marginal with respect to agricultural production have been the primary targets for acquisition for groundwater recharge areas. As previously noted, the opportunities for purchase of these types of land to enhance the groundwater recharge basin inventory have significantly diminished over time.

As the opportunity nonetheless exists for retirement potential, this strategy has not been determined to be not applicable. It will remain on the "watch" list for future policy examination efforts related to the IRWM Plan.

9.4.1.33 Rain Fed Agriculture

Absent runoff from rainfall and accumulated snowmelt from the Sierra Nevada Mountains, the lands comprising the IRWMP Planning Area are desert in nature. With an average rainfall of 10 inches or less, insufficient precipitation exists in virtually all years on which to base a rain fed agricultural economy. While there are some lesser-value foothill lands in the southeast corner of the valley floor lands of Tulare County which have in existence, lands sustained by rainfall, the crops are sporadic and marginal in terms of yield. Given the availability, even to the extent of side-hill development in the foothills, of a water supply within the Kaweah River Basin, a rain fed agricultural economy does not exist. Unless new varieties of plants can be developed which will compete successfully with existing crops, or whether groundwater management rules and regulations will require idling of otherwise highly productive agricultural lands remains to be seen. For the current time frame, given both rainfall conditions and current land use patterns, this strategy has been determined to be not applicable.

9.4.1.34 Waterbag Transport/Storage Technology

By definition, waterbag transport/technology involves harvesting water in geographic areas that have unallocated fresh water supplies, storing the water in large inflatable bladders and towing them to a coastal port for offloading. This strategy is currently not being utilized within the State of California and likely will not be an implementable strategy in the interior portions of the State, such as the Kaweah River Basin. While it may eventually have some application in urbanized coastal areas, it is not likely to be competitive with alternative sources of supply. Transporting bladders by rail or by truck, while technically feasible, have even more severe economic consequences. It has therefore been determined that this strategy is not applicable to the Kaweah River Basin.

9.4.1.35 Sediment Management

Sediment management appears in several areas of water management activities within the Kaweah River Basin. As runoff develops in the Kaweah River watershed above Terminus Reservoir, it carries with it a sediment load. The volume of sediment is flow dependent and is influenced by external issues such as forest fires. This sediment load has been addressed in the design of Terminus Reservoir, with assigned space being allocated to each storage unit for invasion by sediment. A separate sediment pool exists for both the initial reservoir storage space allocation and the enlarged reservoir storage capability resulting from insertion of fuse gates into the Reservoir spillway. Over time, without a program to remove the accumulated sediment, the available storage space will decrease.

The second active area of sediment load management is that related to channel capacity. Management efforts are directed both at sediment removal activities for flood conveyance capacity and irrigation flow conveyance capabilities. Flood control maintenance activities are principally concentrated in efforts of the KDWCD. Maintenance activities related to irrigation are normally constructed by the channel owner or party holding channel easement rights. In most cases, removed sediment is put to beneficial use by the party performing the removal process.

The last maintenance activity is directed at sediments that accumulate in groundwater recharge basins. As conditions are typically quiescent beyond the inlet conditions, sediments drop out of the water envelope and accumulate on the basin floor. Routine removal steps are required to maintain effective percolation rates.

Many entities have sand/sediment traps near the point of diversion into a conveyance facility. These areas allow for sediments to drop out of the flow profile in an area designed to accommodate equipment introduction and efficient removal of accumulated materials.

9.4.1.36 Outreach and Engagement

The IRWMP has incorporated, from the earliest of days, an outreach and engagement array of policies and procedures. The specifics of this process and procedures program are embodied in the stakeholder process and in the elements of the disadvantaged communities outreach program, in the form of adopted elements of the IRWMP. The details of the outreach program are introduced later in this Chapter in this expanded element of the outreach program is subject to comment of the Department of Water Resources for review and comment. The matter of inclusion of this Water Management Strategy into the Plan has been of priority position from the onset of the formalization of Kaweah River Basin integrated water management steps into a State Guidelines written plan format.

9.4.1.37 Water and Culture

As the definition of "culture" is broad, it would be presumptive to state that this IRWMP is totally compliant with this strategy. It is safe to say that there are numerous parts of the IRWMP that properly address the matter. For example, the Kaweah River Basin is defined as an arid region. Conservation is a matter of everyday life for all categories of water users. Whether on an urban basis, an industrial basis or an agricultural basis, conservation is a way of business and life. A culture, if you will.

On a specific basis, hydrology has long created a culture of conjunctive use. While just coming into vogue in many areas of the state and as a recent element addition of many funding programs, conjunctive use is a multi-decades old practice within the IRWM Planning Area. Hardly a surface water user does not have significant acreage and multiple facilities in inventory designed to implement conjunctive use objectives. As an example, the KDWCD has developed conjunctive use basin areas totaling over 5,000 acres with another 1,000 acres currently in inventory and in the development process.

On the urban use side, a considerable number of examples exist. Turf replacement, low flow toilets and showerheads, odd-even watering days, no watering months and water-reuse/recycling are dominant features of conservation based ordinances currently in place in urban settings ranging in size form larger cities, down to the smallest unincorporated communities.

A culture attitude, introduced into educational curriculums, targeting children of a young age. Incorporated into competitions involving posters, slogans and billboards. Basis of an industry focused on conservation. From plants to irrigation systems, to faucet management issues while brushing teeth or washing hands.

An area, however, where it is a proven fact that more can be done. Where there are more areas to address the expansion and refinement of elements supporting the existence and expansion of this culture. The pursuit of strategies related to this issue is likely not likely to ever come to an end.

9.4.2 DAC Communities/Rural Water Related Concerns

Considered to be of significant importance by the Board of Directors of the Regional Water Management Group (RMG) and the IRWM Stakeholders Advisory Group is the matter of dealing with water quality/water quantity related issues for rural unincorporated communities and aggregations of single-family residences identified in current context as "hamlets." For several years, the Stakeholders Advisory Group worked on structural, political and management procedures related to addressing these water quality/water quantity issues. The issue was pursued to the extent that process and procedures were identified for both entities where a local governance structure existed and for those where it did not. As one would expect, the IRWM process was interjected into the solution set resulting in a process which is expressed graphically in two (2) process diagrams which are presented here as Figure 9-1. Part of the Figure 9-1 presents the scenario where there is initially no identified lead agency to address the drinking water problem. The process follows from initial problem identification and definition through project completion and implementation. “Go-no go” points are incorporated, indicating where the willingness of the local beneficiaries to engage becomes the critical element in the success of the particular project to proceed from initial identification and description to completion and implementation. Paralleling this process, but for those situations where there is an identified lead agency, the Figure also presents the pathway for a process from problem identification and definition again to completion and implementation. The process, in this case, only ceases if there is no identified feasible solution. It should be noted, with the advent of Proposition 218, this process diagram may need to be modified to reflect the support, in general, for the project, but an unwillingness to fund the level necessary to achieve project implementation.

Prior to the transition to the RMG as the lead agency in the IRWM process for the Kaweah River Basin, this process has become a priority item for the Board of Directors of KDWCD. Based on opinions which exist with respect to the capability of the Regional Water Quality Control Board’s recently adopted Irrigated Lands Regulatory Program General Order to succeed in any reasonable time frame with respect to addressing groundwater quality improvements, the Board of Directors instructed engagement of staff and consultants in the pursuit of the process generated by the Stakeholders Advisory Group. At the current time, outlines are being prepared of policies and procedures to implement the process and to further expand the process into non-traditional arenas for the KDWCD. As an example, the Board of Directors has suggested that a potential arena for IRWM activities related to disadvantaged area drinking water activities is related to technical assistance. This technical assistance comes in numerous forms including management assistance, governance assistance, outreach assistance, operations related assistance and projects funding and construction plans and specifications preparation assistance. In demonstration of one of the elements of this consideration, there is contained in Appendix I, a memorandum in which is summarized training and technical assistance activities which have application to areas within the Kaweah River Basin for which the KDWCD has elected to engage separate, but as a participant in the RMG.

9.4.3 Rural Water Supply Study

In addition to the KDWCD outreach effort, the County of Tulare has completed a report specifically oriented to the various issues outlined in the Appendix I memorandum with specific emphasis on four (4) specific concerns. The first of these is the arena of management and financial activities, the second addressing water supply and water supply augmentation issues, the third dealing with technical issues related to water and wastewater systems and the fourth related to individual water and wastewater systems. Recommendations forthcoming out of the report have application at the individual level, the community level and at the community governance level. Most importantly, recommendations were developed with respect to actions which county, state and federal governments can take to improve the drinking water and wastewater conditions which exist for individuals living within the Fresno, Kings, Tulare and Kern County region, but with application state-wide for a similar population. In particular, the report addressed obstacles which can be removed related to delivery of service at the local, state and federal governmental levels and steps which can be taken to enhance the current process and procedures related to such delivery of service.

9.5 INTEGRATION OF STRATEGIES WITH BASIN PLAN OBJECTIVES

Table 9-2 presents the surface water beneficial uses which are adopted into the Basin Plan by the RWQCB for both the Kaweah River and the Tule River. From a water management planning perspective, the Basin Plan has always been considered the primary and governing document in this regard. The beneficial uses listed in the table are those which the RWQCB has chosen to be protected by activities taking place within the respective basins. Activities involving discharge to waters which have established beneficial use criteria are enjoined from degrading the potential for said waters to be utilized for those purposes. It is reinforced in this IRWMP document that the Basin Plan Objectives are of paramount significance and deserve the position which they have been accorded by action of the RWQCB in establishing said protective standards.

TABLE 9-2
SURFACE WATER BENEFICIAL USES TULARE LAKE BASIN
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Stream	MUN	AGR	IND	PRO	POW	REC-1	REC-2	WARM	COLD	WILD	RARE	SPWN	GWR	FRSH
553,558 Kaweah River														
Above Lake Kaweah	•				•	•	•	•	•	•	•	•		•
Lake Kaweah					•	•	•	•		•				•
Below Lake Kaweah	•	•	•	•		•	•	•		•			•	
555,558 Tule River														
Above Lake Success	•	•			•	•	•	•	•	•	•	•		•
Lake Success		•			•	•	•	•		•				•
Below Lake Success	•	•	•	•		•	•	•		•			•	
552,553, 554, 555 Other East Side Streams	•	•				•	•	•	•	•			•	
551,557, 558, Valley Floor Waters		•	•	•		•	•	•		•	•		•	

9.6 UPDATED OUTREACH STRATEGY

Objectives

One of the objectives of the State during the initial contracting process for the Proposition 84, Round 2 contracting process was the preparation of a revised “Draft” outreach strategy. As demonstration of technical, financial and governance attributes of solution sets to the water quantity and water quality problems which were documented to exist at the time of contracting in the defined study area, the State felt it premature to finalize the outreach strategy until after Report completion. Finalizing the outreach strategy following the publication of the Report, which would then contain feasible solution sets to Participant needs, was felt to be appropriate. In addition, given both the presence/absence of community water systems and the presence/absence of water utility governance structures, it was acknowledged that there would be numerous stakeholder arenas which needed to be properly addressed in order to translate the initial study efforts into finalized projects. Said Report had been completed and accepted by the RMG.

IRWM ADOPTED PROCEDURES

In the process of converting the “Deemed Equivalent” nature of the historic water management structure which existed within the Kaweah River Basin to a formal IRWMP structure, focused attention was given to project development. Many hours were spent by the then Stakeholders Advisory Group in the development of project planning strategies, including the specific development of outreach efforts related to Disadvantaged Communities (DAC). Topic specific and lengthy sessions were spent developing an outreach structure which was eventually divided into separate pathways. These pathways were in recognition of the oft-times coordinated focus of existing properly managed water management entities, DAC based or not, in comparison to the lack of such coordination in certain rural unorganized areas. Effort was focused in the latter stages of the strategy development sessions exclusively toward the unorganized areas in recognition of the fact that, in many cases, they were not always small in size and often had similar characteristics of other unincorporated communities. They were just lacking water and sewerage infrastructure systems.

Resulting from these efforts was the development of a formalized approach to project completion/implementation for areas both having and lacking an identified lead agency. Figure 9-1, previously mentioned, was the adopted and implemented structure. Attention is called to the process diagram for “No Identified Lead Agency Status,” the right-hand side of the figure. The chart pathway starts at the bottom in recognition that there is the absence of a governance structure, but with problem identification and definition having been accomplished. Progressive steps then take place at the local level with the process either stopping because there is a lack of community support or proceeding if such support is present. In the presence of support, the IRWM governing Board and Stakeholder Advisory Committee step in to provide interim governance support. This support extends through funding application efforts, all the way to the invitation being extended for project funding. At that time, efforts are undertaken to either form a new political subdivision to carry the project through construction and into implementation or, with consolidation having been examined, consolidation efforts are pursued and completed, allowing for the enlarged public entity to carry the project through completion and implementation.

This structure has been in place for several years, with like efforts having been in place prior to the approval of the process for inclusion into the IRWMP. As an element of the current IRWMP, the structure is available to utilize as an initial step in the outreach process and as an initial step in this outreach strategy.

As a supplement to this process, the IRWM governing Board put forth a Request for Proposals for Proposition 1 funding to strengthen DAC involvement in the IRWM process. Letters of support have been approved by other IRWM groups in the region, with the item brought to the Tulare County Board of Supervisors at the end of February, 2017, for approval to submit to the State for funding. As a result, supplemental funding capability now exists to allow the IRWM governing Board to perform in accordance with the adopted structure outlined in Figure 9-1 as many of the projects detailed in this IRWMP are specific to water quality and water quantity.

Participant Outreach Program

Supplemental Report Tasks

Following a determination of grassroots support for a particular solution set, a number of supplemental steps have been defined as being constructive which take place during the outreach time frame and extending into the pre-project development phase. These steps are identified as follows utilizing a regional surface water treatment plant as the solution set example:

1. Conduct meetings with communities with consolidation capabilities regarding water supply needs, interest in participation and capabilities for development of an adequate surface water supply. Participation results would determine if interest exists in pursuit of development of a regional surface water treatment facility and appurtenant distribution system and development of an associated dependable raw water supply to meet Participant needs;
2. Define and develop an initial organizational structure which would include preparation of draft agreements to be used for participation in negotiations for a surface water supply and definition of characteristics of a regional surface water treatment facility. Based on these efforts, a preliminary service area would be established and the service area boundaries defined. In the development of the raw water supply, consideration would be given to not only the satisfaction of existing demands, but anticipated long-term demands. Evaluation would begin of a permanent organizational structure which would cover the proposed service area, cover institutional requirements and contracting for the surface water supply and be capable of satisfaction of operational issues. Based on these findings, a recommendation would then be prepared for the interim organizational governing body. The proposed structure would be reviewed with all intended Participants and a Memorandum of Understanding or equivalent legal agreement would be prepared for approval by all Participants. As example, for a potable water supply type

project, through this organizational structure, funding could be requested for the proposed facility, a water supply permit obtained and knowledge would exist that the operation and maintenance of water treatment plant improvements would have adequate oversite;

3. The capacity requirements of each of the Participants would need to be specifically determined. Where available, historical data would be analyzed, future needs quantified and the defining relationship between the raw surface water supply, resulting backwash quantity and estimated and interim standards compliance confirmed. An interim water supply would be identified for distribution when the treatment facility is out of operation for maintenance. For example, if the source of supply is from the Friant-Kern Canal, interim supply coverage would need to exist for the winter period every three (3) years when the canal is out of operation for maintenance. Following this analysis, the defined treatment capacity parameters for each Participant would be assigned;
4. Based on the aforementioned water supply requirements, an adequate surface water supply quantity would be established and the source would be identified, negotiated and set to contract;
5. Identification and development of water transfer and conveyance agreements associated with the raw water supply would need to be drafted and negotiated to completion. This effort may include agreements for water transfers and water exchange mechanisms, including conveyance of exchange supplies to the service area of the partnering entity. In addition to initial identification of the interconnecting pathways between Participants, there would need to be finalized easements, fee acquisitions and/or encroachment permit arrangements. Related documents would need to be taken from initiation to closure. Identification of reimbursement potential for any property purchases would need to be accomplished from the proposed funding source prior to any purchase action;

6. Terms and conditions for Participant use of water treatment capacity, storage capacity and transmission line capacity would need to be finalized and placed in agreement form. Such terms and conditions would need to cover capacity encroachment provisions. Negotiations would need to take place to take such agreements to closure;
7. Filing of an application for a Water Supply Permit with the Division of Drinking Water, State Water Resources Control Board, would need to take place. Required technical reports, definition of managerial capabilities and documentation of financial capabilities would need to be prepared to be submitted with the Water Supply Permit application;
8. Efforts related to water treatment plant location would need to be initiated and resolved to a point of closure of at least an option to purchase, as current funding sources do not allow for reimbursement of property purchases in advance of finalization of the funding agreement documents. A design level analysis of the selected site would need to be accomplished to identify any constructability problems, along with access for a multiple number of issues including employee ingress and egress, materials delivery, electrical power service, windshed evaluation related to notice and evacuation potential, should chemicals such as chlorine gas be released and sludge drying and dried sludge storage capabilities. With respect to the latter, identification of the absence of perched water conditions which would aggravate both sludge drying and dried sludge storage would need to be carefully avoided; and
9. Initiation and completion of the necessary environmental procedures would need to take place. A determination of the applicability of the California Environmental Quality Act and the National Environmental Protection Act would need to be accomplished. Completion of the environmental process including the recordation of a final finding is a prerequisite for issuance of a Water Supply Permit. In addition, environmental considerations which need to be addressed in the design

phase, as built in mitigation features of a project, need to be clearly delineated prior to design proceeding much beyond the one-third point.

Following these initial steps, additional steps would need to be addressed as follows:

1. A determination of the required license and experience level of the lead operator and a preliminary determination of staffing requirements, including license levels for such personnel;
2. A determination of the financing arrangements felt to be necessary during the construction period, particularly with respect to the necessity for swing financing in order to meet State-mandated requirements for the timing associated with construction contractor payments; and
3. Taking to closure, the binding agreement between Participants, putting into place the governance structure and the financial and legal obligations related to payment of both current bills and long-term debt instrument obligations.

Outreach Advocates

The IRWMP Planning Area is fortunate in its location. Considerable support and advocacy exists within the area from multiple sources, each strong in their own right and often working in combination to achieve maximum results. These entities include Self-Help Enterprises, Community Water Center, California Rural Water Association and the County of Tulare. Use of the services which each provide is encouraged.

The lead position to date for efforts to begin to address Participant needs on a regional basis has been assumed by the KDWCD. KDWCD has been engaged in area efforts for some time and led the effort to secure contracts for funding of the Feasibility Studies for Lindcove and Tooleville, assisted by the County of Tulare. The KDWCD has historically worked on an advocacy level relative to qualified operator issues and with respect to surface water and groundwater supply issues.

In the future, it is envisioned that the role of the Local Agency Formation Commission and the Division of Drinking Water, State Water Resources Control Board will increase as issues related to entity formations, boundaries and permits begin to take shape and be pursued to completion.

Participant Additions And Withdrawals

Of particular importance in the development of the final outreach strategy will be the manner in which Participant additions and deletions to chosen projects are managed. In the initial outreach and initial expression of support phase, the process must be extremely flexible, allowing for parties to become educated to the issues, as well as the solutions. As project details, including cost and financing aspects are refined, the capability of Participants to engage or withdraw must continue to remain flexible, albeit to a lesser degree than in the initial stages.

Experience has taught that the initial determinations of need and commitments eventually made with respect to treatment and distribution capacity are critical to the overall success of a project. When dealing with capital cost funding from sources other than pure borrowing, critical attention is given by funding agencies to capacity allocated for purposes other than meeting existing demand. This creates a situation wherein the lack of foresight to contract for sufficient additional capacity creates growth constraints in the future and can even lead to disputes between the participating parties due to issues such as capacity encroachment. Specific attention needs to be given to the additions and deletions process, with respect to both who the Participants are and are not and capacity allocation issues, as projects proceed from concept to completion.

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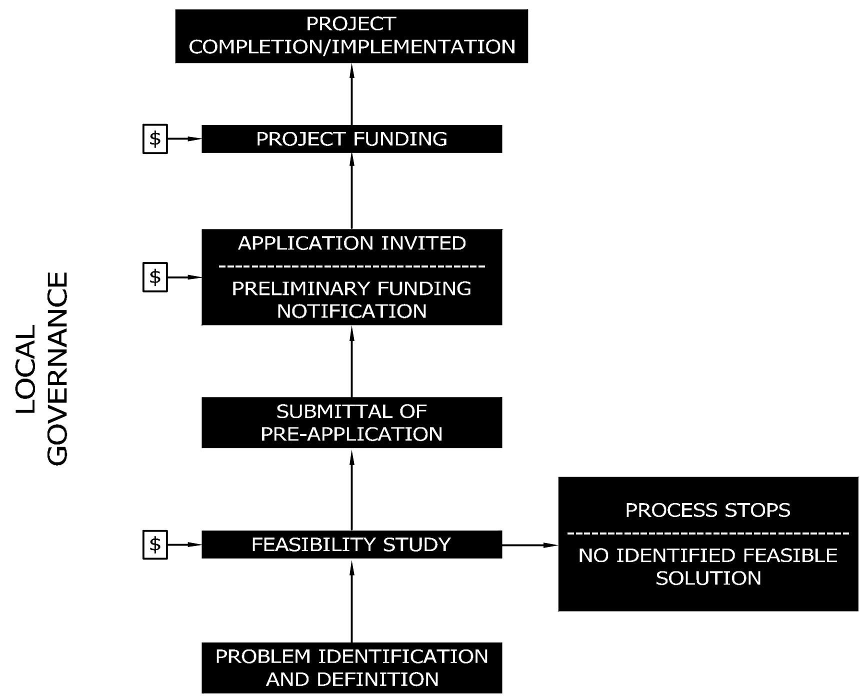
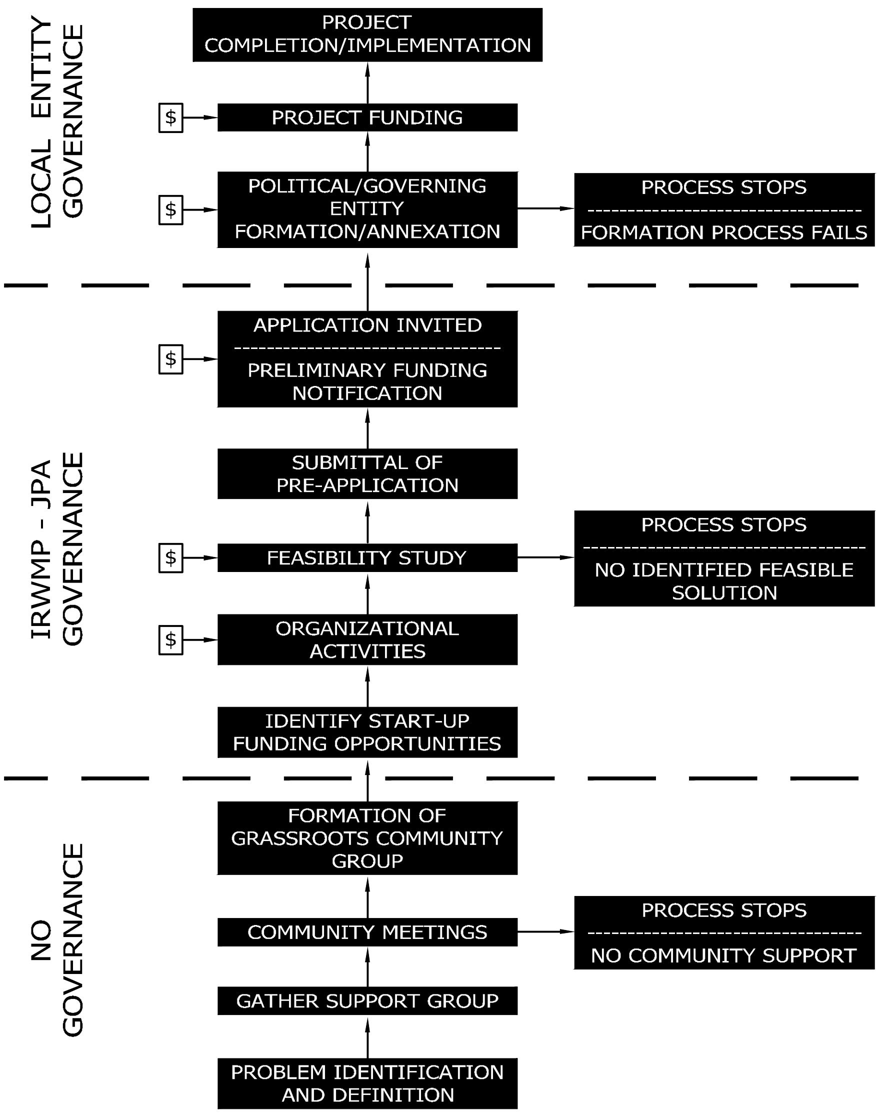


PROCESS DIAGRAM
IDENTIFIED LEAD AGENCY
WATER QUALITY/WATER QUANTITY ISSUES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH BASIN



PROCESS DIAGRAM
NO IDENTIFIED LEAD AGENCY
WATER QUALITY/WATER QUANTITY ISSUES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH BASIN

KELLER/WEGLEY

FIGURE 9-1

CHAPTER 10

WATER RESOURCES MANAGEMENT OPPORTUNITIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 10

WATER RESOURCES MANAGEMENT OPPORTUNITIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

10.1 PARTNERSHIP FORMAT

While not discouraging the individual entity approach to water management and development of water management projects, the Kaweah River Basin's Integrated Regional Water Management Plan (IRWMP) is designed to foster and encourage a partnership based approach to project evaluation and development. When viewed from a single-entity approach, projects are not allowed to achieve their maximum potential. Only when evaluated by multiple stakeholders potentially affected by results of a project and given a chance to change their project elements to be incorporated with the proposal of another entity, can optimum results be assured of being achieved. It is this partnership type approach that has been a part of the Kaweah River Basin IRWMP for in excess of two (2) decades. It is the intent of the Board of Directors of the Kaweah River Basin Regional Water Management Group to continue to encourage this basis of approach to project development and water resources management into the future. The current approach to the IRWMP structure and an open Stakeholders Advisory Group process ensures that the Board of Directors' directive has a chance of succeeding.

10.1.1 Water Supply Augmentation Measures

There are a number of water supply augmentation measures which are currently being contemplated. Amongst these are programs which are appurtenant to other organizations or are partially driven by regulations and guidelines either in place, or in the process of development. As is the case with the IRWMP Planning Area, these programs have somewhat of a division between municipal and industrial water management issues and those of the agricultural community.

Augmentation measures related to municipal and industrial uses include putting shuttered groundwater extraction facilities back into operation with the assistance of treatment methodologies. As shuttering wells from systems due to contamination often causes a skew within the groundwater reservoir, problems associated with mounding and over-drafting can be partially addressed with a more even distribution of water extraction made available by utilizing mechanisms such as well head treatment.

A water supply augmentation methodology currently in use in the Deer Creek & Tule River Authority area is that of the Lower Tule River Irrigation District (LTRID). Elements of their program call for partners receiving surface water during below normal and dry years from the supply of the LTRID to participate in the construction of groundwater banking facilities and to participate in the purchase of above-normal and wet year supplies to deliver in-lieu quantities to agricultural users and to populate the groundwater recharge facilities for purposes of augmenting the groundwater reservoir. Such a program does not currently exist within the Kaweah River Basin IRWMP area, but would be a mechanism by means of which water supply augmentation for municipal and industrial needs could be addressed.

With respect to agricultural water supply augmentation, several opportunities exist, some of which are available programs, some in the process of being developed and others in the concept stage. Amongst the developed programs, attention is currently being given to those related to the San Joaquin River Restoration Settlement actions. This program, now in the implementation stage, offers funding assistance for programs which are designed to replace the water supply lost as a result of release of heretofore allocated project yield from the San Joaquin River to the River below Millerton Reservoir for purposes of reintroduction and maintenance of anadromous fishery. The KDWCD, as well as multiple Friant Division, CVP Contractors located within the Kaweah River Basin are affected by Settlement action and are therefore eligible to participate in the program to mitigate the effects of Settlement implementation.

In progress in the development phase, is the concept of a surface water distribution system in the westerly portion of the KDWCD service area. While this would be a paradigm shift for the KDWCD to deliver water directly to landowners/growers, the Board of Directors is considering this program due to the declining levels of groundwater in the subject area, principally due to the curtailments in the deliveries of water from the Sacramento-San Joaquin Rivers Delta by the State Water Project and the San Luis Unit CVP. KDWCD would utilize its Friant Division, CVP contracts as the principal mechanism to provide water to these facilities, augmented by its pre-1914 water rights from the Kaweah River.

Additional programs which have been discussed which could provide augmentation would be delivery of water to concentrated water use areas, such as Monrovia Nursery. Augmentation of the groundwater extractions in this area would allow for existing groundwater conditions to remain, to the extent that demand could be offset by an imported supply, in lieu of groundwater pumping, while this program would be of benefit in a localized area of the Kaweah River Basin, it nonetheless is an augmentation measure which would have benefits to both a portion of the agricultural community within the Basin, as well as to downstream municipal and industrial users, such as the City of Visalia through its service provider, California Water Service Company.

Another opportunity which exists for augmentation is the conversion of current played-out mine sites developed for purposes of obtaining sand and gravel supplies for construction related activities. In reclamation, these facilities have been approved to be in a lake/pond form, however, in that form, groundwater is the source of supply which fills the excavated basins and considerable evaporation results from this reclamation activity, with the backfill again being provided by groundwater. Recent action to replace this procedure with a “dry pit” concept eliminates the exposure of groundwater to potential adverse contaminant introduction, plus virtually eliminates the evaporation impact.

Two (2) types of projects, one of which is in the implementation phase and one in the planning/development phase include the Hannah Ranch project of KDWCD and the McKay Point project of the Consolidated Peoples Ditch Company, the Tulare Irrigation District and the Visalia- Kaweah Water Company. Both of these facilities are designed to act as re-regulation facilities below Terminus Dam, re-regulating flows for the benefit of peak power production, as well as allowing for introduction of currently non-storable flows lost to the basin and released downstream for groundwater recharge purposes based on the availability of recharge capability in existing basins.

Programs based on cooperative partnerships such as the City of Visalia/Tulare Irrigation District tertiary treated effluent – Kaweah Water Exchange and the groundwater recharge basin development east of the City of Tulare, in partnership with the Tulare Irrigation District are examples of partnerships wherein groundwater supply augmentation for municipal and industrial purposes are in the process of taking place.

Banking programs are currently being developed between partners within the Kaweah River Basin which will call for normal, above-normal and wet year puts into ditch company service areas, in exchange for yielding dry year, low flow, high priority Kaweah River entitlement for the prior puts. These puts are at ratios to the extraction quantities reflecting the higher value of the dry year surface water entitlement.

10.1.2 Water Demand Reduction Measures

A number of water demand reduction measures are already in effect within the IRWMP Planning Area. Principal amongst these are the utilization of rate structures associated with metered deliveries for domestic, commercial and industrial consumption with accompanying rate structures which can be varied to encourage conservation. In addition, household plumbing retrofits and installation of improved technology, low-flow plumbing devices are mandated to be installed in new construction, as well as retrofits requiring a building permit.

On the agricultural use side, considerable improvement in agricultural irrigation delivery efficiency has been accomplished over the last several decades. Often at considerable economic expense, complete conversions of fields from furrow and flood irrigation to low-volume micro sprinkler and drip irrigation has occurred. Such conversions are extensive and common place within the permanent plantings areas of IRWMP Planning Area. The greatest opportunity for demand reduction, however, is that associated with elimination of multi-cropping in a single year. Double cropping in certain parts of the IRWMP Planning Area is common as the growing season is year-round and readily accommodates both a summer, as well as a winter crop. In some cases, adjustment of crop types and the nature of the harvest has allowed for both triple-cropping and quadruple-cropping. The impacts on the groundwater reservoir when these cropping choices are made, absent a plentiful surface water supply, are beginning to be understood. It is likely that demand reduction procedures undertaken in the future will call for the reduction and/or elimination of a significant portion of this multiple-cropping if declining groundwater level trends are to be abated.

10.1.3 Flood Control Projects and Programs

Flood control facilities have been given development potential planning consideration on Dry Creek, Lewis Creek and Cottonwood Creek. An alternative evaluated for Lake Kaweah enlargement was the inclusion of a dam on Dry Creek, but due to the adverse impact of the elimination of one of the largest riparian sycamore corridors still in existence in the United States eliminated this alternative from consideration. In addition, off- stream storage related to the Friant-Kern Canal and its relationship to flood flows on the San Joaquin River has given rise to the evaluation of Yokohl Valley as a potential off- stream storage site. This concept was included in the proposed East Side Division, CVP, planning which was abandoned by the U.S. Bureau of Reclamation. Given the current desire of the major landowner in Yokohl Valley to plan for urban development in that area, it is not likely that the off-stream storage proposal will be pursued in the near future. To date, projects on Mehrten Creek have not been given consideration, due to the low- volume discharges from these facilities, the fact that water is currently diverted for beneficial use in the majority of storm-water related events and flood related events on both of these streams are so infrequent as to eliminate the economic viability of current flood control project types. Whether this remains the situation for the future is yet to be determined.

10.2 WATER QUALITY IMPROVEMENT OPPORTUNITIES

The most significant future opportunities for groundwater quality improvement lie in outreach education and employment of Best Management Practices related to application of pesticides and herbicides. This educational component applies to both the urban and rural development regions of the IRWMP Planning Area, as well as the agricultural areas. Both areas are potential sources of contamination leading to the degradation of groundwater supplies and avoidance of contamination is the strongest methodology for assuring future beneficial use capability of existing surface and groundwater supplies.

The pilot disadvantaged community drinking water outreach program recently completed by KDWCD identifies additional water quality improvement opportunities. It is acknowledged that most water quality improvements within the IRWMP Planning Area will be oriented to human consumption purposes. Levels of constituents such as Nitrates are of benefit to irrigated agricultural and are not considered to be adverse, as they are with respect to human consumption. Likewise, pumping groundwater with residual quantities of DBCP and 1,2,3-TCP are not adverse to agricultural operations and allow for reduction in the level of these contaminants in the environment through volatilization associated with pumping and exposure to sunlight when applied for irrigation application purposes. The pursuit of the implementation of this pilot program is currently a priority of KDWCD and, to date, has received a positive response from the representatives of potential beneficiaries of this process.

10.3 OTHER WATER MANAGEMENT MEASURES

10.3.1 Land Use Policies

Of critical importance in the water resources management opportunities which exist within the IRWMP Planning Area, is the matter of improved land use policy decisions. Currently, most land use policy decisions, particularly those which allow for the placement of developed subdivisions and farmworker housing installations in areas with known groundwater contamination, occur without thought to that existing contamination. It is a goal of the IRWMP to intensify discussions with land use policy decision makers, bringing attention to the gravity of this situation and providing input as to how their land use planning policies could avoid many of the adverse drinking water situations which are being developed. If the resolution of providing high quality drinking water to rural residents is to be properly addressed, the land use policy decision making process is the first and foremost arena in which attention to improvement needs to be given.

10.3.2 Water Supplies for New Development

Assuming the addressing of proper placement of new development with respect to groundwater quality issues, sufficient quantity then becomes the principal issue. Policies such as have been developed for the City of Visalia and the City of Tulare, wherein evaluations have taken place of agricultural to urban development and displacement of previously delivered surface water supplies and their relationship to water balance, will need to be evaluated for other areas. These policies have resulted in the implementation of impact fees designed to at least generate a cash flow position wherein water can be acquired and delivered to offset the impacts of the development based land conversion and the modification of the water supply delivery sources. Additional policy considerations, such as those associated with the City of Porterville will also need to be given in the future. Their recent policy, calling for maintaining a position of only extracting water from the groundwater reservoir where said extractions are within the safe yield of the groundwater structure will bring about a myriad of changes in lifestyle. In particular, landscaping considerations under this type of policy adoption would be considerably different than those which currently exist. High volume demands for landscaping during summer months would virtually need to be eliminated. In addition, conservation practices would need to be employed, such as the rural practice of utilizing water supplies to introduce moisture into the dirt for dust abatement and atmospheric cooling conditions. In an over-drafted groundwater basin, it is envisioned that future policies will be directed principally at these two (2) related urban water uses. New developments will lead the way with landscaping requirements and provisions for dust control built into project development considerations. Eventually, it is envisioned that the policies and procedures which are generated as a result of application to new development will roll over into existing rural development related ordinance restrictions. It is acknowledged that the current groundwater declining trends cannot be sustained into the future with water uses remaining status quo.

10.3.3 Agricultural Crop Water Management Measures

Previously noted, water demand reduction measures potentially exist where multiple cropping patterns contribute directly to significant reductions in the available amount of groundwater in storage and to resulting declines in both static and groundwater pumping levels. In addition to exacerbating water quality related concerns, additional impacts associated with over-drafting include increased power consumption related to pumping, the need to develop additional power grid improvements to accommodate increases in power demand, falling groundwater conditions which both reduce the useful life of the pumping unit and entrain air into delivered domestic supplies creating adverse conditions from an aesthetic perspective with these deliveries.

Already existing, but in somewhat an abated condition is the matter of subsidence. The importation of water, both on the east and west sides of the IRWMP Planning Area has led to groundwater extractions over-drafting, principally sand and gravel aquifers, in lieu of pulling water from the clay lenses in groundwater wells. Over-draft conditions which are currently beginning to be seen in areas of the Kaweah River Basin will likely result in pulling of water molecules out of the clay lenses which virtually instantly lose the support structure offered by the water molecules and collapse instantly due to the loss of structural support. This water storage capability is then permanently lost due to the weight of the overburden on the clay lens and results in the development of reflective subsidence which ultimately manifests itself at the ground surface. In addition to interference with the gravity delivery of surface water, numerous structural problems associated with roadways, drainage systems and constructed buildings, including single-family residences, occur. Evidence of this subsidence accelerating beyond historic levels is beginning to be documented. An element of the KDWCD Groundwater Management Plan is associated with documentation of this occurrence and the degree to which it exists. Improvements and a more significant outreach in this regard are anticipated to be incorporated into the next update to the KDWCD Groundwater Management Plan, which is currently in progress.

10.3.4 County Systems Infrastructure Improvements

As the County of Tulare has elected to act in the role as lead agency for several rural hamlet water systems, monthly costs associated with the operation and maintenance of these systems has been observed to be a major issue. At the current time, many of these systems are having their costs subsidized by the General Fund of the County of Tulare and several attempts to correct this trend through Proposition 218 related procedures have met with failure. It should be recognized that this situation will intensify in the future as these systems become older and both maintenance costs increase, as well as the systems facing costs associated with replacement of obsolete and deteriorated facilities. The affordability characteristics of delivery of drinking water supplies meeting applicable state and federal drinking water standards are again, a reason why land use planning must become a critical element in water management planning. Systems deterioration and systems abandonment due to the lack of proper financial planning and land use planning are situations which are to be avoided based on policies and procedures associated with this IRWMP.

10.3.5 Pilot Studies

In an attempt to begin to address the issues related to disadvantaged community water supply and water quality related issues, the County of Tulare acted as lead agency for a four (4) county effort addressing water and wastewater related issues for the disadvantaged communities within the four (4) county region, which includes the areas of the Counties of Kings and Tulare within the IRWMP Planning Area. The pilot studies address issues not only related to water quality, water supply and their related technical issues, but also administrative, managerial and finance issues critical to the maintenance and well-being of rural water supply systems. The fourth pilot study deals with individual household water supply and wastewater treatment and disposal systems.

10.3.6 SCADA Expansion

Another water management measure which is increasing in its importance to optimized water management is the installation and maintenance of Supervisory, Control and Data Acquisition Systems. Otherwise known as SCADA Systems, installation of same allows for remote monitoring and remote control of water management related facilities. Whether these facilities are surface water oriented, groundwater oriented or in response to power production, significant efficiencies can be achieve through the utilization of this equipment and its related software systems. Consideration of increased design, installation and maintenance of these systems within the IRWMP Planning Area is encouraged and offers opportunity for improved management of available water supply resources.

CHAPTER 11

WATER RESOURCES MANAGEMENT FRAMEWORK COMPONENTS

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 11
WATER RESOURCES MANAGEMENT FRAMEWORK COMPONENTS

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

11.1 PLANNING FRAMEWORK

In addition to the traditional water management planning tools, as have been outlined in chapters previous to this chapter, there are a number of other planning instruments which are critical elements to proper water management planning. Reference has already been made to land use planning and its relationship to delivery of potable and standards compliant drinking water supplies, particularly to hamlet and individual rural housing units. Supporting those land use policies are general plans and their related elements and a number of other formally adopted, publicly vetted plans. While these plans do not have as their basic underpinnings the broad water management related issues of this Integrated Regional Water Management Plan (IRWMP), they nevertheless have a direct nexus to the water management planning process. These plans are described herein in general context, but, as they are adopted plans and in the public domain, will not be described in detail in this IRWMP.

11.1.1 County and City General Plans

Both the County of Kings and the County of Tulare have adopted General Plans. That of the County of Tulare was recently adopted with at least a portion of said plan currently subject to a legal challenge. These general plans have elements related to infrastructure development, with particular emphasis on the provision of water supply to community areas, with specific emphasis on water supply for areas subject to development. In recognition of the significance of surface water supply to both counties, reference is made to surface water supply related issues. The County of Tulare General Plan, in particular, has a special section related to water supply based on the early recognition by the Board of Supervisors that water plays a critical role in the economic well-being of the County. It was the understanding of the Board of Supervisors that the authors of various components of the General Plan took into consideration the water supply information which was made available prior to the development of policy issues which are embodied in the adopted General Plan.

It is the goal of the Regional Water Management Group (RMG) Board of Directors to work with both counties with respect to the issues of land use planning and land use actions as they relate, in particular, to water quality and, to a lesser extent, water quantity. The need to cease approval of land division maps and permits which allow development to occur in locations where the drinking water supply is out of compliance with state and federal drinking water standards is increasingly apparent.

11.1.2 National Forest Land Management Plan

While the Kaweah River Basin IRWMP has an easterly boundary that extends up to approximately the 660 foot contour, actions which take place higher in the Kaweah River watershed have an impact on beneficial uses within the IRWMP Planning Area. In particular, sedimentation reduction is a major issue, particularly as it affects storage capability behind Terminus Dam. In addition, uncontrolled stream systems feeding into the IRWMP Planning Area are sensitive to and impacted by adverse volume sediment loads. The recharge capability of the Kaweah River and its distributaries and the uncontrolled stream system beds are the principal locations where effective recharge of runoff to the groundwater reservoir occurs. Accumulation of sediments in these channels is adverse to the effective percolation capability of same.

In addition, coliform contamination is an objective water quality standard in both the Basin Plan for the Tulare Lake Basin and within the adopted General Order related to the Irrigated Lands Regulatory Program. The actions of parties in their utilization of natural forest and park lands contributory to the stream groups is currently exhibiting an adverse level of coliform presence and the matter is rising on the radar of the Regional Water Quality Control Board as an issue to be dealt with. As preliminary indications are that the source of this contamination is not from irrigated agricultural, attention of the Regional Water Quality Control Board will be turned away from irrigated agricultural to other potential sources once they feel that sufficient justification exists of the source not being irrigated agricultural. Coordination with the National Forest Land Management Plan and with U.S. Forest Service personnel will obviously be required to address each of these and potentially additional, water quality related issues.

11.1.3 Urban Water Management Plans

Urban Water Management Plans are currently current and in place for the City of Lindsay, the City of Tulare and the City of Visalia. The plan covering the City of Visalia was prepared by the water service provider for the City, California Water Service Company. Each of these plans deals with existing and forecasted future conditions, particularly with regard to land use considerations. In response to projected demands, forecasts are made of future requirements for supply, with additional segments dealing with water quality related issues. In addition, due to declining water levels, both static and pumping, each of these plans deals with issues related to power required for extraction and the costs related to same. Additional considerations are given to water quality issues and historical and projected impacts on water quality parameters. Interface between elements of these plans and this IRWMP will obviously take place in the future and the guidance provided by each of these plans will be employed by those parties who are charged with dealing with the particular matter at hand. Within the Kaweah River Basin IRWM planning structure, including the Stakeholders Advisory Group, participation from each of the urban water suppliers already exists and attendance is regular for each of the representatives. Adequate knowledge sharing as to elements of each of the plans will be of necessity moving forward with the implementation of the objectives of this IRWMP.

11.1.4 Groundwater Management Plans

The KDWCD has in place, an SB1938 compliant Groundwater Management Plan. This plan was prepared pursuant to the statutes related to implementing AB 3030 and is currently in the process of its first update since the update bringing the plan SB1938 compliant. There are a multiple number of signatories to the KDWCD Groundwater Management Plan, including the Tulare Irrigation District (TID). In addition to being signator to the KDWCD Groundwater Management Plan, TID has their own Groundwater Management Plan prepared pursuant to AB 255 implementing statues. Said plan was recently brought SB1938 compliant with both plans addressing complimentary and coordinating issues.

Based on the parties' signator to the KDWCD Groundwater Management Plan Memorandum of Understanding, the jurisdiction of said Groundwater Management Plan extends beyond the boundaries of KDWCD. In fact, based on the Memorandum of Understanding participants, the area covered by said plan extends beyond the boundary of the IRWMP. To date, steps taken to update the policy provisions of both the KDWCD and TID Groundwater Management Plans have taken into consideration IRWM principals and it is anticipated that that degree of cooperation and coordination will remain in the future.

11.1.5 Water Shortage Contingency Plans

At the current time, there is a single identified water shortage contingency plan in place within the IRWMP Planning Area. This plan is in the form of a written agreement between the Lindsay-Strathmore Irrigation District (LSID) and TID. Principal features of this plan call for entitlement to Friant Division, CVP supplies of LSID and Wutchumna Water Company entitlement of LSID to be made available to TID when the demands of

LSID have been met, in any given year. In a reciprocal fashion, in below-normal and dry year conditions, the Kaweah River entitlement supplies of TID, in addition to their available declared Friant Division, CVP supplies, are first dedicated to LSID to meet their in-lieu domestic, domestic and agricultural demands. Supplies above that level are available to TID to use at their direction. While there are other informal water shortage contingency plans, there are no others that exist in written form that apply on a long-term basis. To the degree that such plans may be developed in the future, policies such as those of the Kaweah & St. Johns Rivers Association relative to out-of-basin transfers will need to be taken into consideration as they are principally focused on water balance conditions within the Kaweah River Basin. Likewise, any future negotiations related to water banking where such banking will call for exportation of water from the Kaweah River Basin will need to take into account existing adopted policies with respect to out-of-basin transfers.

11.1.6 Capital Improvement Plans/Master Plans

For many of the public agencies and California Public Utility Commission governed utilities, capital improvement plans and/or master plans are in place. Many of the public district surface water suppliers also have in place either complete or equipment and distribution system oriented capital expenditure plans.

Based on the requirements of the implementing legislation of Proposition 218 and multiple court related decisions based on litigation surrounding compliance with the legislation implementing Proposition 218, future water management planning will need to take into consideration the economic constraints imposed by existing adopted elements of budgets, Improvement Plans and/or Master Plans. Water supply and water supply infrastructure projects developed as a result of the IRWM process and participation, have already had to take into account financial constraints imposed by both economic conditions within the IRWM Planning Area, as well as the constraints imposed by the implementing legislation associated with Proposition 218. This will continue to be of necessary concern in future planning efforts.

11.1.7 San Joaquin River Restoration

An important element of San Joaquin River Restoration Settlement legislation and the underpinning Settlement Agreement, calls for funding and project assistance and priority for restoring back to the Friant Division, CVP Contractors that element of water supply estimated to be taken from their declared basis by virtue of Settlement. Based on the position of the number of Friant Division, CVP Contractors within and adjacent to the IRWMP boundary, attention to and participation in San Joaquin River Restoration activities was felt to be paramount, particularly those dealing with water supply restoration.

As a supportive step in this effort and as a tool in preparation for undertaking the preparation of Groundwater Sustainability Plans for each of the Groundwater Sustainability Areas within the Kaweah River Basin, application was made for funding assistance to model the impacts of implementation of Settlement on the Plan area. Funding was secured under Round 2 of Proposition 84 funding efforts which allowed for impacts to be modeled and results of modeling analyzed, resulting in the completion of Task 4 as defined by the Round 2 Funding Agreement. The Task 4 deliverables are reflected in a series of memorandums published in this Plan as Appendix L. Policy and procedure changes to this Plan have been developed and adopted by the RMG as an outcome of the effort. In addition, estimates of the impacts on various categories of imported water supplies are now available for use in support of improved water management efforts.

11.2 WATER MANAGEMENT AND MONITORING PROGRAMS

The IRWMP project evaluation and scoring criteria take into account compliance with elements of adopted water management and monitoring programs in their evaluation and scoring processes. Outlined as follows are several topics related to water management and monitoring which are incorporated in this evaluation and scoring process. Updates to this IRWMP will need to consider the addition and/or deletion of programs from this inventory.

11.2.1 Groundwater Measurement Programs

The KDWCD, throughout its history, as well as all Friant Division, CVP contractors have historically engaged in a process of groundwater measurement which occurs in both the spring and fall months of each year. Data from these measurements is fed to the U.S. Bureau of Reclamation who published documents up to 1992 with said information. The information is also supplied to the State Department of Water Resources (DWR) who historically published maps of both confined and unconfined lines of equal elevation on both a spring and fall basis. That mapping procedure has now been reduced by DWR to publication in the spring only of the unconfined lines of equal elevation of water and wells.

Complimentary to these programs, both the Kaweah River Basin urban and rural domestic water purveyors also conduct depth to groundwater measurement procedures. While driven principally by the economic factors of power consumption and capability of current pumping equipment to satisfactorily perform within the observed groundwater conditions, the information is nonetheless available in the public arena and can be utilized for project planning and impact analysis purposes. Based on the importance of this information to IRWM based water planning, it is envisioned that these efforts by local agencies will continue into the future and be available as a planning tool to IRWMP participants and the associated Stakeholders Advisory Group.

11.2.2 Stormwater Management Programs

A number of stormwater management programs exist within the IRWMP area. Historically, stormwater master plans were associated with these programs, however, these plans were not referenced in 11.1 of this IRWMP as each of these plans is currently considerably out of date. The programs, however, are functioning programs and are documented whether they are at the State, County or local levels. Coordination with the implemented elements of these programs, as they are documented, can be taken into consideration in the IRWM planning process. Attention will also need to be given to the fact that while the overall stormwater master plans are not being brought current, planning related to additions to the current system elements still is ongoing and these peripheral planning efforts will need to be taken into account in coordinating IRWM plans and project proposals which involve storm drainage elements.

11.2.3 Water Quality Monitoring Programs

As previously introduced, a considerable program, both in terms of scope and cost exists with respect to surface water quality. An extensive inventory of surface water quality test results associated with agricultural delivery systems exists and is database accessible, both at the local, as well as at the State level. With the expansion of the Irrigated Lands Regulatory Program into groundwater, it will not be long until an expanded amount of information is available with respect to groundwater quality which, at the current time, is restricted principally to the domestic water purveyors' service areas and the Dairy Order Monitoring Program. While this information is available through the databases of the Department of Public Health and the RWQCB and published by each water purveyor and transmitted annually to their customers, the same level of quality information does not exist in the rural unincorporated areas not covered by a permitted domestic water supplier. Deliverables which are in the near-term, time wise, are required as a part of the newly adopted General Order under the Irrigated Lands Regulatory Program with respect to groundwater. As time passes, additional information will be available through this monitoring program to be utilized as another tool in the IRWM planning process.

11.2.4 Water Quality Improvement Programs

Associated with the activity to determine surface and groundwater quality, are required management plans where water quality failures are observed. Whether these failures are toxicity related or simply elevated levels of contaminants, two (2) occurrences within a three (3) year period at the same sampling location triggers a management plan requirement. At the current time, there are eight (8) Management Plans which have been prepared and are in effect within the Kaweah River Basin. Each of these

Management Plans is designed to work to eliminate the source of the contamination and to improve water quality in the area of the observed water quality objectives failure.

11.2.5 Conservation Programs

An extensive number of conservation programs are in effect within the IRWMP Planning Area. Whether these are required elements, such as those of the Friant Division, CVP, or in Water Management Plans required to be prepared on a 5-year basis and updated annually, or are conservation elements of Urban Water Management Plans, the plans are in evidence. Each of these plans brings with it either Best Management Practices or conservation procedures designed to conserve the available ground and surface water supplies and to improve the efficiency of the use of same. These conservation programs and their related plans play an important role in Kaweah River Basin water management given the difference between the level of demand and the available supply to satisfy that demand.

11.2.6 Weed Management Programs

Weed management programs are of importance to planning within the IRWMP Planning Area for several reasons. These include control, from a contamination point of view, of the application of herbicides and the need to do so in a fashion which does not result in contamination of runoff or reaching surface water sources or, accruing, through percolation, to reach usable groundwater. These programs, from a public agency and water purveyor standpoint, relate principally to water conveyance facilities maintenance, well site maintenance and reservoir and recharge basin maintenance. Increased usage begins to be evident when road and highway weed abatement procedures are taken into consideration, along with railroad related weed abatement procedures, which are principally designed to reduce the potential for spark-induced fires. The two (2) most significant areas where weed abatement programs exist are in the agricultural arena, where materials application is typically under a jurisdiction of licensed professional advice and restricted materials registration and application constraints and homeowner related applications where no controls exist, except for what material may be available for over-the-counter purchase. To the extent that these programs interface with other management programs, be they surface water related or groundwater related, the programs will need to be taken into consideration in the planning process.

11.2.7 Vector Control Programs

Active within the Kaweah River Basin IRWMP area are a multiple number of vector control related entities. Considerable cooperation exists at the current time with these agencies and such coordination is anticipated in the future. Coordination takes place on the level of the types of materials which are allowed to be applied and where they can be applied, including water supply conveyance facilities, water management and recharge related basins and stormwater collection and disposal facilities. Additional interface takes place related to on-farm facilities including dairy waste related impoundments and tailwater return sumps. Additional coordination takes place with respect to wastewater treatment and disposal facilities, particularly as it related to treated effluent storage and discharge for recycling/reuse. To a lesser extent, coordination exists with school districts and municipal agencies related to parks and grounds watering. Future water management planning activities will need to recognize the degree to which coordination currently exists with vector control agencies and to incorporate their thoughts and recommendations into future water related planning efforts and related construction details, where applicable.

CHAPTER 12

STAKEHOLDER INVOLVEMENT AND COORDINATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 12

STAKEHOLDER INVOLVEMENT AND COORDINATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

12.1 INTRODUCTION

As has been the case through history of water management planning in the Kaweah River Basin, interested parties have gathered together in a number of venues to evaluate common goals and objectives and to formulate plans to cooperatively implement projects and coordinate management of water supplies. At times, these gathered groups have been the governing boards of the water management agencies, while more often, they have been the staffs and consultants to the governing boards. Beginning in the early 1980s, a number of other parties began to meet with the water managers and staffs as it became apparent that water and the management thereof, was going to be a critical element in the maintenance and potential growth within the here and now identified as Kaweah River Basin Integrated Regional Water Management Plan (IRWMP) Planning Area. Representatives of electric utility services, city and county regional planning staff members, staff of Self-Help Enterprises, leadership out of the County Agricultural Commissioner's Office and the head of the University of California, Cooperative Extension have all been involved for more than three (3) decades in the issues related to water management on the IRWM level.

With the formal actions taken by the Kaweah Delta Water Conservation District (KDWCD) in the early 1990s, this group became more formally organized and the KDWCD Board of Directors accepted the group as advisory to the Board. With the development of the Memorandum of Understanding process which allowed direct participants in the IRWMP and with the involvement of Self-Help Enterprises, the group became more formally organized and rather than meeting at disparate places within the County of Tulare, began meeting on a more regular basis of the office of KDWCD. An improved notification process as to meetings of the group began to develop. During those years, the Department of Fish & Game had a resident biologist in the Visalia area. While she was in fairly regular attendance, representatives of other agencies outside of the Department and the County were infrequent and were often specifically invited for input on a particular matter.

12.2 COOPERATING PARTNERS INVOLVEMENT

As earlier outlined in this IRWMP, a process evolved whereby interested agencies could become signator to a Memorandum of Understanding with the KDWCD. These participation documents became the basis for coordinated efforts with respect to input to state and federal agencies, water related plan documents issued by agencies of both the state and federal government in applications for funding of specific water resources oriented procedures and projects and in the joint funding of local projects for which there was no state or federal funding available. Steps to formally identify these water management relationships began to develop with the periodic availability of funding at both the state and federal levels.

12.3 STAKEHOLDERS ADVISORY GROUP

While the interested parties group advisory to the Board of Directors has had different informal titles over time, it has now been formally organized and recognized in procedural documents as the Kaweah River Basin IRWMP Stakeholders Advisory Group. A list of current participants is presented in Appendix J.

12.4 PUBLIC STAKEHOLDER OUTREACH

As the "deemed equivalent" IRWM process of the KDWCD became the formally organized and identified mechanism by which regional water management plan efforts were coordinated, parties outside of the framework looked to join the framework to begin to address their specific issues related to water management. To date, no party requesting participation has been denied. The basis for participation has been other than just general public interest in the topic. The outreach effort is specifically designed to deal with interested parties issues for which either they are the stakeholder or the representative of a stakeholder segment of the water management world.

12.4.1 Stakeholder Outreach Meetings

For some length of time, an intense series of meetings were held, over a two (2) plus year period of time, to deal with the framework of project planning and project evaluation and with the issue of the mechanisms by which disadvantaged communities and/or disadvantaged community representatives could participate. Meetings are currently being held on a regular basis surrounding activities at the KDWCD level, activities within the Kaweah River Basin and activities driven by funding programs, currently those specific to the Department of Water Resources (DWR). Meetings have surrounded policy issues related to the Regional Acceptance Process (RAP), meetings to work through RAP driven issues and meetings related to policy development specific to this IRWMP. In all cases, these meetings have included the IRWMP Stakeholders Advisory Group and, where appropriate, the Boards of Directors of the KDWCD and the Deer Creek & Tule River Authority. In the future, Stakeholder Advisory Group meetings are anticipated to be held on an as-needed basis with the exception being during the project layout, project evaluation, project coordination and project ranking process. That process is anticipated to be energized and de-energized based on available funding opportunities.

12.4.2 Electronic Outreach

The sole mechanism which exists at the current time to communicate with the Stakeholders Advisory Group is by electronic outreach. A copy of the current Kaweah River Basin IRWMP Stakeholders Advisory Group contact list was noted to be presented in Appendix J.

12.4.3 Web Site

At the direction of the Board of Directors of KDWCD, a web site for the KDWCD was created and has been maintained current since.

The web site is identified as www.kdwcd.com and, in addition to being currently maintained, is maintained with links to applicable water management agencies and topics which may be of interest to the party looking for information in greater detail than offered through the web site.

Contained on the web site is information related to the IRWMP process and with the development of this formally written IRWMP, same was added to the web site.

As a water conservation instrument and an education instrument, the District publishes a newsletter, on a quarterly basis minimum, with each of these newsletters being posted on the web site, in addition to being mailed to a list of interested parties which has been developed over time. KDWCD management is constantly looking for comment with respect to the web site, and constructive suggestions on how it may be improved to the benefit of water management within the IRWMP Planning Area.

12.4.4 Targeted Outreach

Within the conduct of the IRWMP Stakeholders Advisory Group, it is acknowledged that certain topics brought to the Group and to the RMG would benefit from input from parties with expertise who do not routinely attend the Stakeholders Advisory Group meetings. When that need is recognized, specific outreach from the RMG is made to specific individuals and/or entities which are felt to potentially be of assistance to the Stakeholders Advisory Group in formulating a position relative to the then current topic.

In addition to such supplemental targeted outreach efforts, additional outreach efforts are also incorporated into the project development process. Stakeholder invitations are extended when specific projects have been identified for pursuit and input is requested from parties in both the impacted and benefitted environments. With the reforming of the Water Commissions by both the County of Kings and the County of Tulare, additional targeted outreach potential exists within the appointed members to those groups. The Commissions bring to the table a different perspective as land use, a broader basis of political representation and disparate water related interests are present within the make-up of the appointed commissioners.

With the creation of the new disadvantaged communities assistance program by KDWCD, a new outreach effort has been created. As parties experienced with project definition and creation have learned by experience, the strongest projects are those which have the wholehearted support of the affected stakeholders. As work begins in areas which currently have no defined governance structure on which to develop water quality and water supply related projects, stakeholder outreach efforts will occur and be actively pursued in order to ensure that support for project development and project handoff at implementation occurs with the support of and with the actions of the directly affected parties.

12.4.5 Cooperation and Coordination with State and Federal Agencies

Coordination between parties associated with the Kaweah River Basin IRWMP are in a continuous mode of coordination with state and federal agency management and staff. Virtually no element of water management within the Kaweah River Basin takes place without the involvement of representatives from these agencies. Whether it is day-to-day coordination with the U.S. Army Corps of Engineers relative to storage in Lake Kaweah, or releases from Terminus Dam, to an ongoing series of projects developed in cooperation with and funded by the Bureau of Reclamation and/or the DWR, constant communication and meeting takes place.

The development of the KDWCD Habitat Conservation Plan and Natural Communities Conservation Plan has expanded the family of coordinating parties for the Kaweah River Basin IRWMP beyond the normal water management related agencies. Development of specific habitat, preservation of specific habitats and management of these developed habitats requires coordination with the State Department of Fish & Wildlife and with the U.S. Fish & Wildlife Service. While relationships with administrators and staff members within these agencies have existed from a project perspective, over time, the pursuit of elements of projects specifically for habitat conservation and development has brought about a different relationship with these agencies, as has the development and pursuit of the referenced Habitat Conservation Plans.

From a flood control standpoint, the relationships with the U.S. Army Corps of Engineers and state agencies, including the State Lands Commission and the Central Valley Flood Protection Board, are necessary and important to achieve optimum coordination. These efforts are related to both maintenance and project planning and development as related to storm water control and flood protection procedures and projects.

12.4.6 Outreach to Other Regions

As shown on Figure 4-2, the Kaweah River Basin IRWMP boundary also abuts that of the Kings River Joint Powers Authority IRWM to both the north and the west. A considerable degree of cooperation exists between the two IRWM groups and, on numerous previous occasions, the entities have conducted joint project evaluations to determine if a strengthening of projects could occur as a result of simply evaluating the nature of particular projects and their particular advantages and disadvantages. It is a goal of the RMG Board of Directors to continue this coordination, which is partially based on the recognition that water deliveries into the western portion of the Kaweah River Basin have a joint source basis of the Kaweah River and the Kings River. In addition, groundwater issues are common between the Kings River service area and that of the KDWCD service area.

As a result of the completion of the efforts to estimate the impacts of implementation of the Settlement Agreement associated with San Joaquin River Restoration litigation, modifications have been made to the original IRWMP objectives. An objective has been added advocating support for increased involvement in Sacramento-San Joaquin Rivers delta issues focused specifically on planning, operations and legislative activities specific to “the Delta.” This involvement will be manifested in several forms including educational outreach efforts, both within the Kaweah River Basin and external to the IRWMP Planning Area.

12.4.7 Outreach to Disadvantaged Communities

Based on the decision to create a revised outreach program specifically designed to address water quality issues related to disadvantaged communities and aggregation of single-family residences in a disadvantaged hamlet setting, the recognition exists that a different outreach methodology will need to be generated, at least as to the efforts of the IRWMP.

Mapping has been completed of each of the concentrations of households within the IRWMP boundary in excess of six (6) single-family units. From this basis, work will begin with respect to the drinking water quality of each of those areas and contact with representatives of environmental justice concerns will be made in order to ensure that all possible steps are taken to remedy the drinking water quantity/quality deficiency.

While the IRWMP process adequately addresses the intent to incorporate stakeholders and potential beneficiaries in the service areas into the process, more specific work needs to be undertaken to address the project development and, more importantly, the government’s development steps which are associated with generating solutions to rural drinking water related problems.

12.4.8 Outreach to Native American Tribal Communities

The KDWCD as well as multiple MOU Participants have longstanding relationships with tribal community representatives in the area. It is an objective of this IRWMP to continue this relationship on an expanded basis. Currently, consultations take place on any project which is in the development process or, more importantly, at the threshold of construction process, to ensure coordination with tribal group representatives and to ensure protection of antiquities, sacred sites and burial sites.

As an example of this coordination, the KDWCD has recently completed the development of the Paregien Basin Project. Elements of this project involved excavation in areas where the potential existed for historic activity by tribal members. In addition to a library-based research effort, initial consultations occurred with tribal representatives which resulted in limited on-site excavations by qualified archeologists. As a result of this effort, a complete geo-archeological study was undertaken on the project site to ensure that there was no evidence of prior activity wherein artifacts or burial sites would be encountered. With the completion of the geo-archeological study, it was concluded that the risk of finding any artifacts and/or burial sites was remote. Nevertheless, the KDWCD prepared a Memorandum of Understanding with tribal group representatives which called for immediate cessation of project activities if any antiquities or evidence of burial were discovered in the construction process. In such case, consultation would occur with tribal group representatives to determine next steps, which could have possibly included the re-design of the project in order to avoid disturbance of a specific area.

Recently, the tribal contact list was expanded from the historical two (2) contacts to multiple contacts. Additional contact steps have been developed to include an “early” contact step in the project development process to allow for a project awareness step to be incorporated in the contact process, in lieu of waiting for a project to be well along in the development and environmental evaluation process prior to contact efforts being undertaken.

In addition, the process calling for contact to be made if artifacts are discovered has been augmented with an open access policy allowing for interim project site visits at the election of the tribal representatives. Site safety briefings and safety equipment are being incorporated into this process.

There are no tribal reservations within the Plan Area. There are therefore no specific critical water issues for Native American tribal communities within the Kaweah River Basin. There are therefore no specific government-to-tribal government opportunities.

CHAPTER 13

PROJECT DEVELOPMENT PROCEDURES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 13

PROJECT DEVELOPMENT PROCEDURES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

13.1 PROCEDURES APPROACH

While a considerable amount of effort goes into integrated regional water management procedures and processes associated with the preparation of existing water management elements and the evaluation of procedures, methodologies and structures associated with the improvement of the management process, another integrated approach, separate from that of operation and maintenance, exists. Conceiving of new projects and procedures designed to improve water management within the Kaweah River Basin Integrated Regional Water Management Plan (IRWMP) Planning Area has received separate consideration with respect to policies and procedures. Extending back 30-40 years in history, coordinated operations on the purchase of property and the development of water management facilities, including groundwater recharge facilities, occurred on a joint and cooperative basis. Oftentimes, basins were developed with underlying fee being held by a special district or private stock mutual water company with the Kaweah Delta Water Conservation District (KDWCD) contributing equipment and manpower to maintain the basins, in exchange for utilization of the basins in which to place KDWCD entitlement waters for groundwater recharge purposes. In some cases, roles have been reversed where the property purchase was by KDWCD with either joint maintenance or maintenance by the local water supply/delivery entity. In a limited number of cases, maintenance is performed on a fee basis, in lieu of an exchange benefits basis. These cases are extremely limited, however. In the 1980s, projects began to be developed pursuant to formal partnership arrangements where cost sharing occurred relative to land purchase, property development and operation and maintenance considerations. As property has increased as a percentage of total project cost and where specific items of construction equipment have been purchased by various water management agencies, project development and implementation has taken several forms depending on the circumstances of the participating parties. A number of parties with specific water management needs have remained outside of the project development process due to both initial funding and operation and maintenance funding constraints.

This process changed again as the Memorandum of Understanding Process was strengthened in the early 1990s. Projects with significant land, development and sophisticated operational constraints were developed, with most projects addressing a multi-party cooperation basis. This process remains in place to date, notwithstanding the availability of funding from federal and state water management related programs. With only local entities involved in project development and implementation and with the utilization of their own revenues, the process of project selection and development only requires a winnowing process elected to be utilized by the participants.

With the advent of the availability of state and federal funding to assist in the development of projects, a separate process was needed to address project development, structure and coordination in order, principally, to ensure that only the best projects were being put forth for funding consideration.

It was at this time that the IRWMP Stakeholders Advisory Group engaged in a process of project development, project evaluation and scoring and project funding submittal coordination. Literally hundreds of hours were invested in the development of the process. A primary goal of the process was to ensure that it was flexible enough to respond to funding opportunities for all aspects of water management. This included surface water related projects for both irrigation and flood water control, groundwater related projects, water supply project types, as well as water quality project types. Expansion of the typical IRWMP Planning Area projects from being irrigation supply oriented to being inclusive of urban and rural community needs has also been addressed.

The outcome is a process which was reached by consensus between parties with disparate interests and with often seemingly disconnected goals. The process is now in place, functioning and is folded into the IRWM planning process by action of the Board of Directors of the Kaweah River Basin Regional Water Management Group (RMG). As with all processes associated with the IRWMP, the process remains open for modification based on the circumstances of time, participants and funding agency criteria.

13.2 Project Solicitation, Qualification and Prioritization

On a periodic basis and sufficiently in advance of the announcement of any funding opportunity, solicitation of projects is sought from MOU participants, as well as other potential participating parties within the IRWMP Planning Area. The submittals are to contain sufficient information to determine if the candidate project reasonably complies with criteria which will be utilized to determine the competitive nature of the proposed project relative to the funding invitation. At a minimum, a project must satisfy at least one (1) of the IRWM Plan Objectives. Sufficient detail indicating how that is accomplished must be presented. The proposed project must be initially submitted to the RMG and action taken to add the project to the list of projects meeting minimum criteria to move forward in the project development process.

The project advocate is then required develop and present for evaluation, project related documents dealing specifically with a number of issues. These issues are to be developed in the form of a technical report and, at a minimum, include the following information:

1. A cost estimate and a Total Project Cost;
2. Total Project Cost in comparison to proposed cost sharing amount. The economic feasibility of the project, absent grant funding, must be demonstrated;
3. Project objectives including a determination of the independent value of the project;
4. Yield benefit, if any;
5. Water supply benefit;
6. Water quality benefit;
7. Groundwater benefit;
8. Climate change relationship;
9. Demonstration of project technical feasibility;

10. Financing details including local share and method(s) of funding local share are to be addressed;
11. Operation, maintenance, repair and replacement considerations including estimates of costs, methods of funding those costs and indication if a Proposition 218 proceeding must be completed to secure an adequate revenue source;
12. Licensed operator requirements and opinion as to short-term and long-term availability;
13. Opinion and discussion as to the project being a Disadvantaged Community project and the basis for the opinion including the most recent Median Household Income determination and the source for the information;
14. Source(s) of and nature of Environmental Justice concerns, consideration for which potential solutions must be presented;
15. Examination of the project merit in relation to the strategic implementation of the IRWM Plan;
16. An analysis of the project's contribution to climate change adaptation;
17. An examination and computations, if possible, of the project's contribution to reduction of Greenhouse Gases as compared to the project's identified alternatives;
18. An indication of the status of the project proponent's governing body action(s) to adopt the IRWM Plan;
19. Where applicable, the project's contribution to reducing the candidates service area dependence on exports from the Sacramento-San Joaquin Rivers Delta;
20. Administrative requirements and benefits;
21. Presentation of a thorough discussion of the project status including status of CEQA/NEPA compliance, required permits including status of acquired permits and an estimate of time to secure those remaining, bond financing status if applicable and a statement of "Ready to Proceed," if applicable;
22. An initial evaluation of integration potential with other identified prospective projects; and
23. Relationship to established Resource Management Strategies.

The submitted prospective project information is then evaluated by the IRWMP Stakeholders Advisory Group, with a scoring effort against the scoring associated with the funding agency's process, typically taking a very conservative viewpoint of how a funding agency may score the subject project. For DAC projects, the DAC Scoring Criteria contained in Appendix K is utilized as a supplement to the standard scoring criteria.

Following this iterative process, the resulting project descriptions and structures are subjected to an internal scoring procedure developed specifically for the KDWCD IRWMP. The criteria and related point system were developed by the IRWMP Stakeholders Advisory Group and have been approved for use by the Board of Directors of the RMG.

For DAC projects, the DAC scoring criteria contained in Appendix K is utilized as a supplement to the standard scoring criteria. The process has been utilized for both Round 1 and Round 2 of the DWR Proposition 84 Implementation Grants round and for the Round 2 Planning Grant round of DWR. The IRWMP scoring criteria is set forth in Appendix K. Particular attention is called to the sub-scoring categories of 19 through 23. These subcategories are used, in particular, where applications are oriented to a specific nature. For instance, project applications which are flood control oriented only would have specific emphasis placed on Criteria 22 and weighted accordingly.

As a result of the impacts analysis performed as Task 4 of the Round 2, Proposition 84 Funding Agreement, a new segment of scoring criteria has been added by action of the RMG. This segment was developed to specifically address projects seeking to address overcoming the impacts related to implementation of the provisions of the Settlement Agreement related to San Joaquin River Restoration litigation. Contained in Appendix K, this addition to the scoring criteria reflects the potential to develop projects designed to address the surface water delivery reduction impacts of settlement, but does so in a fashion which recognizes that such project development can occur in a fashion which has positive impacts on disadvantaged communities and on cities who have developed and adopted Urban Water Management Plans.

13.3 Current High Priority Projects

As would be expected with any active IRWMP group, projects are continuously being conceived and evaluated. In addition, it is the desire of the IRWMP group to maintain a current list of projects for two (2) specific purposes. The first, an entity proposing a project can look at other projects on an IRWMP generated list and see if there is any potential for integration of projects or, just as importantly, to see if projects are competing for management of the same segment of the available water supply within the IRWMP planning area. In addition, looking at the scope of other projects and the evaluation associated with other projects gives rise to either dismissal of a project at onset or advancing a particular project concept.

TABLE 13-1
CURRENT PROJECTS LIST
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Submitting Entity	Project	Project Description	Total Project Cost	Project Status	Date
County of Tulare	Tulare County Well Abandonment Project	Proposes to administer a voluntary compliance program for owner/operators of private wells in high risk areas. This will also involve an education element (will most likely be multiple projects).	$500,000	KIRWM Approved	(In Adopted Plan)
Tulare Irrigation District	SCADA Modernization Project	Proposes to continue distribution system modifications by installing additional Supervisory Control Acquisition and Data Analysis (SCADA) to increase the efficiency of water delivery.	$800,000	KIRWM Approved	(In Adopted Plan)
Kaweah Delta Water Conservation District	Demaree Check Structure Modification	Proposes to modify existing structure to improve flood control ability.	$350,000	KIRWM Approved	(In Adopted Plan)
Kaweah Delta Water Conservation District	Construct New Groundwater Monitoring Wells	Proposes to identify areas within the existing monitoring well network that are lacking proper coverage and construct monitoring wells in those voids to improve the evaluation of groundwater conditions.	$500,000	KIRWM Approved	(In Adopted Plan)
Ivanhoe Public Utility District	Construct New Drinking Water Well #9	Proposes the drilling, casing and installation of appurtenances to develop groundwater from the underlying groundwater reservoir to compensate for wells lost for constituents above MCLs.	$750,000	KIRWM Approved	(In Adopted Plan)
City of Lindsay	Well Head Treatment Project	Proposes to reduce electrical conductivity at a well site.	?	KIRWM Approved	(In Adopted Plan)
City of Lindsay	Reclaimed Water Use Project	Proposes to extend the "Well Head Treatment Project" to utilize treated water as a surface water supply for agricultural.	?	KIRWM Approved	(In Adopted Plan)
City of Lindsay	Canal Storage/Cross Exchange Project	Proposes to improve year to year water supply reliability to the City by initiating either storage or a water exchange.	?	KIRWM Approved	(In Adopted Plan)
City of Visalia		Interconnection of existing storm water basins, parks and school turf to surface water ditch distribution system.	$2,500,000	KIRWM Approved	(In Adopted Plan)
City of Visalia		Enhanced water conservation program: Alternative landscape (xeriscape), grey water reuse, low flow toilets, etc.	$1,250,000	KIRWM Approved	(In Adopted Plan)
City of Visalia		Investigation/construction of groundwater recharge sites in and around the City.	$4,125,000	KIRWM Approved	(In Adopted Plan)
City of Visalia		Investigation of effective recharge rates for various waterways traversing the City including existing storm water basins.	$350,000	KIRWM Approved	(In Adopted Plan)

CHAPTER 14

COMPLIANCE, BENEFITS AND IMPACTS RESULTING FROM IRWMP IMPLEMENTATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 14

COMPLIANCE, BENEFITS AND IMPACTS RESULTING FROM IRWMP IMPLEMENTATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

14.1 OVERALL BENEFITS OF THE IRWMP

14.1.1 General

This chapter provides a description of the benefits and impacts related to implementation of the Kaweah River Basin Regional Water Management Group's (RMG) Integrated Regional Water Management Plan (IRWMP). Impacts have been addressed in the IRWMP from the perspective of the IRWM Planning Area, as well as the interfaces with surrounding IRWM regions. Pursuant to provisions of the 2016 IRWM Grant Program Guidelines, this chapter addresses both impacts and benefits of regional water management, impacts and benefits of defined resource management strategies, impacts and benefits to disadvantaged communities, impacts and benefits related to candidate project evaluations and steps related to the periodic updating of impact and benefits analyses.

In addition to being a Guideline requirement, identification and discussion related to IRWMP implementation allows for IRWM Plan Objectives to be reviewed in a current situation context. It also allows for emphasis priority to be developed relative to Resource Management Strategies and for avoidance of adverse impacts from certain elements of

Resource Management Strategies. The impact and benefits analysis is also an element of the overall evaluation process of the IRWMP performance.

14.1.2 Benefits of Regional Water Management

Based on the objectives set forth for the IRWMP, the governance structure which currently exists offers the opportunity to establish and put into effect policies, procedures and developed projects related to water management. These policies and procedures are related to a number of specific areas of interest which were discussed principally in Chapter 10. Running the gauntlet from water supply augmentation through water quality and into land use policies, there is a wide breadth of subjects that fall under the category of water management policies and procedures. What the IRWM structure offers, as compared to either no structure or alternative structure, is the chance to work on the issues in a joint fashion, taking into account disparate interests, along with like interests, working toward the goal of improving management related procedures, along with relevant projects.

While simple partnerships offer some similar benefits, the expansion of those partnerships to the degree offered and experienced by the KDWCD IRWMP Stakeholders Advisory Group is of substantial advantage. Representation exists of a myriad of interests, sometimes seeming as though there is no common thread. But when all is said and done, the topics, opinions and constructive suggestions all circle back around to the goal of improving IRWMP Planning Area efficiencies related to water management. Another concept has yet to be developed which replaces this model with the chance of improved outcomes. The fact is exemplified in the Kaweah River Basin case, as in one form or another, the model has functioned for in excess of four (4) decades. Whether the IRWM structure exists in the formal, written format required by agencies in exercising jurisdiction over allocation of project funds, or in demonstrated partnership actions requiring little more than a handshake, is not material. The fact that individuals and representatives of entities come together under one structure or the other is not the significant issue. The fact that they do and that the outcome is expressed in improved water management procedures and the development and implementation of water management facilities is the critical issue.

The approach to regional water management incorporated into the current IRWMP demonstrates that a cooperative, comprehensive and objectives based approach to regional water management is far superior to an individual entity fragmented approach. The effort further reduces the potential for development of conflicting goals, policies and projects within a defined planning area. This coordinated approach will likely become even more important as extractions of groundwater are required to remain within defined sustainable yield quantities.

Efforts to date to develop projects have proven that there are multiple benefits from coordinated development. Project evaluations performed by multiple stakeholders with diverse interests and objectives has resulted in stronger candidates and weak/strong points have been coordinated to the benefit of all projects. Project coordination also allows for increased potential for project approval/funding influence and reduced costs associated with project development.

These benefits would be lost if the IRWMP is not supported and maintained. Likewise, if participation and financial support diminish, the IRWMP effectiveness diminishes or could be lost. Coordinated efforts to maintain the established groundwater numeric model or to address San Joaquin River restoration related impacts can only be accomplished to the fullest potential when approached on a coordinated basis.

Primary impacts associated with such a loss would be loss of capability to manage groundwater on a cooperative region-wide basis. Management elements include both water quality and quantity issues, issues which are now mandated to be managed on a regional basis. Numerous adverse impacts have been identified associated with loss of capability to manage groundwater including the following:

(1) Declining water levels;
(2) Potential land subsidence;
(3) Increased pumping costs;
(4) Increased costs to lower pumps, deepen wells or construct new wells;
(5) Potential conflicts between overlying water users for available groundwater supplies;
(6) Loss of economic viability at the farm level;
(7) Inability to respond to dry year conditions;
(8) Reduced supply reliability;
(9) Limitations on planned development and inability to comply with revised state laws requiring proof of adequate and sustainable water supplies; and

(10) Inability to address regional water quality issues such as drinking water solutions for DACs.

14.1.3 Benefits and Impacts of Resource Management Strategies

Introduced and discussed in Chapter 9 were all of the Resource Management Strategies (RMS) presented in the most recent California Water Plan Update. Of the total applicable on a state-wide basis, the majority were determined to apply within the Kaweah River Basin. An overview of the benefits and impacts of applicable RMS is presented in Table 14-1. While success of implementation of the IRWM Plan objectives is the best measure of IRWM Plan performance, the examination of benefits and impacts associated with the RMS represent the potential benefits and impacts related to implementation of the IRWMP implementation.

14.1.4 Adjacent IRWM Area Benefits and Impacts

Significant coordination exists with adjacent IRWM Planning Areas as a result of joint efforts related to the Irrigated Lands Regulation Program, coordinated efforts between river watermasters and groundwater management plans coordination. The southern San Joaquin Valley has a long history of coordinating together on matters related to water supply, water quality, flood control, groundwater interface and water management planning. It has been long recognized that inter-regional water management coordination is necessary for progress to be made on the political front and for projects implementation. Following is a brief discussion of areas of influence between the IRWMP and those of adjacent entities.

14.1.4.1 North – Kings Basin IRWM Plan

The Kings Basin IRWM Plan boundary adjoins the IRWMP boundary along its south and southwesterly sides. The separation, for the most part, follows the Cottonwood Creek alignment to Cross Creek and then the Cross Creek alignment southwesterly. The Kings region is experiencing overdraft conditions and water management strategies between the areas differ only in the aspect that the annual yield of the Kings River is considerably greater than the Kaweah and the Kings River normally flows year-round.

TABLE 14-1
BENEFITS AND IMPACTS OF RESOURCE MANAGEMENT STRATEGIES
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH DELTA WATER CONSERVATION DISTRICT

Strategy	Benefits	Impacts
Agricultural Water Efficiency	• Redirect supply • Reduced application cost • More efficient use of chemicals • Reduced subsurface drainage • Protection of water quality	• Reduced groundwater recharge • Lost revenue if usage based • Causes operational changes • Irrigation hardware needed • Hardware maintenance • Irrigator training requirements • Reduction of spills
Urban Water Efficiency	• Redirect supply • Reduced supply/distribution costs • Reduced home chemical use • Delayed capital costs • Protection of water quality • Reduced energy use • Reduced groundwater overdraft • Reduced wastewater production	• Causes operational changes • Lost revenue if usage based • Inconvenient watering times • Creates hard demand that reduces opportunities for drought response
Conveyance – Regional/local	• Maintain water rights • Conjunctive use • Improved water quality • Increased flood control capabilities • Deliver surface water to areas that use only groundwater	• Increased use of facilities • Shortened maintenance periods • Greater costs for larger facilities
Water Transfers	• Efficient use of surface supplies • Revenue generation • Groundwater recharge • Agricultural sustainability	• Loss of annual local water supply • Groundwater mining • Environmental impacts

Strategy	Benefits	Impacts
Conjunctive Management and Groundwater Storage	• Dry year supply • Extends use of existing basin • Overdraft reduction • Improved water supply reliability • Groundwater recharge • Better groundwater management • Water quality improvement • Reduction in flood impacts	• Increased pumping costs compared to surface water • Litigation challenges • Increased data collection needs and costs • Uncertainty of impacts to facility neighbors • Facility capital costs • Land use changes for facilities
Precipitation Enhancement	• Quick project development • Increase in water supply • Power development	• Accuracy of location and timing
Recycled Municipal Water	• Reliable supply • Improved water quality • Allows for development • Drought resistant supply	• Increased operations and maintenance cost • Public acceptance • Water quality concerns with microbial contaminants, salinity, heavy metals and pharmaceuticals
Surface Storage – Regional/local	• Water supply reliability and augmentation • Flood control • Hydroelectric power generation • Recreation • Sediment transport management	• Permitting requirements • Environmental mitigation • Cost • Limited sites available • Failure impacts • Beneficiary determination • Property tax losses • Habitat losses • Operational control
Drinking Water Treatment and Distribution	• Protect public health • Maintain regulatory compliance • Regionalization/Consolidation of facilities	• Increased O&M costs • Increasingly stringent regulations

Strategy	Benefits	Impacts
Groundwater Remediation/ Aquifer Remediation	• Contamination spread abated • Protect public health • Maintain regulatory compliance • Avoided costs of purchasing additional supply	• Costly • Highly trained operations staff • Public perception/acceptance of treated water
Matching Quality to Use	• Best use of available local water supplies • Most economical choice • Treatment avoided or limited	• Possible environmental impacts • Infrastructure costs • Conveyance costs
Pollution Prevention	• Improved water quality • Consistent with anti-degradation policies • More cost effective than "end of the pipe" treatment	• Increased regulations • Increased costs • Increased management needs • Increased monitoring costs
Urban Runoff Management	• Water source for local recharge • Improve flood protection • Reduce surface water pollution Minimize soil erosion and sedimentation problems • Local resource from waters historically lost to an area • Mimic natural hydrologic cycles	• Cost to treat and manage runoff • Increased cost to urban developments • Vector breeding • Groundwater contamination potential
Flood Risk Management	• Enhanced flood protection • Reduce risk to lives and property • Recharge possible if captured • Riparian habitat improvements • Possible floodplain restoration	• Structural approaches are costly • Permitting requirements involved • Long term ongoing maintenance of facilities • Emergency response planning required • Planning may limit development in some areas • Revisions to flood insurance mapping

Strategy	Benefits	Impacts
Agricultural Lands Stewardship	• Reduces pressure to agricultural lands from urban development • Increased economic viability for agricultural lands • Habitat improvement • Encourages agricultural practices which also benefit environmental and restoration concerns	• Conservation easement costs • Cost to implement BMPs • Reduction in tax base
Economic Incentives (Loans, Grants and Water Pricing)	• Decreased costs for grant recipients • Reduced wait for needed infrastructure • Reduction in water demand from water pricing structures	• Burdensome application processes • Increased federal or state directives in local issues • Increased administrative costs • Funding is intermittent
Ecosystem Restoration	• General quality of life increase • Protection and enhancement of fish and wildlife resources • Species recovery	• Increased short term costs to goods and services • Water supply loss
Land Use Planning and Management	• Improved communication among different agencies • Proper planning helps ensure new developments have reliable and sufficient water supplies • Potential for reduced water demands based on development designs • Opportunities to reduce flooding and increase recharge	• Difficulty in getting some land and water use planners to cooperate • Increased costs to coordinate efforts
Recharge Area Protection	• Provide sustainable and reliable water supply of good quality • Removal of some microbes and contaminants during recharge • Flood protection	• Vectors and odors
Watershed Management	• Community level solutions • Water quality improvement • Protection of local water rights • Flow attenuation	• Difficulty of diverse stakeholders working together

Strategy	Benefits	Impacts
Watershed Management	• Community level solutions • Water quality improvement • Protection of local water rights • Flow attenuation •	• Difficulty of diverse stakeholders working together
Crop Idling for Water Transfers	• Drought water supply reliability • Stable farm income in water short years	• Introduction of wildlife, weeds, pests and trash dumping to the area • Changes to local community way of life
Irrigated Land Retirement	• Generation of stable water supplies • Reduction in agricultural drainage to an area	• Taxpayer burden of land cost • Increased management costs of government owned retired lands • Lower income and higher unemployment • Growth inducement • Security needs
Sediment Management	• Improvement of water quality • Improvement of channel conveyance capacity • Improvement of Infiltration Rates	• Reduced reservoir storage volumes • Permit terms and conditions • Materials disposal
Outreach and Engagement	• Expands Plan benefits to additional areas and parties • Provides an improved method of communication and funding assistance	• Reduces the number of and intensity of identified problems • Offers increased potential for improvement in the quality of life
Water and Culture	• Reinforces Prior and Continuing Outreach Practices • Allows for continuous examination of underpinning policies	• Optimizes conservation benefits • Employs participants across all age and demographic profiles • Expands topic considerations for educational programs and outreach

Both regions are affected by Friant Division, CVP contractors within and adjacent to their boundaries.

14.1.4.2 South – Tule River Basin

The Tule River Basin is currently forming an IRWM Planning Area covered by the participating districts in the Deer Creek – Tule River Authority. The Kaweah River Basin IRWM and the Tule River IRWM currently share a common Advisory Committee and the Tule River IRWM Plan is currently being written in a parallel form and format to the IRWMP. Groundwater supplies are common at the Plan boundaries and the SWRCB has designated the Kaweah River as a tributary to the Tule River. There are a number of common and strong water management ties between these two areas.

14.1.4.3 West – Tulare Lake Basin

The Tulare Lake Basin is located west of the Kaweah River Basin IRWM Planning Area. This region is not currently covered by an IRWMP. Historically, Kaweah River flows flooded this area, but now this only occurs during very wet years. Consequently, Kaweah IRWM flood control and diversion projects could negative or positively impact the Tulare Lake Basin.

14.1.4.4 East – Southern Sierra IRWMP

The Southern Sierra IRWM Plan area occupies lands to the east of the Kaweah River Basin IRWMP Planning Area. These lands are upstream and at higher elevation than the Kaweah River Basin, so activities in the Kaweah River Basin would not influence the Southern Sierra IRWMP. The Southern Sierra IRWM region includes, however, the Kaweah River watershed. The RMG has and can provide support to and help coordinate forest management and watershed management in the Southern Sierra IRWMP area that benefits both regions.

14.1.5 Benefits and Impacts to DACs and Other Parties

The steps taken in recent years to engage all water related parties in Kaweah River Basin water resources issues have succeeded as to engagement of DAC stakeholders and representatives, environmental justice representatives and tribal representatives in the further development and improvement of the IRWM process. Multiple parties with specific DAC ties have a voting seat on the IRWM Stakeholders Advisory Group and actively participate at the IRWM Plan governance and policy development levels. Specific benefits accrue to all participants as a result of the engagement of these stakeholders and representatives including the following:

(1) Forum for discussion – The IRWM process provides an opportunity for DAC, environmental justice and tribal stakeholders and representatives to discuss water management issues, including problems, concerns and priorities. It also allows for DAC – non DAC project coordination;

(2) Creation of and dissemination of information – the opportunity to develop and/or share information is facilitated by meetings of DAC/EJ stakeholders and representatives and water management professionals in the IRWM setting. Opportunity to interface with state and county regulators is also facilitated. Meetings are conducted pursuant to Brown Act regulations and minutes are taken and kept; and

(3) Funding opportunities – The forum created by the IRWMP process offers specific opportunity to information regarding funding to be provided and further offer unique opportunity to coordinate projects otherwise difficult to tie together. The IRWMP offers special opportunity for participation for DACs, including advanced and technical planning assistance for designated projects.

No significant impacts are anticipated to accrue to DAC related parties or tribal related parties or projects as a result of IRWM efforts. Positive outcomes coordinated with other MOU participant sponsored projects is the desired end result.

14.2 COMPLIANCE WITH STATEWIDE PRIORITIES

Statewide priorities, at least as to topic, are embodied within the Resource Management Strategies topics associated with the California Water Plan Update. The Resource Management Strategies were presented and discussed in Chapter 9. It is envisioned that, with impacts related to population changes, changes in locations of populations within the geography of the State, changes driven by elected officials and associated politics and paradigm shifts such as may be associated with climate change, modest changes will occur with the current state-listed Resource Management Strategies. The goal of this IRWMP is to remain flexible, with the ability to visit issues from a different perspective or from a changed base. It is the opinion of the RMG Board of Directors that such has been the case over recent history and with a simple reduction of their IRWM efforts summarized in a written plan form, that they do not envision that flexibility to be diminished.

14.3 IRWMP IMPLEMENTATION ISSUES

14.3.1 Project Cost Related Benefits

If it is agreed that the IRWM process results in outcomes which are improved over those which exists when exercising other procedures, then it should be agreed that the economic side of the project development issue should result in like benefits. Whether in the vein of initial capital cost, or in long-term operations and maintenance costs, intense scrutiny of a project by separate parties with differing interests results in an improved analysis. Improved analysis results in an improved project, or the elimination of a project, either case resulting in an improved financial picture for any proposed project.

14.3.2 Potential Beneficiaries

The simplistic response to the analysis of who the potential beneficiaries are of the IRWM process is "all." Maybe not all at the same time, maybe not for every policy, procedure or project, but given the involvement of water and life of each individual within the IRWMP Planning Area, the process eventually is of benefit to all individuals. One only has to look at the benefits of the outcome of various projects, whether water supply, water quality or flood control, for instance, to see the width and breadth of the impact on people that these types of projects have.

14.3.3 Obstacles

As the IRWM process has been in place within the Kaweah River Basin for a number of decades and formalized by agreement for in excess of 20 years, there are no obstacles to its implementation, as it already has been implemented. There are, however, obstacles which could arise which would derail the effort. For example, withdrawal of a number of parties from the process and, in particular, the Stakeholders Advisory Group, would deal a damaging blow to IRWM planning efforts. Likewise, the lack of a coordinated review of projects and critical critiques of the advantages and disadvantages of combining projects would result in a similar outcome.

Other potential scenarios also exist, but of a far greater draconian nature. An overhaul of California water rights could cause a shift from an emphasis of local management of available water resources to a state level. This action could result in situations where parties now at the table on a cooperative basis would be across the table fighting over specific allocations and their related process and procedures. The displacement of guiding water management plans from the local level to the state level would have a like effect. One only has to look at states with groundwater under the control of a state designated engineer to determine that the process of integrated regional water management involving local stakeholders is not the same as the current IRWMP structure. As no direction from the governing board of the RMG exists to evaluate potential outcomes under these types of scenarios, same are not laid out in this IRWMP. Suffice it to say, however, that there is potential to provide sufficient obstacles to cease the IRWM process.

14.3.4 Ongoing Support and Financing

On a brighter note, the IRWMP is supported by the participants within the IRWMP area. Whether it is in the form of attendance, document generation, document review and comment, project generation, project evaluation, local share funding or funding of application costs, support has been proven to exist. Financing of costs related to IRWMP activities is based on a dividing process with the principal burden of the cost being assumed related to the IRWM Plan by the signatories to the MOU. This is felt to be appropriate by the Board of Directors as they are the lead agency for the Kaweah River Basin relative to satisfaction of the IRWM Guidelines. When it comes to application and project related costs, however, a shift in this cost share occurs. Participants in applications for funding have, to date, shared the cost on an equal basis, for certain applications, notwithstanding the estimated cost of a project's differential. In others, the majority of the application cost has been borne by a single applicant. As project proponents are required to bring to the table documents related to their project ready to be inserted into a project application, these costs are felt to be appropriately divided on an equal basis. These procedures are currently memorialized in the Second Restated Memorandum of Understanding located in Appendix N. With respect to the local cost share component of projects, project applicants determine what their capability is to participate in structuring their individual project. One of the harsher evaluation steps which is taken at the Stakeholders Advisory Group level is the points spread which is estimated to exist based on the level of financial participation in any given project. The pressure and the evaluation procedures are even more critical when the viewpoint is what an underfunding of a particular project does to the prospect of the total application succeeding when against other like project applications from competing IRWM groups.

14.4 IRWMP'S ROLE IN THE FUTURE

In their assessment of the preparation of this formalized, written IRWMP, the Board of Directors of the RMG, as well as the Stakeholders Advisory Committee, evaluated where they thought the IRWM process was headed in the long-term. Their conclusion was that, given the strength of the process, particularly as compared against alternatives, a strong argument exists for it being the principal mechanism for development of guidance related to water management and development of water management related project. Their review of actions at the State level, including those of the Governor's office, the agencies of jurisdiction and the staff of the various agencies all contributed to the thought that the IRWM process was, at least for the near term, going to be the vehicle of choice for creation of water management policies and procedures and for the development and vetting out of water management related projects. In short, the IRWM process is where it's at with respect to water management planning efforts.

14.5 PROJECT RELATED BENEFITS/IMPACTS ANALYSIS

14.5.1 General

The RMG, with the powers of a public agency and the lead with respect to implementation of IRWM based projects has adopted guidelines implementing the California Environmental Quality Act (CEQA). It is a procedural requirement that impacts and benefits associated with specific projects be evaluated in conformance with CEQA Guidelines. Where applicable, this analysis must be expanded to include the National Environmental Policy Act (NEPA) process. Projects that have adverse impacts will not be supported absent a thorough mitigation plan being developed. Project impacts and benefits must be described when projects are submitted for funding consideration. Completion of the CEQA (and NEPA) process is not required during the project evaluation phase, but a thorough discussion of benefits and impacts is required. A complete and approved CEQA or NEPA analysis would, however, be viewed more positively than a preliminary assessment as it provides greater assurance of project feasibility.

As a minimum, the benefit/impact analysis should address the topics found in a CEQA analysis including: aesthetics, air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, noise, population and housing, public serves and utilities, recreation and transportation and circulation.

14.5.2 Project Development Philosophy

In the development of projects, the IRWM process demonstrates its unique characteristics. Being able to identify projects and to describe those projects is a process familiar to all in the water management arena. Being able to bring projects to the table where they are dissected, criticized, stripped and rebuilt with the intended goal of improvement is unique. The true uniqueness comes about, however, in the form of viewing projects in the context of other projects. Projects, which on a singular basis may not appear to have characteristics which would lead to their eventual implementation, are put in the context, however, of being strengthened and augmented by another project or having the capability to have that effect on yet another project. This is a unique characteristic of the IRWM process. Sentiment has even been expressed regarding the process that being forced to work outside of the "box" or outside of one's comfort zone, as is often required by state and federal imposed guidelines, is not all that bad and often results in an improved outcome. This applies both in the arena of policy and procedure development, as well as project development. Very little of this critiquing capability exists outside of the process, other than internally within some consulting firms. In the latter case, however, the parties at the table engaged in the critiquing process do not offer the width and breadth of basic interests that the IRWM process does.

This process may require a revisit of completed CEQA/NEPA documents for a given project if the combining or revision to the project is recommended. The project evaluation process can be categorized as a process with benefits, but having a requirement of undertaking additional impact analysis.

14.5.3 Required Impact Analysis Elements

In order to provide overall IRWMP guidance to efforts such as existed with the Stakeholders Advisory Group in development of project evaluation criteria and scoring, the IRWM Plan at this juncture, sets forth a minimum set of resource-specific impacts which are to be considered in project development and evaluation. Similar in approach to the checklist orientation of an Environmental Assessment related to CEQA, setting forth these specific areas of potential impact which must be evaluated ultimately on water management projects is felt to be a necessary component of this IRWMP. Some elements may be covered by the required CEQA analysis of each project, but have been determined to apply to project analysis, if only for this analysis step. Set forth as follows are the current resource specific impacts which have been established by the RMG, which list was developed by the Stakeholders Advisory Group:

(1) Aesthetic/visual resources;
(2) Agricultural resources;

(3) Air quality;
(4) Biological resources;
(5) Cultural resources;
(6) Environmental Justice/Disadvantaged Communities;
(7) Geology and soils;
(8) Hazards and hazardous materials;
(9) Hydrology and water quality;
(10) Land use and planning;
(11) Noise;
(12) Population and housing;
(13) Public services;
(14) Recreation;
(15) Transportation and circulation; and
(16) Utilities/service systems.

The addressing of these topics can either be in the required technical report associated with a project, or in a separate dedicated document. If sufficient reference is supplied, each of these topics can be addressed in the project's environmental document(s).

14.5.4 Stakeholder Contact and Input Procedures

Public outreach, particularly to affected stakeholders and principal interested parties, is a fundamental aspect of the IRWM process. Only through successful implementation of this process can the IRWMP governing body insure that affected parties, agencies of jurisdiction and tribal representatives be informed as to the project proposal and, further, be assured that steps were taken to request and receive all potential project related input.

The Regional Water Management Group (RWMG) and the IRWMP Stakeholders Advisory Group includes a diverse group of members and interested parties, which is the result of on-going public outreach efforts since 1992. The California Water Code (CWC) §10541(g) identifies 13 different stakeholder categories. The Stakeholders Advisory Group includes a representative of each of the stakeholder categories. Appendix J contains a list of the members and interested parties and their primary affiliation. The Plan RMG satisfies the definition of a Regional Water Management Group provided in the California Water Code.

Critical water supply and water quality issues of Disadvantaged Communities (DACs) are important Kaweah River Basin concerns. Most of the communities in the Basin meet the state definition of DAC, which is having a median household income less than 80 percent of the statewide average. While most small DACs are not signator to the Plan MOU, many do participate on the same basis as signator parties. Special efforts have been made to educate and engage DACs within the planning area. These efforts are described in Chapter 13.

KDWCD performed extensive outreach while preparing the initial submittal of its IRWM Plan. On-going outreach efforts since then have attracted more stakeholders. As a result, most of the stakeholders in the region are actively participating in the IRWM process. A few potential parties are not involved as they did not respond to previous outreach efforts.

The KDWCD has a Public Affairs Plan which is employed in the Stakeholders Advisory Group process. The Plan is a living document and is the principal element of the KDWCD public outreach effort. The plan identifies the following goals for the public outreach process:

(1) Recognizes the RMG as a regional entity addressing water reliability, quality, agricultural, urban and natural resource issues;
(2) Educate the public about the Basin's water resources issues;
(3) Promote an IRWM approach to gain support for water management strategies being considered by the RMG; and
(4) Inform and educate the electorate regarding projects and bond issues that improve regional water supply reliability and quality.

The KDWCD maintains a website (www.kdwcd.com) that posts a variety of information on regional water management efforts including: Board of Directors meeting schedules, agendas and minutes, Stakeholders Advisory Group meeting schedules, agendas and minutes, list of members and interested parties, recent news and Basin documents of general interest (governing documents, reports, technical papers, applications and proposals). This website is updated regularly and also serves as an archive for important documents developed by the RMG.

14.5.5 Consideration of Greenhouse Gas Emissions in Project Benefits (Impacts Analysis)

Climate change mitigation can be achieved by reducing energy demands, improving energy efficiency and carbon sequestration. These will help to reduce greenhouse gas (GHG) concentrations in the atmosphere. Climate change mitigation will require global cooperation, but the Regional Water Management Group supports reasonable efforts to make their own local contribution. As a result, it has been determined to consider impacts to GHG when selecting and prioritizing projects. This criterion will generally be a lower priority than water supply or water quality, but it is still considered an applicable criteria.

When projects are reviewed and prioritized the project proponents will need to address the following:

1. Will this project increase greenhouse gas emissions? If yes, explain how and quantify; and

2. Will this project result in reduced greenhouse gas emissions? If yes, explain how and quantify.

14.5.6 Consideration of Climate Change in Benefits/Impact Analysis

Climate change has the potential to cause adverse effects on the region, including changes in the timing and amount of precipitation, increased evaporation and transpiration from higher temperatures, increased frequency of droughts and floods, reduction in water quality, increased wildfires and increased presence of certain pests. Developing projects that can address these issues is a desired goal. When projects are reviewed and prioritized, their contribution to addressing climate change will be considered. In particular, project proponents will need to address the following:

(1) Will the proposed project reduce vulnerability to anticipated impacts from climate change? If yes, explain and quantify;

(2) Will the proposed project help the IRWMP Planning Area to adapt to climate change impacts, or increase resiliency to climate change impacts? If yes, explain and quantify; and

(3) Will the proposed project help to increase the region's understanding of climate change impacts and local vulnerabilities? If yes, please explain.

14.6 IRWM PLAN BENEFITS AND IMPACTS CONSIDERATIONS REVISIONS AND UPDATES

The impacts and benefits associated with IRWMP implementation will be revised according to the following procedures:

(1) Impacts and benefits will be reviewed and revised whenever the IRWMP is updated or DWR establishes new guidelines for this standard. It is expected that the Plan will be updated at least every five (5) years;

(2) Impacts and benefits will be revised, as appropriate, to reflect anticipated or observed changes in regional climate patterns; and

(3) The impacts and benefits analysis will be revised to reflect the results of experience, new impacts or benefits identified during implementation of local projects.

14.7 OVERSIGHT AND IMPLEMENTATION OF PROJECTS

14.7.1 General

The tasks involved with oversight and evaluation of project implementation differ from the tasks associated with construction management for a number of elements. There are, however, some common elements, particularly those related to schedule and budget matters. The functions of oversight and evaluation have as their primary objectives monitoring and evaluating the success and generated benefits of a project, that the project is being operated to an optimum level and to insure compliance with applicable rules, regulations, ordinances and laws.

The project sponsor is responsible for development of the project and for developing the monitoring and reporting program(s) necessary to define the degree of satisfaction of intended project goals. The project sponsor is also responsible to convey such information to the IRWM RMG and Stakeholders Advisory Group as is necessary to clearly define project benefits and required progress as against pre-agreed to benchmarks.

14.7.2 Project Monitoring Elements

The following sets forth the established minimum elements of a project monitoring and reporting program. The final project monitoring and reporting program is to be submitted to the RMG prior to completion of construction and disbursement of the final funds due pursuant to any applicable funding agreement. The elements are as follows:

(1) Project description including a narrative description of the project site(s);
(2) Project location including GPS coordinates and location map;
(3) IRWMP objective(s) targeted;
(4) Workplan including a detailed division of project elements;
(5) Schedule including construction start and completion dates and applicable permit elements;
(6) Description of operation & maintenance elements and issues related to optimum implementation;
(7) Budget categorized as to construction elements, operation & maintenance elements and oversight reporting elements;
(8) Desired goals described in sufficient detail to allow for use as benchmark against which to measure success;
(9) Monitoring elements including:
    (a) CEQA/NEPA mitigation elements;
    (b) General monitoring categories:
        (i) Rates and quantities of flow;
        (ii) Water quality parameters
        (iii) Depths to groundwater;
        (iv) Flood frequency;

(v) Habitat Development;

(vi) Species inventory; and

(vii) Operation & maintenance activities; and

(c) Frequency of monitoring and reporting activities;

(10) Data management;

(11) Responsible parties; and

(12) Conclusions and observations.

14.7.3 Project Reporting Elements

The reporting element shall be sufficient in content to allow for the following information to be conveyed:

(1) Satisfaction of IRWMP objective(s);

(2) Success of project against benchmark goal(s);

(3) Financing goals achieved;

(4) Budget compliance; and

(5) Satisfaction of operation & maintenance requirements.

14.7.4 Monitoring Period

The project proponent shall submit to the RMG an outside target time period for conclusion of monitoring and reporting activities. In no case shall such time period be less than five (5) years. In the event of lack of agreement with respect to said time period, the default shall be to have same established by the Director of the Department of Water Resources.

CHAPTER 15

PLAN PERFORMANCE, DATA MANAGEMENT AND ONGOING COORDINATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 15

PLAN PERFORMANCE, DATA MANAGEMENT AND ONGOING COORDINATION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

15.1 TECHNICAL ANALYSIS AND PLAN PERFORMANCE EVALUATION

15.1.1 Performance Measures and Monitoring Methods

Measurement methods have been developed to evaluate the Integrated Regional Water Management Plan (IRWMP) objectives presented in Chapter 3. These measurement methods are to be utilized to determine if a specific objective is being met as elements of the IRWMP are being implemented. In order to facilitate future evaluation procedures, the measurement methods are presented in Table 15-1 along with the IRWMP objective.

15.1.2 Evaluation of Capacity to Evaluate and Implement Projects

The project development process, culminating in project evaluation using the adopted criteria and scoring system currently in place, is designed to be periodically reviewed. This review process includes not only the response of the scoring criteria and scoring system to funding offer guidelines, but also with respect to the quality of the projects being proposed and, most importantly from an IRWMP perspective, the degree to which efforts were undertaken to integrate projects together for improved efficiencies, reduced capital and

TABLE 15-1
PLAN OBJECTIVE MEASUREMENT METHODS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
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Objective No.	Objective	Measurement Method
3.1.1	Work toward achievement of sustainable balanced surface and groundwater supplies	Continue spring and fall measurements of depths to Groundwater. Utilizing those measurements and the numeric groundwater model, determine the trend of volume of groundwater in storage
3.1.2	Protect and improve water resources through land use practices	Report efforts, successes and failures relative to actions associated with land use policy development and implementation as those policies affect water resource planning and implementation
3.1.3	Protection of life, structures, equipment and property	Report policy and structural development progress related to improving the level of protection. Separately, report policy changes and/or structural failures which diminish the level of protection
3.1.4	Provide multiple benefits of management of water resources and related diversion and conveyance infrastructure	Report planning level and implementation level efforts where projects achieve water management, habitat restoration or protection and storm water control benefits
3.1.5	Reduction of contamination of surface and groundwater resources	Report targets for efforts and specific steps taken to reduce exposure or direct contamination of surface and/or groundwater resources
3.1.6	Meet applicable Regional Water Quality Control Board Basin Plan objectives	Report specific IRWM Participant successes in planning and/or implementation of water resource related projects. Report failures within the Kaweah River Basin to meet the Basin Plan objectives and if a Participant project would have a beneficial impact on the cause of the failure
3.1.7	Management of recreational activities to minimize impacts on water resources	Report recent test results indicating presence/absence of impacts and educational efforts undertaken to reduce impacts

TABLE 15-1 (continued)

3.1.8	Conserve, enhance and regenerate riparian habitats	Create list of new projects and opportunities and any specific species benefits. Report on status of maintenance of existing inventory of riparian habitat
3.1.9	Reduce impacts and optimize benefits from assisting other drought-related areas with Basin-to-Basin transfers of water	Report efforts undertaken to facilitate Basin-to-Basin transfers. Report on status of return obligations related to prior assistance transfers
3.1.10	Evaluation of the need for supplemental water management strategies related to the effects of climate change	Report data collected and evaluation of changes needed to address impacts that are other than those projected to occur
3.1.11	Optimize efficient use, conservation and recycling of water resources	Report data collected and evaluate changes in Kaweah River Basin water conditions and approaches to use, conservation and recycling
3.1.12	Identify and promote strategies for hydroelectric generation facilities	Report on planning, design and implementation efforts related to new hydroelectric generation facilities
3.1.13	Evaluate and modify water diversion and conveyance infrastructure	Report on project planning, design and construction activities
3.1.14	Promote city, community and regional storm water management plans	Report modifications to existing plans and any new plans designed to meet the goals of this objective
3.1.15	Increase knowledge regarding groundwater conditions and establish groundwater management practices	Report data collected, observed trends, recognized impacts and areas requiring additional policy direction and/or project development
3.1.16	Conserve and restore native species and related habitats	Report status of current protection and restoration efforts. Report as to new facilities opportunities and development of project related benefits
3.1.17	Sustain agricultural and urban viability through effective water management	Report evaluation efforts and conclusions related to efficiencies of storage and delivery systems. Report educational efforts related to conservation. Report on actions taken in response to development related CEQA documents

operation and maintenance costs, or both. It remains to be determined by the RMG Board of Directors as to whether this evaluation will be placed on a routine calendar schedule, similar to other plan review processes which are in place for the RMG, or will remain on an "as-needed" basis.

15.2 DATA MANAGEMENT

15.2.1 Current Database

The Kaweah Delta Water Conservation District (KDWCD) currently maintains an extensive database in which is contained information necessary to support operating their numeric groundwater model and in preparation of the various reports which it currently publishes. These reports include the Annual Groundwater Management Report, the annual update of and the five-year revision to the Water Management Plan required under the contract with the U.S. Bureau of Reclamation for its Friant Division, CVP water repayment contract and publication of the various reports associated with the Kaweah & St. Johns Rivers Association. An overall summary of the data which is maintained is contained in Table 15-1.

In addition to this database, a complete water quality database related to surface water is maintained. Both the contents of and the parameters contained within these databases are updated frequently. Water level information, for instance, is updated at least semiannually and water quality information is updated monthly, when flows are present at the monitoring locations.

15.2.2 Data Collection

Data is generated from a number of sources. Those sources include the KDWCD itself, the Kaweah & St. Johns Rivers Association, the Friant Water Authority, the Kaweah Basin Water Quality Association and numerous state and federal agencies with whom the KDWCD has cooperative data sharing agreements. In addition, the KDWCD has an informational sharing arrangement with both the County of Kings and the County of Tulare with respect to information available in both of their ArcView databases and, to a certain extent, in their AutoCAD databases.

Data is collected by each of the public water supply systems located within the Kaweah River Basin. Such data is collected pursuant to provisions of Water Supply Permits issued by the State Water Resources Control Board (SWRCB), Division of Drinking Water. Like information is collected pursuant to provisions of Monitoring and Reporting Programs as adopted elements of Waste Discharge Order issued by the Regional Water Quality Control Board. This data is uploaded to an SWRCB maintained database which his accessible to agencies of jurisdiction, as well as the general public.

Groundwater related information is also secured pursuant to programs conducted by MOU Participants, collected to agency specific databases and then uploaded to state sponsored and federal sponsored databases. While water level information is generally available to the public as a result of these collection efforts, often times, water quality information is not available on a site-specific basis to the general public.

Data sharing efforts are in a constant state of evaluation and are improving as a result of cooperative efforts. Additional improvements are being manifested as a result of to-date efforts related to implementation of the Sustainable Groundwater Management Act.

Data uploaded to the SWRCB and Department of Water Resources databases which include water quality data often have direct data feeds from contracted water quality testing laboratories. These uploads contain sample specific QA/QC measures, results and interpretive decision related inputs designed to assist in the evaluation of resulting test data.

15.2.3 Database Maintenance

At the current time, KDWCD assumes the responsibility and lead role position of maintaining their database and makes same available to other MOU Participants. Transition has occurred between the Kaweah & St. Johns Rivers Association with respect to the maintenance of the water quality database. Upon acceptance of the Kaweah Basin Water Quality Association by the Regional Water Quality Control Board, the water quality database is now maintained by the Kaweah Basin Water Quality Association. In addition, this database has been expanded from its current format of being the repository for surface water quality data and will expand to include groundwater quality data.

15.2.4 Data Sharing

In addition to responding to Public Records Act requests, MOU Participants routinely share all of their information with parties, upon request. Numerous requests for water level information, water management information and project related performance measurements are shared, upon request.

15.2.5 Interface with State Database Systems

Data is currently automatically uploaded to State databases such as the California Environmental Resources Evaluation System (CERES), to CEDEN, the Water Data Library (WDL), CASGEM, of which both the KDWCD and the Tulare Irrigation District are signator participants and the California Environmental Information Catalog (CEIC). Water quality data is currently entered into the Groundwater Ambient Monitoring and Assessment Program (GAMA) of the State Water Resources Control Board and into the Surface Water Ambient Monitoring Program (SWAMP) of the same agency. The KDWCD has long transmitted both spring and summer groundwater elevation readings to the State Department of Water Resources, with additional readings now being introduced on a separate basis into the California Statewide Groundwater Elevation Monitoring Program (CASGEM).

15.3 PLAN UPDATES

15.3.1 Interim Updates

Previously, not having had the IRWMP in a written formal format allowed KDWCD and interested stakeholders the flexibility to modify elements of the IRWMP on almost an instantaneous basis. Obviously, modification of a formal written document will need to take on expression in a process which will yield a written modification to the IRWMP, thus necessitating the ability to readily amend the IRWMP and to reflect those amendments in an accessible form.

As a matter of current policy, the KDWCD routinely updates its plans in five (5) year increments. This applies currently to its Groundwater Management Plan and its Water Resources Investigation, for example. If this length of examination and rewrite was established by the RMG Board of Directors, the need would exist for interim updates to the IRWMP and a methodology to associate the amendments with the proper section(s) of the IRWMP. Where elimination of certain policies and procedures have been caused by the interim modification, a reasonable way to note that a particular segment or segments of the previously adopted IRWMP is no longer valid would need to be created. To date, this process has not been devised, as previously noted, the IRWMP was in a more flexible position to be amended in interim form in its prior “deemed equivalent” state.

15.3.2 Formal Plan Changes

The RMG Board of Directors has chosen to select a five-year interval for review and update of the IRWMP. The update format policy is in the process of development. Formal IRWMP updates are to be accompanied with a complete replacement of the IRWMP document. It has been proven in other cases to not be as efficient to issue amendment additions to critical plans, thus causing a party utilizing the particular plan to circuit back and forth between an auxiliary amendment documents and the principal plan document. The authority to effect this policy resides currently with the RMG Board of Directors.

CHAPTER 16

PLAN PREPARATION, GOVERNANCE AND AMENDMENT

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

CHAPTER 16

PLAN PREPARATION, GOVERNANCE AND AMENDMENT

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

16.1 NOTICES AND HEARINGS

16.1.1 Notice and Hearing on Intent to Prepare an Integrated Water Management Plan

On September 17, 2008 and September 24, 2008 a Notice of Public Hearing was published in the *Visalia Times-Delta* by a Regional Water Management Group, formed pursuant to California Water Code Section 10539 and comprised, at the time, of the County of Tulare, the Exeter Irrigation District, the City of Visalia, the City of Lindsay and the Kaweah Delta Water Conservation District. The aforementioned Notice of Public Hearing stated that a public hearing would be held to consider whether or not the aforementioned entities would "prepare an Integrated Regional Water Management Plan." A copy of a Certificate of Publication of the aforementioned Notice of Public Hearing is attached hereto as Appendix L. As noticed, the public hearing was held on October 7, 2008. After the public hearing, the Regional Water Management Group (RMG) decided to proceed with the preparation of an IRWM Plan (IRWMP) for the Kaweah River Basin.

16.1.2 Notice and Hearing on Intent to Adopt an Integrated Water Management Plan

On June 24, 2014 and July 1, 2014, a Notice of Intent to Adopt an Integrated Regional Water Management Plan was published in the Visalia Times Delta. It provided notice that "the Regional Water Management Group comprised of the Kaweah Delta Water Conservation District, Exeter Irrigation District, Tulare Irrigation District, Lakeside Irrigation Water District, County of Tulare, City of Visalia, City of Farmersville, City of Tulare and City of Lindsay" would hold a public hearing on July 8, 2014, regarding "their intent to adopt an Integrated Regional Water Management Plan for the Kaweah Basin." The Notice stated that "the public may comment on the proposed plan during the public hearing." A copy a Certificate of Publication of the aforementioned Notice of Intent to Adopt an Integrated Regional Water Management Plan is attached hereto as Appendix M. The public meeting was held on July 8, 2014, as noticed. A copy of a document memorializing the decision of the RMG is attached hereto as Appendix N.

16.2 GOVERNANCE

16.2.1 Governing Board

As the primary body involved with the governance of the IRWMP, the RMG as described in the Second Restated Memorandum of Understanding, dated June 20, 2014, a copy of which is attached as Appendix O ("MOU"), shall be led by a governing board ("RMG Governing Board") composed of one designated primary representative from each of the parties (individually "Party" and collectively "Parties") to the MOU, together with those who may hereafter be added as members of the RMG by any subsequent majority vote of the Parties. Each Party shall also designate an alternate representative to attend meetings of the RMG Governing Board when the designated primary representative is unable to do so and in such situations the alternate representative shall represent the Party. During the first two years of the existence of the RMG Governing Board its Chair shall be the designated primary representative of the KDWCD, or in the absence from a meeting of such representative, the alternate representative of the KDWCD shall Chair the meeting. Thereafter, the Chair shall be elected for a two year term by the members of the RMG Governing Board from among its members.

16.2.2 Stakeholder Advisory Group

A stakeholder advisory group has participated extensively in many of the details involving the formation of the IRWMP. A group comprised of many of the same individuals and entity representatives, together with all other persons interested in the plan who desire to be a member of such group ("RMG Stakeholder Advisory Group"), has been formed to participate in advising the RMG Governing Board on the implementation of the IRWMP. The RMG Stakeholder Advisory Group shall elect from among its members a Chair and an alternate Chair to conduct the meetings of the RMG Stakeholder Advisory Group. The RMG Stakeholder Advisory Group shall appoint two individuals and two alternates to serve on the RMG Governing Board for a term of two years each. The first meeting of the RMG Stakeholder Advisory Group shall be called by the Chair of the RMG Governing Board. Actions of the RMG Stakeholder Advisory Group shall be by majority vote of those present at a duly called and noticed meeting and shall be limited to action to advise the RMG Governing Board and to appoint members to such Board in the manner provided in paragraph 16.2.3.

16.2.3 Actions of the RMG Governing Board

Actions requiring the approval of the RMG Governing Board shall only be taken after approval of a majority of the Parties present during a duly noticed meeting of a quorum of the RMG Governing Board. The aforementioned actions include how formal changes to the IRWMP will be undertaken. Before taking any action to direct the performance of formal changes to the IRWMP, the RMG Governing Board shall hold a public hearing and consider any and all advice from the RMG Stakeholder Advisory Group and comments from other members of the public.

16.2.4 Meetings

All meetings of the RMG Governing Board or the RMG Stakeholder Advisory Group may be called by the Chair of the respective group or any two members of the Group by providing the notice of such meeting as required by law. Meetings of either shall be held in the Board Room at the office of the Kaweah Delta Water Conservation District, located at 2975 N. Farmersville Blvd., Farmersville California, unless the RMG Governing Board or the

RMG Stakeholder Advisory Group takes action to hold one or more of its meetings at a different location. All meetings of the RMG Governing Board and the RMG Stakeholder Advisory Group shall be in compliance with the requirements of the Ralph M. Brown Act found in California Government Code Sections 54950 *et seq*.

16.3 PLAN ADMENDMENTS

16.3.1 Plan Review

Whenever the RMG Governing Board deems it necessary to keep the IRWMP current, but not less frequently than four years after the date of the adoption of the IRWMP and every five years thereafter, the Chair of the RMG Governing Board shall appoint individuals who shall constitute a committee ("Plan Review Committee") composed of an equal number of members of the RMG Governing Board and the RMG Stakeholders Advisory Group, which shall be tasked with reviewing the IRWMP and recommending updates or amendments ('amendments") to the RMG Governing Board. The Plan Review Committee shall elect a Chair and an alternate Chair. The Plan Review Committee shall complete its review and make its recommendations to the RMG Governing Board within one year after its formation. The Chair of the Plan Review Committee shall set the frequency of the meetings and call as many meetings as he or she deems necessary to timely complete its assigned tasks. The Plan Review Committee shall obtain the permission of the RMG Governing Board to employ consultants to assist it in reviewing the IRWMP and in preparing any recommended amendments.

16.3.2 Interim Change

The IRWMP shall be subject to adaptive management processes in order to timely respond to changing conditions. A minor process, organizational, or water management change ("Interim Change") that occurs relatively frequently may be made informally and without formal action of the RMG Governing Board. Staff of a Party may identify and effectuate an Interim Change unless directed otherwise by the RMG Governing Board. The RMG Stakeholders Group may take action to recommend an

Interim Change to the staff of a Party or Parties. Either staff of a Party or the RMG Stakeholders Group may ask the RMG Governing Board to determine whether a minor process, organizational, or water management change constitutes an Interim Change.

16.3.3 Consideration of Recommendations by the Plan Review Committee

The Plan Review Committee shall provide its recommendation to the RMG Governing Board, which shall review the same and consider whether to adopt the recommendation in whole, in part or not at all. The RMG Governing Board may consider other amendments to the IRWMP not recommended by the Plan Review Committee.

16.3.4 Notice and Hearing on Intention to Adopt Amendments to Plan.

If the RMG Governing Board decides that it will consider adopting amendments to the IRWMP, it shall publish notice of its intention to amend the IRWMP in accordance with California Government Code Section 6066.

16.3.5 Adoption of Amendments to Plan

After providing the notice required above in paragraph 16.3.3, the RMG Governing Board shall have a public meeting at which it may adopt amendments to the IRWMP. If it decides to adopt amendments to the IRWMP, the RMG Governing Board shall determine whether to adopt the amendments by amending the IRWMP or by adopting an amended or restated IRWMP.

APPENDIX A

REFERENCES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

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REFERENCES

APPENDIX A

INTEGRATED REGIONAL WATER MANAGEMENT PLANT

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

1. *California Water Plan Update 2013*; Department of Water Resources, State of California; 2012.
2. *Groundwater Management Plan Update*; Kaweah Delta Water Conservation District; 2007.
3. *Groundwater Quality Protection Strategy*; Regional Water Quality Control Board, 2010.
4. *Time Series Evapotranspiration and Applied Water Estimates from Remove Sensing*; Kaweah Delta Water Conservation District; Davids Engineering, Inc.; 2013.
5. *Tulare County General Plan 2030*; County of Tulare, State of California; 2012.
6. *Water Resources Investigation of the Kaweah Delta Water Conservation District*; Fugro West, Inc.; 2003.

APPENDIX B

RESTATED MEMORANDUM OF UNDERSTANDING

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

RESTATED
MEMORANDUM OF UNDERSTANDING

THIS RESTATED MEMORANDUM OF UNDERSTANDING ("Restated MOU"), effective this 30th day of November, 2010, by and between the COUNTY OF TULARE ("County"), the EXETER IRRIGATION DISTRICT ("Exeter"), the CITY OF VISALIA ("Visalia"), the CITY OF LINDSAY ("Lindsay"), KAWEAH DELTA WATER CONSERVATION DISTRICT ("District"), LAKESIDE IRRIGATION WATER DISTRICT ("Lakeside"), the TULARE IRRIGATION DISTRICT ("TID") and the CITY OF TULARE ("Tulare"), is made in light of the following:

RECITALS:

WHEREAS, both the Integrated Regional Water Management Planning Act of 2002, found in Division 6, Part 2.2 of the California Water Code ("IRWMP Act"), and the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002, found in Division 26.5 of the California Water Code, authorize and encourage certain local agencies and mutual water companies to develop an integrated regional water management plan ("IRWMP");

WHEREAS, during or about November 2007, County, Exeter, Visalia, Lindsay and the District (collectively "Original Parties"), desiring to form a regional water management group, as defined in the IRWMP Act, entered into a Memorandum of Understanding ("MOU") to develop an IRWMP for the Kaweah River Basin;

WHEREAS, during or about September 2009, the California Department of Water Resources determined that the Kaweah River Basin already had a "functionally equivalent" IRWMP;

WHEREAS, the Original Parties continue to desire to develop an IRWMP in addition to the aforementioned "functionally equivalent" IRWMP;

WHEREAS; there have been amendments to the IRWMP Act, including an amendment that eliminates the time period during which a plan must be developed by a regional water management group, which amendments have created a reason to amend the MOU;

WHEREAS, Lakeside, TID and Tulare desire to join the Original Parties as members of the Kaweah River Basin regional water management group (collectively "Parties" and individually "Party");

WHEREAS, the Parties desire to have an agreement restating the MOU in order to include Lakeside, TID and Tulare as Parties and also to include other appropriate changes to the MOU resulting from amendments to the IRWMP Act; and

TULARE COUNTY AGREEMENT NO. 24790

WHEREAS, the parties desire to set forth their restatement of the MOU in writing,

NOW, THEREFORE, the parties hereto mutually agree to the terms and conditions of this Restated MOU, which provides as follows:

Section 1: Definitions

1.1 "KAWEAH RIVER BASIN" shall mean the area covered by the IRWMP, which area is generally comprised of all of the lands on which is situated any of the following: (a) the District; (b) portions of the County in which is located any part of Dry Creek, Yokohl Creek or Cottonwood Creek; and (c) any portion of the Kaweah River System located below Terminus Dam.

1.2 "Lead Party" shall mean the District.

1.3 "KAWEAH RIVER BASIN IRWMP" shall be the name for the IRWMP for the KAWEAH RIVER BASIN.

Section 2: Purposes and Goals

2.1 The parties desire to coordinate their efforts to do the following:

2.1.1 Prepare this Restated MOU.

2.1.2 Follow the notice, hearing and other procedures outlined in California Water Code §10543, paragraphs (a) and (b), together with all other applicable law, to determine whether to prepare the KAWEAH RIVER BASIN IRWMP.

2.1.3 To prepare the KAWEAH RIVER BASIN IRWMP and adopt said IRWMP, all in accordance with the provisions of California Water Code §§10540-10543, together with all other applicable law.

Section 3: Cost Sharing

3.1 The Parties agree to retain Dennis R. Keller, Consulting Engineer, to prepare the KAWEAH RIVER BASIN IRWMP at a cost not to exceed $50,000.

3.2 Each Party agrees to contribute $3,000 towards the aforementioned costs of $50,000 described above in Section 3.1. The Lead Party shall pay any difference between the amount of $50,000 and the sum of the aforementioned contributions. Entities other than the Parties may become a party to this Restated MOU by a written amendment to this Restated MOU executed by each such entity and all of the existing Parties to this Restated MOU. Any new party to this Restated MOU shall pay $3,000 to the Lead Party as such new party's contribution towards the aforementioned cost to prepare the KAWEAH RIVER BASIN IRWMP.

3.3 Lead Party will be reimbursed for costs incurred by it in furtherance of the objectives of this Restated MOU, other than the cost described above in Section 3.1, upon the approval of a majority of the Parties, including the Lead Party. The Lead Party shall issue a call for funds to fund the aforementioned approved reimbursement by a written invoice sent to each Party showing its share of such costs, which share shall be calculated by dividing the total approved reimbursements by the number of Parties to the MOU at the time the particular cost is incurred. Each Party will pay its share of the aforementioned costs within thirty (30) days of receiving an invoice for the same from the Lead Party.

Section 4: Authority of Lead Party

4.1 The Lead Party shall be authorized to prepare and publish the notice referred to in California Water Code §10543, paragraph (a). Any Party located wholly outside of the boundaries of the Lead Party shall also publish the aforementioned notice within its own boundaries. Regardless, the Lead Party shall have the authority to hold the public hearing described in California Water Code §10543, paragraph (b).

4.2 After the aforementioned public hearing, the Lead Party shall confirm with each Party whether it is still in favor of proceeding towards the preparation of a KAWEAH RIVER BASIN IRWMP. If all of the Parties are still in agreement with the Parties proceeding to prepare a KAWEAH RIVER BASIN IRWMP, then Lead Party is hereby authorized to retain Dennis R. Keller, Consulting Engineer ("Keller"), on behalf of the Parties, to prepare the KAWEAH RIVER BASIN IRWMP. If either the Lead Party or a majority of the Parties determine that it might be productive to do so, Keller will be instructed to apply for a grant to fund all or part of the cost of preparing the KAWEAH RIVER BASIN IRWMP.

Section 5: General Provisions

5.1 Term. This Restated MOU shall become effective on the date first above written and shall continue until the final adoption of the KAWEAH RIVER BASIN IRWMP or until this Restated MOU is terminated as hereinafter provided. Any Party or all of the Parties may terminate participation in this Restated MOU upon 60 days notice to each other; provided, however, any Party so terminating its participation in this Restated MOU shall be responsible for its share of the costs incurred by the Parties through the date of said notice.

5.2 Additional Parties. Upon written approval of all of the Parties, other local public agencies, as defined in California Water Code §10535, may become parties to this Restated MOU.

5.3 Construction of Terms. This Restated MOU is for the sole benefit of the Parties and shall not be construed as granting rights to or imposing obligations on any person other than the Parties.

5.4 Good Faith. Each Party shall use its best efforts and work in good faith for the expeditious completion of the purposes and goals of this Restated MOU and the satisfactory performance of its terms.

5.5 Rights of the Parties and Constituencies. This Restated MOU does not contemplate the Parties taking any action that would:

5.5.1 Adversely affect the rights of any of the Parties; or

5.5.2 Adversely affect the constituencies of any of the Parties.

5.6 Execution. This Restated MOU may be executed in counterparts and the signed counterparts shall constitute a single instrument. The signatories to this Restated MOU represent that they have the authority to sign this Restated MOU and to bind the Party for whom they are signing it.

IN WITNESS WHEREOF, the Parties hereto have executed this Restated MOU to be effective as of the date first above written.

County:

COUNTY OF TULARE

Dated: 11/30/10

By: [signature]

Title: CHAIRMAN, BOARD OF SUPERVISORS

Approved as to form:

Dated: 11/23/2010

[signature] 20101737
TULARE COUNTY Counsel

Exeter:

Dated: 11-22-10

EXETER IRRIGATION DISTRICT

By [signature]

Title: President

Approved as to form:

Dated: 15 Nov. 2010

[signature]

Attorney for EXETER IRRIGATION DISTRICT

Visalia:

CITY OF VISALIA

Dated:____________________

By________________________

Title: ____________________

Approved as to form:

Dated:____________________

____

Attorney for CITY OF VISALIA

Exeter:

Dated:______________________ EXETER IRRIGATION DISTRICT

By__________________________

Title: ______________________

Approved as to form:

Dated:______________________ ______________________

Attorney for EXETER IRRIGATION DISTRICT

Visalia:

CITY OF VISALIA

Dated: 11/23/2010 By [signature]

Title: City Manager

Approved as to form:

Dated: 11/22/2010 [signature]

Attorney for CITY OF VISALIA

Lindsay:

CITY OF LINDSAY

Dated: 11/15/2010 By Ed Murray

Title: MAYOR

Approved as to form:

Dated: 12/06/2010 Julia M. Lew

Attorney for CITY OF LINDSAY

District:

KAWEAH DELTA WATER
CONSERVATION DISTRICT

Dated:________________ By________________

Title: ________________

Approved as to form:

Dated:________________ ________________

Attorney for KAWEAH DELTA WATER
CONSERVATION DISTRICT

Lindsay:

CITY OF LINDSAY

Dated:____________________ By____________________

Title: ____________________

Approved as to form:

Dated:____________________ ____________________

Attorney for CITY OF LINDSAY

District:

KAWEAH DELTA WATER CONSERVATION DISTRICT

Dated: 10-7-2010 By [signature]

Title: President

Approved as to form:

Dated: 10/13/2010 [signature]

Attorney for KAWEAH DELTA WATER CONSERVATION DISTRICT

Lakeside:

LAKESIDE IRRIGATION WATER DISTRICT

Dated: 10-7-2010

By Don Mills

Title: President

Approved as to form:

Dated: 11-1-2010

Attorney for LAKESIDE IRRIGATION WATER DISTRICT

TID:

TULARE IRRIGATION DISTRICT

Dated:____________________

By____________________

Title: ____________________

Approved as to form:

Dated:____________________

Attorney for TULARE IRRIGATION DISTRICT

Lakeside:

LAKESIDE IRRIGATION WATER DISTRICT

Dated:____________________

By________________________

Title: ____________________

Approved as to form:

Dated:____________________

____

Attorney for LAKESIDE IRRIGATION WATER DISTRICT

TID:

TULARE IRRIGATION DISTRICT

Dated:____________________

By J. Paul Hendrix

Title: General Manager

Approved as to form:

Dated: 10/21/10

[signature]

Attorney for TULARE IRRIGATION DISTRICT

City:

CITY OF TULARE

By ____________________

Dated: 10-07-10

Title: City Manager

Approved as to form:

Dated: 10/7/10

____

Attorney for CITY OF TULARE

APPENDIX C

OUTLINE – TULARE BASIN WATER AUTHORITY

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Outline for Development of the

Tulare Basin Water Authority

The following is the beginnings of a concept paper that would outline why and how we could put together an organization charged with coordinating the development of a Tulare Basin–wide regional water planning effort. The first step is to "outline the outline" to make sure we are providing the right background and informational setting as well as addressing the right questions. The next step would be to "flesh out" the outline into a conceptual paper.

1) **Background:**

    a) Local planning efforts;

    b) Costa planning effort;

    c) The Governor's SJV Partnership Initiative;

    d) The SJV Blue Print effort;

    e) San Joaquin Valley Water Coalition;

    f) Coordination/interface with the San Joaquin River Region;

2) **Purposes:**

    a) To be complimentary to existing planning efforts which are primarily being done on a watershed basis…not to replace them;

    b) To accommodate the areas where existing plans don't address known water management needs:

        i) From a geographic perspective;

        ii) From the kind of need;

    c) To provide a certain degree of coordination between the existing planning efforts;

    d) To increase the likelihood and "reasonableness" of state and federal grant and loan funding by having a coordinated program to address the Region's needs;

    e) To provide a framework for inter-regional cooperation on projects/programs of mutual benefit.

3) **State and Federal Funding Opportunities** (discussion of state and federal preference/desires relative to regional planning efforts, moneys available, etc.)

a) State Funding:

i) Prop 13;

ii) Prop 50;

(1) IRWMP Program:

(a) Planning grants;

(b) Implementation grants;

iii) Prop 84;

iv) Prop 1E;

v) AB 303;

vi) Partnership monies.

b) Federal monies.

4) Potential Membership/Involvement:

a) Those actively planning:

i) Those that have prepared Integrated Regional Plans:

(1) Upper Kings;

(2) Poso Creek;

(3) San Luis and Delta Mendota Water Authority;

b) Those that are intending to prepare Integrated Regional Plans:

c) Those that are planning water resource activities under other authority:

i) Kaweah Delta WCD;

ii) Deer Creek and Tule River Authority;

iii) Kern County Water Agency;

iv) Friant Water Authority;

v) Tulare Lake Basin WSD;

d) Those entities/needs that logically fit under the auspices of an existing local planning effort but have not been invited or for other reasons are on the sidelines;

e) Those entities/needs that don't logically fit under the auspices of an existing local planning effort but are still within the Tulare Basin Region;

f) Involvement of County governments;

g) Involvement of incorporated cities (use of COGs or CAGs?);

h) Involvement of environmental interests/needs;

5) How the TBWA Would Interact with Existing Planning efforts:

a) Existing planning efforts would be acknowledged as part of organizational framework…interaction would be described in detail in organizational creation documents.

b) Description of interaction would include mechanism for deciding when a project falls under the auspices of one of the existing planning efforts or under the auspices of the new organization (TBWA).

6) Potential Organization Forms and Governance:

a) Degree of organization formalization needed?

i) Being able to accept funding and grant accountability;

ii) Being able to make decisions and set priorities;

iii) Having the proper authorities relative to planning, construction (?) other authorities (?)

b) Does it need to be a public agency?

c) Who would sit as the governing body?

d) How would voting be done?

e) How would the general public be involved?

f) Discuss alternative organizational formats that could meet the agreed-to requirements – plusses and minuses (once we have answers to the above questions);

g) Operational funding requirements and sources;

h) Staffing.

7) Timelines – What Controls?

a) To be effective in dictating the allocation of the Prop 84 - $60 million earmarked for the Tulare Basin. Required milestones:

   i) (list dates and events)

   ii)

b) To meet the Governor's Partnership water planning element needs – Required milestones:

   i) (list dates and events)

   ii)

c) To meet Costa Planning effort needs – Required Milestones:

   i) (list dates and events)

   ii)

8) **Frequently Asked Questions:** (start a list)

9) **Who to Contact:**

APPENDIX D

JPA-TULARE LAKE HYDROLOGIC REGION WATER-RELATED ENTITIES

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

JOINT POWERS AGREEMENT
FOR
TULARE LAKE HYDROLOGIC REGION WATER-RELATED ENTITIES

THIS JOINT POWERS AGREEMENT (hereinafter referred to as the "Agreement") is made this ____ day of _____________, 2007, by and between the KAWEAH DELTA WATER CONSERVATION DISTRICT (hereinafter "KDWCD"), KINGS RIVER CONSERVATION DISTRICT (hereinafter "KRCD"), SEMITROPIC WATER STORAGE DISTRICT (hereinafter "STWSD") and the other undersigned signatories (hereinafter individually referred to as "Party" and collectively as "Parties").

RECITALS

A. WHEREAS, KDWCD is a water conservation district formed pursuant to the Water Conservation Act of 1927 located in the western portion of Tulare County and the eastern portion of Kings County; and

B. WHEREAS, KRCD is a conservation district formed pursuant to the Kings River Conservation District Act of 1951; and

C. WHEREAS, STWSD is a water storage district formed pursuant to the California Water Storage District Act; and

D. WHEREAS, a portion or all of each of the Parties is located in a hydrologic region sometimes referred to as the "Tulare Lake Hydrologic Basin" (hereinafter "Basin"), the general locale of the Basin being outlined in red on the map attached hereto as Exhibit A;

E. WHEREAS, each of the parties is either a public entity with authority to manage water resources in the Basin and managing such resources or a mutual water company that provides water service in the Basin; and

F. WHEREAS, it is in the interest of the Parties, and the region served by them for the water resources of the Basin to be responsibly developed, managed, protected and conserved to the extent feasible; and

G. WHEREAS, both the Integrated Regional Water Management Planning Act of 2002, Division 6, Part 2.2 of the California Water Code, and the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002, Division 26.5 of the California Water Code, authorize and encourage public entities to develop an integrated regional water management plan ("IRWMP"); and

H. WHEREAS, KDWCD, representing a substantial number of other water-related entities, has created and the State of California has recognized the Kaweah River Basin Integrated Water Management Plan; and

I. WHEREAS, KRCD and STWSD, each acting as the lead agency for a substantial number of other water-related entities, have already initiated the process to create separate IRWMPs for other parts of the Basin not covered by the Kaweah River Basin Integrated Water Management Plan; and

J. WHEREAS, the Parties desire to improve the integration of programs and strategies among the municipal, industrial, agricultural and environmental uses of water in the Basin: and

K. WHEREAS, the Parties desire to form a regional water management group, as defined in California Water Code §10537, to take the steps outlined in the Integrated Regional Water Management Planning Act of 2002, to work towards the preparation of a comprehensive IRWMP for the Basin; and

L. WHEREAS, the preparation of such a comprehensive IRWMP for the Basin will likely take many months to complete; and

M. WHEREAS, pursuant to the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (hereinafter referred to as "Proposition 50"), and the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (hereinafter referred to as "Proposition "84"), certain grant monies may be made available by the State of California for water-related projects in the Basin prior to the completion of a comprehensive IRWMP for the Basin; and

N. WHEREAS, other monies may be made available to the Parties by the United States of America and from other sources for water-related projects in the Basin; and

O. WHEREAS, the Parties desire to enter into this Agreement, pursuant to California Government Code §§6500 <u>et</u> <u>seq</u>., in order to further their efforts to develop, manage, protect and conserve the water resources of the Basin whether or not they are able to complete the development of an IRWMP for the Basin,

NOW, THEREFORE, in and for consideration of the mutual covenants, conditions and promises hereinafter set forth, the Parties hereby agree as follows:

1.0 Purposes and Goals

1.1 <u>Objectives</u>. The Parties desire to work together to accomplish the following:

a. To facilitate the integration of programs and strategies among municipal, industrial, agricultural and environmental users for enhancing the water supply, water quality and watershed management of the Basin;

b. To improve the reliability of the imported and local water supplies of the Basin;

c. To protect and enhance the viability of the watersheds of the Basin;

d. To seek, obtain, administer and distribute grant and/or loan funds from the State of California, the United States of America or other sources for qualifying water-related projects in the Basin; and

e. To create an IRWMP for the Basin.

1.2 Combined Efforts. The Parties believe that by executing this Agreement and coordinating and combining their respective resources, they will be able to better and sooner achieve the aforementioned objectives for a substantial number of water-related entities located within the Basin, by acting as designated lead agencies with respect to this Agreement and their effort to establish an IRWMP, both for their regional areas and for the Basin. Attached hereto as Exhibit B is a listing of the other aforementioned water-related entities and a brief description of their IRWMP-related involvement with the Parties.

1.3 Immediate Collaboration. The Parties agree that once KDWCD, KRCD and STWSD have duly approved and signed this Agreement, they will immediately cease efforts to separately obtain or compete against each other for Proposition 50 and Proposition 84 grant funds (hereinafter referred to as "Grant Funds") and will commence to collaborate and cooperate to achieve the purposes and goals described in this Section 1, including, but not limited to their objective to seek and obtain Grant Funds for qualifying water-related projects in the Basin. The aforementioned collaboration and cooperation shall commence with each Party immediately designating a representative and an alternate representative to attend monthly meetings, to share all relevant information and documents and to coordinate their efforts to collaborate as described in this Section 1.3. Further, each Party will make a good faith effort to cooperate in every reasonable way towards the expeditious accomplishment of the purposes and goals described in this Section 1.

2.0 Management of Funds

2.1. Deposit of Funds. The Parties hereby authorize the State of California to distribute Proposition 50 and Proposition 84 Grant Funds to KDWCD to be held by it in its own name and distributed for use pursuant to the provisions of this Agreement. All Grant Funds received by KDWCD on behalf of it and the Parties shall be held by it in one of two designated and separate accounts. One account shall be an interest-bearing account with the State of California Local Agency Investment Fund and the other account shall be an interest-bearing or non-interest bearing checking account with a federally-insured financial institution (hereinafter collectively "Accounts"). The only monies deposited into the Accounts by KDWCD shall be Grant Funds and other funds, of any type, if related to the achievement of the purposes and goals set forth in Section 1 of this Agreement.

2.2. Designated Officials. Pursuant to Government Code section 6505.1, KDWCD shall designate a minimum of two individuals (hereinafter referred to as the "Designated Officials") employed by it who will have charge of, handle and have access to the Grant Funds held in the Accounts. The names of the Designated Officials shall be provided to the Parties, once said individuals are designated by KDWCD. Should any of the Designated Officials change, KDWCD shall so notify the Parties of the same.

2.3. Bond. Pursuant to Government Code Section 6505.1, KDWCD shall obtain a surety bond for each of the Designated Officials. Such bonds shall provide coverage in the amount of $250,000 for the theft or other malfeasance by the Designated Officials related to the Accounts. The premiums for said bonds shall be paid from funds held in the Accounts.

2.4. Accounting Records. KDWCD shall keep precise and accurate records of all deposits and disbursements from the Accounts, including the current balance in the Accounts. The aforementioned records shall include all interest accrued on the monies deposited in the Accounts.

2.5. Access to Accounting Records. Any current party to this Agreement shall be allowed to review the records of the Accounts and obtain copies of the same from KDWCD, upon 72-hours written notice to KDWCD.

2.6 Audits. KDWCD shall be responsible for the performance of all audits of the Accounts required by law. KDWCD may hire any qualified accounting or auditing firm to perform any required audit of the Accounts. The costs of the aforementioned audits may be paid for by funds held in the Accounts.

3.0 Availability of Grant Funds

3.1. Distribution from the Accounts. Subject to the limitations set forth in this section, Grant Funds will be available to the Parties as determined by the provisions of this Agreement, the terms of any grant, together with any amendments to either.

3.2. Limitation on IRWMP Grants. No more than $500,000 will be distributed to any entity for the development of an IRWMP. Any proposed IRWMP must be for an area located within the Basin.

4.0 Selection of Proposals

4.1. Solicitation Notice. KDWCD will solicit grant applications for Grant Funds within 30 days after this Agreement is signed by KDWCD, KRCD and STWSD.

4.2. Project Proposals. All applications for Grant Funds shall be submitted to KDWCD in a format to be determined by the Parties. Within 10 days thereafter, KDWCD shall distribute a copy of any submitted applications to all of the Parties, together with a score sheet for each.

4.3. Voting. Each Party with an IRWMP approved by the State of California Department of Water Resources shall be entitled to score each application. Additionally, all other Parties shall be entitled to together, acting as one, score each application, with such scoring to be accomplished in accordance with a procedure established by a majority vote of such other Parties. The scores received for each application shall be submitted to KDWCD and tallied by KDWCD for each application. Such scoring shall be deemed completed 45 days after the date KDWCD distributes the application for scoring. As to any decision to be made by the Parties that do not involve the scoring of applications, a majority vote of the Parties shall govern.

4.4. Scoring. Each application shall be scored by the Parties entitled to do so, pursuant to section 4.3 above, using the State of California Department of Water Resources statewide priorities and eligibility criteria or other priorities and criteria established by written agreement of a majority of the Parties, which may also be modified by such a majority. The Parties shall each review the priorities and eligibility criteria for each application, prior to scoring such application.

4.5. Results. Within 60 days of its mailing out any application to the Parties, KDWCD shall notify the Parties of the scoring tallies for such application.

4.6. Verification of Need. The records of each entity submitting an application shall be subject to review in order to verify that the proposed project described in an application is among the highest ranking needs of the submitting entity in accordance with the requirements of the State of California.

5.0 Reimbursement of Costs

5.1. Costs. KDWCD will be reimbursed for its actual costs in acting as lead agency under this Agreement. KDWCD shall be entitled to reimburse itself for such costs by distributions from the Accounts.

5.2. Other Parties. Any other Party that incurs a cost in connection with the performance of a duly authorized duty arising under this Agreement shall be entitled to reimbursement for its costs from the Grant Funds in the Accounts, within 45 days of submission of a written request for reimbursement to KDWCD. KDWCD may request documentation sufficient to substantiate any request for funds.

5.3 Financial Statements. A summary of revenues and expenses, including beginning and ending cash balances in the Accounts, shall be prepared annually and submitted to the Parties by KDWCD.

6.0 Governance

6.1 Decision Making. Except as otherwise specified in part 4.0 of this Agreement, all decisions made by the Parties to this Agreement shall be made by a majority vote of those present at a duly called, noticed and convened meeting.

6.2 Call of Meetings. A meeting may called by any two Parties.

6.3 Notice of Meetings. Except in emergency situations, written notice of all duly called meetings shall be provided to all Parties at least ten (10) days prior to any meeting so called.

6.4 Convened Meeting. A duly called and noticed meeting shall be convened, if a majority of the Parties are present at the time, on the date and at the location where the meeting was noticed to occur.

6.5 Conduct of Meetings. All meetings of the Parties, regarding the subject matter of this Agreement, shall comply, in all respects, with the provisions of the Ralph M. Brown Act, currently found in California Government Code Sections 54950, *et seq.*, or any replacement legislation, except as to meetings that are exempted by law from such compliance.

6.6 Public Forum. Persons and entities that are not Parties shall have the right to speak and otherwise comment on all actions at any meeting of the Parties or by a writing submitted to the Parties and mailed to KDWCD.

7.0 Termination

7.1 Withdrawal by Party. Any Party may terminate its participation in this Agreement, without cause, by providing the other Parties with ten (10) days written notice.

7.2 Termination of a Party. Any Party that fails to sufficiently participate in the activities of the Parties pursuant to this Agreement may, at the sole discretion of the other Parties, be terminated as a party to this Agreement by a vote of a majority of the Parties.

7.3 Notice to Cure. Prior to the termination of any Party pursuant to Section 7.2 of this Agreement, KDWCD shall provide such Party with a notice to cure such Party's deficiencies within ten (10) days from the time of such notice or be subject to being terminated as a party to this Agreement as allowed in said Section.

7.4. Termination of this Agreement. This Agreement may be terminated by a written agreement signed by a majority of the Parties to the Agreement.

8.0 General Provisions

8.1. <u>New Parties</u>. Any public agency and any mutual water company that has the authority or right to manage water resources in the Basin, or any part of it, may, with the written consent of a majority of the Parties, become a Party by signing this Agreement and providing all of the other Parties with a copy of such signed Agreement. Any new Party shall be subject to this Agreement, together with all rules, regulations and separate agreements promulgated by or entered into by the Parties as part of or in relation to this Agreement.

8.2. <u>Construction of Terms.</u> This Agreement is for the sole benefit of the Parties. It shall not be construed as granting rights to any person other than the Parties, or imposing obligations on any person or entity other than another Party.

8.3. <u>Good Faith.</u> Each Party shall use its best efforts and work in good faith for the expeditious completion of the purposes and goals of the Agreement and the satisfactory performance of its terms.

8.4. <u>Execution.</u> This Agreement may be executed in counterparts and the signed counterparts shall constitute a single instrument. The signatories to this Agreement represent that they have the authority to sign to bind the entity for whom they are signing this Agreement.

8.5 <u>Amendment.</u> This Agreement may only be amended by a written amendment signed by a majority of the Parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the date first above written.

Date:________________________

KDWCD:

KAWEAH DELTA WATER CONSERVATION DISTRICT

By:______________________________

Date:________________________

KRCD:

KINGS RIVER CONSERVATION DISTRICT

By:______________________________

Date:________________________

STWSD:

SEMITROPIC WATER STORAGE DISTRICT

By:________________________________

PARTIES:

Date:________________________

By:________________________________

Date:________________________

By:________________________________

Date:________________________

By:________________________________

Date:________________________

By:________________________________

Date:________________________

By:________________________________

Date:________________________

By:________________________________

APPENDIX E

CURRENT PARTICIPANT MOU

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

UNANIMOUS WRITTEN CONSENT FOR A LOCAL PUBLIC AGENCY TO BECOME A PARTY TO A MEMORANDUM OF UNDERSTANDING

THIS AGREEMENT ("Agreement"), effective this 11th day of December, 2013, by and between the undersigned entities, is made in light of the following:

RECITALS:

WHEREAS, on or about November 8, 2007, COUNTY OF TULARE ("County"), EXETER IRRIGATION DISTRICT ("Exeter"), CITY OF VISALIA ("Visalia"), CITY OF LINDSAY ("Lindsay"), and KAWEAH DELTA WATER CONSERVATION DISTRICT ("District") entered into a Memorandum of Understanding ("MOU");

WHEREAS, on or about November 30, 2010, County, Exeter, Visalia, Lindsay, and District, entered into a Restated Memorandum of Understanding ("Restated "MOU"), which, among other things, added LAKESIDE IRRIGATION WATER DISTRICT ("LIWD"), TULARE IRRIGATION DISTRICT ("TID") and CITY OF TULARE ("Tulare") as additional parties to the Restated MOU;

WHEREAS, Section 5.2 of the Restated MOU allows other local public agencies to become parties to the Restated MOU, upon written approval of all of the parties to the document; and

WHEREAS, the parties to the Restated MOU are agreeable to having CITY OF FARMERSVILLE ("Farmersville") become a party to the Restated MOU,

NOW, THEREFORE, it is mutually understood and agreed as follows:

1. **Approval.** The undersigned, being all of the current parties to the Restated MOU, hereby approve Farmersville to become a party to the Restated MOU.

2. **Agreement of Farmersville.** Farmersville agrees to become a party to the Restated MOU and be bound by all of the provisions of the document. Farmersville hereby accepts all of the duties and responsibilities

agreed to by the parties in the Restated MOU.

3. **Counterpart Copies.** This document may be executed in two or more counterparts, which shall, in the aggregate, be signed by all parties. Each counterpart shall be deemed to be an original against any party who has signed it.

IN WITNESS WHEREOF, the parties hereto have executed this document on the date first above written.

County:

COUNTY OF TULARE

Dated: April 30, 2013

By ____________________

Title: CHAIRMAN, BOARD OF SUPERVISORS

Approved as to form:

Dated: ____________________

____
TULARE COUNTY Counsel

Exeter:

EXETER IRRIGATION DISTRICT

Dated: ____________________

By ____________________

Title: ____________________

Approved as to form:

Dated: ____________________

____
Attorney for EXETER IRRIGATION DISTRICT

BEFORE THE BOARD OF SUPERVISORS
COUNTY OF TULARE, STATE OF CALIFORNIA

IN THE MATTER OF CONSENT TO ADD FARMERSVILLE AS PARTY TO THE KAWEAH RIVER BASIN INTEGRATED WATER MANAGEMENT GROUP RESTATED MEMORANDUM OF UNDERSTANDING	)	**Resolution No. 2013-0252** **Agreement No. 23353-A & 23353-B**

UPON MOTION OF SUPERVISOR WORTHLEY, SECONDED BY SUPERVISOR ENNIS, THE FOLLOWING WAS ADOPTED BY THE BOARD OF SUPERVISORS, AT AN OFFICIAL MEETING HELD APRIL 30, 2013, BY THE FOLLOWING VOTE:

AYES: SUPERVISORS ISHIDA, VANDER POEL, COX, WORTHLEY, AND ENNIS
NOES: NONE
ABSTAIN: NONE
ABSENT: NONE

ATTEST: JEAN M. ROUSSEAU
COUNTY ADMINISTRATIVE OFFICER/
CLERK, BOARD OF SUPERVISORS

BY: ______________________
Deputy Clerk

1. Rescinded Tulare County Board Agreement No. 24790 and approve Amendment One to Tulare County Board Agreement No. 23353 for the Restated Memorandum of Understanding with Exeter Irrigation District, City of Visalia, City of Lindsay, Kaweah Delta Water Conservation District, Lakeside Irrigation Water District, Tulare Irrigation District, City of Tulare, and the County of Tulare for the preparation of an Integrated Regional Water Management Plan for the Kaweah River Basin for $3,000 and an estimated $6,000 for grant application preparation fees, retroactive to November 30, 2010.
2. Found that the Board had authority to enter into the proposed amendment as of November 30, 2010 and that it was in the County's best interest to enter into the amendment on that date.
3. Approved Amendment Two to Tulare County Board Agreement No. 23353 allowing the City of Farmersville to Become Party to the Kaweah River Basin Integrated Regional Water Management Plan Group Restated Memorandum of Understanding.
4. Authorized the Chairman to sign three copies of the Unanimous Written Consent For a Local Public Agency to Become Party to a Memorandum of Understanding.

CAO
Auditor
Co. Counsel

DAY
4/30/13

#17

UNANIMOUS WRITTEN CONSENT FOR A LOCAL PUBLIC AGENCY TO BECOME A PARTY TO A MEMORANDUM OF UNDERSTANDING

THIS AGREEMENT ("Agreement"), effective this 30th day of April, 2013, by and between the undersigned entities, is made in light of the following:

RECITALS:

WHEREAS, on or about November 8, 2007, COUNTY OF TULARE ("County"), EXETER IRRIGATION DISTRICT ("Exeter"), CITY OF VISALIA ("Visalia"), CITY OF LINDSAY ("Lindsay"), and KAWEAH DELTA WATER CONSERVATION DISTRICT ("District") entered into a Memorandum of Understanding ("MOU");

WHEREAS, on or about November 30, 2010, County, Exeter, Visalia, Lindsay, and District, entered into a Restated Memorandum of Understanding ("Restated "MOU"), which, among other things, added LAKESIDE IRRIGATION WATER DISTRICT ("LIWD"), TULARE IRRIGATION DISTRICT ("TID") and CITY OF TULARE ("Tulare") as additional parties to the Restated MOU;

WHEREAS, Section 5.2 of the Restated MOU allows other local public agencies to become parties to the Restated MOU, upon written approval of all of the parties to the document; and

WHEREAS, the parties to the Restated MOU are agreeable to having CITY OF FARMERSVILLE ("Farmersville") become a party to the Restated MOU,

NOW, THEREFORE, it is mutually understood and agreed as follows:

1. **Approval.** The undersigned, being all of the current parties to the Restated MOU, hereby approve Farmersville to become a party to the Restated MOU.

2. **Agreement of Farmersville.** Farmersville agrees to become a party to the Restated MOU and be bound by all of the provisions of the document. Farmersville hereby accepts all of the duties and responsibilities

TULARE COUNTY AGREEMENT NO. 23353-B

agreed to by the parties in the Restated MOU.

3. **Counterpart Copies.** This document may be executed in two or more counterparts, which shall, in the aggregate, be signed by all parties. Each counterpart shall be deemed to be an original against any party who has signed it.

IN WITNESS WHEREOF, the parties hereto have executed this document on the date first above written.

County:

COUNTY OF TULARE

Dated:____________ By____________

Title: ____________

Approved as to form:

Dated:____________ ____________

TULARE COUNTY Counsel

Exeter:

EXETER IRRIGATION DISTRICT

Dated: 11/13/13 By [signature]

Title: GENERAL MANAGER

Approved as to form:

Dated: 8/18/13 [signature]

Attorney for EXETER IRRIGATION DISTRICT

Visalia:

CITY OF VISALIA

Dated: 2/15/13

By ____________________

Title: City Manager

Approved as to form:

Dated: 2/12/13

____
Attorney for CITY OF VISALIA

Lindsay:

CITY OF LINDSAY

Dated: ____________________

By ____________________

Title: ____________________

Approved as to form:

Dated: ____________________

____
Attorney for CITY OF LINDSAY

Visalia:

CITY OF VISALIA

Dated:____________________ By____________________

Title: ____________________

Approved as to form:

Dated:____________________ ____________________

Attorney for CITY OF VISALIA____________

Lindsay:

CITY OF LINDSAY

Dated: 1/28/2013 By Ramona Villarreal-Padilla

Title: City Mayor

Approved as to form:

Dated: 2/26/2013 Julia M. Lew

Attorney for CITY OF LINDSAY

District:

KAWEAH DELTA WATER CONSERVATION DISTRICT

By_______________________________

Dated:________________________ Title: _________________________

Approved as to form:

Dated:________________________ _____________________________

Attorney for KAWEAH DELTA WATER CONSERVATION DISTRICT

LIWD:

LAKESIDE IRRIGATION WATER DISTRICT

Dated: 12-11-13 By [signature]

Title: Secretary - Manager

Approved as to form:

Dated: 12-11-13 [signature]

Attorney for LAKESIDE IRRIGATION WATER DISTRICT

TID:

TULARE IRRIGATION DISTRICT

Dated: 4/15/13

By J. Paul Hendrix

Title: General Manager

Approved as to form:

Dated: 4/17/13

Attorney for TULARE IRRIGATION DISTRICT

Tulare:

CITY OF TULARE

Dated:

By

Title:

Approved as to form:

Dated:

Attorney for CITY OF TULARE

TID:

TULARE IRRIGATION DISTRICT

Dated:____________________ By____________________

Title: ____________________

Approved as to form:

Dated:____________________ ____________________

Attorney for TULARE IRRIGATION DISTRICT

Tulare:

CITY OF TULARE

Dated: 5/7/2013 By [signature]

Title: City Manager

Approved as to form:

Dated: 05.07.13 [signature]

Attorney for CITY OF TULARE

APPENDIX F

2013 EDUCATIONAL OUTREACH PROGRAMS

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

APPENDIX F

EDUCATIONAL PROGRAMS KDWCD SUPPORTED OR PARTICIPATED IN – 2013

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

1. Water Education Central Valley Water Tour
2. Sequoia for Youth Program – 3 sessions
3. Central Valley Christian High School Agricultural Group – Terminus Dam Tour
4. KDWCD/TID Groundwater Symposium - + 300 participants
5. Mark Larsen Elected to the Water Education Foundation BOD

APPENDIX G

STATEMENT OF POLICY REGARDING
WATER TRANSFERS AND EXCHANGES

INTEGRATED REGIONAL WATER
MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL
WATER MANAGEMENT GROUP

STATEMENT OF POLICY RE WATER
TRANSFERS AND EXCHANGES
September 8, 1994

The purpose of this policy statement is to confirm the intent of the Association to retain waters of the Kaweah River and its tributaries in the Kaweah River hydrologic surface basin ("Basin") for beneficial use therein. The boundaries of the Basin are set forth on Exhibit A, appended hereto and made a part of this statement.

Each of the Member Units shall retain the right and privilege alter, amend, change or modify their respective service areas, without notice to or consent of the Association, provided that the expanded service area of the Member Unit does not extend beyond the boundary of the historical Basin. Should a Member Unit make such an adjustment to its service area, it shall so notify the Watermaster. Documentation shall be provided by the Member Unit, to the Watermaster, adequate to demonstrate that the expanded service area is within the Basin.

Water to which Member Units are entitled shall be utilized only within said Basin boundary except as provided hereinafter for periods of flood release. Transfer(s) of entitlement waters shall be allowed within the Basin upon proper notification to the Watermaster of such impending transfer(s). The Watermaster shall provide notification to the Board of Directors of any such transfer(s). Approval of the Board of Directors shall not be required for any transfer within the Basin. It is acknowledged that under certain flood release conditions, after irrigation and spreading demands have been fully satisfied and the capability of the Basin to retain flood release water has been fulfilled, flood water flows naturally to the historic Tulare Bed which lies within the Basin.

Member Units may enter into water exchange agreements which call for no net loss to the Basin of to any in-Basin water rights holder, subject to administrative rules and regulations adopted by the Board of Directors.

Transfer(s) of riparian waters or waters resulting from settlement of riparian entitlement negotiations shall not be allowed. Transfers of water received under contracts for water made available through the State Water Project, the Federal Central Valley Project or the Cross Valley Canal Exchange Program shall not be subject to these provisions.

This policy shall be implemented by the following additions to the rules and regulations effective upon adoption of the policy by the Board of Directors:

Transfers of water shall be allowed between entities for use within the Basin. Notice of an impending transfer shall be provided to the Watermaster in writing.

Exchanges of water out of the Basin shall be subject to approval of the Board of Directors. Such exchanges shall only be considered when the recipient of the water can demonstrate, to the satisfaction of the Board of Directors, that a hardship situation exists. The required information associated with the documentation of the hardship situation shall be established by the Board of Directors on a case by case basis.

An out-of-Basin water exchange agreement may be entered into by a member unit subject to approval of the Association Board of Directors. Any exchange approved by the Board of Directors shall be conditioned on the full execution of an exchange/return agreement submitted with the petition for approval. Such agreement(s) shall call for no net loss to the Basin or to any in-Basin water rights holder.

To this end, exchanges shall call for channel loss water to be withheld from the total quantity of water available for exchange in the year of the exchange.

The total quantity of water exchanged shall be returned to the Basin for further diversion to a headgate designated by the exchanger subject to coordination with the Watermaster.

To compliment the Terminus and in-Basin storage capabilities available to members of the Association, temporary out-of-Basin storage historically has been permitted on a case-by-case basis and may be permitted in the future. Authority to grant permission to store out-of-Basin shall reside with the Watermaster, subject to appeal to the Board of Directors. Permission shall be predicated on the ability of the requesting entity to demonstrate the eventual delivery within the Basin of waters temporarily stored out-of-Basin. Following removal from storage, documentation shall be provided that the water, less the normal losses, was delivered within the Basin.

APPROVED BY THE KAWEAH AND ST. JOHNS RIVERS ASSOCIATION BOARD OF DIRECTORS ON SEPTEMBER 8, 1994.

James Crook
Manager/Secretary

wp60\wtr.trn

APPENDIX H

REGIONAL ACCEPTANCE PROCESS DOCUMENTS

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

REGIONAL ACCEPTANCE PROCESS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN/TULE RIVER BASIN

INTRODUCTION

The development and management of comprehensive regional water management activities has been coordinated over the last several decades in both the Kaweah River Basin and the Tule River Basin. Leadership activities, including development of Integrated Regional Water Management Plan elements have been conducted under governance provided by the Kaweah Delta Water Conservation District (KDWCD) in the Kaweah River Basin and by the Deer Creek and Tule River Authority (DCTRA) in the Tule River Basin.

With the passage of bond propositions by the California electorate, state leadership with respect to IRWM activities has been directed by the Resources Agency to the Department of Water Resources (DWR). DWR has developed IRWM guidelines addressing numerous planning issues including issues such as Plan formatting, stakeholder development and participation guidelines and solicitations for and criteria for evaluation proposals for the funding of capital projects designed to enhance integrated water management.

As a part of the determination of the adequacy of local efforts to address IRWM planning goals and criteria, DWR embarked on a process identified as the Regional Acceptance Process or RAP for short. As a part of the RAP, DWR conducted interviews of IRWM lead agencies and participants and provided recommendations and opinions, particularly as they applied to SBXX1 funds. As a part of the RAP for the Kaweah River Basin, interview conclusions were prepared containing the conclusions and recommendations of DWR.

For a period of time, the efforts of the KDWCD and DCTRA were oriented toward the interview conclusions which were received at the close of the RAP process which stated, "…the Kaweah River Basin RWMG must consolidate their IRWM planning efforts with the Tule River RWMG. The Kaweah River Basin and Tule River IRWM Regions must explore options on how best to structure the regional boundaries in this area." Several meetings with DWR have occurred over time attempting to clarify the intent of this instruction and to determine if the RAP condition could be agreed upon by the IRWM areas and, if so, how the coordinated structure would be developed. Additional light was shed on the subject when the RAP summary was posted to the DWR website. A copy of this summary is included herewith as Appendix A.

This document clarified that for funding eligibility in subsequent rounds, "…the Kaweah River Basin and Tule River IRWM Regions must explore options on how best to structure the regional boundaries in this area. DWR's intent is to facilitate future communication and cooperation between the Kaweah River Basin and Tule River IRWM Regions, to develop a single IRWM Region that fosters integration and cooperation, and does not result in overlapping and competing planning efforts." Significant discussions have reinforced this conclusion between the General Manager of KDWCD and the IRWM program management of DWR. It is the purpose of this document to place before the governing boards of KDWCD and DCTRA the request of DWR as expressed in the RAP documents and to have both governing entities provide policy direction with regard to the IRWM structure for each river basin.

<u>CURRENT STATUS</u>

There are currently three (3) critical status elements that exist which are related to the IRWM process. The first of these is the integrated regional water management elements which exist within each river basin and which are currently functional. On an every-day basis, water management occurs in each of the basins, both with respect to the local Kaweah River and Tule River supplies, as well as the Friant Division, CVP supply. In addition, both KDWCD and DCTRA have adopted Groundwater Management Plans with current annual updates.

Specific IRWM planning efforts began in the Kaweah Basin in 1992 and are based in a Memorandum of Understanding which includes the County of Tulare, four (4) cities, three (3) irrigation districts and KDWCD. DCTRA was formed specifically for IRWM purposes with the agreement forming the Authority specifically detailing the integrated regional water management elements.

Second in the status of issues is that of a plan acceptable to DWR. For KDWCD, DWR has determined that KDWCD has a "Deemed Equivalent" Plan. DWR has determined the eligibility of KDWCD for Round 1 and Round 2 funding with a plan reformatted to DWR criteria currently being prepared in order to satisfy Round 3 eligibility requirements. For the Tule River Basin, efforts are currently underway, a portion of which is this RAP related exercise, leading to a written plan for the Tule River Basin.

The third element is that related to the advisory committee function of an IRWM area. The KDWCD has a functioning Advisory Committee through which membership issues, disadvantaged community issues, project planning functions, project evaluation functions and funding applications are directed. From its inception, DCTRA has participated in these efforts with at least one (1) if not more, representatives of the Tule River Basin area attending for input and coordination purposes.

As a fourth and adjunct venue, both KDWCD and DCTRA participate in the overall Tulare Lake Basin Joint Powers Group which meets on a monthly basis. The Group has taken steps to officially form, however, has been advised that such step was premature and the formation and functional implementation of separate advisory groups. The only point of coordination in satisfaction of the DWR requirement to coordinate planning efforts would be that related to project evaluations. At properly timed intervals, projects which have been developed, initially scored and prepared for application would be placed before the individual advisory groups and then the governing boards for both IRWM Plan areas. The project elements would be analyzed from the standpoint of improvement due to coordinated efforts between the Kaweah River Basin and the Tule River Basin. The principal basis for this coordination would be improvement of water management capability, with a shadow justification of improved capability to compete for available funding in a Tulare Lake Basin-wide competition, or even a state-wide competition arena. All other activities undertaken within the purview of an IRWM Plan area would be conducted by that area and with that area principally in mind, expanding the planning activities only with respect to project development opportunities.

Separate IRWM Plans/Single Advisory Group

The second alternative would involve creation of separate IRWM Plans with the formation of a single advisory group which would offer expanded coordination capability for planning purposes beyond that of the first option, which is directed solely at project development. At the current time, the Kaweah River Basin IRWM has a functioning advisory group which meets on a regular basis and includes representatives from all affected, impacted and regulatory groups within the Basin. Attending on a regular basis and providing input from the perspective of the Tule River Basin has been the DCTRA's secretary, along with periodic attendance from public agency managers which are member agencies to DCTRA. The expansion of this advisory group to contain member agency representation on a regular basis would satisfy this option, as the representatives of the County, the regulatory agencies and the disadvantaged communities are common to both the Kaweah River Basin and the Tule River Basin.

Policy input and specific project development input could be provided to advisory group participant members in separate individual basin settings where strategies, project goals and financial issues could initially be worked out and direction provided prior to vetting at the advisory group level. It would appear that this option would lead to coordination between the basins on more than just a project development level, with only time telling whether separate advisory groups coordinated together as described in the separate advisory group option would be superior.

Joint IRWM Plan/Joint Advisory Group

The last of what appears to be the currently viable options would call for the creation of a joint IRWM Plan with a single advisory group. This option would necessitate the current governing entities to embark on an evaluation of governance options which would be viable for a combined basin effort and which would provide for a structure which would adequately address the individual needs of the basins. The goal would be to function on a completely coordinated, single-source planned basis yet addressing the needs of the individual basins. From a planning coordination perspective, this option allows for the most complete integration of the project development, project optimization and funding competition perspectives. The governing boards will have to determine, however, if this planning advantage allows for the capability to properly address the fact that actual water management activities do not currently take place on an integrated basis, most times not on even a coordinated basis. Project planning, financing and implementation are but an element of integrated water management with principal daily activities

No. 14 - Kaweah River Basin Integrated Regional Water Management Region

Region Acceptance Process Summary

General Description of Region

The Kaweah River Basin Integrated Regional Water Management (IRWM) Region is comprised of approximately 340,000 acres in the counties of Tulare and Kings. This Region is within the Tulare Lake Hydrologic Unit. This Region is defined primarily by hydrologic boundaries, except the southern boundary which is defined by the Tule River IRWM Region. Kaweah River Basin IRWM Region boundaries follow the watershed boundary formed by in-part by Cottonwood Creek to the north. However, this creates a small overlap with the Upper Kings Water Forum IRWM Region's southern boundary. Also, small islands of non-participation within the proposed Kaweah River Basin Region exist, such as the City of Exeter.

The Kaweah Delta Water Conservation District (KDWCD) has acted as the lead agency in the management of water resources available to the Kaweah River Basin, particularly as they have applied to groundwater resources and flood and storm water control.

Several agencies have executed a Memorandum of Understanding (MOU) and include KDWCD, Exeter Irrigation District, and the City of Lindsay. Several petitions also have been recently submitted to join in the MOU, including the City of Visalia, the County of Tulare, the Tulare Irrigation District, the City of Tulare, the Ivanhoe Irrigation District, and the St. Johns Water District. Principal water management activities undertaken by the cooperating agencies within the Kaweah River Basin have joined together with multiple agencies for management of pre-1914 water rights, groundwater management, and development of a formal IRWM Plan. The Kaweah River Basin IRWM Region has a functionally equivalent plan. This IRWM Region has indicated that there is ongoing coordination and cooperation with neighboring IRWM Regions, in particular with the Tule River IRWM Region.

Interview Conclusions- Conditional Approval for SBXX1 Funds

DWR approves the Kaweah River Basin IRWM Region to allow this Region to complete for planning and implementation funding from Senate Bill XX1 (Perata, Stats. 2008, Ch. 1), California Water Code §83000-

83002.7. However, for subsequent funding rounds, the Kaweah River Basin and Tule River IRWM Regions must explore options on how best to structure the regional boundaries in this area. DWR's intent is to facilitate future communication and cooperation between the Kaweah River Basin and Tule River IRWM Regions, to develop a single IRWM Region that fosters integration and cooperation, and does not result in overlapping and competing planning efforts. Nearby "gap" areas, not covered by the Kern County, Poso Creek, Tule River, Kaweah River, or Southern Sierra IRWM Regions should also be considered for inclusion in the IRWM planning effort.

The stated communication and cooperation, region boundary structure, as well as inclusion of "gap" areas, will be considered when determining future region approval and eligibility for subsequent funding rounds.

STAFF RECOMMENDATION
REGIONAL ACCEPTANCE PROCESS
INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN/TULE RIVER BASIN

JOINT BOARD MEETING

On Friday, June 21, 2013, the governing Boards of the Kaweah Delta Water Conservation District and the Deer Creek and Tule River Authority (DCTRA) met in joint session. The purpose of the meeting was to review a document related to the Regional Acceptance Process (RAP), in preparation for separate board meetings to be held in July, 2013. Prior to the end of July, 2013, the objective is to provide direction with respect to the implementation procedures which the governing boards desire to see included in the Integrated Regional Water Management (IRWM) planning process, including preparation of Plans formatted to meet the requirements of the State Department of Water Resources (DWR).

At the conclusion of the joint meeting of the Boards, the following were observations made by those present:

- It was the feeling of all present that the coordination which DWR desired to see in place between the Kaweah River Basin and the Tule River Basin was already in place and functioning.

- The Board members pointed to a number of specific coordination issues, including water exchanges, which have and continue to take place between the basins in response to the variable hydrology within the two (2) basins and out of the San Joaquin River. It was noted that there were participants from the Tule River Basin which were the recipients of water from two (2) different programs being implemented this year with Kaweah River water leaving the Kaweah River Basin to assist farmers outside of said basin.

- Board members noted that the Stone Corral Irrigation District was a member of DCTRA and had participated in the construction of the DCTRA recharge ponds and could enjoy the benefits of puts and takes from banking programs involving said ponds.

- In addition, the Stone Corral Irrigation District had participated in the DCTRA exercise which set the stage for many of the current DCTRA based programs wherein assets and needs of the member agencies were delineated and program matches were identified.

- The Boards further noted the coordination which occurs at the Friant Water Authority level based on the number of Friant Division, CVP contractors existing within each of the subject river basins. It was noted that this coordination extended beyond just project development coordination into significant policy and legislation arenas.

- As a final item, the Boards noted that the Tule River Basin has been participating in the IRWM Advisory Group formed for the Kaweah River Basin and has been treated as a member of said Advisory Group with specific coordination taking place on a number of levels between the river basins as a result of that participation. It was further noted that agencies such as Tulare County and disadvantaged community participants had parallel interests in both basins and coordination of issues related to Tule River Basin issues had and would continue to occur as a result of the open-door policy which exists with respect to the Advisory Group structure and participation rules.

The Board members and staff who were present noted that the extension of the current efforts to include a thorough vetting of proposed projects would be relatively easy to add to the existing process and that it appeared that a common Advisory Group orientation would satisfy the basis for this coordination to occur. It was noted that projects such as the merging of the current individual basin groundwater models and evaluation of the needs and capabilities of each of the existing water management entities within the Tule Basin could be expanded to include entities within both basins. In addition, the expansion of the Advisory Group membership to include additional Tule River Basin members beyond that which currently exist could be implemented readily.

RECOMMENDED ACTION

The meeting concluded with instruction being given to staff and consultants to formulate a recommendation based on the conclusions of the governing boards as of the date of their joint meeting and to provide recommendations prior to the July, 2013, meetings for consideration for policy instruction adoption by the governing boards.

It is therefore the recommendation of the participating member staffs and consultants for both river basins that the following policy instruction be ratified by each of the governing boards:

1. The Kaweah River Basin and the Tule River Basin would continue their existing Integrated Regional Water Management procedures and implementation of related policies as they apply to each specific basin;

2. That the IRWM Plan structures be developed on a DWR acceptable format specific to each river basin;

3. That the existing Kaweah River Basin Advisory Group be retained and expanded to include Tule River Basin membership. The Advisory Group meeting location would be rotated between the basins so as to encourage participation by water management entities and disadvantaged communities specific to each basin. A specific task being given to the Advisory Group would be to address the project evaluation process and, in particular, the evaluation of projects from the perspective of improvement if projects were designed on a multi-basin format, in lieu of just a single basin format;

4. That specific steps be taken to update and expand the prior activity of the DCTRA to delineate needs and capabilities within the participating entities between both Plan areas; and

5. The structure should be reviewed in no more than five (5) years to allow for the opportunity of strengthening, confirmation or modification of the policies and procedures based on the success of implementation.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY | EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

January 22, 2014

Mr. Mark Larsen
General Manager
Kaweah Delta Water Conservation District
2975 North Farmersville Boulevard
Farmersville, California 93233

Dear Mr. Larsen:

The purpose of this letter is to express concerns the Department of Water Resources' (DWR) has regarding communication with and timely action by Kaweah Delta Water Conservation District (KDWCD) by the Round 2 Planning grant agreement. The initial planning grant award was made over a year ago (November 29, 2012); DWR is still waiting for information from KDWCD so that the agreement can be drafted. Due to the length of time between the grant award and today, I had my staff review communications (letters, emails) that occurred over the past year regarding the planning grant. This review revealed two items of interest, one is that DWR was remiss on finishing the Region Acceptance Process (RAP) with KDWCD and that there seems to be long running confusion between our agencies regarding the planning grant.

Regarding the RAP, on July 23, 2013, KDWCD sent an email to DWR containing documentation supporting the consideration and ultimate decision by KDWCD and the Deer Creek and Tule River Association that the Kaweah and Tule IRWM regions remain separate and requesting a meeting to discuss the material. On August 23, 2013, I sent an email to you stating we did not need to meet. DWR should have formally acknowledged at that point the September 2009 RAP conditions were satisfied. DWR regrets the time it took to formalize this decision and has removed your conditional RAP acceptance and updated our website to reflect this decision. This letter serves as your official notice that the RAP condition has been satisfied and Kaweah and Tule IRWMs are fully accepted regions.

Regarding activity on the planning grant, when we met January 2013, you mentioned that a portion of the plan was already drafted. Our intent for asking to see the plan was so we could ensure the planning grant scope was complementary to the current plan status. To date our requests to view the plan so we could draft the scope of the grant have been continually delayed. The following is a brief overview of events related to the plan development.

- The planning grant award was made on November 29, 2012.
- In a letter to DWR dated January 16, 2013, you indicated that the draft IRWM plan was scheduled to be released in August of 2013 and adopted in October of 2013.
- In DWR's planning grant commitment letter dated February 7, 2013, DWR requested that a meeting be held prior to February 19, 2013 to discuss how the scope of the planning grant supplements the draft IRWM plan, and that the most recent draft of the IRWM plan was to be provided to DWR prior to this meeting.
- In an email dated February 27, 2013, KDWCD indicated that plan was not in readable format.
- In an email dated March 6, 2013, DWR clarified that our request was not related to distributing the draft plan to stakeholders for comment, and that we were asking KDWCD to share with DWR the current version of the plan to support agreement development.
- In a June 25, 2013 email, DWR stressed the need to review the draft IRWM plan prior to executing the agreement.
- On December 8, 2013 email from your staff to DWR included an attached schedule that appears to indicate that work on the draft IRWM plan has actually been ongoing and that the draft IRWM plan will be provided to DWR and stakeholders on February 4, 2014, and considered for adoption March 4, 2014.

It is interesting to note the timing of recent plan activities (release of draft to stakeholders) seems to coincide with the Round 2 Planning Grant Application schedule. This seems to indicate that KDWCD has proceeded with drafting a plan without use of the planning grant funding. The planning grant award is intended to aid IRWM practitioners in developing their plans. Therefore DWR is not certain if the grant is needed or if DWR can support the work of drafting the plan that is now scheduled for release in February. It is important that we meet to discuss the lack of progress on the planning grant agreement in light of the status of the draft IRWM plan and to discuss whether the grant is still viable. One of my staff will be contacting you to set a meeting.

If you have any questions, please contact Joe Yun at (916) 651-9222 or Joe.Yun@water.ca.gov.

Sincerely,

Tracie L Billington

Tracie Billington, P.E., Chief
Financial Assistance Branch
Division of Integrated Water Management

cc: Mr. Don Mills
President
Kaweah Delta Water conservation District
2975 North Farmersville Boulevard
Farmersville, California 93233

Mr. Shane Smith
Projects/Administrative Manager
Kaweah Delta Water Conservation District
2975 North Farmersville Boulevard
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APPENDIX I

OUTLINE OF POTENTIAL TRAINING AND TECHNICAL ASSISTANCE

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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MEMORANDUM

DATE: August 23, 2013

TO: Mark Larsen

FROM: Dennis Keller

SUBJECT: OUTLINE OF POTENTIAL TRAINING AND TECHNICAL ASSISTANCE ACTIVITIES - KAWEAH DELTA WATER CONSERVATION DISTRICT

A potential arena for IRWM activities related to disadvantaged area drinking water activities is that of technical assistance. The U.S. Environmental Protection Agency, Office of Water, Office of Groundwater and Drinking Water current funding opportunity entitled "Training and Technical Assistance to Improve Water Quality and Enable Small Public Water Systems to Provide Safe Drinking Water" provides an outline of training and technical assistance activities that are segregated into four (4) National Priority Areas. Summarized below are the training and technical assistance activities which fall under each of those areas which may have application to the Kaweah River Basin:

1. Training and Technical Assistance for Small Public Water Systems to Achieve and Maintain Compliance with the Safe Drinking Water Act:

    - Provide operator training and technical assistance on how to comply with the SDWA, with emphasis on regulatory requirements which present a particular challenge for small systems;
    - Provide training to decision makers and board members regarding SDWA requirements;
    - Provide training/technical assistance to diagnose and trouble-shoot system operational and compliance-related problems and identify solutions;
    - Provide training/technical assistance and solutions to address microbial, nitrate/nitrite and disinfection byproducts contamination;
    - Provide training and technical assistance to systems to help develop and implement source water protection plans;

- Conduct preliminary engineering evaluations to assess treatment, storage and distribution system issues and identify low-cost alternative technology and management techniques; and/or
- Provide training for operator certification and continuing education (CEU). Applicants should describe how they would obtain state approval for CEU credits for their training courses.

2. Training and Technical Assistance to Improve Financial and Managerial Capacity and Enable Small Water Systems to Provide Safe Drinking Water:

   - Provide training and technical assistance to improve the knowledge and skill competency of drinking water system personnel in the areas of managerial and financial capacity;
   - Provide training sessions for water system managers and board members in asset management, fiscal planning and other sustainable management topics;
   - Provide training and technical assistance in asset management program implementation;
   - Provide training and technical assistance to develop financial assessments and rate analyses;
   - Conduct energy audits and water loss analyses to determine potential energy and water efficiencies and cost savings;
   - Work with systems to conduct analyses on the potential benefits of partnerships and collaboration with other systems, including shared operators and treatment, restructuring and consolidation, thereby enabling them to become financially sustainable and to provide safe and affordable water to their communities; and/or
   - Assist systems to access and manage multiple infrastructure funding sources to address public health risks and achieve compliance.

3. Training and Technical Assistance for Small Publicly-Owned Wastewater Systems and On-Site/Decentralized Wastewater Systems to help improve water quality:

   - Preliminary needs analysis;
   - Consideration of alternatives for treatment options, including advanced treatment, nutrient control, low impact development and other green infrastructure practices;
   - Project planning and design;
   - Development of maintenance schedules;

- Assistance identifying and applying for funding sources;
- Assistance forming responsible management entities (RMEs) and supporting the development of a long-term business plan;
- Training of community leaders, service providers and regulatory officials to assist in consideration of alternatives, highlight the importance of management, facilitate certification of installers and operators;
- Outreach to individual system owners and the general public during the planning process to gain trust and support for solutions; and/or
- Outreach to individual system owners and the general public on proper maintenance techniques.

4. Training and Technical Assistance for Private Homeowners to Help Improve Water Quality:

   - Developing and/or providing online and hard copy information and materials on topics of interest to private well owners, such as well construction, well maintenance and operation, well testing, groundwater quality and protection, state regulations impacting private wells, water rights, and how to respond to well contamination emergencies;
   - Providing information, technical assistance and training to other organizations with activities that affect private well owners;
   - Adequately maintaining a hotline with a toll-free number for private well owners to call or timely assistance and advice on private well matters;
   - Providing electronic newsletters or using social media to provide topical or emergency information quickly to private well owners with internet access; and/or
   - Educating private well owners through face-to-face visits regarding potential or actual threats to their wells and whom to contact for help.

We have started to watch for funding opportunities for this approach to the water quality issue. We will not pursue any pathway related to this approach to the alternative ILRP process without specific direction from either you or the Board.

APPENDIX J

KDWCD STAKEHOLDERS ADVISORY GROUP

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

KAWEAH RIVER IRWMP STAKEHOLDER GROUP

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APPENDIX K

KDWCD IRWMP SCORING CRITERIA

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

KAWEAH RIVER BASIN IRWMP
PROJECT SUB-SCORING

Proposed DAC Scoring Criteria for IRWMP Projects

Each project in the plan will be scored using the following criteria:

Definitions

- Disadvantaged Community (DAC): Community Median Household Income (MHI) is 80% of statewide MHI.
- Severely Disadvantaged Community (SDAC): Community MHI is 60% of statewide MHI.
- Negative Impacts – includes, but is not limited to, emissions from stationary or mobile sources, discharges from project site that reduce area water quality, or water supply, increased likelihood of flooding, increase traffic, and noise.

Points Awarded for Projects Benefiting DACs

- +1 - Generalized Benefit: The project alleviates a general regional problem that is also experienced by DACs, but will not address a DAC-specific priority; ex. open space/natural restoration opportunities are near community, but not readily accessible; increases groundwater supply generally, but doesn't secure water supply for a DAC experiencing supply problems.

- +2 – Measurable Benefit to at least one DAC with no formal DAC participation: The project directly benefits a DAC (ex. community drinking water quality or supply, wastewater or flooding problem) but the project does not include DAC representation and consultation during the entire course of project planning, design, and development, as well as DAC representation and consultation during project implementation and monitoring.

- +3 – Measurable Benefit to at least one DAC with DAC participation: The project directly benefits a DAC (ex. community drinking water quality or supply, wastewater or flooding problem) and the project includes DAC representation and consultation during the entire course of project planning, design, and development, as well as DAC representation and consultation during project implementation and monitoring.

- +4 – Alleviates a public health & safety problem in at least one DAC with DAC participation: The project directly alleviates a priority public health and safety water problem in at least one DAC (ex. community drinking water quality or supply, wastewater or flooding problem) and the project includes DAC representation and consultation during the entire course of project planning, design, and development, as well as DAC representation and consultation during project implementation and monitoring.

- +5 – Alleviates a public health & safety problem in at least one SDAC with SDAC participation: The project directly alleviates priority public health and safety water problem in at least one SDAC (ex. community drinking water quality or supply, wastewater or flooding problem) and the project includes SDAC representation and consultation during the entire course of project planning, design, and development, as well as SDAC representation and consultation during project implementation and monitoring.

No project will be approved if it may negatively impact a disadvantaged community or a community already impacted by environmental health hazards.

-

Water Quality Proposed Scoring Criteria for IRWMP

+1 Indirect impact

Project has positive effect although it wasn't part of the project's vision

-Although the project is not to improve water quality it has an indirect affect such as increasing quantity

-Increases amount of surface water available which has an impact on quality

- Reduces the amount of pumping required
- Flood control
- Conservation/water use efficiency
- Education/ BMP*

+2 Indirect impact

Project has positive effect and it is part of the project's vision

Mitigates by dilution - Recharge projects

Urban runoff management

Matching quality to use

Education/ BMP*

+3 Direct impact

Project would address sources of potential pollution

Recharge areas protection from contamination

Education/ BMP*

+4 Direct impact

Project addresses public drinking water systems and private domestic wells directly - Secondary contaminants

Education/ BMP*

+5 Direct impact

Project mitigates or improves quality by addressing sources of pollution

Protect Water Quality

Remediate surface and groundwater contaminants

Properly destroy abandoned wells

Project addresses drinking water and domestic wells directly - access to SDW

Addresses Primary Drinking Water contaminants such as nitrate, DBCP, arsenic, radiological and bacteriological

Addresses salinity

Education/ BMP*

TO BE CONSIDERED:

- Time duration of value of action would effect scoring.
- Education/ BMP*could fit into any of these categories but should be scored based on impact and effectiveness
- Ranking would vary if project is in a vulnerable or non-vulnerable area
- **Projects that have a negative impact on water quality would not be recommended for funding**

Proposed Natural Resource Conservation and Restoration NRC&R) Scoring Criteria for IRWMP Projects

Prepared by Tulare Basin Wildlife Partners:
Revised: 9 March 2009

The primary environmental goals for the Tulare Basin are: (1) protection and restoration of riparian habitats; (2) protection and restoration of wetland habitats; (3) protection and restoration of upland habitats, corridors and linkages; 4) protection and restoration of natural habitat heterogeneity; (5) protection and restoration of functioning landscape-level ecological processes; and (6) protection and restoration of key ecosystem structures appropriate for the habitat.

The Environmental Scoring Matrix presented in Table 1 shows these goals or desired outcomes that can be applied to specific projects. It also shows tools that can be used to attain these desired outcomes. The scores in this matrix are above and beyond any habitat mitigation that state or federal agencies might require to fund a given project.

Table 1. Environmental Scoring Matrix for IRWMP

	Tools					
Desired Outcomes	Protect Existing Habitat	Create New Habitat	Develop and Use Best Management Practices	Develop and Implement Adaptive Management Plan	Unweighted Total	Weighted Total
Riparian Habitat	4	4	1	1	0-10	0-30
Wetland Habitat	4	4	1	1	0-10	0-30
Habitat Heterogeneity	4	4	1	1	0-10	0-30
Upland Habitat	4	4	1	1	0-10	0-10
Functioning Landscape Processes	4	4	1	1	0-10	0-10
Key Ecosystem Structures Appropriate for Habitat	4	4	1	1	0-10	0-10
Total	24	24	6	6	0-60*	0-120

* The total score can be apportioned so as to be proportionate to the maximum score that may be available for a given IRWMP category in any of the various IRWMP planning

efforts. Under the Kaweah Plan, for example (where there are a total of 5 IRWMP Environmental Scoring Points available), 12 Environmental Criteria Points are equal to 1 IRWMP Scoring Point.

Description of Desired Outcomes

Riparian Habitat - Stream-side or pond-side vegetation that is dominated by willows, cottonwoods, button willow, valley oak, or other native moisture-dependent vegetation. Riparian corridors and linkages are vitally important to the long-term sustainability of plant and animal populations. This is especially important in long-term planning for the effects of climate change.

Wetland Habitat - Areas that support native marsh or vernal pool vegetation (and wildlife that are dependent on these habitats). Wetlands can include areas that are managed for wintering waterfowl, summer breeding habitat, migratory shorebirds (including mudflat areas) or are year-round (permanent) wetlands.

Habitat Heterogeneity – Natural Tulare Basin landscapes tend to have relatively high habitat heterogeneity. Uplands grade into wetlands, often with a change of only a few feet in elevation.

Upland Habitat – Upland habitat is not dependent on stream-flow or surface runoff. Upland habitats in the Tulare Basin are chiefly grasslands, scrub habitats, and oak woodland. Upland habitat corridors and linkages are vitally important to the long-term sustainability of plant and animal populations. This is especially important in long-term planning for the effects of climate change.

Functioning Landscape Processes – These processes include fires (and their frequency), floods (and their frequency), type of grazing, and erosion (or lack thereof). Some of these processes provide society with vital ecological services such as purification of water or reduction of air pollution.

Key Ecosystem Structures Appropriate for Habitat – These ecosystem structures are important micro-habitats that could include nesting island in wetlands, micro-topography in valley uplands, cliffs in foothill or mountain areas, and old-growth trees and snags in forested areas.

Description of Point system

Protect Existing Habitat (0-4 scale)

In the following four categories, "protection" assumes that the land area under consideration (whether it is existing habitat, restored/created habitat, or is intended for ecological restoration/creation) has already been purchased in fee title or is covered by an appropriate easement (a conservation easement, a management easement, or an agricultural easement) in perpetuity. Points should be allocated according to the following guidelines:

1. **Strict Nature Reserve**: protected area managed mainly for science. A Strict Nature Reserve is an area of land and/or water possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring. These areas have a management plan operation to maintain a natural state within which disturbance events (of natural type, frequency, and intensity) are allowed to proceed without interference or are mimicked through management (Example: A nature reserve used exclusively for scientific research and/or environmental monitoring). Lands managed as Strict Nature Reserves earn the maximum score (4 points) in the *Protect Existing Habitat* column.
2. **Habitat/Species Management Area**: protected area managed mainly for conservation through management intervention. A Habitat/Species Management Area is an area of land and/or water subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species. Habitat/Species Management Areas have a mandated management plan operation to maintain a primarily natural state, but which may receive use or management practices that degrade the quality of existing natural communities (Example: National Parks). Habitat/ Species Management Areas earn 3 points in the *Protect Existing Habitat* column.
3. **Managed Resource Protected Area**: protected area managed mainly for the sustainable use of natural ecosystems. A Managed Resource Protected Area is an area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs. Managed Resource Protected Areas are subject to extractive uses of either a broad, low-intensity type of localized intense type. These areas also confer protection to federally listed endangered and threatened species throughout the area (Example: National Forests). Managed Resource Protected Areas earn 2 points in the *Protect Existing Habitat* column.
4. **Protected Landscape**: protected area managed mainly for landscape conservation and recreation. A Protected Landscape is an area of land and/or water, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological, recreation, and/or cultural value, and often with high biological diversity. Protected Landscapes allow for intensive use throughout the tract, or existence of such restrictions is unknown (Examples: County Parks and grazing easements on private land). Lands managed as protected landscapes earn 1 point in the *Protect Existing Habitat* column.

Create New Habitat (0-4 scale)
Projects that 'Create New Habitat' are assumed to include active intervention to improve highly degraded, severely damaged, or destroyed ecosystems. Points in this category should be allocated according to the following four guidelines.

NB: Any project that creates new habitat earns a minimum of 2 points; if this tool is not utilized, 0 points should be given.

1. **Restoration** – Ecological restoration can be defined as "an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability" (SER 2004). Ecological restoration usually has an end goal of establishing an ecological condition which closely approximates the pre-disturbance condition. This may include, to the greatest practicable extent, returning an ecosystem to its original community structure, restoring natural ecosystem processes, and reestablishing key indigenous species. The practice of ecological restoration includes a wide scope of projects including, but not limited to: erosion control, reforestation, removal of non-native species and weeds, revegetation of disturbed areas, daylighting streams, reintroduction of native species, as well as habitat and range improvement for targeted species. Ideally, the restored ecosystem should be self sufficient and adequately resilient to endure the normal periodic stress events in the local environment that serve to maintain the integrity of the ecosystem (SER 2004). Ecosystem restoration projects earn 4 points in the *Create New Habitat* column.
2. **Reclamation** – to return an ecosystem to a useful state. Reclamation may include the establishment of a functional vegetative composition different than the pre-disturbance condition, but consistent with the native vegetation for the region and regional habitat goals. Reclamation often includes the stabilization of the terrain, aesthetic improvement, and the reinstitution of productive or useable habitat. Reclamation may return an area to a more natural state after, for example, pollution, desertification or salination have made it unusable. Reclamation projects earn 3 points in the *Create New Habitat* column.
3. **Remediation** – to remove an undesirable condition from an ecosystem. Environmental remediation deals with the removal of pollution or contaminants from soil, groundwater, sediments, or surface water for the general protection of human health and the environment. Sometimes, due to fundamental changes to environmental conditions, an ecosystem cannot be restored and a new ecosystem will need to be created; this is remediation (New South Wales Department of Infrastructure, Planning and Natural Resources 2004). Remediation projects earn 2 point in the *Create New Habitat* column.

Best Management Practices (0-1 scale)
Best management practices (BMPs) are guidelines that show the best way to manage each habitat (after acquisition and/or restoration) to provide the benefit or outcome that is desired. If the goal is to manage for special status species (any species that is listed as Threatened, Endangered, Sensitive, Species of Special Concern, Rare, etc) such as Tipton kangaroo rats or blunt-nosed leopard lizards, intensive grazing of the habitat might be necessary. If high native plant diversity is the goal, lighter, rotational grazing might be prescribed. If BMPs are applied to a project, that project earns a point under the BMP column.

Adaptive Management Plan – (0-1 scale)
An adaptive management plan provides for monitoring to determine whether or not the desired outcomes are being met. This monitoring takes place over an appropriate timescale to determine these outcomes. If the desired outcome is not being achieved, the

monitoring data will be used to develop new management practices that will successfully lead to the desired outcome. Projects with adaptive management plans earn a point in the Adaptive Management Plan column.

Weighting Points According to Project Size

Larger protected areas typically support a greater diversity and abundance of plants and animals and are generally able to sustain more natural ecosystem processes than smaller areas. Larger protected areas also tend to contain a greater diversity of habitats, allowing greater populations of species to persist over time (Environmental Law Institute 2003). Correspondingly, projects that restore or protect large intact areas, or projects that supplement or connect existing critical habitat areas should be prioritized over smaller and more isolated projects.

The following guide will provide multipliers with which to 'weight' a given project based on size. Critical or beneficial threshold sizes differ for different habitats; the guidelines below and habitat descriptions on page 2 should be used to apply the appropriate weight to a given project. The weighting factor should be multiplied times the row total for the appropriate desired outcome. These weights may only be applied to projects containing Riparian Habitat, Wetland Habitat, and/or Upland Habitat.

If a project covers multiple habitats, weight the row total appropriately for each habitat type encompassed within the project area.

If a project connects, or is contiguous to an existing protected area *add* three points to the final project score.

An example is given on page 7.

Upland habitat:

- Less than 80 acres: Weighting Factor = 1
- 80 – 320 acres: Weighting Factor = 2
- Greater than 320 acres: Weighting Factor = 3

Riparian habitat

- Less than 1000 feet in length and less than 100 feet wide for at least 75% of the stretch: Weighting Factor = 1
- 1000 feet to 1 mile in length and 100 feet to 300 feet wide for at least 75% of the stretch: Weighting Factor = 2
- Greater than 1 mile in length and greater than 300 feet wide for at least 75% of the stretch: Weighting Factor = 3

Wetland habitat

- Less than 10 acres: Weighting Factor = 1
- 10-50 acres: Weighting Factor = 2
- Greater than 50 acres: Weighting Factor = 3

<u>**References:**</u>

1. New South Wales Department of Infrastructure, Planning and Natural Resources. 2004. *Georges River Catchment: Guidelines for Better Foreshore Works.* http://www.planning.nsw.gov.au/plansforaction/pdf/grc_better_practice_guideline.pdf
2. Environmental Law Institute. 2003. *Conservation Thresholds for Land Use Planners.* http://www.seagrant.noaa.gov/focus/documents/SCD/ConservationThresholdsforLandUsePlanners.pdf
3. Society for Ecological Restoration International Science & Policy Working Group. 2004. *International Primer on Ecological Restoration.* www.ser.org & Tucson: Society for Ecological Restoration International

Table 2. Project X will protect and reclaim 25 acres of wetland habitat adjacent to a 400-acre upland wildlife refuge. Project X will be subsequently maintained as a Managed Resource Protected Area. Waterfowl hunting will be allowed. Managers will use best management practices for targeted special status species and develop and adaptive management plan.

	Tools					
Desired Outcomes	Protect Existing Habitat	Create New Habitat	Develop and Use Best Management Practices	Develop and Implement Adaptive Management Plan	Unweighted Total	Weighted Total & Additional Points
Riparian Habitat	0	0	0	0	0	0
Wetland Habitat	2	3	1	1	7	14
Habitat Heterogeneity	2	3	1	1	7	7
Upland Habitat	0	0	0	0	0	0
Functioning Landscape Processes	2	3	1	1	7	7
Key Ecosystem Structures Appropriate for Habitat	2	3	1	1	7	7
Total	8	12	4	4	28	38

Water Supply Scoring Items

WATER SUPPLY SCORING

DESIRED OUTCOMES	TOOLS				Total
	SURFACE WATER STORAGE	GROUNDWATER	CONVEYANCE	SUPPLY	
QUANTITY	0 - 3	0 - 3	0 - 3	0 – 3	0 - 12
RELIABILITY	0 - 1	0 - 1	0 - 1	0 - 1	0 - 4
FLEXIBILITY	0 - 1	0 - 1	0 - 1	0 - 1	0 - 4
Total					0 - 20

QUANTITY:

- Does the project increase surface water storage? An increase of 0 acre-feet = 0 points, up to 200 acre-feet = 1 point, +200 - 4000 acre-feet = 2 points, +4000 acre-feet = 3 points.
- Does the project involve percolation to groundwater? A soil percolation of 0" inches per day = 0 points, up to 3" inches per day = 1 point, +3" – 6" = 2 points, +6" inches per day = 3 points.
- Does the project increase the amount of water that can be conveyed? 0 cfs increase = 0 points, up to 50 cfs = 1 point, +50 – 250 cfs = 2 points, +250 cfs = 3 points.
- Does the project increase the water supply to the area? 0 acre-feet increase = 0 points, up to 1000 acre-feet = 1 point, +1000 – 2500 acre-feet = 2 points, +2500 acre-feet = 3 points.

RELIABILITY: (No = 0 points, Yes = 1 point.)

- Does the project increase the reliability of the surface water storage in the area? For example: Will this additional storage improve the ability to distribute water according to demand?
- Does the project increase the reliability of groundwater in the area? For example: Will the increased ability to manage groundwater supplies reduce overdraft or increase safe yield?
- Does the project increase the reliability of the conveyance system in the area? For example: Will the project improve the ability of the conveyance system to be able to convey water when needed?
- Does the project increase the reliability of water supply to the area? For example: Will the project increase the firmness of the water supply?

FLEXIBILITY: (No = 0 points, Yes = 1 point.)

- Does the project increase flexibility to the area in regards to surface water storage? For example: Will the additional storage be a multiple use facility for recharge, and re-regulation, or is it a single use facility?
- Does the project increase flexibility to manage groundwater? For example: Will the additional groundwater recharge/extraction ability increase the ability to develop or utilize groundwater?
- Does the project increase flexibility to convey water in the area? Fore example: Will the addition of conveyance facilities allow more options for water distribution?
- Does the project increase flexibility to manage water supply? For example: Will the addition of the water supply to the area expanded the water management options through timing, place of use, or other options?

Flood Control Scoring Items

Flood Control Scoring Criteria

The following are criteria to be considered when evaluating/comparing the benefits of potential projects that portend to have a flood control function as part of an overall program of project evaluation for projects to be part of the Kaweah River Integrated Regional Water Management Plan. This criteria is not to be used for projects that have flood control as their primary function:

(1) Are there any flood control benefits to be provided by the subject project?
- Yes - 1 point;
- No – 0 points.

(2) Is life being protected as a result of the flood control aspects of the subject project (the flood control aspects of the project significantly reduce the depth of water to an area with a population of 50 persons or more)?
- Yes - 1 point;
- No – 0 points.

(3) The balance of the total of five points used to differentiate the flood control aspects of projects are all based around the benefit/cost ratio and the size of the project; where BC equals the dollar amount of the flood control benefit provided by the project divided by the incremental costs associated with providing just the flood control aspects of the project.
- If the magnitude of the annual flood control benefit is in excess of $1 million per year then:
    - For BCs of 1.0 to 2.0 – 1 point;
    - For BCs of 2.0 to 3.0 – 2 points;
    - For BCs of 3.0 or more – 3 points.
- If the magnitude of the annual flood control benefit is less than $1 million per year then:
    - For BCs of 2.0 to 3.0 – 1 points;
    - For BCs of 3.0 or more – 2 points.

There was also discussion of if a project has flood control aspects that result in adverse impacts being redirected to other areas whether the project should warrant being included in an integrated regional water management plan at all. Additionally, where there already exists storm water or flood control planning documents that call for certain projects or actions, that if a project is reflected in these planning documents it should be awarded higher consideration, similar to if a project is included in a groundwater management plan or an ag/urban water conservation plan.

APPENDIX K ADDITION

INTEGRATED REGIONAL WATER MANAGEMENT PLAN
KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Scoring Category: San Joaquin River Restoration Impacts Mitigation

0-3 points – Proposed Project

Degree to which a Proposed Project addresses the contract quantity declaration reduction resulting from implementation of the San Joaquin River Settlement Agreement and the significance of financial assistance made available through the IRWM process to the implementation of the Proposed Project.

+1 point – Proposed Project's Impact on a City With an Urban Water Management Plan

If a Proposed Project to address the impacts resulting from implementation of San Joaquin River Restoration is designed and located such that groundwater recharge benefits accrue to a city with an Urban Water Management Plan, award of an additional point shall be granted.

+1 point – Proposed Project's Impact on a Disadvantaged Community

If a Proposed Project to address the impacts resulting from implementation of San Joaquin River Restoration is designed and located such that groundwater recharge benefits accrue to a verified disadvantaged community, award of an additional point shall be granted.

APPENDIX L

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

KAWEAH DELTA WATER CONSERVATION DISTRICT

This appendix contains the technical memorandums and reports that comprise the Kaweah Basin Imported Water Vulnerability Study conducted by Provost and Prichard Consulting Group, MBK Engineers and Daniel B. Steiner Consulting completed in April of 2017.

Over the last several years significant surface water supply issues have developed that are redefining the understood water balance of the Kaweah Groundwater Sub-basin. One of these is the San Joaquin River Restoration Settlement that has reduced the expected yield from Friant Division CVP contract supplies into the Sub-basin. The other is the implementation of the Endangered Species Act as it relates to the operations of the federal Central Valley Project and the State Water Project, particularly in the Sacrament/San Joaquin Rivers Delta (Delta). Federal district court decisions (Wanger Decisions[1]) have limited CVP and SWP surface water export pumping south of the Delta and significantly reduced the amount of surface water available to areas adjacent to the Region that pump groundwater from common groundwater aquifers. Only four or five years ago it was understood from Regional water models that the Kaweah Sub-basin was approximately 20,000 to 40,000 acre-feet per year in overdraft. However, recent updates to these analytical tools have indicated that the combined impacts from the San Joaquin River Restoration Settlement and the Wanger Decisions may have increased the Regional overdraft to somewhere between 100,000 acre-feet and 150,000 acre-feet per year.

Given the dramatic change that is becoming more and more apparent regionally (and was amplified and demonstrated by the drought years of 2014 and 2015), we evaluated the potential magnitude of the imported surface water supply changes and impacts within the Kaweah Sub-basin. A “bookends” approach was used to assess possible outcomes with different assumptions as to the most significant regulatory controls that dictate the amount of water available from CVP and SWP exports, and the resultant ability to meet the requirements of the Exchange Agreement that makes a large portion of the San Joaquin River generated water supply available to the Friant Division of the CVP. We were also tasked with updating past analysis of the impacts of the San Joaquin River Settlement on the availability of Friant Division CVP water supplies to the Friant contractors within the Kaweah Subbasin. The analysis also incorporates climate change impact analysis available for the SWP or CVP in assessing the possible “bookends” of impact.

Following is a listing of the technical memorandums that were developed and a brief discussion of their content. The actual technical memorandums (Appendices L.1 to L.5) follow along with the results of the modeling studies prepared by MBK Engineers and Daniel B. Steiner (Appendices L.6 to L.8) that served as the technical source for much of the technical memorandums.

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[1] U.S. District Judge Oliver Wanger ruled in 2007 that the Biological Opinion (BO) issued by the USFWS and for the SWP and CVP did not sufficiently consider the Delta Smelt. Subsequent BOs by USFWS (2008) and the NMFS (2009) have required SWP and CVP pumping restrictions to protect Delta Smelt (including adaptive management), winter-run and spring-run Chinook salmon, steelhead, green sturgeon and killer whales, but have been the focus of considerable litigation and scrutiny.

APPENDIX L.1 – **Task 2 Memorandum - Reliability of SWP Supplies and CVP Westside Supplies**

The implementation of the Endangered Species Act as it relates to the operations of the federal Central Valley Project and the State Water Project, particularly in the Sacramento/San Joaquin Rivers Delta (Delta) has had implications and immediate impacts on the availability of water supplies to part of the Kaweah Subbasin.. Federal district court decisions (Wanger Decisions) have limited CVP and SWP surface water export pumping south of the Delta and significantly reduced the amount of surface water available to areas that otherwise pump significant amounts of groundwater. This memorandum includes a review of existing data and reports, including the most recent edition of the *SWP Water Delivery Capability Report.* Modeling of major project operations was updated to reflect current consideration of various operational parameters (OMR criteria, Shasta RPA) and summarized as to the effect of these changes on the water supplies used in the region from these sources, and thus their effect on the Kaweah Subbasin water balance.

APPENDIX L.2 – **Task 3 Memorandum – Lack of Alternative Water Supplies to Fulfill the Exchange Contract**

An extension of the reductions to available water supplies from the Delta to be analyzed in Task 2, is an estimation of the likelihood those reductions will be significant enough to impair the CVP's ability to meet its obligations to provide an alternative supply from the Delta as required under the Exchange Contract, the foundational agreement which makes water available to Friant Division contractors from a water rights perspective. Review of the most recent modeling of CVP and SWP operations was made along with an estimate of how often and how short the CVP will be in fulfilling its Exchange Contract obligations from the Delta.

APPENDIX L.3 – **Task 4 Memorandum – Impacts of San Joaquin River Restoration**

The effort to restore the San Joaquin River (Restoration Program or Settlement) was originally defined in litigation settlement documents and subsequently in supporting federal legislation. The Restoration Program has been underway for a couple of years and has suffered from less than adequate funding and costs/timeframes running bigger/longer than originally planned. Several years have passed which have added to the hydrologic history since the Settlement, including some of the driest years of record. Modeling originally performed which estimated impacts to Friant Division operations as a result of Settlement was updated both from a raw record standpoint and from a look at the realities of the Restoration Plan's likely implementation given its track record to date.

APPENDIX L.4 – **Task 5 Memorandum – Limitations on the Delivery of High Flow San Joaquin River Water**

Additional modeling was performed to assess the timing of availability of high flow CVP water supplies including Section 215 water and 16(b) $10 water made available as a result of the Settlement and attempt to analyze the impacts of known capacity issues, the impacts of the implementation of the resulting Canal Capacity Correction Program and the impacts associated with likely increasing demands for this water along the Friant-Kern Canal, in getting the high flow CVP supplies delivered into the Kaweah Subbasin. Additionally, a comparison was made with the timing of availability of Kaweah River flood releases to better define the true opportunity to bring additional water into the Kaweah Subbasin from the San Joaquin River.

APPENDIX L.5 – **Task 6 Memorandum – Climate Change Overlay**

A "bookend" approach was taken in estimating the impacts of climate change on the estimates resulting from the analysis in the immediate previous tasks. Climate change projections were gathered from several different studies. To the extent information was available on the potential outcomes and mitigation strategies of the CVP and the SWP in dealing with climate change, this information was incorporated into the technical memorandum.

APPENDIX L.6 – "**Reliability of SWP Supplies and CVP Westside Supplies,"** MBK Engineers, April 2017

This study was a modeling effort to primarily focus on assessing the effect of the more recent changes in CVP and SWP operations on South of Delta (SOD) water supplies. The objectives were: (1) to quantify the effects of more recent changes in CVP and SWP operations on SOD water supplies using an operations model; and (2) to quantify the likelihood of Delta water supply reductions and subsequent impacts on being able to meet the Exchange Contract requirements.

APPENDIX L.7 – **"SOD Delivery Workbook Model,"** Daniel B. Steiner, April 2017

The SOD Delivery Workbook Model (model) was developed to post-process CVP South of Delta pumping results derived from ProjectSim (or CalSim II) and "allocate" available water to the Exchange Contractors, Refuges, and CVP Agricultural and M&I contractors. This model provides a refinement of how water from the Delta is allocated based on priority protocols and the intent to fully exercise available water from San Luis Reservoir each year.

APPENDIX L.8 – "**Extension of Friant Workbook Model Revised Results of SJRRP Analysis"** Daniel B. Steiner, April 2017

The Friant Division Simulation Model (model) provides a tool that can depict Friant Division water diversions and operations during a long-term simulation period. The model was developed during the era of litigation over release requirements from Friant which ultimately led to the San

Joaquin River Restoration Program (SJRRP), and was used by Friant entitles during settlement discussions. The model was initially developed using hydrology for 1922-2004, and was previously extended through 2009. Subsequently additional flood and drought periods have occurred which would provide additional robustness to the model. This memorandum presents the results of the extended model for 1922 through 2016.

APPENDIX L.1

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

TASK 2 MEMORANDUM – RELIABILITY OF SWP SUPPLIES AND CVP WESTSIDE SUPPLIES

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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Memorandum

To:	Mark Larsen, Kaweah Delta Water Conservation District
From:	Richard Moss, Owen Kubit
Subject:	Kaweah Basin Imported Water Vulnerability Study Reliability of SWP Supplies and CVP Westside Supplies (Task 2)
Date:	April 5, 2017

Executive Summary

The reliability of State Water Project (SWP) and Central Valley Project (CVP) Westside Supplies were evaluated including their impact on the Kaweah Groundwater Sub-basin. Recent legal decisions and new Delta operational criteria have significantly impacted the reliability of Delta exports. Delta exports impact the Kaweah Sub-basin primarily because they impact water deliveries to San Joaquin River Exchange Contractors, who can all upon San Joaquin River water if Delta supplies are insufficient, and because lands west of the Kaweah Sub-basin have become more reliant on groundwater due to SWP impacts, thus increasing strain on the regional groundwater supplies. The 2015 DWR Water Delivery Capability Report estimates long-term SWP reliability at 62%, but could increase to 69% with full implementation of the Bay Delta Conservation Plan. CalSim II and ProjectSim were used to develop an improved model to simulate CVP/SWP Delta operations based on the recent changes to the operations criteria. Several scenarios representing different Delta operational criteria were simulated. Estimated CVP water reliabilities are 94-95% for Exchange Contractors, 45-51% for CVP agricultural contractors and 71-75% for CVP M&I contractors. SWP reliability was estimated to be 62% to 64%.

Introduction

This memorandum documents an analysis of water vulnerability to the Kaweah Groundwater Sub-basin related to the reliability of State Water Project (SWP) supplies and Central Valley Project Westside (CVP) supplies.

Over the last several years significant surface water supply issues have developed that are redefining the imported water factors of the water balance for the Kaweah Sub-basin. They have primarily occurred as a result of the settlement of litigation, legislation and regulatory changes. The implementation of the Endangered Species Act as it relates to the operations of the federal Central Valley Project and the State Water Project, particularly in the Sacramento/San Joaquin Rivers Delta (Delta) has had implications and immediate impacts on the availability of water supplies to part of the Kaweah Sub-basin. Federal district court decisions (Wanger Decisions[1]) have limited CVP and SWP surface water export pumping south of the Delta and significantly reduced the amount of surface water available to areas that otherwise pump significant amounts of groundwater. A review of existing data and reports, including the most recent edition of the *SWP Water Delivery Capability Report* and its supporting modeling, was made and summarized including their effect on the Kaweah Sub-basin water balance.

The study area includes the Kaweah Groundwater Sub-basin (Sub-basin) shown on the maps in **Attachment 1**. This area covers 446,000 acres (696 square miles) on the east side of the San Joaquin Valley. The Sub-basin covers portions of Kings and Tulare Counties and includes numerous water agencies and canal/ditch companies. The Sub-basin includes the lower watershed of the Kaweah River and the soils are primarily comprised of alluvial fill material.
This memorandum is part of a comprehensive analysis of the vulnerability of local and imported water supplies for the Kaweah Groundwater Sub-basin. Other memorandums document:

1. Availability of alternative supplies to fulfill San Joaquin River Exchange Contractors supply and prevent an interruption of Friant CVP water deliveries
2. Impacts to Friant CVP contractors from implementation of the San Joaquin River Restoration, including how reliability has changed from historic conditions
3. Limitations on the Delivery of High Flow San Joaquin River Water (Section 215 water, 16(b) $10 water and other surplus waters) and comparison to the timing of Kaweah River high flows.
4. The potential impacts of climate change on SWP, Westside CVP, Friant CVP and Kaweah River waters

<u>Background Information</u>
In 2007, a series of legal decisions restricted the amount of surface water that was deliverable through the Delta and into the joint SWP-CVP system. These restrictions were tied to impacts on endangered species from pumping facilities that convey water from the Delta to south of Delta contractors. In fact, for many years there have been incremental reductions over time in the export pumping allowed from the Delta, which is affecting numerous water agencies throughout the San Joaquin Valley.

The reliability of SWP and CVP Westside water originating from the Delta are of interest to the Kaweah Sub-basin for three reasons:

1. Some Delta supplies are used within the Kaweah Sub-basin
2. Delta water reliability impacts water supplies to the San Joaquin River Exchange Contractors, who can call upon San Joaquin River water if Delta supplies are insufficient

[1] U.S. District Judge Oliver Wanger ruled in 2007 that the Biological Opinion (BO) issued by the USFWS and for the SWP and CVP did not sufficiently consider the Delta Smelt. Subsequent BOs by USFWS (2008) and the NMFS (2009) have required SWP and CVP pumping restrictions to protect Delta Smelt (including adaptive management), winter-run and spring-run Chinook salmon, steelhead, green sturgeon and killer whales, but have been the focus of considerable litigation and scrutiny.

3. Several agencies west of the Kaweah Sub-basin use Delta water supplies, and reductions in Delta water have increased reliance on groundwater, thus causing strain on the regional groundwater supplies

These three topics are discussed in more detail below:

Local Delta Supplies. The County of Tulare is a contractor for Delta water supply, a portion of which can be delivered to the Cities of Visalia and Lindsay by means of an exchange agreement with the Arvin-Edison Water Storage District. This delivery is enabled by virtue of ownership of capacity in the Cross Valley Canal and a wheeling agreement for the in-delta supply with DWR. These are relatively minor amounts of water, and are not the primary reason that Delta water reliability is important to the Kaweah Sub-basin.

San Joaquin River Exchange Contract. The San Joaquin River Exchange Contractors (Exchange Contractors) include four primary agencies on the lower San Joaquin River. In 1939, as part of the development of Friant Dam and the Friant Division CVP system, they agreed to exchange the balance of their San Joaquin River water supply entitlement for a substitute supply from the Delta. If Delta supplies are insufficient to meet the Exchange Contractor demands as specified in the agreements, Reclamation and the upstream power reservoirs must, at a minimum, bypass the River's natural flow and under some conditions, release water from storage in Millerton Reservoir. Thus, the availability of San Joaquin River supplies for Friant Division CVP contractors can be directly impacted. As a result, the reliability of surface water supply in the Kaweah Sub-basin is directly related to the reliability of Delta exports. This topic is addressed in a separate April 2017 memorandum entitled "*Lack of Alternative Water Supplies to Fulfill the Exchange Contract*."

Local Groundwater Pumping. Groundwater overdraft in the Kaweah Sub-basin has been a concern since the early 1900's, and was one of the reasons the region developed surface water supplies decades ago. The Sub-basin's groundwater levels are sensitive to drought conditions and significant declines have been observed during prolonged droughts. Recent Delta pumping restrictions have resulted in the loss of some SWP surface water supply to lands farmed west of the Kaweah Sub-basin, but who share access to the same groundwater resources. Over the last few years, new depths to groundwater have been reached that is due in part to the reduced Delta surface water deliveries to Tulare Lakebed farming interests. These Lakebed farming interests have placed greater reliance on pumped groundwater to offset the loss of SWP supplies. Pumping both above and below the Corcoran Clay can cause series issues. Dropping the levels in the unconfined aquifer even further can cause a larger gradient in the groundwater that will cause it to flow to the west even faster, thus impacting the east side of the Basin that normally has higher groundwater levels. Deep pumping below the Corcoran Clay in the confined aquifer can lead to subsidence issues.

SWP/CVP Water Allocations

The amount of SWP water allocated to contractors each year is dependent on a number of factors that can vary significantly from year to year. The primary factors affecting SWP supply include: hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies to SWP contractors is generally less than their full Table A amounts in many years and can be significantly less in very dry years.

CVP pumping from the Delta is subject to similar criteria as the SWP. The CVP also includes an M&I Water Shortage Policy that has a tiered system of allocation reductions when project supplies are not adequate to provide a full allocation to all contractors. Allocations differ for agricultural and M&I water users, with some priority given to M&I water users. The CVP may also provide different allocations to different divisions based on the water supply available to the divisions. This occurs most frequently between contractors located North of Delta and contractors located South of Delta. It also is a regular occurrence in terms of the CVP Friant Division allocations given the Friant Division water supplies are primarily dependent on runoff from the San Joaquin River and not the Northern California streams and reservoirs of the CVP (except to meet the Exchange Contract requirements as noted previously).

State Water Project Delivery Capability Report

DWR prepares a biennial report to assist SWP contractors and local planners in assessing the near and long-term availability of supplies from the SWP. DWR issued its most recent update, the *2015 DWR State Water Project Delivery Capability Report* (DCR), in July 2015. In this report, DWR provides SWP supply estimates for use in their planning efforts. Estimates are provided for both current and future conditions.

DWR's estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and CVP systems. Key assumptions and inputs to the model include the system facilities, hydrologic inflows, regulatory and operational constraints on system operations, and projected contractor demands for SWP water. For example, the 2015 DCR uses the following assumptions to model current conditions: existing facilities, hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003), current regulatory and operational constraints, and contractor demands at maximum Table A amounts.

The report provides an average base reliability of 62% for the SWP, with an 11% minimum and 98% maximum reliability. A future reliability of 69% was also estimated if the Bay Delta Conservation Plan is fully implemented.

Modeling Results

MBK Engineers performed modeling of SWP and CVP supplies and documented the results in a report entitled '*Reliability of SWP Supplies and CVP Westside Supplies*". Following is a brief summary of the model and the principle results.

CalSim II is the most commonly applied CVP/SWP operations modeling tool for evaluating water supply reliability of CVP/SWP projects. In order to provide a CVP and SWP operational simulation more representative of current practices, two modeling approaches were taken in this study. The first approach required making adjustments to the CalSim II modeling by modifying reservoir releases and export rates during periods when CalSim II did not respond appropriately to the hydrological and biological conditions. The second approach involved use of a spreadsheet model (ProjectSim) to simulate CVP/SWP operations based on the recent changes to the operations criteria.

The goals of the model include:

1. Quantify the effects of more recent changes in CVP and SWP operations on South of Delta water supplies using an operations model
2. Quantify the likelihood of Delta water supply reductions and subsequent impacts on Exchange Contractors.

The model was run for five different scenarios:

1. Baseline: Baseline conditions in which all regulations are consistent with the CalSim II baseline, and reservoir operating criteria are consistent with the Adjusted CalSim II baseline.
2. Old and Middle River (OMR) Flows > -3,500 cfs: An operational criteria that limits the reverse flow of water in the channel between the stem of the San Joaquin River and the south end of the Delta to no more than -3,500 cfs based on salinity, turbidity and temperature criteria to protect fish entrapments.
3. Old and Middle River (OMR) Flows > - 5,000 cfs: An operational criteria that limits the reverse flow of water in the channel between the stem of the San Joaquin River and the south end of the Delta to no more than -5,000 cfs based on salinity, turbidity and temperature criteria to protect fish entrapments.
4. Proposed Amended Shasta Reasonable and Prudent Alternative (RPA): An operational scenario in which additional cold water is stored in Shasta Dam to benefit fisheries in the Sacramento River. It includes carrying over cold water from year to year in the reservoir, thus significantly reducing the storage available to the CVP system. More information on the proposed RPA can be found in the amendment documentation released by the National Marine Fisheries Service on January 19, 2017: http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/nmfs_s_draft_proposed_2017_rpa_amendment_-_january_19__2017.pdf

5. Climate Change. A scenario representing anticipated hydrologic and sea level conditions for 2025 was simulated. This scenario is discussed in another April 2017 memo entitled *"Kaweah Basin Water Supply and Vulnerability Study - Climate Change Impacts*."

Table 1 compares Delta CVP reliability for Exchange Contractors, CVP Agricultural Contractors and CVP M&I Contractors for the first four scenarios listed above.

Table 1 – Summary of Average CVP Delivery Reliability

Water Contractor	Scenario			
	Baseline	**OMR > -3,500 cfs**	**OMR > -5,000 cfs**	**Shasta RPA**
Exchange Contractors	94	94	95	95
CVP Agricultural	48	45	49	51
CVP M&I	72	71	73	75

Table 2 summarizes estimated exports from the Delta Banks (SWP) pumping plant and Jones (CVP) pumping plant for the four operational scenarios.

Table 2 – Average Annual Delta Exports (TAF)

Water Contractor	Scenario			
	Baseline	**OMR > -3,500 cfs**	**OMR > -5,000 cfs**	**Shasta RPA**
Banks Pumping Plant	2,501	2,518	2,564	2,501
Jones Pumping Plant	2,159	2,186	2,239	2,117

MBK Engineers also provided average SWP reliability for the different scenarios. They include: 62% for Baseline and RPA, 63% for OMR > -3,500 cfs and 64% for OMR > -5,000 cfs. These agree fairly well with the DWR Water Delivery Capability Report, which estimates a 62% average reliability.

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California Department of Water Resources, *The State Water Project Final Water Delivery Capability Report 2015*, July 2015.

California Department of Water Resources, *Water Available for Replenishment – Draft*, January 2017.

Steiner, Daniel B., *San Joaquin River Exchange Contractors Water Authority – 25 Year Water Transfer Program Water Resources Analysis*, March 2012.

<u>Attachments</u>

Attachment 1 – Project Area and Impacted Parties

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

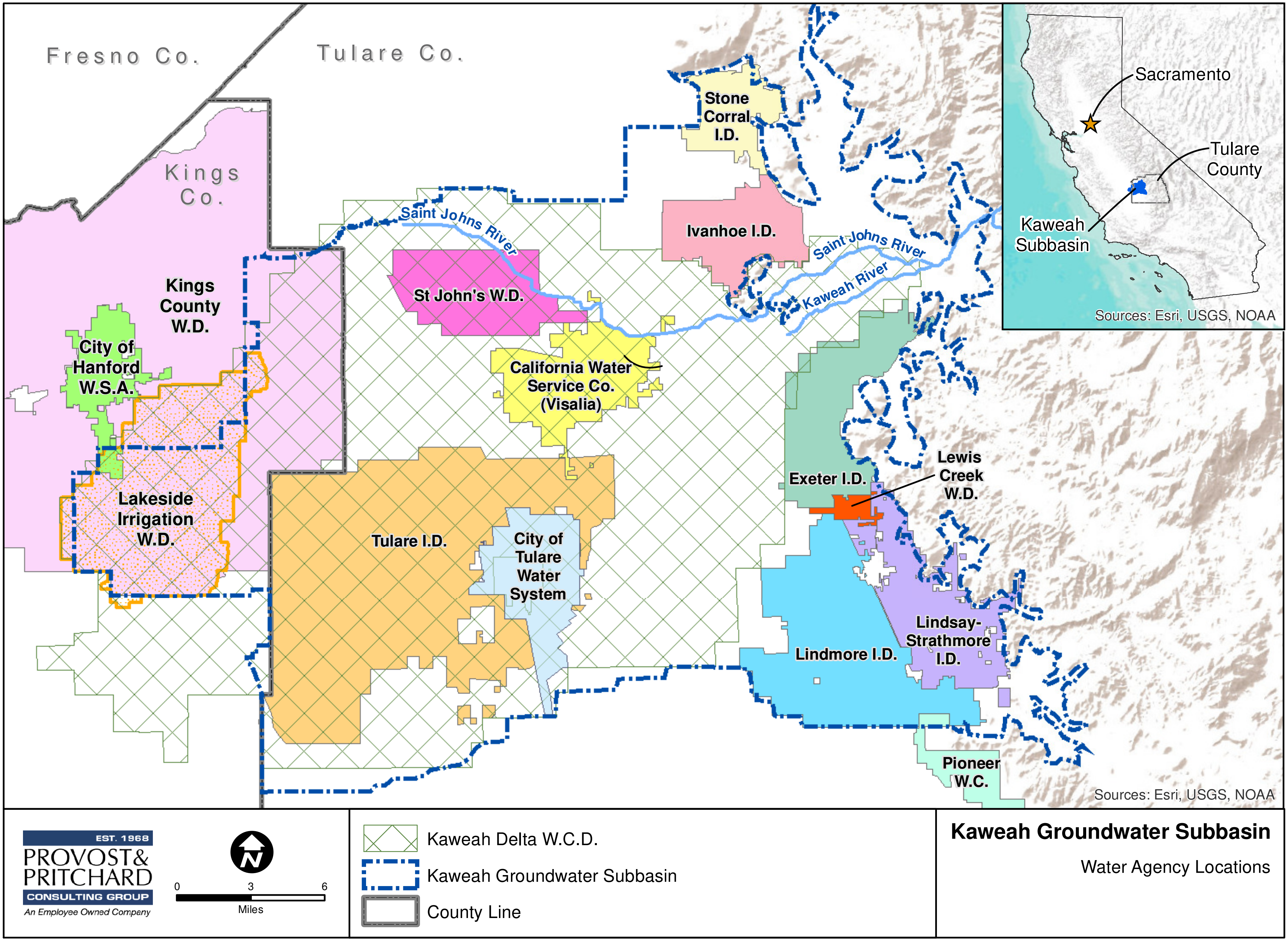
RELIABILITY OF SWP SUPPLIES AND CVP WESTSIDE SUPPLIES

ATTACHMENT 1 – PROJECT AREA AND IMPACTED PARTIES

Kaweah Basin Water Supply & Vulnerability Study
Imported Water Supply Contracts in Study Area

Agency	San Joaquin River (Friant Division of CVP)[1]	Kaweah River[2]
City of Lindsay	Class 1 – 2,500 AF	
Consolidated Peoples Ditch Co.		X
Elk Bayou Ditch Co./Bliss Ditch Co.		X
Evans Ditch Company		X
Exeter Irrigation District	Class 1 - 11,500 AF Class 2 - 19,000 AF	
Farmers Ditch Company		X
Fleming Ditch Company		X
Foothill Ditch Company		X
Hamilton Ditch Company		X
Ivanhoe Irrigation District	Class 1 - 6,500 AF Class 2 – 500 AF	
Kaweah Delta Water Conservation District	Class 1 – 1,200 AF Class 2 – 7,400 AF	X
Lemon Cove Ditch Company		X
Lewis Creek Water District	Class 1 - 1,450 AF	
Lindmore Irrigation District	Class 1 - 33,000 AF Class 2 - 22,000 AF	
Lindsay-Strathmore Irrigation Dist.	Class 1 - 27,500 AF	
Longs Canal Company		X
Matthews Ditch Company		X
Modoc Ditch Company		X
Oakes Ditch Company		X
Persian Ditch Company		X
St. Johns Ditch Company		X
Sentinel Butte Mutual Water Co.		X
Stone Corral Irrigation District	Class 1 - 10,000 AF	
Sweeney Ditch		X
Tulare Irrigation Company		X
Tulare Irrigation District	Class 1 - 30,000 AF Class 2 - 141,000 AF	X
Uphill Ditch Company		X
Watson Ditch Company		X
Wutchumna Water Company		X

1 – San Joaquin River contract represent maximum deliveries. Actual deliveries are often less than the maximum contract amount.
2 – Water contract volumes for Kaweah River water are not provided because they are based on a share of reservoir storage space and complex allocation formulas



Kaweah Groundwater Subbasin

Water Agency Locations

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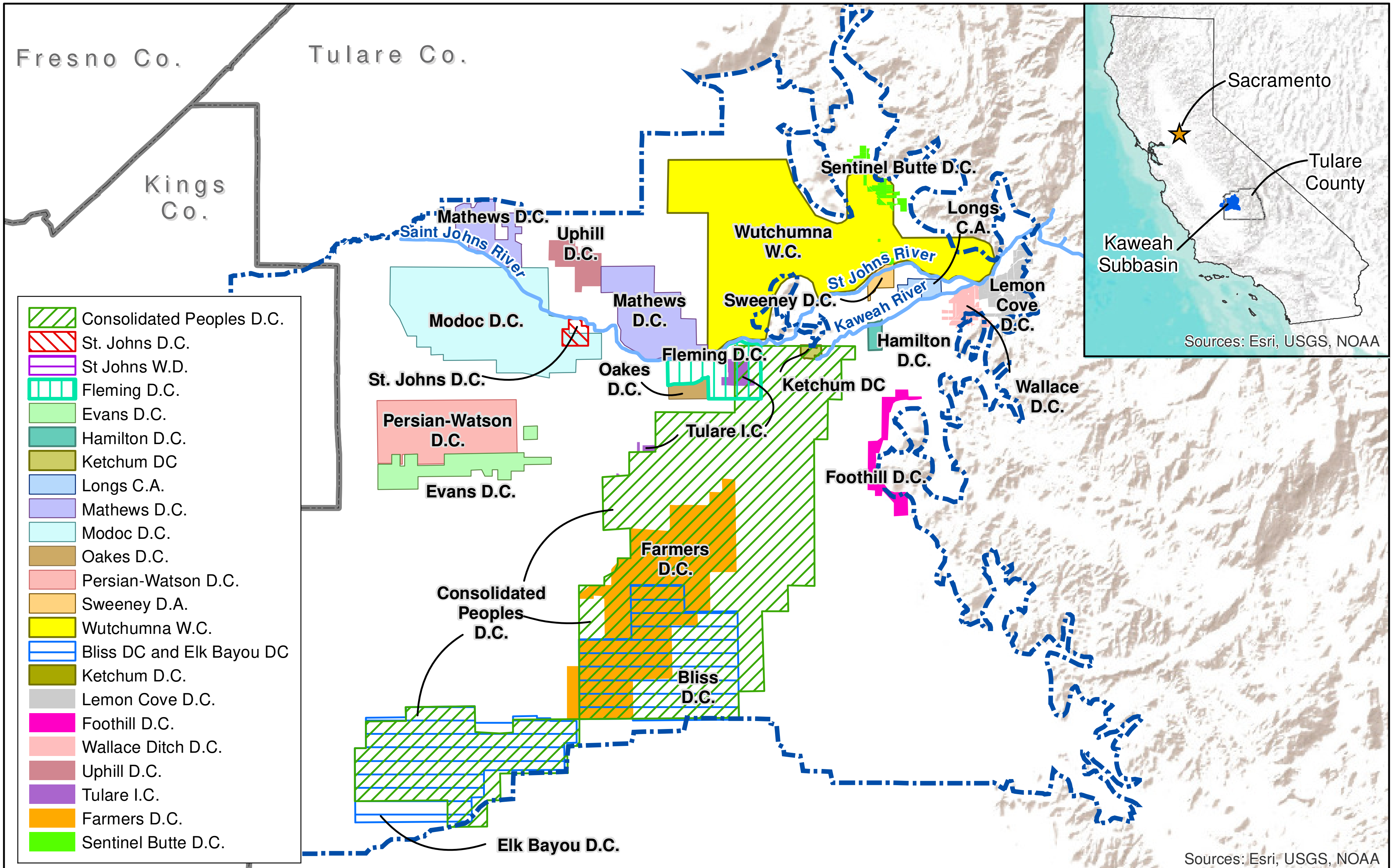

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company

0 3 6
Miles

Kaweah Groundwater Subbasin
County Line

Kaweah Groundwater Subbasin

Ditch Company Locations

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APPENDIX L.2

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

TASK 3 MEMORANDUM – LACK OF ALTERNATIVE WATER SUPPLIES TO FULFILL THE EXCHANGE CONTRACT

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

PROVOST & PRITCHARD CONSULTING GROUP
EST. 1968
An Employee Owned Company

130 N. Garden Street
Visalia, CA 93291-6362
Tel: (559) 636-1166
Fax: (559) 636-1177
www.ppeng.com

Memorandum

To:	Mark Larsen, Kaweah Delta Water Conservation District
From:	Richard Moss, Owen Kubit
Subject:	Kaweah Basin Imported Water Vulnerability Study Lack of Alternative Water Supplies to Fulfill the Exchange Contract (Task 3)
Date:	March 30, 2017

Executive Summary

The San Joaquin River Exchange Contractors (Exchange Contractors) include four primary agencies on the lower San Joaquin River. In 1939, as part of the development of Friant Dam and the Friant Division CVP system, they agreed to exchange the balance of their San Joaquin River water supply entitlement for a substitute supply from the Sacramento-San Joaquin Rivers Delta. If Delta supplies are insufficient to meet the Exchange Contractor demands as specified in the agreements, Reclamation and the upstream power reservoirs must, at a minimum, bypass the River's natural flow and under some conditions, release water from storage in Millerton Reservoir. Thus, the availability of San Joaquin River supplies for Friant Division CVP contractors can be directly impacted. The '*SOD Delivery Workbook Model'* was used to simulate the allocation of water available to all South of Delta (SOD) water demands for the CVP including the demands of the San Joaquin River Exchange Contractors'. Thus, it is able to predict the timing and the amount of shortage the Exchange Contractor are likely to see from the Delta alternative supply and their potential to need water from the San Joaquin River as impounded by Friant Dam and Millerton Lake. The '*SOD Delivery Workbook Model'* model uses the simulated data results generated by the modeling efforts in support of the '*Reliability of SWP Supplies and CVP Westside Supplies'* memo. This simulated data output contains results from 1921 through 2015 for four different Delta operational scenarios.

The results suggest that the Exchange Contractors will have a water shortage in about 7% to 10% of years, depending ultimately on how the Delta is operated under current regulations. The water shortage will range from 8,000 AF to 538,000 AF, with an average of 271,000 AF in those years in which shortage occurs. The Exchange Contractor's shortage could exceed the Friant Division CVP contractor allocation in some critically dry years. When the Exchange Contractors have a shortage, the impact to the Kaweah Sub-basin would average 42,000 AF, but could be as high as 82,850 AF over the water that otherwise would have been available to the Kaweah Sub-basin CVP contractors.

Introduction

This memorandum documents an analysis of water vulnerability to the Kaweah Groundwater Sub-basin from the potential reduction in Friant Central Valley Project (CVP) deliveries to the Kaweah Sub-basin to fulfill obligations for the San Joaquin River Exchange Contractors.

Over the last several years significant surface water supply issues have developed that are redefining the imported water factors of the water balance for the Kaweah Sub-basin. They have primarily occurred as a result of the settlement of litigation, legislation and regulatory changes. These issues have impacted the reliability of imported water supplies, including San Joaquin River water. If Delta water supplies are sufficiently low in availability, then San Joaquin River supplies could be diverted to San Joaquin River Exchange Contractors instead of Friant CVP contractors. The analysis presented below estimates how often and how short that Delta diversions will be to meet Exchange Contractor demands, and the subsequent impact on Friant contractors, particularly those in the Kaweah Groundwater Sub-basin.

The study area includes the Kaweah Groundwater Sub-basin (Sub-basin) shown on the maps in **Attachment 1**. This area covers 446,000 acres (696 square miles) on the east side of the San Joaquin Valley. The Sub-basin covers portions of Kings and Tulare Counties and includes numerous water agencies and canal/ditch companies. The Sub-basin includes the lower watershed of the Kaweah River and the soils are primarily comprised of alluvial fill material.

The agencies directly impacted within the Kaweah Sub-basin from the lack of Delta originated substitute water supplies to meet the Exchange Contract obligations include the following with Friant Division CVP contracts: City of Lindsay, Exeter Irrigation District, Ivanhoe Irrigation District, Kaweah Delta Water Conservation District, Lewis Creek Water District, Lindmore Irrigation District, Lindsay-Strathmore Irrigation District, Stone Corral Irrigation District and Tulare Irrigation District. However, all of the other agencies and ditch companies in the Sub-basin would be indirectly impacted, since the Exchange Contractor obligations can reduce the volume of surface water imported to the area, results in less CVP surplus water being available to the area and thus increases reliance on groundwater supplies.

This memorandum is part of a comprehensive analysis of the vulnerability of local and imported water supplies for the Kaweah Groundwater Sub-basin. Other memorandums document:

1. The reliability of State Water Project (SWP) Supplies and Central Valley Project (CVP) Westside Supplies (this provides foundational modeling for the Exchange Contractors analysis)

2. Impacts to Friant CVP contractors from implementation of the San Joaquin River Restoration, including how reliability has changed from historic conditions
3. Limitations on the Delivery of High Flow San Joaquin River Water (Section 215 water, 16(b) $10 water and other surplus waters) and comparison to the timing of Kaweah River high flows.
4. The potential impacts of climate change on SWP, Westside CVP, Friant CVP and Kaweah River waters

Background Information

The San Joaquin River Exchange Contractors (Exchange Contractors) include Central California Irrigation District, Firebaugh Canal Water District, San Luis Canal Company and Columbia Canal Company. They are located along the Lower San Joaquin River, and on the west side of the San Joaquin Valley in Fresno, Madera, Merced and Stanislaus Counties. The Exchange Contractors together cover about 240,000 acres.

The Exchange Contractors hold some of the oldest water rights in the state, dating back to the late 1800s. The rights were established by Henry Miller of the legendary Miller and Lux cattle empire. In 1871, Henry Miller constructed canals to divert water from the San Joaquin and North Fork of the Kings Rivers for irrigation of his vast acreage. Today, several of the original Miller and Lux canals are operated by the Exchange Contractors.

Although Henry Miller's canals served the irrigation needs of his estate in the western portion of Fresno, Madera, Merced, and Stanislaus counties, in order for more growth on the east side of the San Joaquin Valley to occur, more water was needed. In 1933, the United States Department of Interior undertook the Central Valley Project, a vast undertaking to build dams throughout the great Central Valley including the Sacramento, American and San Joaquin Rivers. When Friant Dam was under consideration, feasibility studies showed that irrigation development of the Friant Project between Chowchilla and Bakersfield depended upon water being diverted from the San Joaquin River at Friant Dam and brought to the east side of the valley, via the Friant-Kern Canal.

To accomplish this, the Bureau of Reclamation asked the heirs of Miller and Lux to agree to an "exchange" where the Bureau would be able to divert the pre-1914 appropriative and riparian water from the San Joaquin and Kings Rivers in exchange for the Bureau guaranteeing deliveries of "substitute" water from the Sacramento River and Sacramento-San Joaquin Rivers Delta via the Delta-Mendota Canal and other facilities of the United States. This agreement, known as the "Exchange Contract," along with the accompanying "Purchase Contract," were reached in 1939. In normal years, the Exchange Contractors are guaranteed 100% of their contractual water allotment (840,000 acre-feet) and in critical years the amount is 75% (approximately 650,000 acre-feet).

The Exchange Contractors, however, did not abandon their San Joaquin River water rights. Instead, they agreed not to exercise those San Joaquin and Kings Rivers' water rights if guaranteed water deliveries continued through the Delta-Mendota Canal or other facilities of the United States. In the event that the Bureau is unable to make its contracted deliveries of substitute water to the Exchange Contractors, the Exchange Contractors have reserved the right to receive water from the San Joaquin River in satisfaction of the Exchange Contract obligations.

In 2014 and 2015, San Joaquin River water was delivered to meet the Exchange Contract obligations for the first time in CVP history. This occurred during a severe drought with significant impact on Friant Districts, resulting in zero net allocation to the Friant Contractors in both years. There remains significant controversy about the appropriate operations required under the Exchange Contract in 2014 and 2015. Nevertheless, it is now apparent that Delta operations can result in insufficient water supplies being available out of the Delta to meet the Exchange Contract obligations, thus illustrating the importance of predicting and preparing for future scenarios when this situation may occur again.

Modeling Results

The '*SOD Delivery Workbook Model'* was used to simulate the shortage of Delta water supplies to meet San Joaquin River Exchange Contractor water demands, their subsequent demand for San Joaquin River water, and the impacts to Friant contractors. The model was developed to post process CVP South of Delta pumping results derived from CalSim II and allocate available water to Exchange Contractors, refuges, and CVP agricultural and M&I contractors. The model provides a refinement of how water from the Delta is allocated based on the priority protocols and the intent to fully exercise available water from San Luis Reservoir each year. The model includes a monthly time step and simulated data from 1921 through 2015.

The model was run for five different scenarios:

1. Baseline: Baseline conditions in which all regulations are consistent with the CalSim II baseline, and reservoir operating criteria are consistent with the Adjusted CalSim II baseline
2. Proposed Amended Shasta Reasonable and Prudent Alternative (RPA): An operational scenario in which additional cold water is stored in Shasta Dam to benefit fisheries in the Sacramento River. It includes carrying over cold water from year to year in the reservoir, thus significantly reducing the storage available to the CVP system.
3. Old and Middle River (OMR) Flows > -3,500 cfs: An operational criteria that limits the reverse flow of water in the channel between the main stem of the San Joaquin River and the south end of the Delta to no more than -3,500 cfs based on salinity, turbidity and temperature criteria to protect against fish entrapment at the state and federal pumps.
4. Old and Middle River (OMR) Flows > - 5,000 cfs: An operational criteria that limits the reverse flow of water in the channel between the main stem of the San Joaquin River and the South end of the Delta to no more than -5,000 cfs based on salinity, turbidity

and temperature criteria to protect against fish entrapment at the state and federal pumps.

5. Early Long-Term Climate Change. This scenario includes climate change impacts in the year 2025, including a 15 cm sea level rise affecting Delta supplies.

The results from the modeling include: Deliveries to the Exchange Contractors, CVP Agricultural contractors and CVP M&I contractors (Table 2), Exchange Contractor Shortage based on Delta supplies only (Table 3), and Friant Water Deliveries including pre and post San Joaquin River Restoration (Table 4).

The following observations can be made using the results from all five scenarios:

- The Exchange Contractors have water shortages in between 7 to 9 years out of 94 years, or about 7% to 10% of the time.
- The average Exchange Contractor shortage is 271,000 AF when shortage occurs
- Exchange Contractor shortages range from 8,000 AF to 538,000 AF
- The Exchange Contractor's shortage exceeds the Friant allocation in two of the simulated years (1977 and 2015, which were both critically dry years)
- In years when the Exchange Contractors have a shortage, conditions would typically be dry and there would likely only be a Class 1 Friant allocation. The Kaweah Sub-basin has (123,000 AF/800,000 AF) = 15.4% of the Class 1 allocation, so their impact would average (271,000 AF x 15.4%) = 42,000 AF for the region, but could be as high as (538,000 x 15.4%) = 82,850 AF.
- The climate change scenario reduced water reliability to the Exchange Contractors by about 1%.

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California Department of Water Resources, *Analysis of California WaterFix Potential Effects Submitted to the State Water Resources Control Board*, June 1, 2016.

Steiner, Daniel B., *San Joaquin River Exchange Contractors Water Authority – 25 Year Water Transfer Program Water Resources Analysis*, March 2012.

Attachments

Attachment 1 – Project Area and Impacted Parties

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

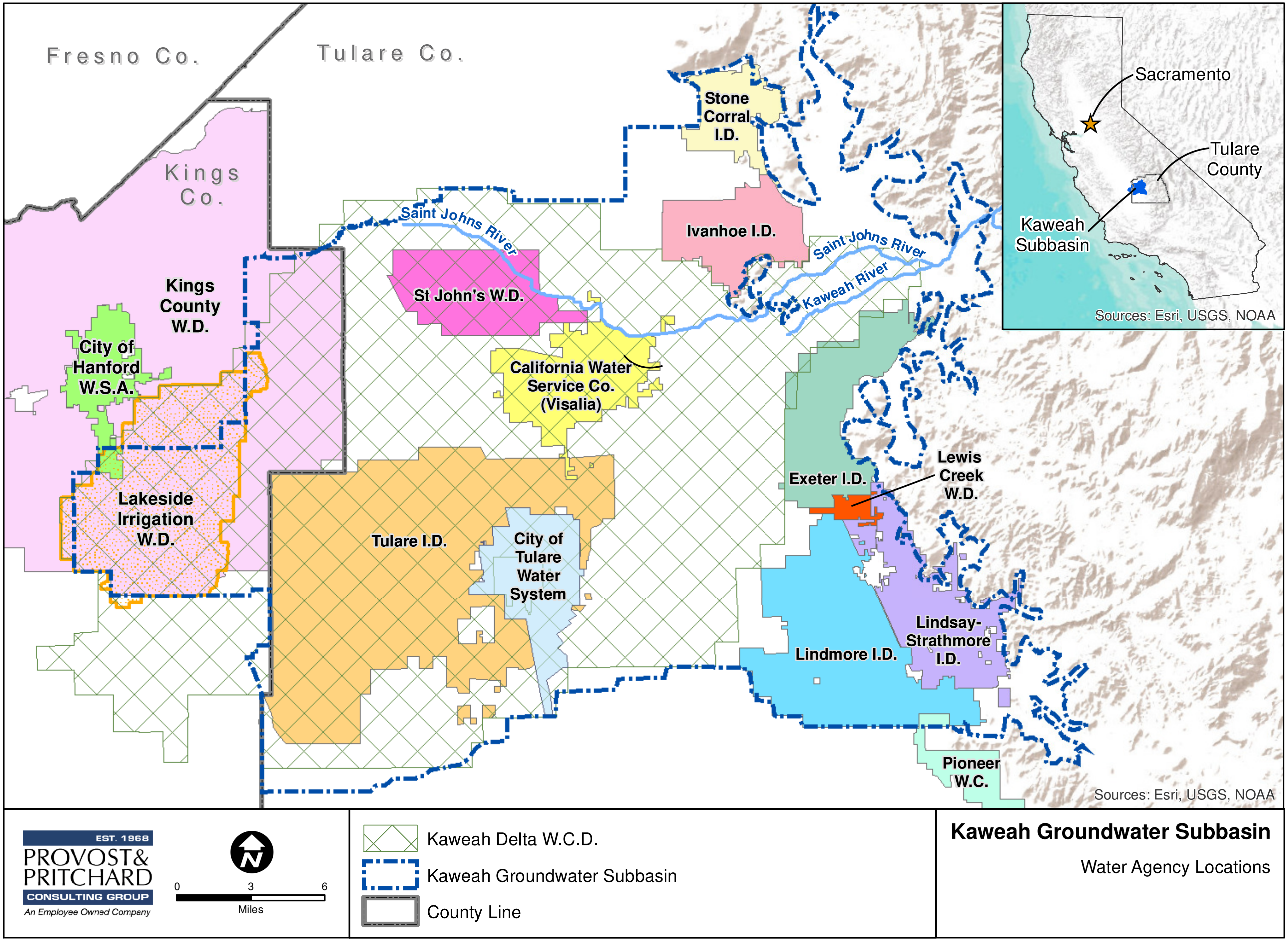
LACK OF ALTERNATIVE WATER SUPPLIES TO FULFILL THE EXCHANGE CONTRACT

ATTACHMENT 1 – PROJECT AREA AND IMPACTED PARTIES

Kaweah Basin Water Supply & Vulnerability Study
Imported Water Supply Contracts in Study Area

Agency	San Joaquin River (Friant Division of CVP)[1]	Kaweah River[2]
City of Lindsay	Class 1 – 2,500 AF	
Consolidated Peoples Ditch Co.		X
Elk Bayou Ditch Co./Bliss Ditch Co.		X
Evans Ditch Company		X
Exeter Irrigation District	Class 1 - 11,500 AF Class 2 - 19,000 AF	
Farmers Ditch Company		X
Fleming Ditch Company		X
Foothill Ditch Company		X
Hamilton Ditch Company		X
Ivanhoe Irrigation District	Class 1 - 6,500 AF Class 2 – 500 AF	
Kaweah Delta Water Conservation District	Class 1 – 1,200 AF Class 2 – 7,400 AF	X
Lemon Cove Ditch Company		X
Lewis Creek Water District	Class 1 - 1,450 AF	
Lindmore Irrigation District	Class 1 - 33,000 AF Class 2 - 22,000 AF	
Lindsay-Strathmore Irrigation Dist.	Class 1 - 27,500 AF	
Longs Canal Company		X
Matthews Ditch Company		X
Modoc Ditch Company		X
Oakes Ditch Company		X
Persian Ditch Company		X
St. Johns Ditch Company		X
Sentinel Butte Mutual Water Co.		X
Stone Corral Irrigation District	Class 1 - 10,000 AF	
Sweeney Ditch		X
Tulare Irrigation Company		X
Tulare Irrigation District	Class 1 - 30,000 AF Class 2 - 141,000 AF	X
Uphill Ditch Company		X
Watson Ditch Company		X
Wutchumna Water Company		X

1 – San Joaquin River contract represent maximum deliveries. Actual deliveries are often less than the maximum contract amount.
2 – Water contract volumes for Kaweah River water are not provided because they are based on a share of reservoir storage space and complex allocation formulas



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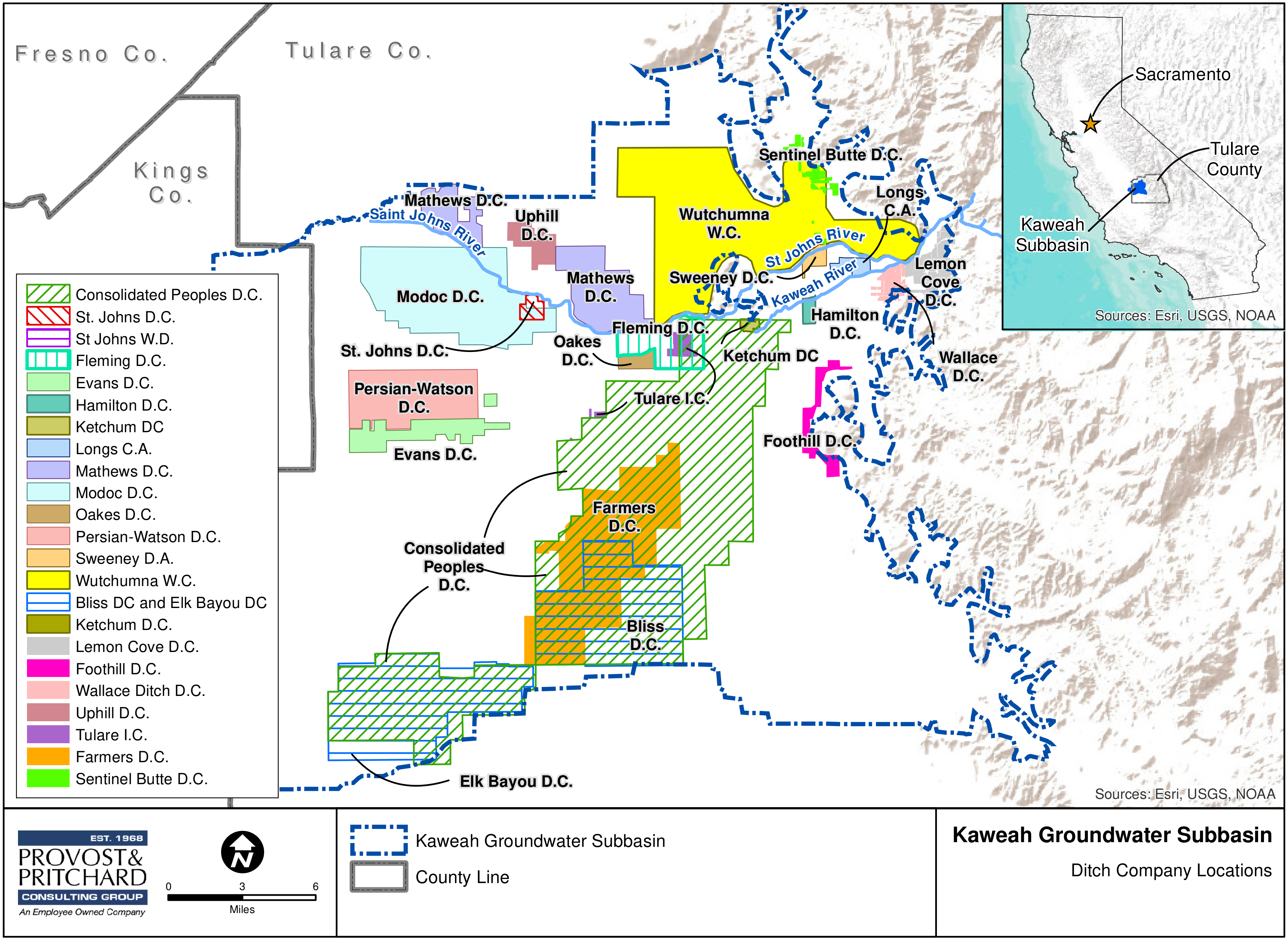

Kaweah Groundwater Subbasin

Ditch Company Locations

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APPENDIX L.3

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

TASK 4 MEMORANDUM – IMPACTS OF SAN JOAQUIN RIVER RESTORATION

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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Memorandum

To:	Mark Larsen, Kaweah Delta Water Conservation District
From:	Richard Moss, Owen Kubit
Subject:	Kaweah Basin Imported Water Vulnerability Study Impacts of San Joaquin River Restoration (Task 4)
Date:	March 30, 2017

Executive Summary

In 2006, after an 18 year court battle, the Friant Division Contractors of the Central Valley Project entered into the San Joaquin River Settlement Agreement with the Bureau of Reclamation and the environmental plaintiffs lead by the Natural resources Defense Council. The Settlement aimed to increase flows to the San Joaquin River to restore habitat and fisheries damaged by the construction of Friant Dam and the diversion of water to lands served by the Friant Division. The San Joaquin River Restoration will significantly impact the nine water agencies in the Kaweah Groundwater Sub-basin that have a Friant Division CVP Contract. Partial restoration flows began in 2009, and full restoration flows, with full water supply impacts, began in 2014. The water supply impacts from the San Joaquin River Restoration were estimated using the Friant Division Simulation Model and hydrology from 1922 through 2016. Mitigation programs intended to provide additional water supplies to the Friant Contractors were not considered in the evaluation. Impacts were estimated based on criteria in SJRRP Restoration Flow Guidelines, as well as a scenario including 10% buffer flows. Impacts to the nine local Friant contractors include an average reduction in Class 1 and Class 2 water deliveries of 20,600 to 24,500 AF/year. The reliability of Class 1 Water will decline from 93% to 87-88%, and the reliability of Class 2 Water will decline from 27% to 19-20%. The availability of “Other” San Joaquin River water supplies (Section 215 and other surplus water) is estimated to decline from 127,000 AF/year to 61,000 – 68,000 AF/year.

Introduction

This memorandum documents an analysis of water vulnerability to the Kaweah Groundwater Sub-basin due to impacts from the San Joaquin River Restoration. The analysis was performed through modeling of San Joaquin River operations using historical data and existing regulatory criteria.

Over the last several years significant surface water supply issues have developed that are redefining the imported water factors of the water balance for the Kaweah Sub-basin. They have primarily occurred as a result of the settlement of litigation, legislation and regulatory changes. The effort to restore the San Joaquin River (Restoration Program or Settlement) was originally defined in litigation settlement documents and subsequently in supporting federal legislation. The Restoration Program has been underway for several years and has suffered from less than adequate funding and costs/timeframes running longer than originally planned. Several years have passed which have added to the hydrologic history since the Settlement, including some of the driest years of record. Modeling originally performed which estimated impacts to Friant Division operations as a result of Settlement were updated both from a raw record standpoint, and from a look at the realities of the Restoration Plan's likely implementation given its track record to date. The Restoration Program remains largely unchanged even though it is recognized as being underfunded and significantly behind schedule. Water supply impacts are still similar to past estimates (as described below), except that Friant contractors now are able to buy some water back in the form of Unreleased Restoration Flows at higher prices. Recapture and recirculation planning continues by the Bureau of Reclamation with actual recapture and recovery occurring on more of a year by year opportunistic basis.

The study area includes the Kaweah Groundwater Sub-basin (Sub-basin) shown on the maps in **Attachment 1**. This area covers 446,000 acres (696 square miles) on the east side of the San Joaquin Valley. The Sub-basin covers portions of Kings and Tulare Counties and includes numerous water agencies and canal/ditch companies. The Sub-basin includes the lower watershed of the Kaweah River and the soils are primarily comprised of alluvial fill material.

The agencies directly impacted by the San Joaquin River Restoration Program include those with Friant CVP contracts: City of Lindsay, Exeter Irrigation District, Ivanhoe Irrigation District, Kaweah Delta Water Conservation District, Lewis Creek Water District, Lindmore Irrigation District, Lindsay-Strathmore Irrigation District, Stone Corral Irrigation District and Tulare Irrigation District. However, all of the other agencies and ditch companies in the Sub-basin would be indirectly impacted, since the River Restoration reduces the volume of surface water imported to the area, results in less CVP surplus water being available to the area, and thus increases reliance on groundwater supplies.

This memorandum is part of a comprehensive analysis of the vulnerability of local and imported water supplies for the Kaweah Groundwater Sub-basin. Other memorandums document:

1. The reliability of State Water Project (SWP) Supplies and Central Valley Project (CVP) Westside Supplies
2. Availability of alternative supplies to fulfill San Joaquin River Exchange Contractors supply and prevent an interruption of Friant CVP water deliveries
3. Limitations on the Delivery of High Flow San Joaquin River Water (Section 215 water, 16(b) $10 water and other surplus waters) and comparison to the timing of Kaweah River high flows.
4. The potential impacts of climate change on SWP, Westside CVP, Friant CVP and Kaweah River waters

Background Information

The San Joaquin River is an important source of surface water for the Kaweah Sub-basin. San Joaquin River water is stored in Millerton Lake located north of the Kaweah Sub-basin, and is delivered to numerous districts within the Kaweah Sub-basin via the Friant Kern Canal. The Friant-Kern Canal, a feature of the Federal Central Valley Project (hereinafter "CVP"), traverses the easterly portion of the Kaweah Sub-basin. The Friant Division of the CVP was constructed in the late 1940's and early 1950's, and for many decades has provided a reliable water supply.

In 2006, after an 18 year court battle, the Friant Division Contractors of the CVP entered into the San Joaquin River Settlement Agreement. The Settlement aimed to increase flows to the San Joaquin River to restore habitat and fisheries that were damaged by the construction of Friant Dam and the subsequent diversion of water for agricultural and municipal uses in the Friant Division service area. Estimated water supply reductions to all Friant Division contractors resulting from the restoration of flows under the San Joaquin River Restoration Program (SJRRP) are about 200,000 AF/year.

The Settlement Agreement has two co-equal goals, one is to restore naturally occurring healthy populations of Chinook salmon. The other is the water management goal, which includes a plan to recapture and re-circulate some of the Restoration Flows that are put downstream and to bring these flows back to the Friant Division contractors. At this point it is unclear how and how much of the water will be recaptured and recirculated. Several options are being investigated and studied as part of the federal environmental review process. The Settlement also has other programs to help mitigate water losses, including selling Unused Restoration Flows back to the Friant Districts, offering floodwater at reduced prices, and funding the construction of recharge and banking projects. These mitigation programs were not considered in the hydrologic modeling presented in this memo.

The July 2015 SJRRP Revised Framework for Implementation updated the US Bureau of Reclamation's 2012 framework, which established a schedule for implementation of the Restoration Program. The schedule for the SJRRP is important since it will determine when full Restoration Flows will be needed in the River. Full Restoration flows amounts are being made available to the SJRRP but are currently not being used in the River until certain facilities and river modifications are complete. This creates Unreleased Restoration Flows (URFs) that have the same impact to historic contract deliveries but the URF's are available for sale back to Friant contractors at premium prices (and potentially to others). Monies generated by the sale of the URFs are used to fund the River Restoration Program. The URFs will cease when river modifications allow full Restoration Flows in the River, which will be sometime between 2025 and 2029, as discussed below.

Every five years, the SJRRP provides a vision document meant to provide clear, realistic and accomplishable steps toward meeting the SJRRP Restoration Goal and Water Management Goal of the Settlement. The framework is based on anticipated federal and State of California appropriations, focused on the planning, permitting, design and construction of major physical project elements of the SJRRP.

The SJRRP is currently behind schedule and under funded, and is anticipated to be funding constrained into the future. SJRRP activities will be subject to available funding. Current funding needs are estimated at about $1.7 billion with approximately $780 million in anticipated funding. The following schedule for major activities are highlighted in the 2015 framework:

- FY 2015-2019, 5-year vision - 1,300 cfs flow capacity in all river Reaches, and completion of the Friant-Kern Canal and Madera Canal Capacity Restoration projects.
- FY 2020-2024 10-year vision - Primary work includes building out Reach 2B, implement the Sack Dam and Arroyo Canal project, increase channel capacity to 2,500 cfs, and award remaining groundwater banking projects.
- FY 2025-2029 15-year vision - Complete remaining Phase 1 and 2 channel and structural improvements and achieve *Full Restoration Flows*.
- FY 2030, beyond 15-year vision - Complete remaining construction, monitor and maintain the system and achieve a naturally reproducing and self-sustaining population of spring-run and fall-run Chinook salmon.

Modeling Results

The potential Impacts from the San Joaquin River Restoration were modeled using the *Friant Division Simulation Model*, an EXCEL workbook model. The results are documented in an April 2017 report from Dan Steiner entitled “Extension of Friant Workbook Model – Revised Results of SJRRP Analysis”. Two scenarios were modeled: 1) Pre SJRRP, and 2) Full Restoration Flows (interim flows were not evaluated). The model is based on the published Restoration Flow Guidelines (SJRRP, 2013). Two scenarios were evaluated including the standard guidelines (called ‘SJRRP’ in the model) and the standard guidelines plus 10% buffer flows (called ‘SJRRP +10%’ in the model). The model simulates river releases and canal diversions for various hydrologic year types. The model also considers flood control operations and required releases for downstream riparian water users. The model results do not consider potential impacts from San Joaquin River Exchange Contract obligations, so some values may be overstated. The model was developed using hydrology from 1922 through 2016.

Table 1 shows the specific impacts to Friant contractors in the Kaweah Sub-basin, including impacts to Class 1 and Class 2 deliveries. The model did not break down impacts to “Other” SJR water deliveries by Friant Division contractor since there is no predetermined contract allocation.

Table 1 – Estimated Impacts to Kaweah Sub-basin Friant Contractors (AF/year)

Water Agency	Full Contract		Current Average Delivery		SJRRP Average Impacts		SJRRP + 10% Average Impacts	
	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
Exeter ID	11,500	19,000	10,681	5,188	-617	-1,396	-772	-1,620
Ivanhoe ID	7,700	7,900	7,152	2,157	-413	-581	-517	-673
Lewis Creek WD	1,450		1,347		-78		-97	
Lindmore ID	33,000	22,000	30,651	6,008	-1,771	-1,617	-2,216	-1,875
Lindsay-Strathmore ID	27,500		25,542		-1,476		-1,846	
Stone Corral ID	10,000		9,288		-537		-671	
Tulare ID	30,000	141,000	27,864	38,503	-1,610	-10,363	-2,014	-12,020
City of Lindsay	2,500		2,322		-134		-168	
	Total		114,847	51,856	-6,636	-13,957	-8,301	-16,188
Class 1 and Class 2 Total			166,703		-20,593		-24,489	

The *Friant Division Simulation Model* was not updated to reflect some recent changes in Friant CVP contract assignments. Specifically, Ivanhoe ID reassigned 1,200 AF Class 1 water and 7,400 AF of Class 2 water to Kaweah Delta Water Conservation District. Since both are in the Kaweah Sub-basin, there was no net impact to the region's water resources. Furthermore, Lewis Creek Water District and Exeter Irrigation District reassigned 250 AF and 400 AF, respectively, of Friant water to other agencies outside of the Kaweah Sub-basin. If these changes had been incorporated, the resulting changes for the entire Kaweah Sub-basin would have been very minor.

Table 2 summarizes the estimated change in the reliability of Class 1 and Class 2 water, and the impact to 'Other' water supplies based on the model results.

Table 2 – San Joaquin River Water Reliability after Restoration

Water Supply	No Buffer Flows		10% Buffer Flows	
	Pre-SJRRP	Post-SJRRP	Pre-SJRRP	Post-SJRRP
Class 1 Water Reliability	93%	88%	93%	87%
Class 2 Water Reliability	27%	20%	27%	19%
Other Water Supplies (AF/year)	127,100	67,900	127,100	61,300

The *Friant Division Simulation Model* was initially created in the early stages of the restoration program. Based on the current SJRRP Framework, there was no need to make fundamental changes to the model, and the original model assumptions are considered valid. The only notable change made was the extension of the simulation period. The model was initially developed using hydrology from 1922-2004, which was later extended through 2009. As part of this effort the model was extended through 2016.

In comparison to previous modeling efforts *using the Friant Division Simulation Model*, the impacts presented in Table 1 are slightly lower. This was caused almost exclusively by extending the simulation period. The recent period added to the model included several very dry years. During these years, water supply impacts from the SJRRP were relatively minor, since there was a severe shortage of water for both the Friant contractors and the river restoration. This resulted in a slight reduction in estimated, long-term impacts.

Due to new USBR policies, Friant contractors can expect to have more opportunities to purchase URF waters than in the past, and this will continue until the physical restoration in the River is complete or nearly so, sometime between 2025 and 2029.

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Attachments

Attachment 1 – Project Area and Impacted Parties

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

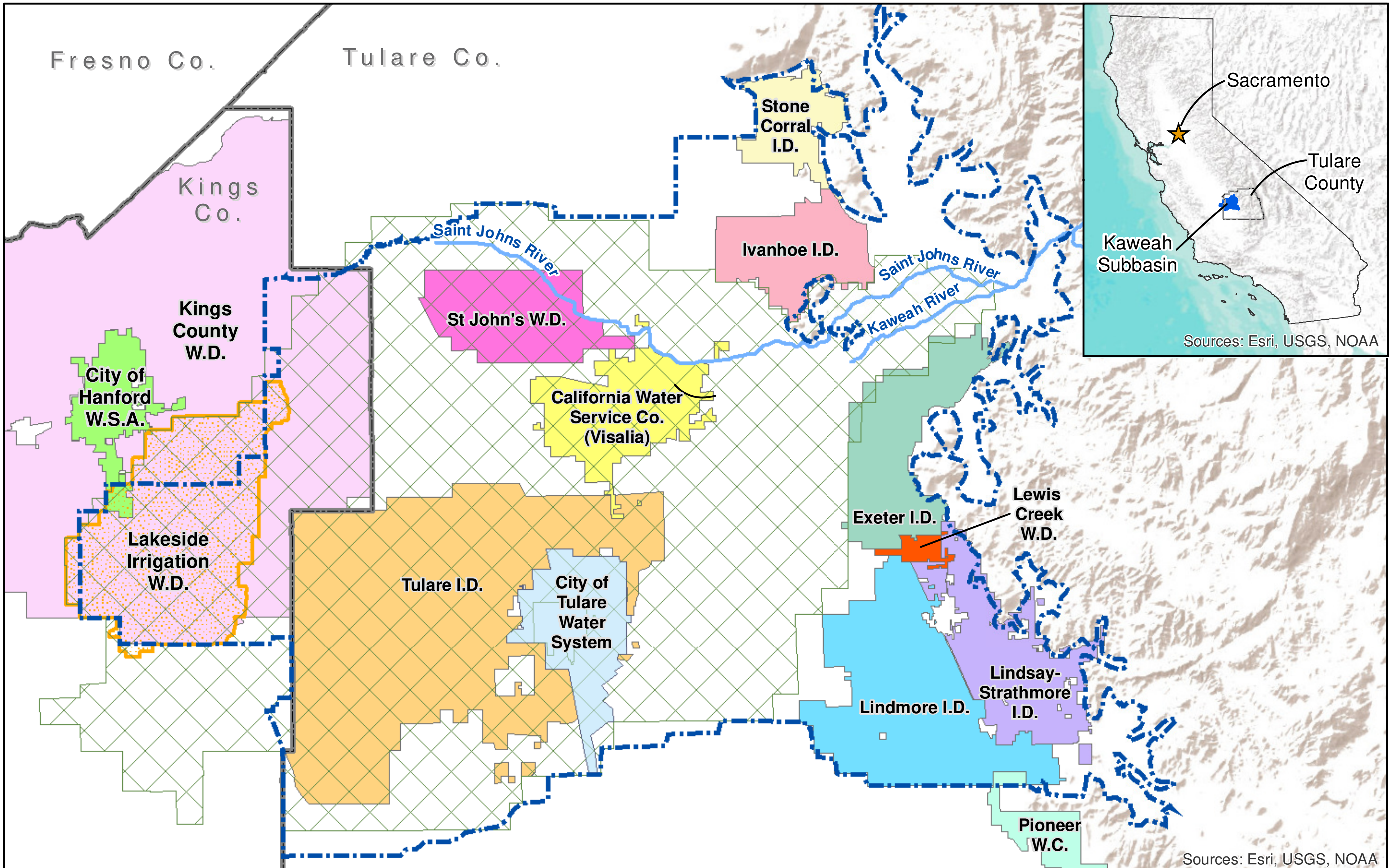
IMPACTS OF THE SAN JOAQUIN RIVER RESTORATION

ATTACHMENT 1 – PROJECT AREA AND IMPACTED PARTIES

Kaweah Basin Water Supply & Vulnerability Study
Imported Water Supply Contracts in Study Area

Agency	San Joaquin River (Friant Division of CVP)[1]	Kaweah River[2]
City of Lindsay	Class 1 – 2,500 AF	
Consolidated Peoples Ditch Co.		X
Elk Bayou Ditch Co./Bliss Ditch Co.		X
Evans Ditch Company		X
Exeter Irrigation District	Class 1 - 11,500 AF Class 2 - 19,000 AF	
Farmers Ditch Company		X
Fleming Ditch Company		X
Foothill Ditch Company		X
Hamilton Ditch Company		X
Ivanhoe Irrigation District	Class 1 - 6,500 AF Class 2 – 500 AF	
Kaweah Delta Water Conservation District	Class 1 – 1,200 AF Class 2 – 7,400 AF	X
Lemon Cove Ditch Company		X
Lewis Creek Water District	Class 1 - 1,450 AF	
Lindmore Irrigation District	Class 1 - 33,000 AF Class 2 - 22,000 AF	
Lindsay-Strathmore Irrigation Dist.	Class 1 - 27,500 AF	
Longs Canal Company		X
Matthews Ditch Company		X
Modoc Ditch Company		X
Oakes Ditch Company		X
Persian Ditch Company		X
St. Johns Ditch Company		X
Sentinel Butte Mutual Water Co.		X
Stone Corral Irrigation District	Class 1 - 10,000 AF	
Sweeney Ditch		X
Tulare Irrigation Company		X
Tulare Irrigation District	Class 1 - 30,000 AF Class 2 - 141,000 AF	X
Uphill Ditch Company		X
Watson Ditch Company		X
Wutchumna Water Company		X

1 – San Joaquin River contract represent maximum deliveries. Actual deliveries are often less than the maximum contract amount.
2 – Water contract volumes for Kaweah River water are not provided because they are based on a share of reservoir storage space and complex allocation formulas



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Kaweah Groundwater Subbasin
County Line

Kaweah Groundwater Subbasin

Water Agency Locations

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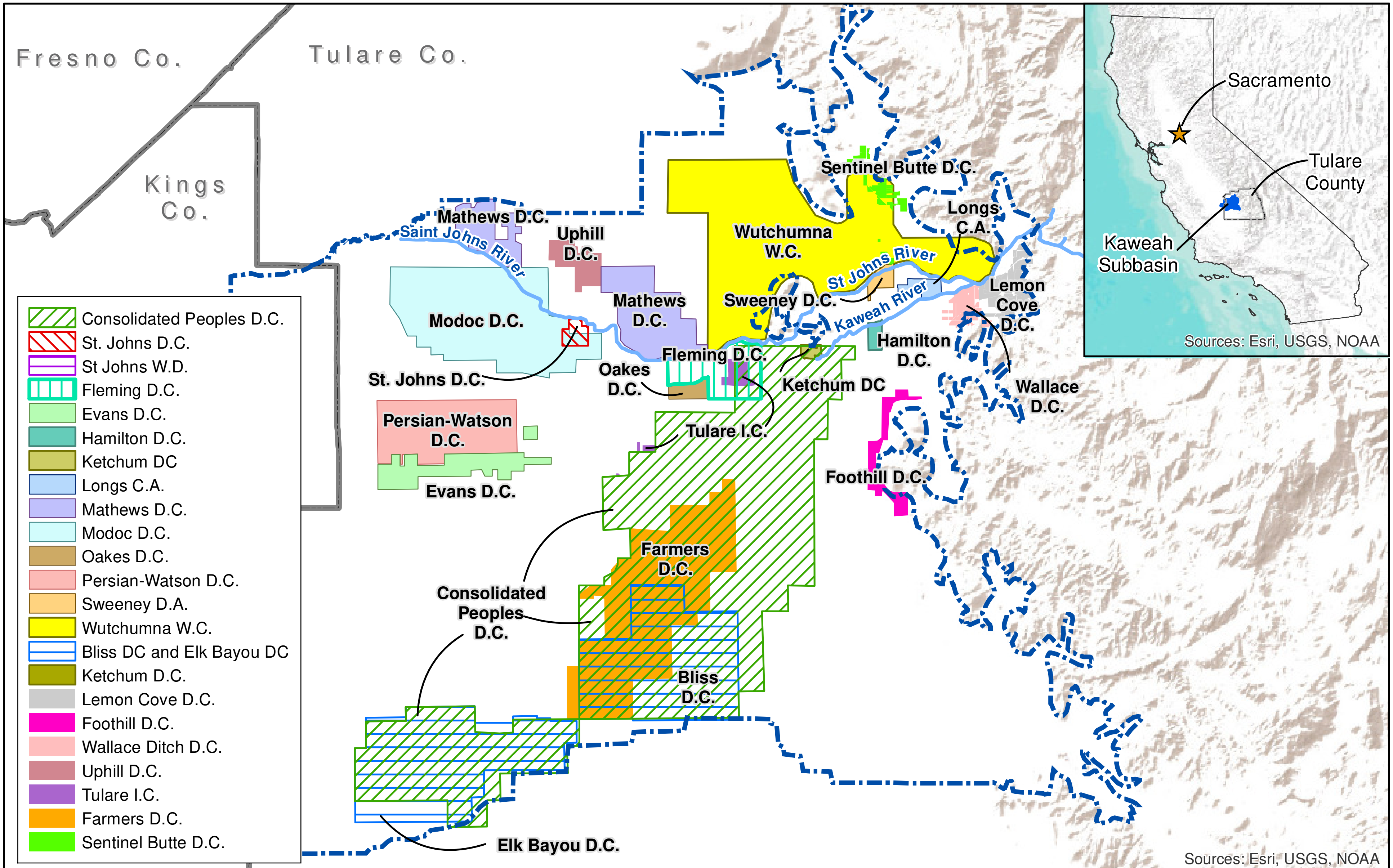

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Kaweah Groundwater Subbasin

Ditch Company Locations

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APPENDIX L.4

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

TASK 5 MEMORANDUM – LIMITATIONS ON THE DELIVERY OF HIGH FLOW SAN JOAQUIN RIVER WATER

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Memorandum

To:	Mark Larsen, Kaweah Delta Water Conservation District
From:	Richard Moss, Owen Kubit
Subject:	Kaweah Basin Imported Water Vulnerability Study Limitations on the Delivery of High Flow San Joaquin River Water (Task 5)
Date:	April 5, 2017

Executive Summary

The volume of Kaweah River and San Joaquin River high flows were estimated based on hydrology from 1962-2015 and current operational criteria. A comparison was made of the timing and availability of both river flows to better define the opportunity to bring additional water into the Kaweah Sub-basin from the San Joaquin River. Kaweah River high flows were estimated from two spill locations at Elk Bayou on the Lower Kaweah River and at Cross Creek past Kansas Avenue. San Joaquin River high flows were estimated using the *Friant Division Simulation Model*. San Joaquin River high flow estimates are based on restoration flow guidelines plus 10% buffer flows. Flows from the two sources often overlap, but high flows are sometimes only available from one river system. San Joaquin River high flows occur more frequently and at greater volumes than Kaweah River high flows. High flow diversions were estimated based on the estimated water availability and assumed Kaweah Sub-basin diversion capacities of 250, 500 and 1,000 cfs. Kaweah River high-flow diversion potential is 10,800 AF (250 cfs), 16,100 AF (500 cfs) and 20,600 AF (1,000 cfs). Diversion potential using both water sources is 28,400 AF (250 cfs), 49,700 AF (500 cfs) and 82,700 AF (1,000 cfs).

Introduction

This memorandum documents an analysis and comparison of high flows (flood water and other surplus waters) available to the Kaweah Groundwater Sub-basin from the Kaweah River and San Joaquin River.

Over the last several years significant surface water supply issues have developed that are redefining the imported water factors of the water balance for the Kaweah Sub-basin. They have primarily occurred as a result of the settlement of litigation, legislation and regulatory changes. Modeling was performed to assess the timing of availability of high flow San Joaquin River water. Additionally, a comparison was made with the timing and availability of Kaweah River flood releases to better define the true opportunity to bring additional water into the Kaweah Sub-basin from the San Joaquin River.

The study area includes the Kaweah Groundwater Sub-basin (Sub-basin) shown on the maps in **Attachment 1**. This area covers 446,000 acres (696 square miles) on the east side of the San

Joaquin Valley. The Sub-basin covers portions of Kings and Tulare Counties and includes numerous water agencies and canal/ditch companies. The Sub-basin includes the lower watershed of the Kaweah River and the soils are primarily comprised of alluvial fill material.

This memorandum is part of a comprehensive analysis of the vulnerability of local and imported water supplies for the Kaweah Groundwater Sub-basin. Other memorandums document:

1. The reliability of State Water Project (SWP) supplies and Central Valley Project (CVP) Westside supplies
2. Availability of alternative supplies to fulfill San Joaquin River Exchange Contractors supply and prevent an interruption of Friant CVP water deliveries
3. Impacts to Friant CVP contractors from implementation of the San Joaquin River Restoration, including how reliability has changed from historic conditions
4. The potential impacts of climate change on SWP, Westside CVP, Friant CVP and Kaweah River waters

Background Information

There are two primary surface water sources to lands lying within the Kaweah Sub-basin. The first source is water originating from the Kaweah River watershed and the second from outside water sources including San Joaquin River through the Friant-Kern Canal and the Kings River. These available waters are obtained by or entitled to various irrigation companies and districts for delivery for beneficial purposes to lands within their respective service areas. Only relatively small quantities of Kings River water are imported into the area, so the analysis focuses on a comparison of Kaweah River and San Joaquin River flows.

Millerton Lake provides the primary surface storage element for the Friant Division of the CVP. Friant water supplies are capable of being stored behind Friant Dam at Millerton Lake (principally limited to Class 1 entitlement) but the active storage amount is limited in comparison to the size of the watershed and runoff available at this diversion point in the San Joaquin River. Storage is also subject to flood operations criteria and the management of USBR. Millerton Lake lacks sufficient storage capacity to effectively carryover much water from year to year. Similarly, Lake Kaweah, which stores Kaweah River water behind Terminus Dam, has similar limitations and could benefit from expanded storage. Such an expansion occurred in 2004 where 40,000 acre-feet of capacity was added to Lake Kaweah with the installation of "fuse" gates in the emergency spillway. However, annually the Kaweah Lake is effectively emptied in order to create flood control space in the reservoir. Flood control operations for both reservoirs often dictate during the winter and spring that these reservoirs release water to maintain reservoir capacity for controlling potential rainfall and snowmelt runoff. The water agencies in the Kaweah Sub-basin attempt to beneficially use these waters to meet demands and for groundwater recharge.

The San Joaquin River high flows, called 'Other San Joaquin River Water' in the model, include Section 215 un-storable water (as defined in federal Reclamation Law) and Article 16(b) water (a provision of the San Joaquin Settlement), both of which are deemed surplus water to the nominal contract allocations available to Friant Contractors.

In very wet years, water flows out of the Kaweah Sub-basin in the form of spills. These spills represent surplus water above the existing ability of Kaweah water users to divert this water for irrigation or recharge. Two primary spill locations are recognized including Elk Bayou on the Lower Kaweah River, and at Cross Creek past Kansas Avenue. Quantification of these spills at these points is straightforward in that these spill points are gauged. In many years, no spill occurs at these locations. From the years of record obtained, large amounts of spills are concentrated in certain years, specifically 1969, 1982, 1983, 1995, 2006 and 2011.

Flows available from the two sources often overlap, since the watersheds are near each other in the southern Sierras, and they generally experience the same climate patterns. However, due to some regional differences in precipitation, as well as different storage availability and operational criteria, high flows are sometimes available from one river system and not in another.

The Kaweah Sub-basin water agencies prefer use of Kaweah River water over San Joaquin River water. Kaweah River high flows are typically free, while San Joaquin River high flows have a unit cost that, while nominal, has increased over the years. The local agencies also prefer to use their local water supplies to demonstrate beneficial use, as well as using Kaweah River water to reduce the potential for local flooding. However, use of high flows from both Rivers presents the best opportunity for maximizing water availability to the Kaweah Sub-basin and thus offsetting groundwater use and for direct recharge.

Since completion of construction by Reclamation in 1951, the Friant-Kern Canal (FKC) has lost its ability to fully meet its previously designed and constructed capacity, resulting in restrictions on water deliveries to the Friant Contractors. The reduction in capacity is a result of several factors, including original design limitations, ground subsidence, increased canal roughness, and changes in water delivery patterns. Hydraulic modeling, completed as part of the *Friant-Kern Canal Capacity Restoration Feasibility Report* (FKC Feasibility Report), authorized pursuant to the San Joaquin River Restoration Settlement Act, confirmed the reduction in FKC capacity in several reaches. **Attachment 3** contains the results of the capacity analysis from the FKC Feasibility Report comparing current estimated capacity against original design capacity. FKC sections upstream of the delivery point for Kaweah Sub-basin CVP contractors have sustained an approximately 8 to 18% percent loss of capacity from that originally designed with remaining capacity on the order of 4,100 cfs. The FKC Feasibility Report describes a number of scenarios where the capacity of the FKC will be upgraded. Federal funding for such improvement has been authorized, but thus far not provided for in SJRRP budgets. The impact of the FKC upgrades on the ability to convey and use high flows within the Kaweah Sib-basin would require detailed modeling and significant speculation as to a number of factors including: what portion of FKC high flows the Kaweah Sub-basin water users could subscribe, when and how significant improvements would be in FKC delivery capacity, timing and volume of demand within the

Kaweah Sub-basin, and improvements to delivery system capacity within the Kaweah Sub-basin necessary to take additional water, none of which was not performed here. The FKC Feasibility did prepare some analysis of the additional water that could potentially be delivered with the capacity improvements considered by one of the alternatives assuming with and without additional demand as created from new recharge projects (Part II Projects). For a matter of reference, they estimated a maximum single year increase in deliveries of 56 TAF without Part-III Projects and 113 TAF with Part-III Projects. Obviously, these improvements will improve the overall capability of all Friant contractors, including those in the Kaweah Sub-basin, to beneficially use San Joaquin River high flows.

As noted above, the analysis of the availability of high flows water supplies from these two sources for beneficial use within the Kaweah Sub-basin depends on numerous factors including water availability, conveyance capacity, diversion capacity and in-basin demands. A complex model would be required to consider all of these factors at once. Instead, a simplified approach was taken using the availability of high flows and assumed diversion capacities in the Kaweah Sub-basin. The availability of water from these two sources was compared against each other assuming an additional demand (or capacity limitation increase) allowing new diversions at the rate of 250 cfs, 500 cfs and 1,000 cfs. This analysis provides a feel for the magnitude of water potentially available from each source if the diversion capacity were increased while attempting to tease out the overlap in availability from the two sources.

Modeling Results

Hydrologic modeling was performed using the "*Friant Division Simulation Model*" to estimate the availability of 'Other' water supplies (Section 215 floodwater and other surplus waters) from the San Joaquin River. The results are documented in an April 2017 report from Dan Steiner entitled "Extension of Friant Workbook Model – Revised Results of SJRRP Analysis". It should be noted that the existing model was developed from review of historical FKC deliveries and operations, and as a result saw most of the original design "neck-downs." When comparing model results to the history used during development the model, it was designed to stay within known capacity limits. More recent subsidence events which are causing the current capacity constraints, especially in the southern end of the FKC, were not considered. The model has the ability to further constrain diversions, but some thought would have to be given to the geographical positions of such constraints and agreement reached by the investigating parties as to the empirical headwork's limits that should be used to simulate such constraints. A new model for post-processing of the diversions to get to the Contractor-level of deliveries would also need to be developed. All of these potential efforts were beyond the scope of this analysis.

'Other' water supplies in **Attachment 2** are presented for two scenarios: 1) River Restoration Flows based on Restoration Flow Guidelines (Tables 10 and 2) River restoration flows based on Restoration Flow Guidelines, but also including 10% additional buffer flows (Table 23). The buffer flows result in the use of more water for River Restoration and reducing the 'Other' San Joaquin River water. Hence, the scenario including the buffer flows was used in the analysis, since it provides a lower estimate of San Joaquin River high flows, is considered to be the more likely and is therefore more conservative.

Kaweah River spill data is available for 1962-2015. Estimates of 'Other' San Joaquin River flow are available for a longer period, but a similar period was desired for comparison, so the analysis was performed for the period of 1962-2015. The high flow data for both rivers is shown in a series of tables in **Attachment 2**. **Table 1** is a comparison the general frequency and magnitude of high flows in both rivers. When high flows occur they are usually between the months of January to June. Note that in some months the high flows are only available in very small quantities.

Table 1 – Comparison of Kaweah River and San Joaquin River High Flows (1962-2015)

Description	Kaweah River	San Joaquin River
No. of Years with High Flows	23	35
% of Years with High Flows	41%	63%
No. of Months with High Flows	126	161
% of Months with High Flows	19%	25%
Avg. Flow in Months with High Flows	171 cfs	247 cfs
Avg. Volume in Months with High Flows	10,200 AF	14,700 AF

Table 2 shows estimated high flow diversions if total additional Kaweah Sub-basin diversion capacities are 250, 500 and 1,000 cfs. Values are provided for Kaweah River, both rivers, and the supplemental contribution from the San Joaquin River if the San Joaquin River high flows are used after Kaweah high flows are diverted.

Table 2 – High Flow Diversion Potential – Kaweah and San Joaquin Rivers

Diversion Capacity	Kaweah River Diversions	Kaweah & San Joaquin River Diversions	Contribution from San Joaquin River
250 cfs	10,800 AF	28,400 AF	17,600 AF
500 cfs	16,100 AF	49,700 AF	33,600 AF
1,000 cfs	20,600 AF	82,700 AF	62,100 AF

Note: Values rounded to the nearest hundred

San Joaquin River high flows occur more frequently and at greater volumes than Kaweah River high flows. Therefore, the Kaweah Sub-basin can benefit significantly if they use a combination of Kaweah and San Joaquin River high flows.

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Attachments

Attachment 1 – Project Area and Impacted Parties
Attachment 2 – Kaweah and San Joaquin River High Flows
Attachment 3 – Friant-Kern Canal Capacity Limitations

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

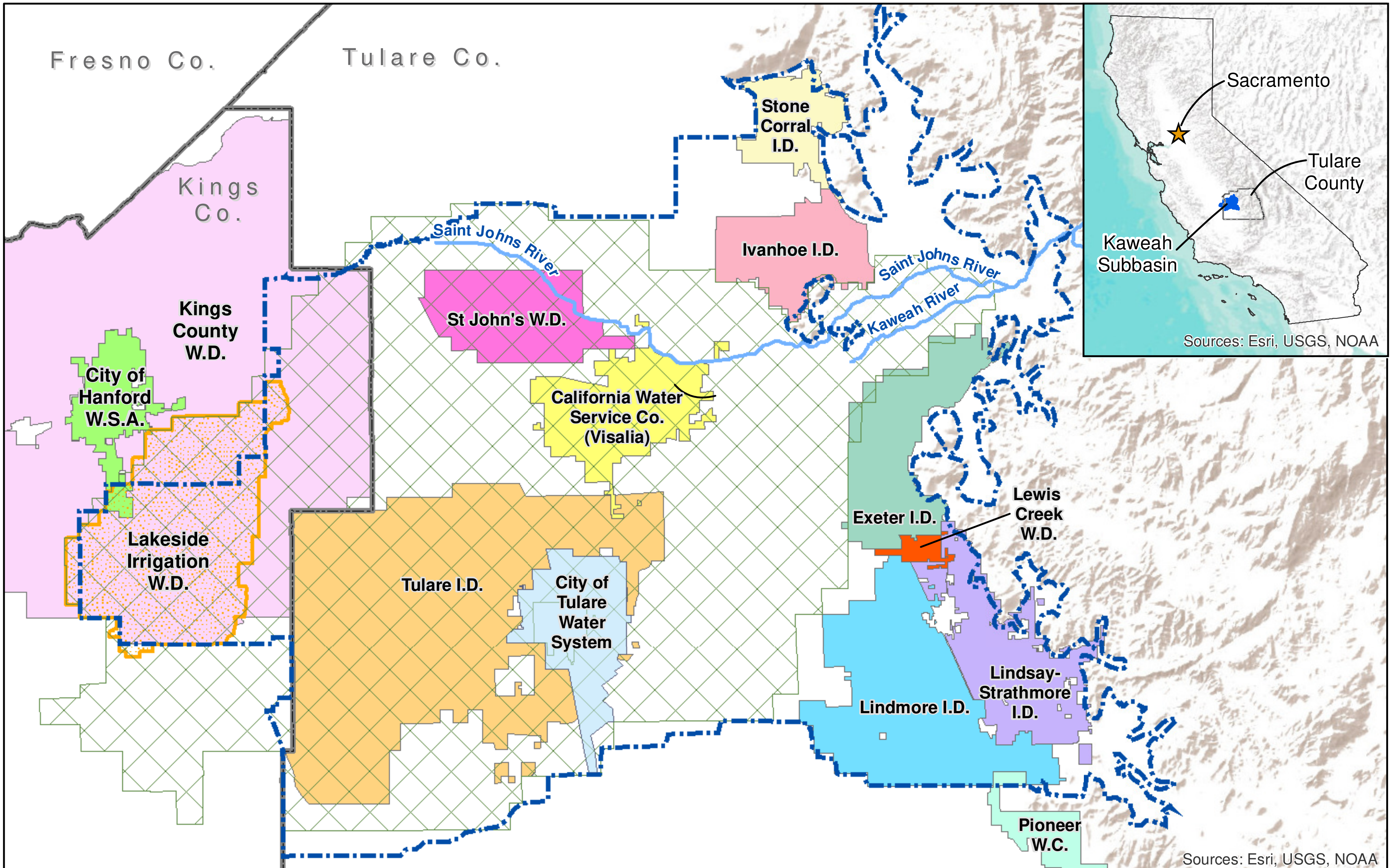
LIMITATIONS ON THE DELIVERY OF HIGH FLOW SAN JOAQUIN RIVER WATER

ATTACHMENT 1 – PROJECT AREA AND IMPACTED PARTIES

Kaweah Basin Water Supply & Vulnerability Study
Imported Water Supply Contracts in Study Area

Agency	San Joaquin River (Friant Division of CVP)[1]	Kaweah River[2]
City of Lindsay	Class 1 – 2,500 AF	
Consolidated Peoples Ditch Co.		X
Elk Bayou Ditch Co./Bliss Ditch Co.		X
Evans Ditch Company		X
Exeter Irrigation District	Class 1 - 11,500 AF Class 2 - 19,000 AF	
Farmers Ditch Company		X
Fleming Ditch Company		X
Foothill Ditch Company		X
Hamilton Ditch Company		X
Ivanhoe Irrigation District	Class 1 - 6,500 AF Class 2 – 500 AF	
Kaweah Delta Water Conservation District	Class 1 – 1,200 AF Class 2 – 7,400 AF	X
Lemon Cove Ditch Company		X
Lewis Creek Water District	Class 1 - 1,450 AF	
Lindmore Irrigation District	Class 1 - 33,000 AF Class 2 - 22,000 AF	
Lindsay-Strathmore Irrigation Dist.	Class 1 - 27,500 AF	
Longs Canal Company		X
Matthews Ditch Company		X
Modoc Ditch Company		X
Oakes Ditch Company		X
Persian Ditch Company		X
St. Johns Ditch Company		X
Sentinel Butte Mutual Water Co.		X
Stone Corral Irrigation District	Class 1 - 10,000 AF	
Sweeney Ditch		X
Tulare Irrigation Company		X
Tulare Irrigation District	Class 1 - 30,000 AF Class 2 - 141,000 AF	X
Uphill Ditch Company		X
Watson Ditch Company		X
Wutchumna Water Company		X

1 – San Joaquin River contract represent maximum deliveries. Actual deliveries are often less than the maximum contract amount.
2 – Water contract volumes for Kaweah River water are not provided because they are based on a share of reservoir storage space and complex allocation formulas



EST. 1968 PROVOST& PRITCHARD CONSULTING GROUP
An Employee Owned Company

0 3 6
Miles

Kaweah Delta W.C.D.
Kaweah Groundwater Subbasin
County Line

Kaweah Groundwater Subbasin

Water Agency Locations

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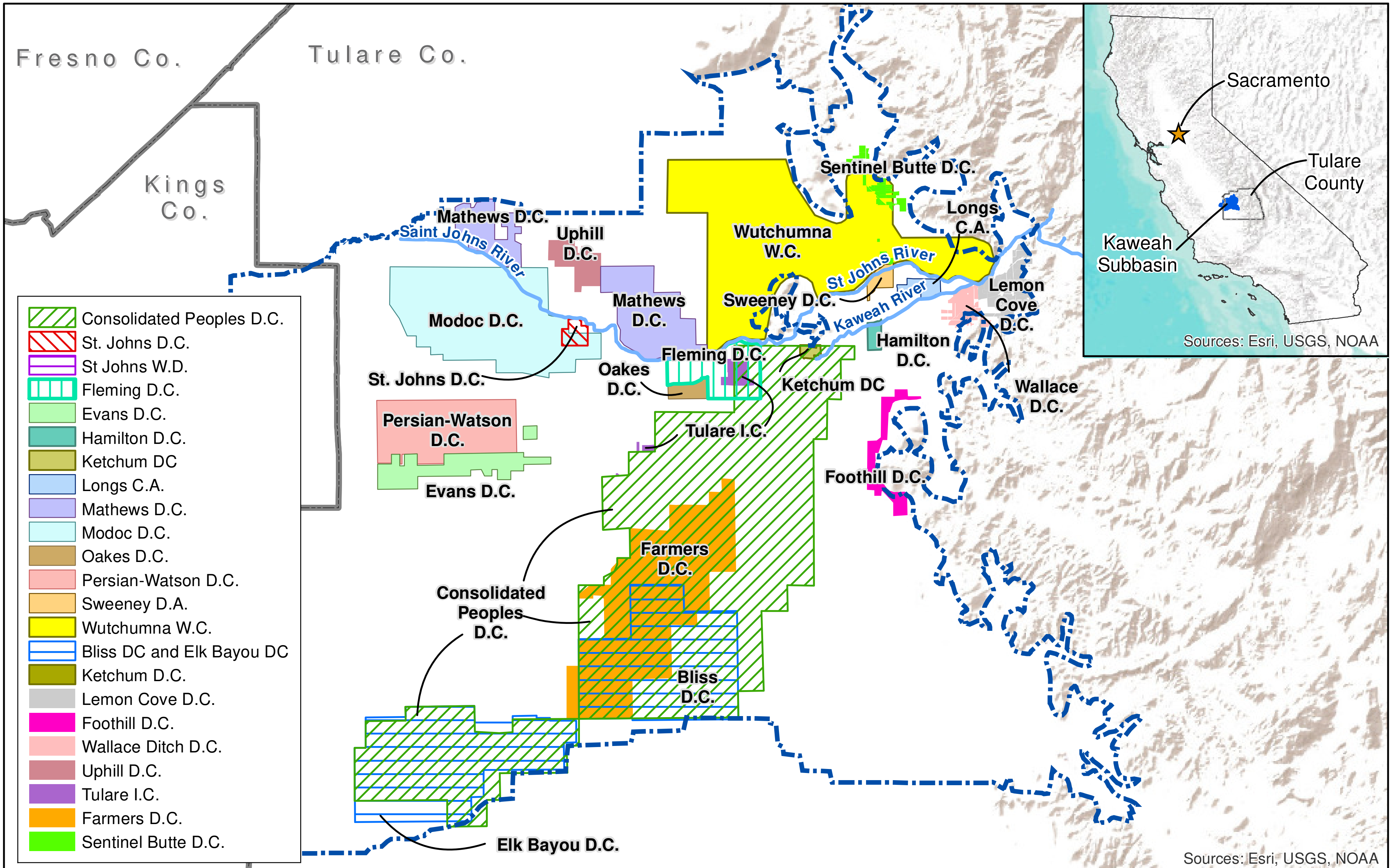

EST. 1968
PROVOST& PRITCHARD
CONSULTING GROUP
An Employee Owned Company

0 3 6
Miles

Kaweah Groundwater Subbasin
County Line

Kaweah Groundwater Subbasin

Ditch Company Locations

3/7/2017 : G:\Kaweah Delta WCD-1225\122516002-Kaweah Basin Water Supply Study\GIS\Map\Kaweah GW Subbasin Ditch Companies FontSame.mxd

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

LIMITATIONS ON THE DELIVERY OF HIGH FLOW SAN JOAQUIN RIVER WATER

ATTACHMENT 2 – KAWEAH AND SAN JOAQUIN RIVER HIGH FLOWS

Kaweah River Spills
Elk Bayou at Road 92

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	4,518	-	100	-	-	-	-	-	**4,618**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1966	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1967	-	-	11,677	85	-	-	1,371	1,079	567	1,162	-	-	**15,941**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	7,732	16,425	11,221	9,804	6,341	5,768	569	678	1,299	**59,837**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	1,285	-	-	-	**6,160**
1974	-	-	-	62	-	-	405	-	294	-	-	-	**761**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	2,614	2,951	2,515	5,340	367	14	-	-	**13,801**
1979	-	-	-	-	-	30	-	-	-	-	-	-	**30**
1980	-	-	-	2,138	6,843	7,956	198	278	113	-	-	-	**17,526**
1981	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1982	-	-	-	-	-	214	10,735	9,751	3,082	385	-	-	**24,167**
1983	-	1,139	4,923	9,309	14,420	26,936	16,425	3,358	7,799	8,182	1,244	1,886	**95,621**
1984	926	657	5,500	4,885	659	-	-	-	-	-	-	-	**12,627**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	5,028	9,806	1,567	1,196	579	-	-	-	**18,176**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	-	4,752	2,172	3,237	1,317	-	-	-	**11,500**
1996	-	-	-	-	137	99	-	-	-	-	-	-	**236**
1997	-	-	-	17,334	8,172	87	-	-	-	-	-	-	**25,593**
1998	-	-	-	551	4,675	5,480	6,365	1,004	1,226	676	422	103	**20,502**
1999	-	121	177	1,091	684	30	-	-	-	-	-	-	**2,103**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	60	141	-	-	-	-	-	**201**
2006	-	-	-	672	-	167	2,973	3,880	1,260	875	113	-	**9,940**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	1,753	472	3,354	573	710	791	353	494	38	**11,833**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2016													**-**
2017													**-**
2018													**-**
2019													**-**
2020													**-**
TOTALS	**1,293**	**1,947**	**26,137**	**47,508**	**66,890**	**78,493**	**55,350**	**36,386**	**24,861**	**12,216**	**2,951**	**3,326**	**357,358**
AVERAGE	**24**	**36**	**484**	**880**	**1,239**	**1,454**	**1,025**	**674**	**460**	**226**	**55**	**62**	**6,057**
MAXIMUM	**926**	**1,139**	**11,677**	**17,334**	**16,425**	**26,936**	**16,425**	**9,751**	**7,799**	**8,182**	**1,244**	**1,886**	**95,621**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Kaweah River Spills
Cross Creek at HWY 43

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	2,132	-	-	-	-	-	-	-	2,132
1964	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	31,992	512	4	-	1,226	12,550	399	387	-	-	47,070
1968	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	28,307	75,835	70,593	36,274	23,350	45,164	-	-	-	279,523
1970	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	-	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	-	-	-	-	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	2,509	1,047	44	-	-	-	-	-	3,600
1979	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	557	14,061	45,079	115,200	49,006	5,246	23,376	12,173	-	-	264,698
1984	2,206	4,810	15,497	11,463	6,635	4,405	161	684	714	-	-	-	46,575
1985	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	7,311	12,845	119	-	-	-	-	-	20,275
1987	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	363	22,231	23,233	2,918	36,645	15,799	-	-	101,189
1996	-	-	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	2,579	74,937	20,490	-	-	-	-	-	-	-	98,006
1998	-	-	-	-	1,160	2,275	19,309	28,011	8,331	9,059	-	-	68,145
1999	-	-	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	?	?	?	?	?	?	?	?	?	?	?	?	-
2012	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-	-	-	-
2016													-
2017													-
2018													-
2019													-
2020													-
TOTALS	**2,206**	**4,810**	**50,625**	**129,280**	**161,518**	**228,596**	**129,372**	**72,759**	**114,629**	**37,418**	**-**	**-**	**931,213**
AVERAGE	**42**	**91**	**955**	**2,439**	**3,048**	**4,313**	**2,441**	**1,373**	**2,163**	**706**	**-**	**-**	**15,783**
MAXIMUM	**2,206**	**4,810**	**31,992**	**74,937**	**75,835**	**115,200**	**49,006**	**28,011**	**45,164**	**15,799**	**-**	**-**	**279,523**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Kaweah River Spills
Combined (Elk Bayou and Cross Creek)

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	6,650	-	100	-	-	-	-	-	**6,750**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1966	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1967	-	-	43,669	597	4	-	2,597	13,629	966	1,549	-	-	**63,011**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	36,039	92,260	81,814	46,078	29,691	50,932	569	678	1,299	**339,360**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	1,285	-	-	-	**6,160**
1974	-	-	-	62	-	-	405	-	294	-	-	-	**761**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	5,123	3,998	2,559	5,340	367	14	-	-	**17,401**
1979	-	-	-	-	-	30	-	-	-	-	-	-	**30**
1980	-	-	-	2,138	6,843	7,956	198	278	113	-	-	-	**17,526**
1981	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1982	-	-	-	-	-	214	10,735	9,751	3,082	385	-	-	**24,167**
1983	-	1,139	5,480	23,370	59,499	142,136	65,431	8,604	31,175	20,355	1,244	1,886	**360,319**
1984	3,132	5,467	20,997	16,348	7,294	4,405	161	684	714	-	-	-	**59,202**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	12,339	22,651	1,686	1,196	579	-	-	-	**38,451**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	363	26,983	25,405	6,155	37,962	15,799	-	-	**112,689**
1996	-	-	-	-	137	99	-	-	-	-	-	-	**236**
1997	-	-	2,579	92,271	28,662	87	-	-	-	-	-	-	**123,599**
1998	-	-	-	551	5,835	7,755	25,674	29,015	9,557	9,735	422	103	**88,647**
1999	-	121	177	1,091	684	30	-	-	-	-	-	-	**2,103**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	60	141	-	-	-	-	-	**201**
2006	-	-	-	672	-	167	2,973	3,880	1,260	875	113	-	**9,940**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	1,753	472	3,354	573	710	791	353	494	38	**11,833**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2016													**-**
2017													**-**
2018													**-**
2019													**-**
2020													**-**
TOTALS	**3,499**	**6,757**	**76,762**	**176,788**	**228,408**	**307,089**	**184,722**	**109,145**	**139,490**	**49,634**	**2,951**	**3,326**	**1,288,571**
AVERAGE	**65**	**125**	**1,422**	**3,274**	**4,230**	**5,687**	**3,421**	**2,021**	**2,583**	**919**	**55**	**62**	**21,840**
MAXIMUM	**3,132**	**5,467**	**43,669**	**92,271**	**92,260**	**142,136**	**65,431**	**29,691**	**50,932**	**20,355**	**1,244**	**1,886**	**360,319**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Kaweah River Spills
Combined (Elk Bayou and Cross Creek)

Diversion Capacity 250 cfs

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	6,650	-	100	-	-	-	-	-	**6,750**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1966	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1967	-	-	15,000	597	4	-	2,597	13,629	966	1,549	-	-	**34,342**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	15,000	15,000	15,000	15,000	15,000	15,000	569	678	1,299	**92,546**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	1,285	-	-	-	**6,160**
1974	-	-	-	62	-	-	405	-	294	-	-	-	**761**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	5,123	3,998	2,559	5,340	367	14	-	-	**17,401**
1979	-	-	-	-	-	30	-	-	-	-	-	-	**30**
1980	-	-	-	2,138	6,843	7,956	198	278	113	-	-	-	**17,526**
1981	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1982	-	-	-	-	-	214	10,735	9,751	3,082	385	-	-	**24,167**
1983	-	1,139	5,480	15,000	15,000	15,000	15,000	8,604	15,000	15,000	1,244	1,886	**108,353**
1984	3,132	5,467	15,000	15,000	7,294	4,405	161	684	714	-	-	-	**51,857**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	12,339	15,000	1,686	1,196	579	-	-	-	**30,800**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	363	15,000	15,000	6,155	15,000	15,000	-	-	**66,540**
1996	-	-	-	-	137	99	-	-	-	-	-	-	**236**
1997	-	-	2,579	15,000	15,000	87	-	-	-	-	-	-	**32,666**
1998	-	-	-	551	5,835	7,755	15,000	15,000	9,557	9,735	422	103	**63,958**
1999	-	121	177	1,091	684	30	-	-	-	-	-	-	**2,103**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	60	141	-	-	-	-	-	**201**
2006	-	-	-	672	-	167	2,973	3,880	1,260	875	113	-	**9,940**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	1,753	472	3,354	573	710	791	353	494	38	**11,833**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
TOTALS	**3,499**	**6,757**	**42,096**	**68,760**	**92,987**	**93,505**	**82,134**	**80,439**	**64,421**	**43,480**	**2,951**	**3,326**	**584,355**
AVERAGE	**65**	**125**	**780**	**1,273**	**1,722**	**1,732**	**1,521**	**1,490**	**1,193**	**805**	**55**	**62**	**10,821**
MAXIMUM	**3,132**	**5,467**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**1,244**	**1,886**	**108,353**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Kaweah River Spills
Combined (Elk Bayou and Cross Creek)

Diversion Capacity 500 cfs

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	6,650	-	100	-	-	-	-	-	**6,750**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1966	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1967	-	-	30,000	597	4	-	2,597	13,629	966	1,549	-	-	**49,342**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	30,000	30,000	30,000	30,000	29,691	30,000	569	678	1,299	**182,237**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	1,285	-	-	-	**6,160**
1974	-	-	-	62	-	-	405	-	294	-	-	-	**761**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	5,123	3,998	2,559	5,340	367	14	-	-	**17,401**
1979	-	-	-	-	-	30	-	-	-	-	-	-	**30**
1980	-	-	-	2,138	6,843	7,956	198	278	113	-	-	-	**17,526**
1981	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1982	-	-	-	-	-	214	10,735	9,751	3,082	385	-	-	**24,167**
1983	-	1,139	5,480	23,370	30,000	30,000	30,000	8,604	30,000	20,355	1,244	1,886	**182,078**
1984	3,132	5,467	20,997	16,348	7,294	4,405	161	684	714	-	-	-	**59,202**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	12,339	22,651	1,686	1,196	579	-	-	-	**38,451**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	363	26,983	25,405	6,155	30,000	15,799	-	-	**104,727**
1996	-	-	-	-	137	99	-	-	-	-	-	-	**236**
1997	-	-	2,579	30,000	28,662	87	-	-	-	-	-	-	**61,328**
1998	-	-	-	551	5,835	7,755	25,674	29,015	9,557	9,735	422	103	**88,647**
1999	-	121	177	1,091	684	30	-	-	-	-	-	-	**2,103**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	60	141	-	-	-	-	-	**201**
2006	-	-	-	672	-	167	2,973	3,880	1,260	875	113	-	**9,940**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	1,753	472	3,354	573	710	791	353	494	38	**11,833**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
TOTALS	**3,499**	**6,757**	**63,093**	**108,478**	**136,649**	**143,139**	**133,213**	**109,145**	**109,421**	**49,634**	**2,951**	**3,326**	**869,305**
AVERAGE	**65**	**125**	**1,168**	**2,009**	**2,531**	**2,651**	**2,467**	**2,021**	**2,026**	**919**	**55**	**62**	**16,098**
MAXIMUM	**3,132**	**5,467**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**29,691**	**30,000**	**20,355**	**1,244**	**1,886**	**182,237**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Kaweah River Spills
Combined (Elk Bayou and Cross Creek)

Diversion Capacity 1,000 cfs

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	6,650	-	100	-	-	-	-	-	**6,750**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1966	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1967	-	-	43,669	597	4	-	2,597	13,629	966	1,549	-	-	**63,011**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	36,039	60,000	60,000	46,078	29,691	50,932	569	678	1,299	**285,286**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	1,285	-	-	-	**6,160**
1974	-	-	-	62	-	-	405	-	294	-	-	-	**761**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	5,123	3,998	2,559	5,340	367	14	-	-	**17,401**
1979	-	-	-	-	-	30	-	-	-	-	-	-	**30**
1980	-	-	-	2,138	6,843	7,956	198	278	113	-	-	-	**17,526**
1981	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1982	-	-	-	-	-	214	10,735	9,751	3,082	385	-	-	**24,167**
1983	-	1,139	5,480	23,370	59,499	60,000	60,000	8,604	31,175	20,355	1,244	1,886	**272,752**
1984	3,132	5,467	20,997	16,348	7,294	4,405	161	684	714	-	-	-	**59,202**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	12,339	22,651	1,686	1,196	579	-	-	-	**38,451**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	363	26,983	25,405	6,155	37,962	15,799	-	-	**112,689**
1996	-	-	-	-	137	99	-	-	-	-	-	-	**236**
1997	-	-	2,579	60,000	28,662	87	-	-	-	-	-	-	**91,328**
1998	-	-	-	551	5,835	7,755	25,674	29,015	9,557	9,735	422	103	**88,647**
1999	-	121	177	1,091	684	30	-	-	-	-	-	-	**2,103**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	60	141	-	-	-	-	-	**201**
2006	-	-	-	672	-	167	2,973	3,880	1,260	875	113	-	**9,940**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	1,753	472	3,354	573	710	791	353	494	38	**11,833**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
TOTALS	**3,499**	**6,757**	**76,762**	**144,517**	**196,148**	**203,139**	**179,291**	**109,145**	**139,490**	**49,634**	**2,951**	**3,326**	**1,114,659**
AVERAGE	**65**	**125**	**1,422**	**2,676**	**3,632**	**3,762**	**3,320**	**2,021**	**2,583**	**919**	**55**	**62**	**20,642**
MAXIMUM	**3,132**	**5,467**	**43,669**	**60,000**	**60,000**	**60,000**	**60,000**	**29,691**	**50,932**	**20,355**	**1,244**	**1,886**	**285,286**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

SAN JOAQUIN RIVER 'OTHER' WATER

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	0	-
1963	-	-	-	-	45,000	-	-	-	-	-	-	0	45,000
1964	-	-	-	-	-	-	-	-	-	-	-	0	-
1965	-	-	-	74,000	72,000	-	-	-	-	-	-	0	146,000
1966	-	-	-	35,000	9,000	-	-	47,000	-	-	-	0	91,000
1967	-	-	-	1,000	72,000	-	-	6,000	6,000	73,000	78,000	0	236,000
1968	-	-	-	-	-	-	-	-	-	-	-	0	-
1969	-	-	-	-	6,000	6,000	6,000	6,000	4,000	79,000	-	0	107,000
1970	-	-	-	-	-	-	-	-	-	-	-	0	-
1971	-	-	-	-	-	-	-	-	-	-	-	0	-
1972	-	-	-	-	-	-	-	-	-	-	-	0	-
1973	-	-	-	-	-	-	-	-	60,000	-	-	0	60,000
1974	-	-	-	74,000	34,000	32,000	-	70,000	59,000	-	-	0	269,000
1975	-	-	-	-	-	-	-	-	-	-	-	0	-
1976	-	-	-	-	-	-	-	-	-	-	-	0	-
1977	-	-	-	-	-	-	-	-	-	-	-	0	-
1978	-	-	-	-	6,000	6,000	6,000	6,000	77,000	76,000	-	0	177,000
1979	-	-	-	23,000	-	21,000	-	41,000	45,000	-	-	0	130,000
1980	-	-	-	-	6,000	3,000	-	72,000	-	64,000	-	0	145,000
1981	-	-	-	1,000	8,000	-	-	-	-	-	-	0	9,000
1982	-	-	-	-	72,000	80,000	6,000	80,000	77,000	14,000	-	0	329,000
1983	62,000	71,000	-	-	6,000	6,000	6,000	6,000	-	74,000	-	0	231,000
1984	-	68,000	-	74,000	7,000	14,000	-	-	-	-	-	0	163,000
1985	-	-	-	-	-	-	-	-	-	-	-	0	-
1986	-	-	-	-	6,000	6,000	77,000	80,000	24,000	-	-	0	193,000
1987	-	-	-	-	-	-	-	-	-	-	-	0	-
1988	-	-	-	-	-	-	-	-	-	-	-	0	-
1989	-	-	-	-	-	-	-	-	-	-	-	0	-
1990	-	-	-	-	-	-	-	-	-	-	-	0	-
1991	-	-	-	-	-	-	-	-	-	-	-	0	-
1992	-	-	-	-	-	-	-	-	-	-	-	0	-
1993	-	-	-	-	2,000	-	-	78,000	-	-	-	0	80,000
1994	-	-	-	-	-	-	-	-	-	-	-	0	-
1995	-	-	-	-	72,000	6,000	77,000	6,000	71,000	74,000	-	0	306,000
1996	-	-	-	-	58,000	6,000	-	80,000	70,000	-	-	0	214,000
1997	-	-	-	-	6,000	67,000	-	55,000	-	-	-	0	128,000
1998	-	-	-	-	6,000	-	5,000	6,000	6,000	78,000	-	0	101,000
1999	-	-	-	-	35,000	64,000	-	-	-	-	-	0	99,000
2000	-	-	-	-	-	-	-	-	-	-	-	0	-
2001	-	-	-	-	-	-	-	-	-	-	-	0	-
2002	-	-	-	-	-	-	-	-	-	-	-	0	-
2003	-	-	-	-	-	-	-	-	-	-	-	0	-
2004	-	-	-	-	-	-	-	-	-	-	-	0	-
2005	-	-	-	-	-	80,000	77,000	6,000	77,000	17,000	-	0	257,000
2006	-	-	-	-	72,000	80,000	6,000	6,000	77,000	20,000	-	0	261,000
2007	-	-	-	-	-	-	-	-	-	-	-	0	-
2008	-	-	-	-	-	-	-	-	-	-	-	0	-
2009	-	-	-	-	-	-	-	-	-	-	-	0	-
2010	-	-	-	-	-	-	-	-	-	-	-	0	-
2011	-	-	-	74,000	72,000	6,000	6,000	80,000	77,000	71,000	-	0	386,000
2012	-	-	-	-	-	-	-	-	-	-	-	0	-
2013	-	-	-	-	-	-	-	-	-	-	-	0	-
2014	-	-	-	-	-	-	-	-	-	-	-	0	-
2015	-	-	-	-	-	-	-	-	-	-	-	0	-
2016													-
2017													-
2018													-
2019													-
2020													-
TOTALS	**62,000**	**139,000**	**-**	**356,000**	**672,000**	**483,000**	**272,000**	**731,000**	**730,000**	**640,000**	**78,000**	**-**	**4,163,000**
AVERAGE	**1,148**	**2,574**	**-**	**6,593**	**12,444**	**8,944**	**5,037**	**13,537**	**13,519**	**11,852**	**1,444**	**-**	**70,559**
MAXIMUM	**62,000**	**71,000**	**-**	**74,000**	**72,000**	**80,000**	**77,000**	**80,000**	**77,000**	**79,000**	**78,000**	**-**	**386,000**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

SAN JOAQUIN RIVER AND KAWEAH RIVER HIGH FLOWS

Diversion Capacity **250** cfs

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	15,000	-	100	-	-	-	-	-	**15,100**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	15,000	15,000	-	-	-	-	-	-	-	**30,000**
1966	-	-	-	15,000	9,000	-	-	15,000	-	-	-	-	**39,000**
1967	-	-	15,000	1,597	15,000	-	2,597	15,000	6,966	15,000	15,000	-	**86,160**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	15,000	15,000	15,000	15,000	15,000	15,000	15,000	678	1,299	**106,977**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	15,000	-	-	-	**19,875**
1974	-	-	-	15,000	15,000	15,000	405	15,000	15,000	-	-	-	**75,405**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	11,123	9,998	8,559	11,340	15,000	15,000	-	-	**71,020**
1979	-	-	-	15,000	-	15,000	-	15,000	15,000	-	-	-	**60,000**
1980	-	-	-	2,138	12,843	10,956	198	15,000	113	15,000	-	-	**56,248**
1981	-	-	-	1,000	8,000	-	-	-	-	-	-	-	**9,000**
1982	-	-	-	-	15,000	15,000	15,000	15,000	15,000	14,385	-	-	**89,385**
1983	15,000	15,000	5,480	15,000	15,000	15,000	15,000	14,604	15,000	15,000	1,244	1,886	**143,214**
1984	3,132	15,000	15,000	15,000	14,294	15,000	161	684	714	-	-	-	**78,985**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	15,000	15,000	15,000	15,000	15,000	-	-	-	**75,000**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	2,000	-	-	15,000	-	-	-	-	**17,000**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	15,000	15,000	15,000	12,155	15,000	15,000	-	-	**87,177**
1996	-	-	-	-	15,000	6,099	-	15,000	15,000	-	-	-	**51,099**
1997	-	-	2,579	15,000	15,000	15,000	-	15,000	-	-	-	-	**62,579**
1998	-	-	-	551	11,835	7,755	15,000	15,000	15,000	15,000	422	103	**80,666**
1999	-	121	177	1,091	15,000	15,000	-	-	-	-	-	-	**31,389**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	15,000	15,000	6,000	15,000	15,000	-	-	**66,000**
2006	-	-	-	672	15,000	15,000	8,973	9,880	15,000	15,000	113	-	**79,638**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	15,000	15,000	9,354	6,573	15,000	15,000	15,000	494	38	**94,754**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
TOTALS	**18,499**	**30,151**	**42,096**	**143,945**	**281,338**	**229,512**	**132,572**	**249,875**	**218,206**	**164,385**	**17,951**	**3,326**	**1,531,856**
AVERAGE	**343**	**558**	**780**	**2,666**	**5,210**	**4,250**	**2,455**	**4,627**	**4,041**	**3,044**	**332**	**62**	**28,368**
MAXIMUM	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**15,000**	**1,886**	**143,214**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

SAN JOAQUIN RIVER AND KAWEAH RIVER HIGH FLOWS

Diversion Capacity **500** **cfs**

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1963	-	-	-	-	30,000	-	100	-	-	-	-	-	**30,100**
1964	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1965	-	-	-	30,000	30,000	-	-	-	-	-	-	-	**60,000**
1966	-	-	-	30,000	9,000	-	-	30,000	-	-	-	-	**69,000**
1967	-	-	30,000	1,597	30,000	-	2,597	19,629	6,966	30,000	30,000	-	**150,789**
1968	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1969	-	-	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	678	1,299	**211,977**
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	**2,878**
1971	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1972	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1973	-	-	-	825	1,535	2,414	6	95	30,000	-	-	-	**34,875**
1974	-	-	-	30,000	30,000	30,000	405	30,000	30,000	-	-	-	**150,405**
1975	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1976	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1977	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1978	-	-	-	-	11,123	9,998	8,559	11,340	30,000	30,000	-	-	**101,020**
1979	-	-	-	23,000	-	21,030	-	30,000	30,000	-	-	-	**104,030**
1980	-	-	-	2,138	12,843	10,956	198	30,000	113	30,000	-	-	**86,248**
1981	-	-	-	1,000	8,000	-	-	-	-	-	-	-	**9,000**
1982	-	-	-	-	30,000	30,000	16,735	30,000	30,000	14,385	-	-	**151,120**
1983	30,000	30,000	5,480	23,370	30,000	30,000	30,000	14,604	30,000	30,000	1,244	1,886	**256,584**
1984	3,132	30,000	20,997	30,000	14,294	18,405	161	684	714	-	-	-	**118,387**
1985	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1986	-	-	-	-	18,339	28,651	30,000	30,000	24,579	-	-	-	**131,569**
1987	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1988	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1989	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1990	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1991	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1992	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1993	-	-	-	-	2,000	-	-	30,000	-	-	-	-	**32,000**
1994	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1995	-	-	-	22	30,000	30,000	30,000	12,155	30,000	30,000	-	-	**162,177**
1996	-	-	-	-	30,000	6,099	-	30,000	30,000	-	-	-	**96,099**
1997	-	-	2,579	30,000	30,000	30,000	-	30,000	-	-	-	-	**122,579**
1998	-	-	-	551	11,835	7,755	30,000	30,000	15,557	30,000	422	103	**126,223**
1999	-	121	177	1,091	30,000	30,000	-	-	-	-	-	-	**61,389**
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	**2,777**
2001	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2002	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2003	-	-	-	-	-	-	-	117	413	-	-	-	**530**
2004	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2005	-	-	-	-	-	30,000	30,000	6,000	30,000	17,000	-	-	**113,000**
2006	-	-	-	672	30,000	30,000	8,973	9,880	30,000	20,875	113	-	**130,513**
2007	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2008	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2009	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2010	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	3,295	30,000	30,000	9,354	6,573	30,000	30,000	30,000	494	38	**169,754**
2012	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2013	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2015	-	-	-	-	-	-	-	-	-	-	-	-	**-**
TOTALS	**33,499**	**60,151**	**63,093**	**265,315**	**479,677**	**387,598**	**224,307**	**434,504**	**408,342**	**292,260**	**32,951**	**3,326**	**2,685,023**
AVERAGE	**620**	**1,114**	**1,168**	**4,913**	**8,883**	**7,178**	**4,154**	**8,046**	**7,562**	**5,412**	**610**	**62**	**49,723**
MAXIMUM	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**1,886**	**256,584**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

SAN JOAQUIN RIVER AND KAWEAH RIVER HIGH FLOWS

Diversion Capacity 1,000 cfs

QUANTITIES IN ACRE-FEET

WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	WY TOTALS
1962	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	51,650	-	100	-	-	-	-	-	51,750
1964	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	60,000	60,000	-	-	-	-	-	-	-	120,000
1966	-	-	-	35,000	9,000	-	-	47,000	-	-	-	-	91,000
1967	-	-	43,669	1,597	60,000	-	2,597	19,629	6,966	60,000	60,000	-	254,458
1968	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	36,039	60,000	60,000	52,078	35,691	54,932	60,000	678	1,299	360,717
1970	367	30	565	1,049	89	778	-	-	-	-	-	-	2,878
1971	-	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	-	-	-	825	1,535	2,414	6	95	60,000	-	-	-	64,875
1974	-	-	-	60,000	34,000	32,000	405	60,000	59,294	-	-	-	245,699
1975	-	-	-	-	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	11,123	9,998	8,559	11,340	60,000	60,000	-	-	161,020
1979	-	-	-	23,000	-	21,030	-	41,000	45,000	-	-	-	130,030
1980	-	-	-	2,138	12,843	10,956	198	60,000	113	60,000	-	-	146,248
1981	-	-	-	1,000	8,000	-	-	-	-	-	-	-	9,000
1982	-	-	-	-	60,000	60,000	16,735	60,000	60,000	14,385	-	-	271,120
1983	60,000	60,000	5,480	23,370	60,000	60,000	60,000	14,604	31,175	60,000	1,244	1,886	437,759
1984	3,132	60,000	20,997	60,000	14,294	18,405	161	684	714	-	-	-	178,387
1985	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	18,339	28,651	60,000	60,000	24,579	-	-	-	191,569
1987	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	2,000	-	-	60,000	-	-	-	-	62,000
1994	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	22	60,000	32,983	60,000	12,155	60,000	60,000	-	-	285,160
1996	-	-	-	-	58,137	6,099	-	60,000	60,000	-	-	-	184,236
1997	-	-	2,579	60,000	34,662	60,000	-	55,000	-	-	-	-	212,241
1998	-	-	-	551	11,835	7,755	30,674	35,015	15,557	60,000	422	103	161,912
1999	-	121	177	1,091	35,684	60,000	-	-	-	-	-	-	97,073
2000	-	-	-	-	619	2,158	-	-	-	-	-	-	2,777
2001	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	117	413	-	-	-	530
2004	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	60,000	60,000	6,000	60,000	17,000	-	-	203,000
2006	-	-	-	672	60,000	60,000	8,973	9,880	60,000	20,875	113	-	220,513
2007	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	3,295	60,000	60,000	9,354	6,573	60,000	60,000	60,000	494	38	319,754
2012	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	**63,499**	**120,151**	**76,762**	**426,354**	**783,810**	**602,581**	**367,059**	**708,210**	**718,743**	**532,260**	**62,951**	**3,326**	**4,465,706**
AVERAGE	**1,176**	**2,225**	**1,422**	**7,895**	**14,515**	**11,159**	**6,797**	**13,115**	**13,310**	**9,857**	**1,166**	**62**	**82,698**
MAXIMUM	**60,000**	**60,000**	**43,669**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**	**1,886**	**437,759**
MINIMUM	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

LIMITATIONS ON THE DELIVERY OF HIGH FLOW SAN JOAQUIN RIVER WATER

ATTACHMENT 3 – FRIANT-KERN CANAL CAPACITY LIMITATIONS

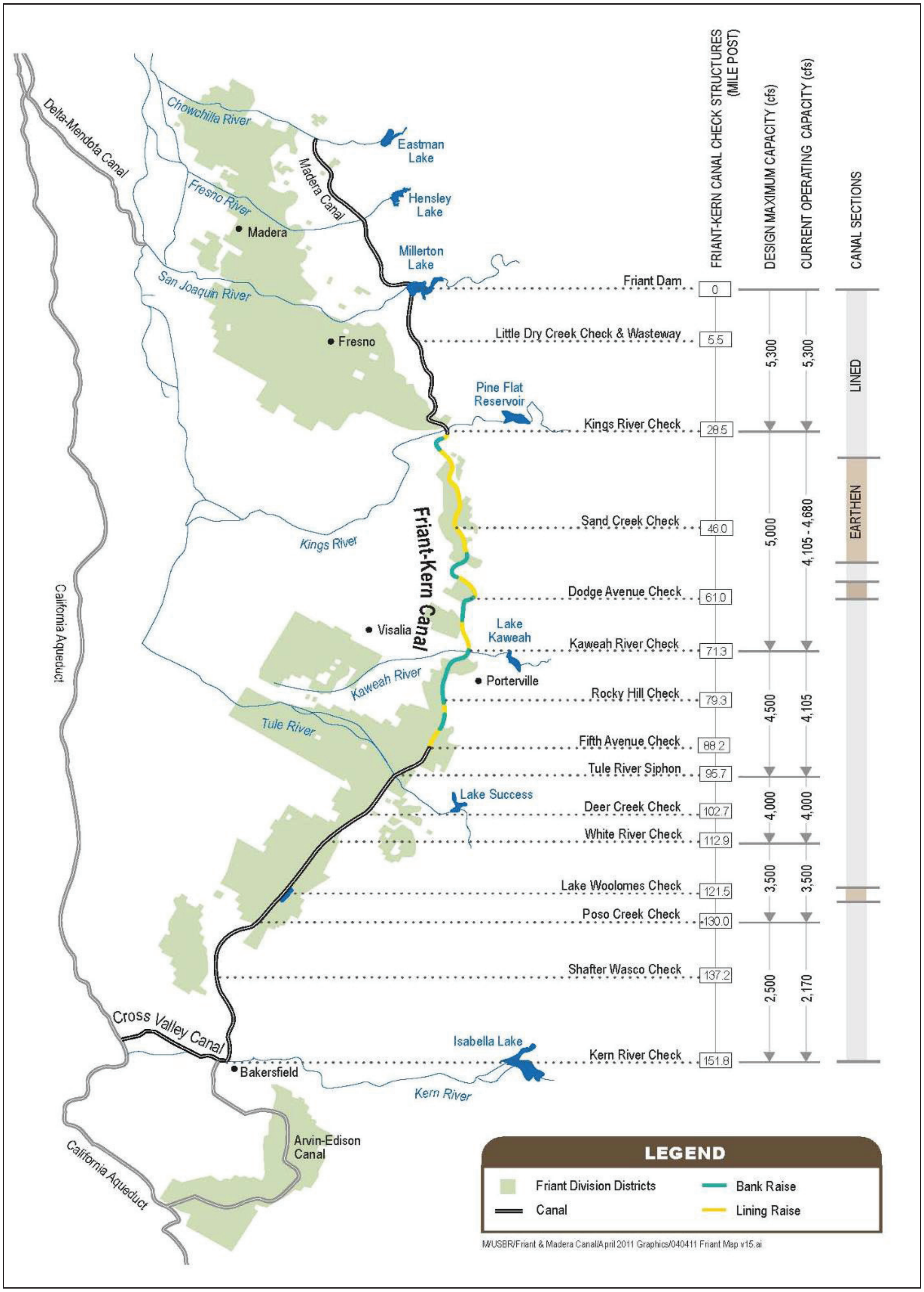

Figure ES-2. Current Capacity vs. Maximum Capacity

Table ES-1. FKC - Current Capacity vs. Maximum Capacity

Reach for Modeling	***Friant-Kern Structures*** FRIANT CONTRACTOS	**Mile Post**	***Current Capacity (cfs)***	***Maximum Capacity (cfs)***
	Friant Dam	**0**		
Reach 1	FRESNO I.D.		5,300	5,300
	CITY OF FRESNO			
	GARFIELD W.D.			
	INTERNATIONAL W.D.			
	Kings River Check	**28.52**		
Reach 2	CITY OF ORANGE COVE		4,680 - 4,105	5,000
	IVANHOE I.D.			
	ORANGE COVE I.D.			
	STONE CORRAL I.D.			
	TULARE I.D.			
	KAWEAH DELTA W.C.D.			
	Kaweah River Check	**71.29**		
	EXETER I.D.		4,105	4,500
	CITY OF LINDSAY			
	LEWIS CREEK W.D.			
	LINDSAY STRATHMORE I.D.			
	LINDMORE I.D.			
	5th Ave Check	**88.22**		
Reach 3	LINDSAY STRATHMORE I.D.			
	LINDMORE I.D.			
	LOWER TULE RIVER I.D.			
	PORTERVILLE I.D.			
	Tule River Check	**95.67**		
	LOWER TULE I.D.		4,000	4,000
	PORTERVILLE I.D.			
	TEA POT DOME W.D.			
	SAUCELITO I.D.			
	TERRA BELLA I.D.			
	Deer Creek Check	**102.69**		
Reach 4	SAUCELITO I.D.			
	TERRA BELLA I.D.			
	DELANO EARLIMART I.D.			
	KERN-TULARE W.D.			
	White River Check	**112.9**		
	DELANO EARLIMART I.D.		3,500	3,500
	SOUTHERN S.J.M.U.D.			
	Poso Creek Check	**130.05**		
Reach 5	SHAFTER WASCO I.D.		2,170	2,500
	Shafter Wasco Check	**137.2**		
Reach 6	ARVIN EDISON W.S.D			
	Kern River Check	**151.8**		

Note: Some contractors span two reaches.

APPENDIX L.5

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

TASK 6 MEMORANDUM – CLIMATE CHANGE OVERLAY

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

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Memorandum

To:	Mark Larsen, Kaweah Delta Water Conservation District
From:	Richard Moss, Owen Kubit
Subject:	Kaweah Basin Imported Water Vulnerability Study Climate Change Overlay (Task 6)
Date:	April 5, 2017

Executive Summary

The potential impacts of climate change on the local and imported water supplies of the Kaweah Sub-basin were assessed through the review of four recent climate change studies and modeling prepared by MBK Engineers. The San Joaquin and Kaweah Rivers are highly dependent on snowpack and thus are even more susceptible to climate change. Climate change could result in changes in local precipitation, declining snow pack, decreased soil moisture, higher rates of evapotranspiration, increase frequency of extreme weather events, and sea level rise impacting Delta supplies. Some climate change studies looked at a wide range of scenarios, resulting in outcomes including both increases and decreases in precipitation and streamflow. A USBR study projected that Tulare Lake Basin precipitation could increase by 13% or decrease by up to 35% by 2099. The study also predicted that San Joaquin Region and Tulare Lake Region runoff could decrease by up to 52% and 66%, respectively, by 2099. Another study predicted significant impacts to South of Delta areas due to weak water rights and strong hydrologic impact to the Southern Sierras. This study estimated that CVP and SWP South of Delta deliveries could be reduced by up to 28% by 2099. The SWP Delivery Capability Report estimates a 1% decrease in SWP reliability by 2025 due to climate change and Delta sea level rise. Another study estimated that that SWP and South of Delta CVP deliveries could be reduced by 6% due to climate change alone. The uncertainty and considerable variability in the hydrologic results of climate change dictate that water managers in the region prepare for a range of possibilities.

Introduction

This memorandum documents an analysis of water vulnerability to the Kaweah Groundwater Sub-basin (Kaweah Sub-basin) due to impacts of climate change on local and imported water supplies. The analysis is based on the results of several local and regional climate change studies.

The study area includes the Kaweah Groundwater Sub-basin (Kaweah Sub-basin) shown on the maps in **Attachment 1**. This area covers 446,000 acres (696 square miles) on the east side of the San Joaquin Valley. The Sub-basin covers portions of Kings and Tulare Counties and including numerous water agencies and canal/ditch companies. The Sub-basin includes the lower watershed of the Kaweah River and the soils are primarily comprised of alluvial fill material.

This memorandum is part of a comprehensive analysis of the vulnerability of local and imported water supplies for the Kaweah Sub-basin. Other memorandums document:

1. The reliability of State Water Project (SWP) supplies and Central Valley Project (CVP) Westside supplies
2. Availability of alternative supplies to fulfill San Joaquin River Exchange Contractors supply and prevent an interruption of Friant CVP water deliveries
3. Impacts to Friant CVP contractors from implementation of the San Joaquin River Restoration, including how reliability has changed from historic conditions
4. Limitations on the Delivery of High Flow San Joaquin River Water (Section 215 water, 16(b) $10 water and other surplus flows) and comparison to the timing of Kaweah River high flows.

Background Information

The Kaweah Sub-basin is in the Tulare Lake Hydrological Region and many of the water agencies rely on a combination of surface water and groundwater. Use of surface water was implemented many years ago to augment groundwater, in large part, to minimize groundwater overdraft in the region. Local water users get surface water from the San Joaquin River and the Kaweah River. Surface water availability could be directly impacted by climate change. Groundwater availability could also be impacted by climate change insofar as it relies on surface water for continual replenishment, and reductions in surface water will increase demand for groundwater. Additionally, changes in crop consumptive use created by climate change can greatly affect water demands within the region.

Surface water availability in the San Joaquin and Kaweah Rivers are dependent on reservoir storage behind the Friant Dam and the Terminus Dam, respectively, snowpack that accumulates in the Sierra Nevada Mountains during winter months, and the rate of snowmelt which typically occurs between April and July.

Climate change modeling is a dynamic process that typically involves several temperature, precipitation and greenhouse gas emission scenarios to develop a range of possibilities for potential climate outcomes. There are numerous authors and maintainers of climate change models. They, fortunately, have coordinated their activities which allow better comparison of their results and a better understanding of where the vast varieties of models are trending in their analysis. It is widely recognized that climate change projections are not precise, yet climate change planning should be acknowledged and incorporated to the greatest degree possible into future water planning, including IRWMPs. Results of climate change models give resource managers and decision makers a range of possible outcomes affecting a multitude of parameters ranging from temperature, impacts to snow in the mountains, and possible effects on stream flow for water availability and power generation. Although assumptions and inputs can vary from model to model, the consensus of these models identifies the following likely issues affecting California and specifically the Central Valley:

1. Increased frequency of atmospheric rivers and other extreme weather patterns;
2. Overall decrease in precipitation;
3. Extended periods of drought;
4. Increases in the duration and intensity of rainfall for single events;
5. Decreases in snow pack;
6. Increases in snowmelt due to rain on snow events; and
7. Increased incidents of flooding.

A major challenge to CVP and SWP operations presented by climate change is the management of salinity and water quality in the Delta with sea level rise. Sea level rise will affect Delta water quality as higher ocean levels increase seawater intrusion into the Delta. The CVP and SWP currently manage seawater intrusion and Delta water quality through a combination of releases from upstream reservoirs, Delta exports, and at times, operation of the Delta Cross Channel Gates. Additional seawater intrusion as a result of sea level rise will require changes in CVP and SWP operations if the existing water quality requirements are to be met. Changes in CVP and SWP operations, such as increases in reservoir releases or reductions in Delta exports, will have impacts on water supply.

Climate change is discussed in the *Kaweah Integrated Regional Water Management Plan* (IRWMP). The IRWMP chapter on climate change was updated in 2017. The IRWMP includes a Climate Change Vulnerability Assessment Checklist, based on criteria presented in the *Climate Change Handbook for Regional Water Planning* (DWR and EPA, 2011). The vulnerability assessment includes a practical list of questions that help to identify local vulnerabilities from climate change related to water demands, water supplies, water quality, flooding, ecosystems and habitat, and hydropower generation.

Climate Change Modeling and Analysis

Several technical studies have been published evaluating climate change factors and their effects on water supplies and water management. The studies evaluated in this memorandum include the following:

1. Sacramento and San Joaquin River Basin Climate Impacts Assessment (USBR 2014)
2. The Sensitivity of California Water Resources to Climate Change Scenarios (Vicuna et al. 2007)
3. SWP Water Delivery Capability Report (DWR 2015)
4. Draft Water Available for Replenishment Report (DWR 2017)
5. MBK Engineers Climate Change Modeling (MBK 2017)

Sacramento and San Joaquin River Basin Climate Impacts Assessment

In the 2014 *Sacramento and San Joaquin River Basin Climate Impacts Assessment,* USBR evaluates a range of climate change scenarios. These included a no climate change scenario (NoCC), decreased temperatures and decreased precipitation (Q1), increased temperatures and decreased precipitation (Q2), increased temperatures and increased precipitation (Q3), decreased temperatures and increased precipitation (Q4), central trending climate (Q5), and others. The results clearly represent a wide range of potential outcomes, but scenario Q2, increased temperatures and decreased precipitation, presents the worst-case scenario for future water supplies.

The USBR predicted that the Tulare Lake Basin is projected to experience changes in precipitation that range from approximately a 35% decrease in annual average precipitation to a 13% increase from 2012 to 2099 for all climate change scenarios. Because of this uncertainty in precipitation it is important to prepare for a range of possibilities.

Table 1 shows the projected changes in annual streamflow for both the San Joaquin and Tulare Lake hydrological regions from 2012 to 2099. Values represent the most extreme changes in streamflow. Minimum changes reflect maximum greenhouse gas emissions scenarios and the assumption of a hotter, drier climate, while maximum streamflow changes reflect minimum GHG emission, and a cooler, wetter climate.

Table 1: Projected Change in Runoff for San Joaquin River System and Tulare Lake Basin

Region	Period	Change in Annual Streamflow	
		Maximum	Minimum
	2012-2040	+37%	-26%
San Joaquin Region	2041-2070	+25%	-47%
	2041-2099	+23%	-52%
	2012-2099	**+25%**	**-41%**
	2012-2040	+23%	-40%
Tulare Lake Region	2041-2070	+25%	-56%
	2041-2099	+23%	-66%
	2012-2099	**+24%**	**-54%**

The Sensitivity of California Water Resources to Climate Change Scenarios (Vicuna et al., 2007)

In this study, potential climate change impacts were evaluated for North of Delta (NOD) CVP, South of Delta (SOD) CVP and SOD SWP contractors. For the purposes of this memo, only CVP SOD and SWP SOD results will be discussed. The study evaluated water supply deliveries, reliability and changes to reservoir storage. The study concluded that "*smaller streamflows, lower reservoir storage and decreased water supply deliveries and reliability, will be especially pronounced later in the 21st Century and south of the San Francisco Bay Delta*". Impacts were predicted to be higher for South of the Delta areas for two reasons: weaker water rights and stronger hydrologic impacts in the Southern Sierra Nevada.

Table 2 compares average historical deliveries and average projected deliveries for both the SWP and CVP SOD from 2020-2049 and from 2070-2099. The projected deliveries include a range of possible climate change scenarios, including some showing a slight increase in water supplies and others predicting a moderate decrease in water supplies.

Table 2 – South of Delta Projected Deliveries

System	Historic Average		2020-2049		2070-2099	
			Minimum	Maximum	Minimum	Maximum
CVP SOD	3,259	Deliveries	3,322	2,881	3,514	2,362
		% of Historic	+2%	-12%	+8%	-28%
SWP SOD	3,877	Deliveries	3,829	3,234	3,931	2,815
		% of Historic	-1%	-17%	+1%	-27%

Notes: 1) Values in thousand acre-feet
2) Historic averages may vary by source

SWP Water Delivery Capability Report

This report provided an estimate of the reliability of the State Water Project under several scenarios. The current reliability was estimated to be 62%, with minimum and maximum reliabilities of 11% and 98%. The report also looked at the Early Long Term (ELT) scenario, which used all of the same model assumptions for current conditions, but reflected changes expected to occur from climate change, specifically, a 2025 emission level and a 15 cm sea level rise. This resulted in only a 1% decrease in the average reliability to 61%. The minimum and maximum reliabilities were estimated to be 8% and 98%. The study did not investigate climate change scenarios past the year 2025. The study also estimated an average reliability of 69% with 2025 climate change impacts, as well as all the improvements outlined in the Bay-Delta Conservation Plan (Alt 4 H3 Study).

Water Available for Replenishment – Draft

In January 2017, the California Department of Water Resources released the Draft Report on Water Available for Replenishment. The report attempts to identify how much water will be available in different regions for groundwater recharge. This report was prepared to assist local agencies in planning for the Sustainable Groundwater Management Act. The report also predicts a 6 percent reduction in SOD CVP and SWP water supplies from climate change as discussed below:

> *"For the following discussion, average South of Delta (SOD) exports and SWP and CVP reliability are used interchangeably. The current average reliability of combined (SWP and CVP) SOD exports is about 4.94 million acre feet (maf)……. The average future reliability associated with combined SOD exports, with climate change, is about 4.63 maf*

(about a 6 percent reduction), indicating that the reliability of the projects are expected to be diminished solely by climate change, assuming no other system changes." (pg 54)

Climate Change Modeling (MBK Engineers)

In March, 2016, MBK Engineers prepared a report entitled "*Reliability of SWP Supplies and CVP Westside Supplies*". The report documented modeling efforts to evaluate the long-term reliability of south of Delta CVP and SWP supplies. It also included an evaluation of climate change impacts on CVP and SWP reliability.

For the climate change scenario, hydrologic conditions for year 2025 that represents early long-term climate changes were selected. Inputs for reservoir inflows and demands were taken from the 2015 SWP Water Delivery Capability Report published by DWR. Climate assumptions include 15 centimeters (cm) of sea level rise along with changes in reservoir inflows to major reservoirs.

The results presented in the report include: 1) projected shifts in timing and volume of reservoir inflows; 2) project changes in Shasta Carryover storage; and 3) predicted changes in CVP Jones Pumping Plant exports. Table 3 shows the estimated changes in exports from the Jones Pumping Plant for various year types:

Table 3 – Average Annual Change in CVP Jones Export (AF)

Water Year Type	Change in Exports
Wet	-1,000
Average-Normal	+26,000
Below Normal	-2,000
Dry	-63,000
Critically Dry	-123,000
All	-29,000

The dry and critical year reductions of 63,000 AF and 123,000 AF respectively will reduce reliability to all CVP contractors, including the Exchange Contractors, increasing the likelihood of the need to use water from the San Joaquin River as impounded by Friant Dam and Millerton Lake to meet the Exchange Contract commitments.

Climate change impacts to water availability for the Friant Division of the CVP were not specifically analyzed in this report. From what we have seen of the work, it has merely been performed as a modification of natural river runoff as may be available at Friant Dam and Millerton Lake. We share the concern with others that this is not truly representative of the effect of climate change on availability of CVP water from Millerton Reservoir when considering the highly impaired nature of the upstream, e.g., 600+TAF upstream storage, along with operational constraints and duties. We envision this task should be performed along the lines of running the upstream modeling with a version of climate change basin runoff disaggregated to the needs of the upstream model. We don't believe this has been done to date, and could not find any studies that performed such an analysis.. Further, we are unaware of any effort to coordinate with upstream power generators or others to insure credibility of approach and reasonableness of results. This was clearly outside the scope of this effort.

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Attachments
Attachment 1 – Project Area and Impacted Parties

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

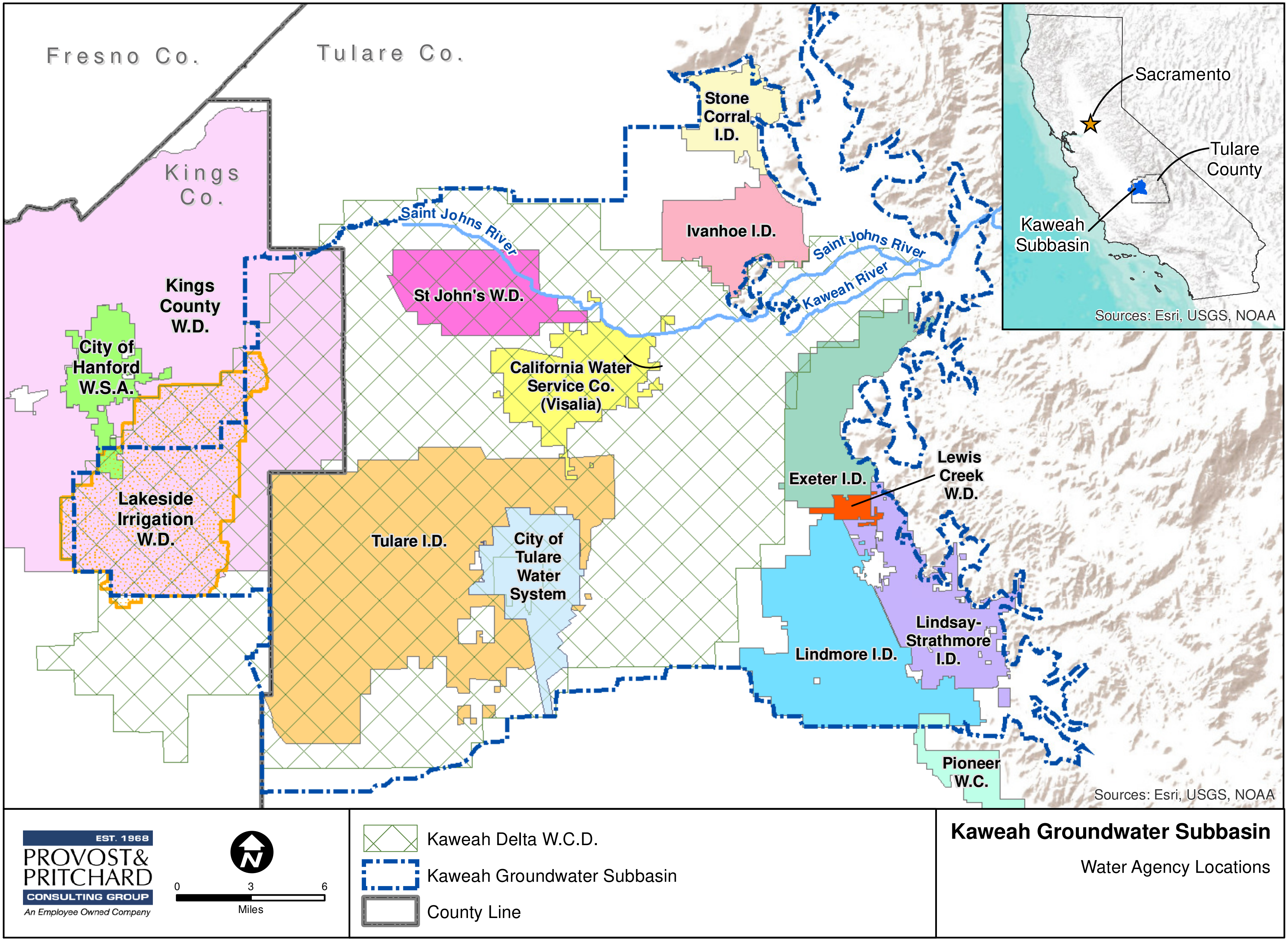
CLIMATE CHANGE OVERLAY

ATTACHMENT 1 – PROJECT AREA AND IMPACTED PARTIES

Kaweah Basin Water Supply & Vulnerability Study
Imported Water Supply Contracts in Study Area

Agency	San Joaquin River (Friant Division of CVP)[1]	Kaweah River[2]
City of Lindsay	Class 1 – 2,500 AF	
Consolidated Peoples Ditch Co.		X
Elk Bayou Ditch Co./Bliss Ditch Co.		X
Evans Ditch Company		X
Exeter Irrigation District	Class 1 - 11,500 AF Class 2 - 19,000 AF	
Farmers Ditch Company		X
Fleming Ditch Company		X
Foothill Ditch Company		X
Hamilton Ditch Company		X
Ivanhoe Irrigation District	Class 1 - 6,500 AF Class 2 – 500 AF	
Kaweah Delta Water Conservation District	Class 1 – 1,200 AF Class 2 – 7,400 AF	X
Lemon Cove Ditch Company		X
Lewis Creek Water District	Class 1 - 1,450 AF	
Lindmore Irrigation District	Class 1 - 33,000 AF Class 2 - 22,000 AF	
Lindsay-Strathmore Irrigation Dist.	Class 1 - 27,500 AF	
Longs Canal Company		X
Matthews Ditch Company		X
Modoc Ditch Company		X
Oakes Ditch Company		X
Persian Ditch Company		X
St. Johns Ditch Company		X
Sentinel Butte Mutual Water Co.		X
Stone Corral Irrigation District	Class 1 - 10,000 AF	
Sweeney Ditch		X
Tulare Irrigation Company		X
Tulare Irrigation District	Class 1 - 30,000 AF Class 2 - 141,000 AF	X
Uphill Ditch Company		X
Watson Ditch Company		X
Wutchumna Water Company		X

1 – San Joaquin River contract represent maximum deliveries. Actual deliveries are often less than the maximum contract amount.
2 – Water contract volumes for Kaweah River water are not provided because they are based on a share of reservoir storage space and complex allocation formulas



Kaweah Groundwater Subbasin

Water Agency Locations

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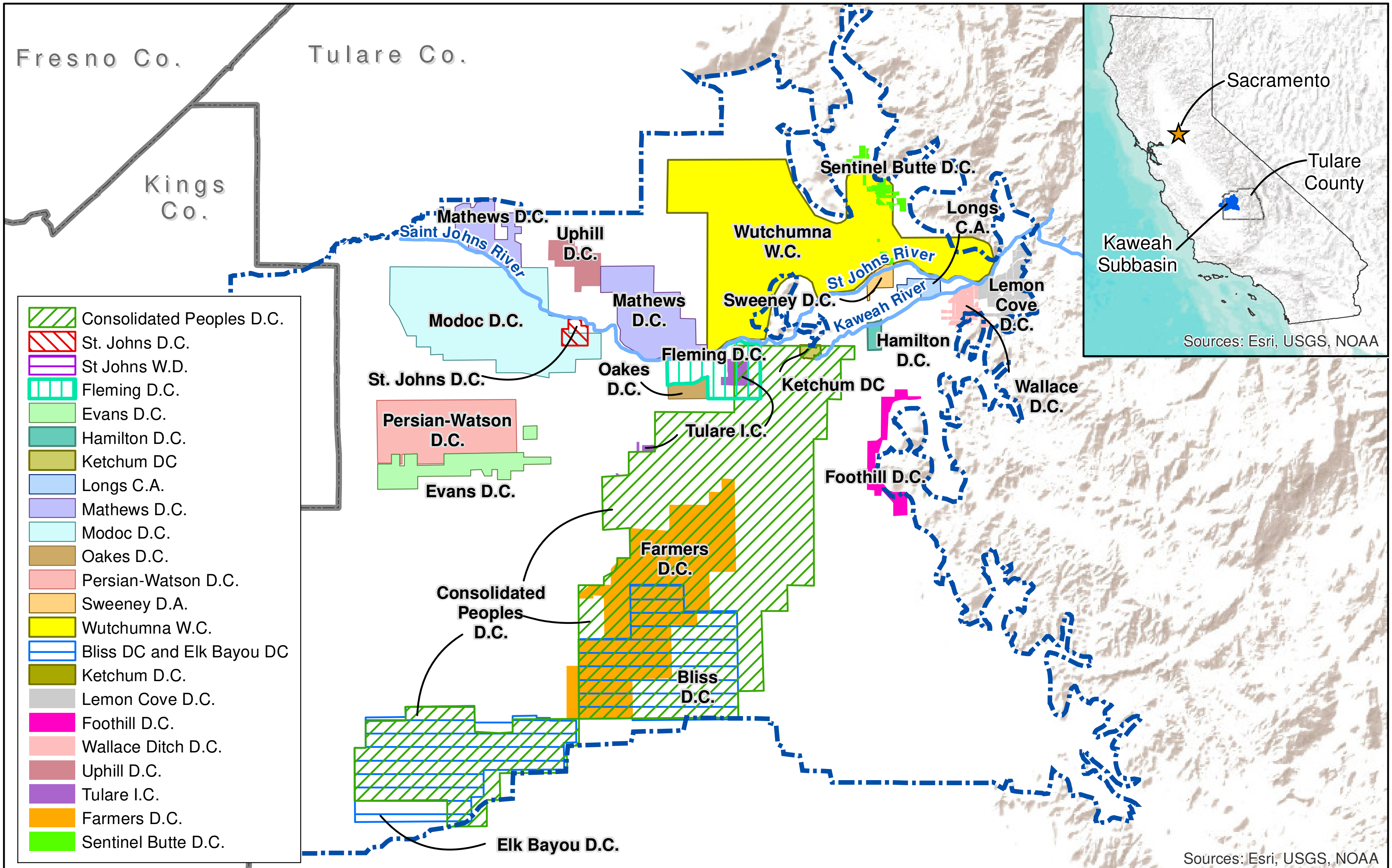

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Kaweah Groundwater Subbasin
County Line

Kaweah Groundwater Subbasin

Ditch Company Locations

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APPENDIX L.6

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

RELIABILITY OF SWP SUPPLIES AND CVP WESTSIDE SUPPLIES," MBK ENGINEERS, APRIL 2017

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Reliability of SWP Supplies and CVP WestSide Supplies

Prepared by

MBK ENGINEERS

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List of Acronyms and Abbreviations:

AF – acre-feet

BO – Biological Opinion

CALFED – California Federal Bay-Delta Program

CAT – California Climate Action Team

CDFW – California Department of Fish and Wildlife

CFS – cubic feet per second

CM – Centimeters

CVP – Central Valley Project

Delta – Sacramento-San Joaquin Delta

ELT – Early long term

ISB – Independent Science Board

M&I – Municipal and Industrial

MAF – million acre-feet

NMFS – National Marine Fisheries Service

OMR – Old and Middle River

Opinion – Conference Opinion

ProjectSim – Spreadsheet model used to simulate operations

RPA – Reasonable and Prudent Alternative

SOD – South of Delta

SWP – State Water Project

SWRCB – State Water Resources Control Board

TAF – 1,000 acre-feet

USFWS – U.S. Fish and Wildlife Service

Introduction

Recently, the years 2014 and 2015 witnessed extended drought conditions and limited water supply in both Sacramento and San Joaquin Valley. The Department of Water Resources (DWR) and Reclamation petitioned the State Water Resources Control Board (SWRCB) to modify specific D-1641 objectives in both 2014 and 2015. With a focus on operations to protect ESA listed species, the Central Valley Project (CVP) and State Water Project (SWP) allocated project water supply to only meet contractual requirements and minimum health and safety needs and the SWRCB modified minimum Sacramento-San Joaquin Delta (Delta) outflow objectives, San Joaquin River flow requirements, Delta Cross Channel Gate closure requirements, maximum export limits, and Delta agricultural water quality objectives. Generally, exports at the CVP and SWP were limited to health and safety needs south of the Delta unless unstored flow was available and all objectives were being met. DWR installed emergency drought barriers in the western Delta in 2015, to improve the water quality in the southern Delta and protect human health and safety demands.

The drought conditions in the San Joaquin Valley were even more severe than conditions in the Sacramento Valley in this drought period. Reservoirs on the Stanislaus River, Tuolumne River, Merced River, and upper San Joaquin River suffered from shortages and SWRCB modified flow requirements on the tributary streams and at Vernalis on the San Joaquin River to help balance the beneficial uses.

Reclamation operated in accordance with its Municipal and Industrial (M&I) Water Shortage Policy to the extent possible. As limited by hydrology, water was made available to the Water Rights Settlement Contractors north of the Delta and to the Water Rights Exchange Contractors and Settlement Contractors south of the Delta in accordance with settlement contracts. This was only 75% of the contract maximum in the Shasta critical years. Because of the limited pumping available in the Delta some of the supply needed to meet the demands of the Exchange Contractors was met by releases from Millerton Reservoir on the San Joaquin River. CVP south of Delta agricultural project water supply contractors received allocations of 20%, 0%, 0%, and 5% in contract years 2013, 2014, 2015, and 2016, respectively.

Objective

This technical memorandum is primarily focused on assessing the effect of the more recent changes in CVP and SWP operations on South of Delta (SOD) water supplies. The objectives are

1. To quantify the effects of more recent changes in CVP and SWP operations on SOD water supplies using an operations model

2. To quantify the likelihood of Delta water supply reductions and subsequent impacts on Exchange contractors.

Methodology

CalSim II is the most commonly applied CVP/SWP operations modeling tool for evaluating water supply reliability of CVP/SWP projects. CalSim II does a reasonable job simulating SWP and CVP operations though the hydrological period of record using current operational criteria. CalSim II applies operational criteria to meet the generalized project goals and objectives. While this modeling process provides an output that can be used for most comparative analysis, it is possible to improve on the simulation by carefully evaluating the project operations under more extreme drought sequences when application of the operational criteria typically used in CalSim II may not be the best approach to achieve all the project objectives. Several factors suggest that more detailed review and analysis could provide a more realistic operation.

Operations of facilities under extreme conditions cannot be easily modeled. Under the driest of years, project facilities may be operating at or near the limits of the typical performance curves and recent data may be used to revise operations to reflect current practices. Knowing the actual turbine and generator performance, outlet works capacities, temperature control device efficiencies, or pump efficiencies under the drought conditions can affect reservoir operation goals or minimum pool objectives. Similarly, fishery resources may also react differently than assumed under the modeled drought periods and a review can consider recent biological responses to drought conditions. Priorities for fishery actions may vary under extreme drought condition if there is an inadequate supply to meet all objectives.

There may also be significant differences between how the model balances the impacts of a drought among the project purposes and how the agencies actually respond to an extended drought. Some factors observed in this recent drought that may differ from the modeling assumptions are:

Use of working groups to coordinate operations and recommend priorities among the beneficial uses: This past drought has seen a significant use of working groups to assess data and to provide recommendations on operational objectives. Recommendations include establishing priorities among endangered species, health and safety needs of municipalities and industries, agricultural uses, water rights, refuge uses, and Delta habitat needs. The working groups have used observed data to assess tradeoffs in operating to alternative objectives and criteria. When there was not an adequate supply for all beneficial uses, the working groups have recommended which objectives may or may not be relaxed to achieve specific goals. A Drought Contingency Plan was developed by Reclamation and DWR in coordination with the fishery agencies to balance water supply, provide biological protection, and protect water quality through the extended drought conditions.

The recent drought years have also provided insight into how the management agencies may approach risk and uncertainty in the future. It does appear that there is a more conservative approach to maintain resources to protect endangered species and the fishery resources than the model might suggest. The more conservative operations is also supported by recent observations of temperature operation efficiencies and the biological response to temperature extremes.

In order to provide a CVP and SWP operational simulation more representative of current practices, two modeling approaches were taken in this study. The first approach required making adjustments to the CalSim II modeling by modifying reservoir releases and export rates during periods when CalSim II did not respond appropriately to the hydrological and biological conditions. The second approach involved use of a spreadsheet model (ProjectSim) to simulate CVP/SWP operations based on the recent changes to the operations criteria. Figure 1, Figure 2, and Figure 3 compare Shasta Reservoir storage, Jones export, and Banks export for CalSim II, adjusted CalSim II, and ProjectSim. Shasta Reservoir carryover (end of September) storage in Figure 1 shows that in the 10% driest years that CalSim II storage is less than both the adjusted CalSim II and ProjectSim storage and the adjusted CalSim II and ProjectSim storages are comparable. Figure 2 contains annual Jones export for each modeling scenario, the annual average exports in the adjusted CalSim II scenario is 6 1,000 acre-feet (TAF) less than the CalSim II scenario, however the maximum annual critical year adjustment is about 200 TAF. Although the ProjectSim operations differs from CalSim II, average annual ProjectSim Jones export is about 26 TAF less than the adjusted CalSim II scenario. Figure 3 contains annual Banks export for each modeling scenario, the annual average exports in the adjusted CalSim II scenario is 1 TAF less than the CalSim II scenario, however the maximum annual critical year adjustment is about 83 TAF. Although the ProjectSim operations differs from CalSim II, average annual ProjectSim Banks export is about 3 TAF less than the adjusted CalSim II scenario. Based on review and comparison of adjusted CalSim and ProjectSim it has been determined that results from ProjectSim are adequate for this analysis.

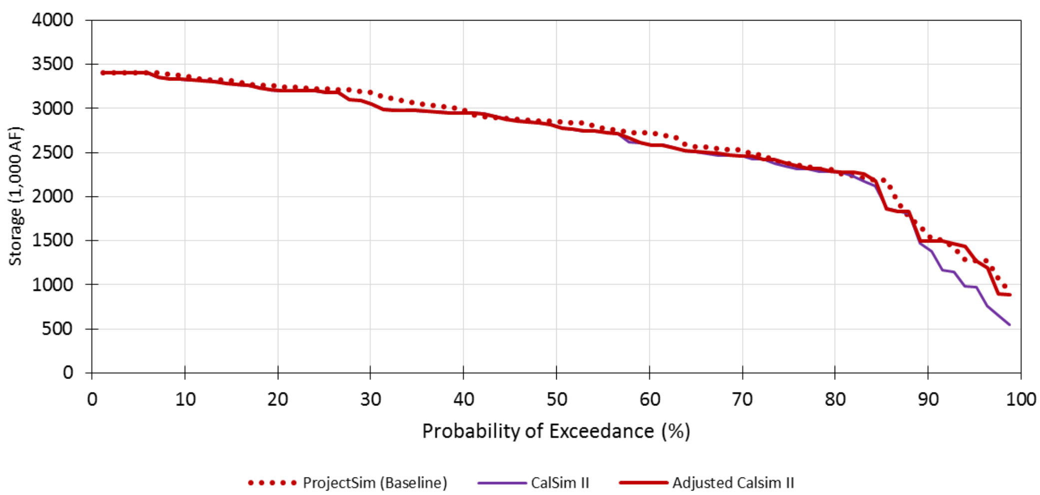


Figure 1- Exceedance Probability of Shasta Carryover Storage for ProjectSim, CalSim II, and Adjusted CalSim II

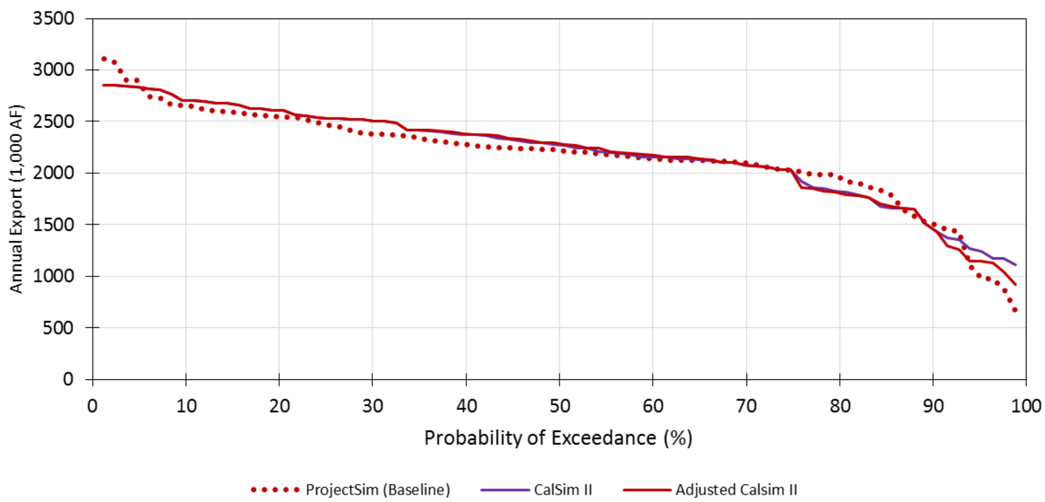


Figure 2- Exceedance Probability of Annual Jones Export for ProjectSim, CalSim II, and Adjusted CalSim II

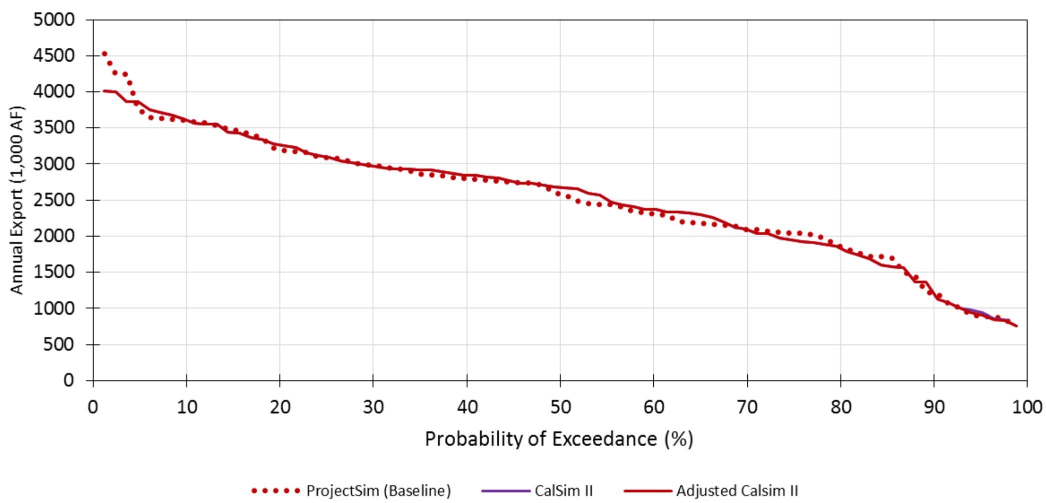


Figure 3 - Exceedance Probability of Annual Banks Export for ProjectSim, CalSim II, and Adjusted CalSim II

Models of the CVP and SWP system operate the major components of the system and balance high volume of flow and storage with deliveries and exports. This involves balancing tens of millions of acre feet of water with a myriad of water demands, contracts, regulations, and physical constraints during highly variable hydrologic conditions. Although the models simulate the system reasonably well, it is difficult to obtain precise deliveries to south of Delta water contractors. Therefore, additional refinements are made to CVP operations south of the Delta using Jones pumping from the system-wide models and adjusting deliveries to various contractors and altering the operation of CVP San Luis Reservoir. This refinement results in an increase to CVP Exchange contractors in approximately 5 years of the 1922 to 2015 simulation period, Figure 4 contains an exceedance probability plot of Exchange Contract allocations modeling in CalSim II, ProjectSim (Baseline), and the refined ProjectSim (Baseline).

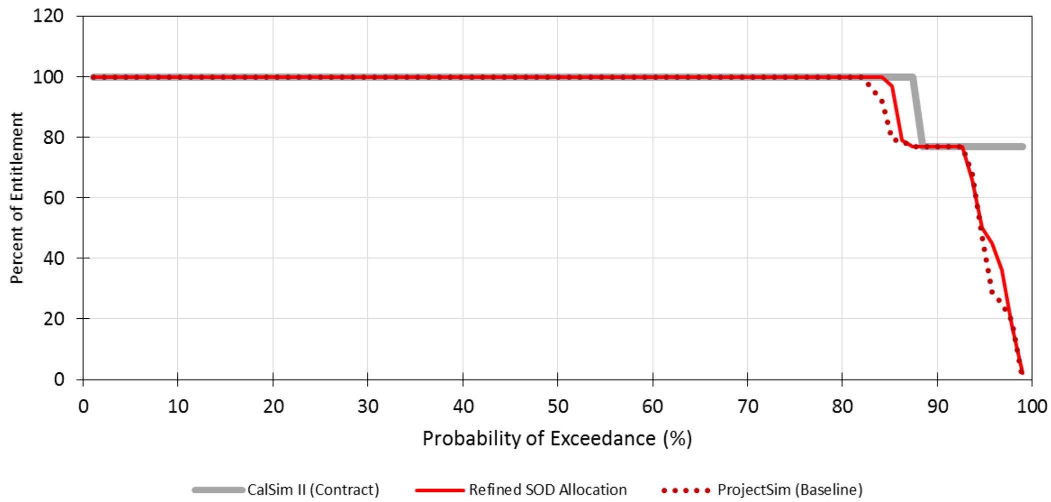


Figure 4 – CVP Exchange Contract Allocation with CalSim II, Baseline, and Refinement

CalSim II results show 100 percent allocation to exchange contracts in all year except Shasta Critical years in accordance with their contract provisions. CalSim model logic is hard coded to ensure that the exchange contract provisions are met every year unless the model runs out of water, thus making it more difficult to use CalSim II to assess the effect of drought operating conditions on water supply reliability to exchange contractors. The ProjectSim model is better suited for simulating the reliability of the Exchange Contractor Delta supply as it attempts to simulate the project operations based on more recent operating criteria as was applied in the year 2014 and 2015.

All modeling for this investigation assumes the same regulatory requirements, generally representing the existing regulatory environment, including the National Marine Fisheries Service (NMFS) BO (June 2009) U.S. Fish and Wildlife Service (USFWS) BO (December 2008). The modeling protocols for the recent USFWS BO (2008) and NMFS BO (2009) have been cited as being cooperatively developed by Reclamation, NMFS, USFWS, California Department of Fish and Wildlife (CDFW), and DWR. For the purpose of this evaluation five different modeling scenarios were evaluated using the ProjectSim model, these scenarios are described below:

Scenario 1: CalSim like Baseline

All regulations in Scenario 1 are consistent with the CalSim II baseline and reservoir operating criteria are consistent with the Adjusted CalSim II baseline.

Scenario 2: Required Old and Middle River (OMR) flows > -5,000 cubic feet per second

Flow in the San Joaquin River splits just downstream from Mossdale in the south Sacramento and San Joaquin Delta with a portion of the flow remaining in the San Joaquin River and a portion going into Old River. Flow in Old River can then split again with a portion remaining in Old River and a portion going down Middle River.

CVP/SWP pumping from the south Delta can create reverse, or negative flows, in Old and Middle rivers. Negative OMR flows can increase the risk of entrainment of Delta smelt and salmon in the Delta pumps. Biological Opinions (BO) issued by NMFS and USFWS imposes flows on the reverse (negative) flows in Old and Middle rivers for the protection of Delta smelt and salmon. Requirements in the Delta smelt Biological Opinion can limit reverse OMR flows to between -1,250 and -5,000 cfs depending on the risk of entrainment as determined by the smelt working group. Smelt-related OMR requirements can restrict Delta exports from December through June. The salmon Biological Opinion includes OMR flow requirements that can affect CVP/SWP operations from January through mid-June. Salmon-related OMR requirements limit negative flows between -2,500 cfs and -5,000 cfs during periods of salmon presence in the Delta.

Reverse flows in Old and Middle rivers can be changed by one of two actions: reductions in Delta exports or increases in San Joaquin River flows entering the Delta. Reducing Delta exports reduce negative flows, while increases in San Joaquin River flows entering the Delta increase positive flows in Old and Middle rivers.

Old and Middle River flow requirement in ProjectSim are set based on the logic similar to CalSim II implementation of OMR requirements based on salinity, turbidity and temperature criteria to protect fish entrapments. Unlike CalSim II, this scenario allows OMR negative flows to go upto -5, 000 cfs during months when the flow requirements in CalSim may be more stringent (-5000 cfs to -1,150 cfs).

Scenario 3: Required OMR flows > -3,500 cfs

Old and Middle River flow requirement are set based on the logic similar to CalSim II implementation of OMR requirements based on salinity, turbidity and temperature criteria to protect fish entrapments. Under this scenario, OMR negative flows go up to -3,500 cfs during months when the flow requirements in CalSim II may be more stringent (-5000 cfs to -1,150 cfs).

Scenario 4: With Proposed Amended Reasonable and Prudent Alternative on Shasta Reservoir Carryover Target

In 2009, the National Oceanic and Atmospheric Administration's NMFS issued a biological and conference opinion (Opinion) on the long-term operations of the Central Valley Project and SWP. The NMFS 2009 Opinion concluded that the CVP/SWP operations were likely to jeopardize the continued existence of several federally listed species under NMFS's jurisdiction and destroy or adversely modify designated critical habitat. In 2011, NFMS issued an amendment of the 2009 Reasonable and Prudent Alternative (RPA).

NMFS proposed an amendment to the 2011 amended RPA related to Shasta Reservoir Operations (RPA Action Suite I.2). One of the primary aspects of the amendments specifies higher carryover storage in Shasta Reservoir in April, May and September for improving cold water conditions in Shasta. Under this amendment, the new targets on Shasta Reservoir storage set forth in RPA Action I.2.4 are:

- Minimum storage between April 1 and May 31, based on water year type, in order to meet the temperature-dependent mortality objectives and the requirements set forth in RPA Action I.2.4, below, no less than:
    - Critically dry: 3.5 million acre-feet (MAF)
    - Dry: 3.9 MAF
    - Below Normal: 4.2 MAF
    - Above Normal: 4.2 MAF
    - Wet: 4.2 MAF
- EOS storage, at Shasta Reservoir, based on water year type, no less than:
    - Critically dry: 1.9 MAF
    - Dry: 2.2 MAF
    - Below Normal: 2.8 MAF
    - Above Normal: 3.2 MAF
    - Wet: 3.2 MAF

Other assumptions are same as Scenario 1. Under this scenario, there is no change to Keswick release schedule. However, exports and releases for water quality are curtailed to meet the minimum flow requirements.

Scenario 5: Climate Change

For the climate change scenario, hydrologic conditions for year 2025 that represents early long-term climate changes were selected for this analysis. Inputs for reservoir inflows and demands for the climate change analysis were taken from the 2015 delivery capability reports published by DWR.

Results

Results are presented in two sections. First section contains results from studies using historically based hydrology following by a summary of the effects of climate change.

Table 1 compares CVP contract allocation from Delta supplies for Scenarios 1 through 5 and Table 2 contains Exchange Contract Shortage from Entitlement. Baseline model results shows Exchange Contract Shortage from Entitlement in 8 out of 94 years (9 percent).

Figure 5 contains exceedance probability curves of annual deliveries to CVP exchange contractors under each scenario displayed in Table 1. The Grey solid line shows annual contract provisions which is reduced from 100% to 75% during Shasta Critical years. Figure 6 and Figure 7 contain a similar set of charts showing annual deliveries to south of Delta Agricultural and M&I water service contractors respectively. Results show little difference between the OMR scenarios in terms of frequency of shortages to Exchange Contractors and refuges under the different scenarios. However, CVP deliveries to south of Delta agriculture service contractors and M&I contractors are shown to be more sensitive to the operations under the different scenarios. Results show that a relaxation of OMR flow requirements tend to increase the deliveries to SOD Ag and M&I contractors. An implementation of RPA related to Shasta Operations tend to have the largest negative impact on Exchange Contract and SOD Agricultural and M&I water service contractors.

Table 1 – CVP Delivery Summary

Water	Exchange Contracts and Refuge				CVP Agricultural Water Service Contracts				CVP M&I Water Service Contracts			
Year	Baseline	OMR at -3500	OMR at -5000	Shasta RPA	Baseline	OMR at -3500	OMR at -5000	Shasta RPA	Baseline	OMR at -3500	OMR at -5000	Shasta RPA
1922	100	100	100	100	65	65	65	65	90	90	90	90
1923	100	100	100	100	61	59	61	64	86	84	86	89
1924	*77*	*73*	*77*	*77*	*3*	*0*	*5*	*6*	*50*	*50*	*50*	*50*
1925	100	100	100	100	37	38	38	41	62	63	63	66
1926	100	100	100	100	30	35	32	34	50	60	57	59
1927	100	100	100	100	49	39	48	50	74	64	73	75
1928	100	100	100	100	41	15	43	46	66	50	68	71
1929	100	100	100	100	0	1	0	2	50	50	50	50
1930	100	100	100	100	31	40	32	39	56	65	57	64
1931	*50*	*56*	*54*	*53*	*0*	*0*	*0*	*0*	*50*	*50*	*50*	*50*
1932	*77*	*77*	*77*	*77*	*46*	*46*	*59*	*56*	*71*	*71*	*84*	*81*
1933	*77*	*67*	*77*	*77*	*14*	*0*	*9*	*0*	*50*	*50*	*50*	*50*
1934	*66*	*58*	*71*	*74*	*0*	*0*	*0*	*0*	*50*	*50*	*50*	*50*
1935	100	100	100	100	44	49	45	48	69	74	70	73
1936	100	100	100	100	54	64	50	50	79	89	75	75
1937	100	100	100	100	99	94	100	100	100	100	100	100
1938	100	100	100	100	100	100	100	100	100	100	100	100
1939	100	100	100	100	5	5	5	6	50	50	50	50
1940	100	100	100	100	49	50	50	61	74	75	75	86
1941	100	100	100	100	95	84	96	88	100	100	100	100
1942	100	100	100	100	50	50	50	50	75	75	75	75
1943	100	100	100	100	85	69	85	87	100	94	100	100
1944	79	99	81	88	0	0	0	0	50	50	50	50
1945	100	100	100	100	72	71	71	74	97	97	96	99
1946	100	100	100	100	57	57	58	64	82	82	83	89
1947	100	100	100	100	36	31	40	44	61	56	65	69
1948	100	100	100	100	32	32	33	38	57	57	58	63
1949	100	100	100	100	48	49	50	61	73	74	75	86
1950	100	100	100	100	39	37	42	39	64	61	67	64
1951	100	100	100	100	62	61	61	68	87	86	86	93
1952	100	100	100	100	97	92	99	96	100	100	100	100
1953	100	100	100	100	24	22	25	31	50	50	50	56
1954	100	100	100	100	36	28	38	44	61	53	63	69
1955	100	100	100	100	47	48	50	59	72	73	75	84
1956	100	100	100	100	86	86	86	85	100	100	100	100
1957	100	100	100	100	10	10	25	25	50	50	50	50
1958	100	100	100	100	100	100	100	100	100	100	100	100
1959	100	100	100	100	12	8	13	21	50	50	50	50
1960	100	100	100	100	49	46	50	65	74	71	75	90
1961	100	100	100	100	33	35	41	39	58	61	66	64
1962	100	100	100	100	46	42	46	63	71	67	71	88
1963	100	100	100	100	61	55	62	59	86	80	87	84
1964	100	100	100	100	14	23	20	25	50	50	50	50
1965	100	100	100	100	67	62	67	67	92	87	92	92
1966	100	100	100	100	35	33	34	39	60	58	59	64
1967	100	100	100	100	100	100	100	100	100	100	100	100
1968	100	100	100	100	43	42	44	50	68	67	69	75
1969	100	100	100	100	100	100	100	100	100	100	100	100
1970	100	100	100	100	21	13	21	27	50	50	50	52
1971	100	100	100	100	46	42	46	44	71	67	71	69
1972	100	100	100	100	27	28	30	39	52	53	55	64
1973	100	100	100	100	82	82	82	84	100	100	100	100
1974	100	100	100	100	72	70	72	72	97	95	97	97
1975	100	100	100	100	34	34	35	38	59	59	60	63
1976	100	100	100	100	39	27	43	49	64	52	68	74
1977	*18*	*22*	*16*	*14*	*0*	*0*	*0*	*0*	*50*	*50*	*50*	*50*
1978	100	100	100	100	100	99	100	100	100	100	100	100
1979	100	100	100	100	50	50	50	58	75	75	75	83
1980	100	100	100	100	100	100	100	100	100	100	100	100
1981	100	100	100	100	22	22	22	29	50	50	50	54
1982	100	100	100	100	100	100	100	100	100	100	100	100
1983	100	100	100	100	100	100	100	100	100	100	100	100
1984	100	100	100	100	69	60	71	73	100	85	96	98
1985	100	100	100	100	37	39	36	36	62	64	61	61
1986	100	100	100	100	94	82	95	95	100	100	100	100
1987	36	50	38	45	0	0	0	0	50	50	50	50
1988	100	100	100	100	34	0	39	46	59	50	64	71
1989	100	100	100	100	30	42	29	28	55	55	54	53
1990	100	100	100	100	16	18	23	26	50	50	50	51
1991	*77*	*77*	*77*	*77*	*17*	*3*	*18*	*15*	*50*	*50*	*50*	*50*
1992	*45*	*36*	*47*	*53*	*0*	*0*	*0*	*0*	*50*	*50*	*50*	*50*
1993	100	100	100	100	66	81	64	66	91	100	89	91
1994	*77*	*77*	*77*	*77*	*50*	*23*	*49*	*59*	*75*	*50*	*74*	*84*
1995	100	100	100	100	100	100	100	100	100	100	100	100
1996	100	100	100	100	75	71	77	75	100	100	100	100
1997	100	100	100	100	28	15	28	29	53	50	53	54
1998	100	100	100	100	100	100	100	100	100	100	100	100
1999	100	100	100	100	59	57	61	64	84	82	86	89
2000	100	100	100	100	37	36	37	40	62	61	62	65
2001	100	100	100	100	39	37	39	47	64	62	64	72
2002	100	100	100	100	36	37	37	50	61	62	62	75
2003	100	100	100	100	50	50	50	58	75	75	75	83
2004	100	100	100	100	45	44	47	45	72	71	72	70
2005	100	100	100	100	97	98	98	98	100	100	100	100
2006	100	100	100	100	82	77	83	84	100	100	100	100
2007	97	100	100	100	0	4	0	4	50	50	50	50
2008	100	100	100	100	16	11	32	32	50	50	57	57
2009	100	100	100	100	37	35	34	35	62	60	59	60
2010	100	100	100	100	39	39	42	48	64	64	67	73
2011	100	100	100	100	100	100	100	100	100	100	100	100
2012	100	100	100	100	32	32	34	43	57	57	59	68
2013	100	100	100	100	30	32	30	32	55	57	55	57
2014	*2*	*0*	*15*	*14*	*0*	*0*	*0*	*0*	*50*	*50*	*50*	*50*
2015	*77*	*66*	*77*	*77*	*14*	*0*	*14*	*11*	*50*	*50*	*50*	*50*

Note: Shasta Critical Years are shaded

Table 2 – Exchange Contractor Shortage From Entitlement

Water	Baseline		OMR at -3500		OMR at -5000		Shasta RPA	
Year	Percent	1,000 AF	Percent	1,000 AF	Percent	1,000 AF	Percent	1,000 AF
1922	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	4	26
1925	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0
1931	27	176	23	150	24	156	21	137
1932	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	10	65
1934	11	72	6	39	3	20	19	124
1935	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0
1944	21	176	19	160	12	101	1	8
1945	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0
1977	59	384	61	397	63	410	55	358
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	64	538	62	521	55	462	50	420
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	32	208	30	195	24	156	41	267
1993	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	3	25	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0
2014	75	488	62	403	63	410	77	501
2015	0	0	0	0	0	0	11	72

Note: Shasta Critical Years are shaded

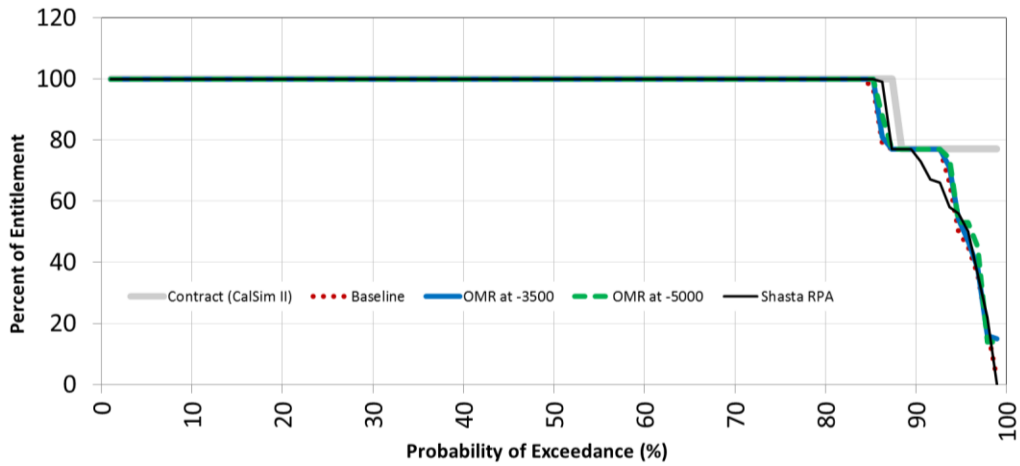


Figure 5 **-** *Exceedance Probability of Annual Exchange Contract and Refuge Delivery*

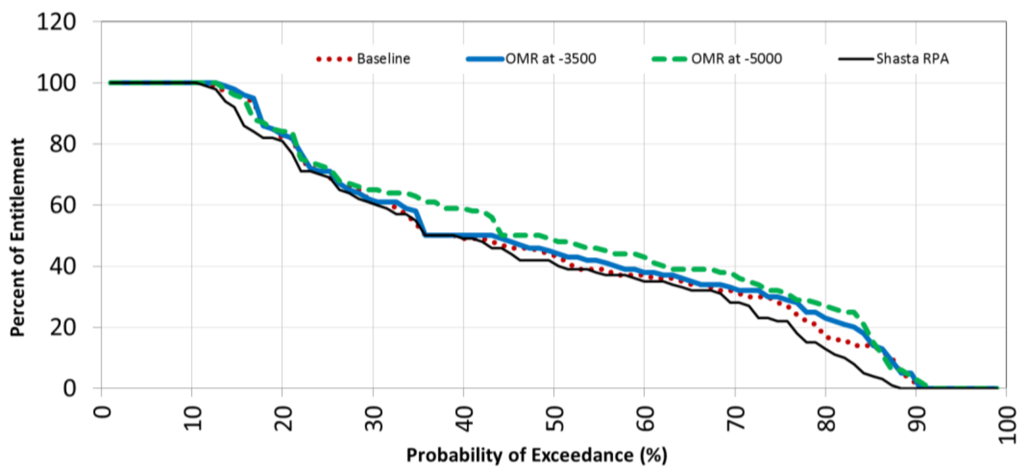


Figure 6 **-** *Exceedance Probability of Annual Deliveries to South of Delta CVP Agricultural Water Service Contractors*

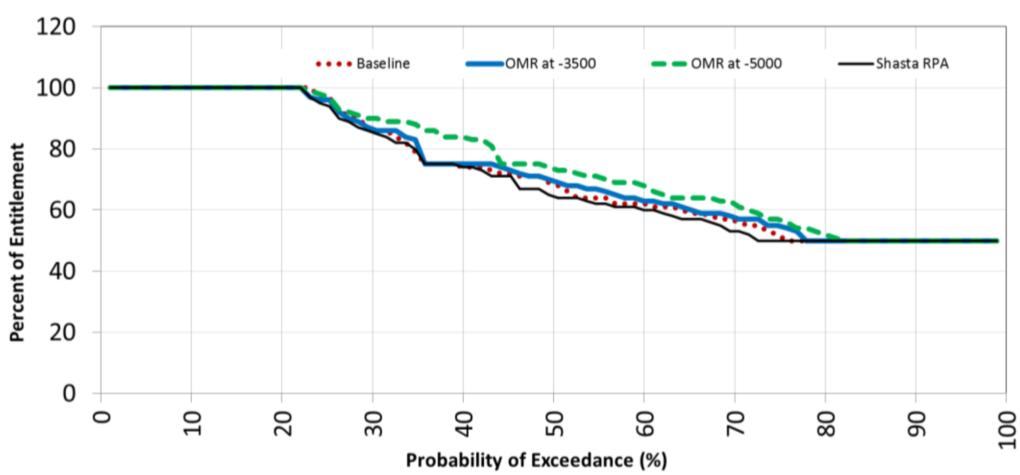


Figure 7 **-** *Exceedance Probability of Annual Deliveries to South of Delta CVP M&I Water Service Contractors*

Figure 8 contains average annual CVP exports for each scenario. Average annual exports increase from 2186 TAF to 2239 TAF (53 TAF) when OMR requirement is assumed to be -5000 cfs compared to -3500 cfs. Average annual Jones export with the Shasta RPA decreases from the Baseline of 2159 TAF to 2177 TAF (42 TAF). Figure 9 contains average monthly Jones export for each scenario. Change in OMR criteria affect the months of January, February, March, and June when OMR requirements constrain exports. The Shasta RPA primarily affects months when storage releases from Shasta are made to support export at Jones, this is the June through September period. Figure 10 contains an exceedance probability plot of annual Jones export for each scenario, the scenario with -5000 OMR criteria most often has the greatest pumping while the Shasta RPA scenario has the lowest.

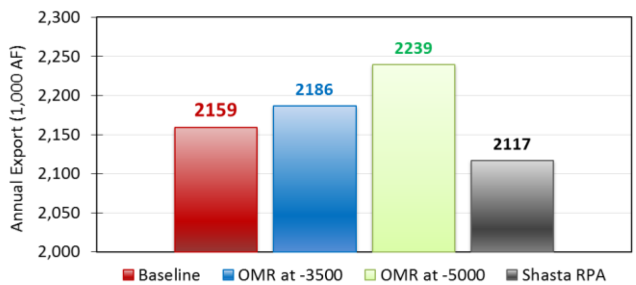


Figure 8: Average Annual Jones Exports

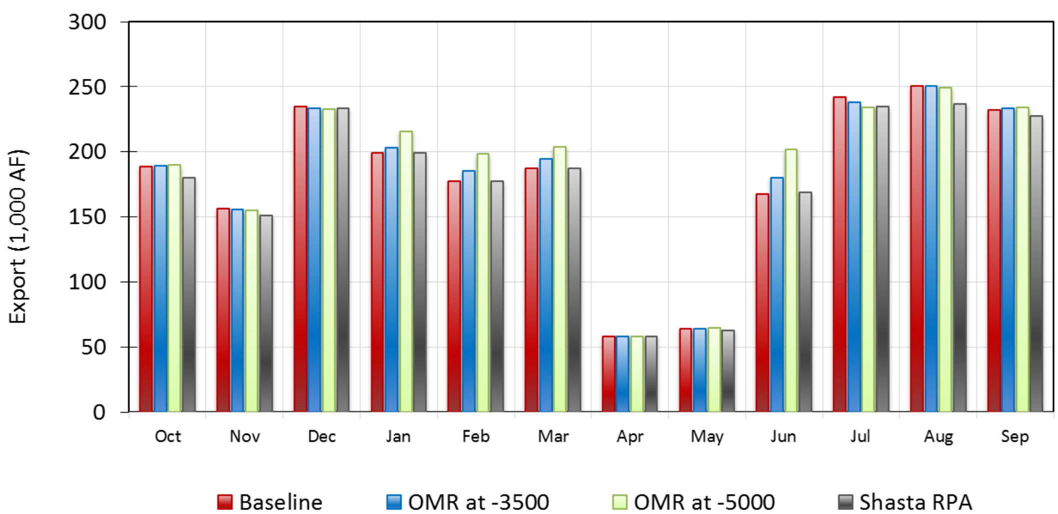


Figure 9 - Average Monthly Jones Export by Water Year Type

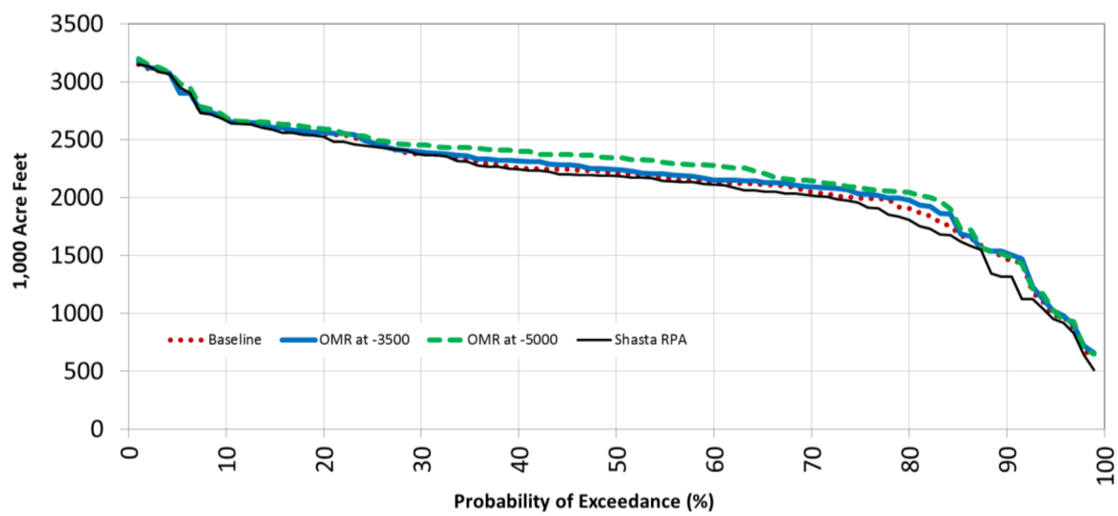


Figure 10: Exceedance Probability of Annual Jones Exports

Figure 11 contains SWP Table A delivery allocation. Delivery to SWP contractors increase with -3500 cfs OMR requirement compared to the CalSim II OMR assumptions, and the increase is greater with -5000 cfs OMR requirement. The Shasta RPA does not affect SWP allocations in this analysis, however this may vary in actual operations if releases are required to maintain Shasta storage. Figure 12 contains a chart showing average annual SWP export at Banks pumping plant. Average annual SWP pumping increases by about 60 TAF compared to the Baseline with CalSim II OMR assumptions and the Shasta RPA has little effect on Banks export in this analysis. Figure 13 contains average monthly export at Banks for each scenario, monthly changes occur from January through March and in June due to changes in OMR requirements.

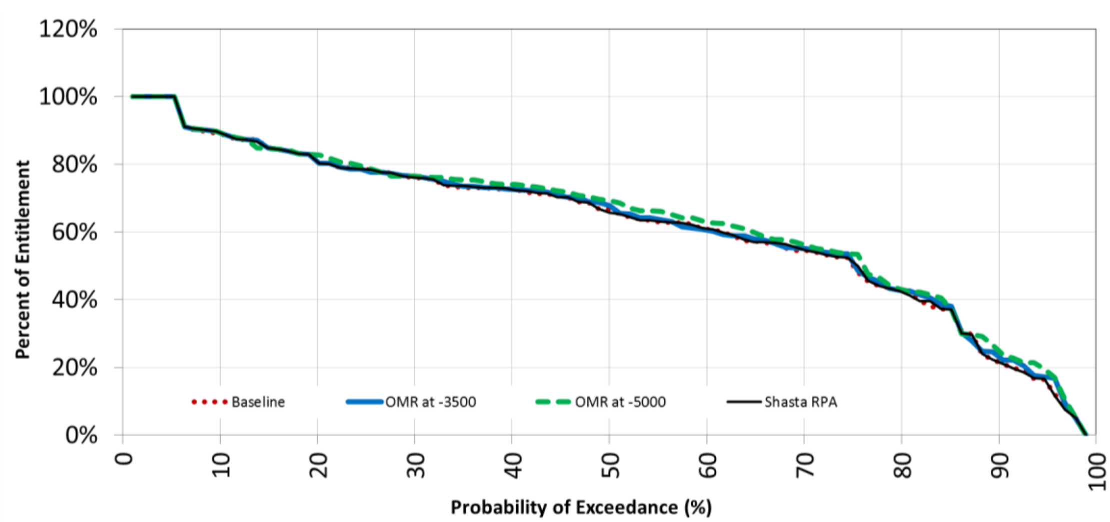


Figure 11 – SWP Table A Allocation

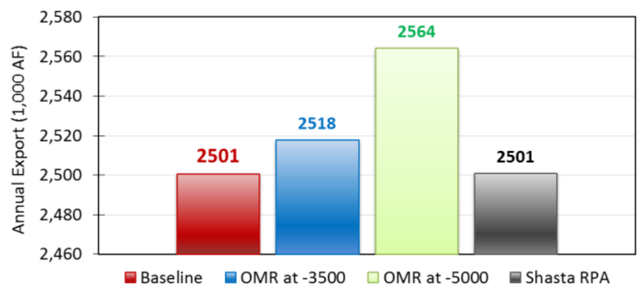


Figure 12: Average Annual Banks Exports

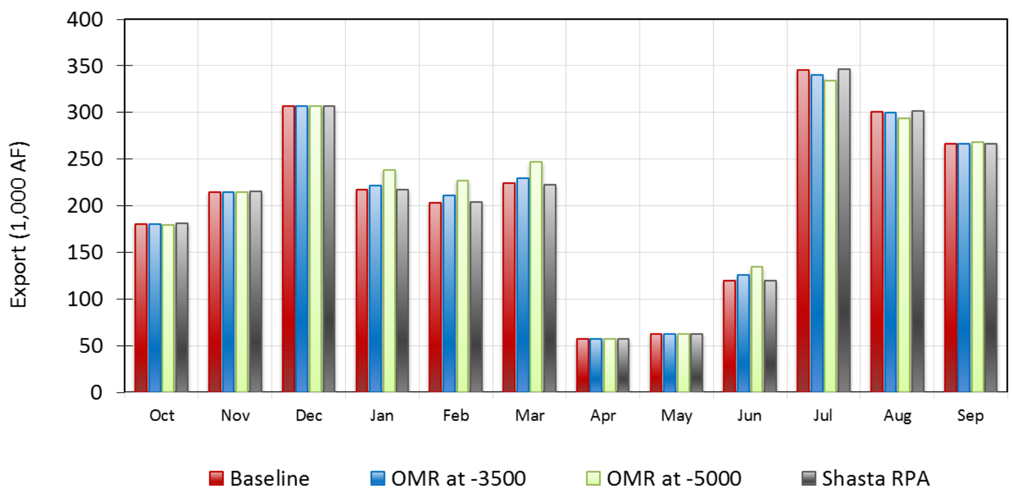


Figure 13: Average Monthly SWP Banks Exports

Just as Delta exports are reduced when storage in upstream reservoirs fall below minimum acceptable levels, there are times when reservoirs fall low enough that Delta outflow requirements may not be satisfied. ProjectSim places a higher priority on satisfying Delta outflow requirements than meeting water supply needs south of the Delta, therefore reduces exports occur prior to relaxing Delta outflow. Figure 14 contains a chart showing annual Delta outflow shortages for each scenario and Figure 15 contains an exceedance probability plot of annual shortages in required Delta outflow. The largest annual shortfall in satisfying required Delta outflow occurs in water year 1977, when approximately 900 TAF of additional storage would be need to satisfy this requirement. There are approximately 10% of years when there was inadequate storage to satisfy minimum required Delta outflow.

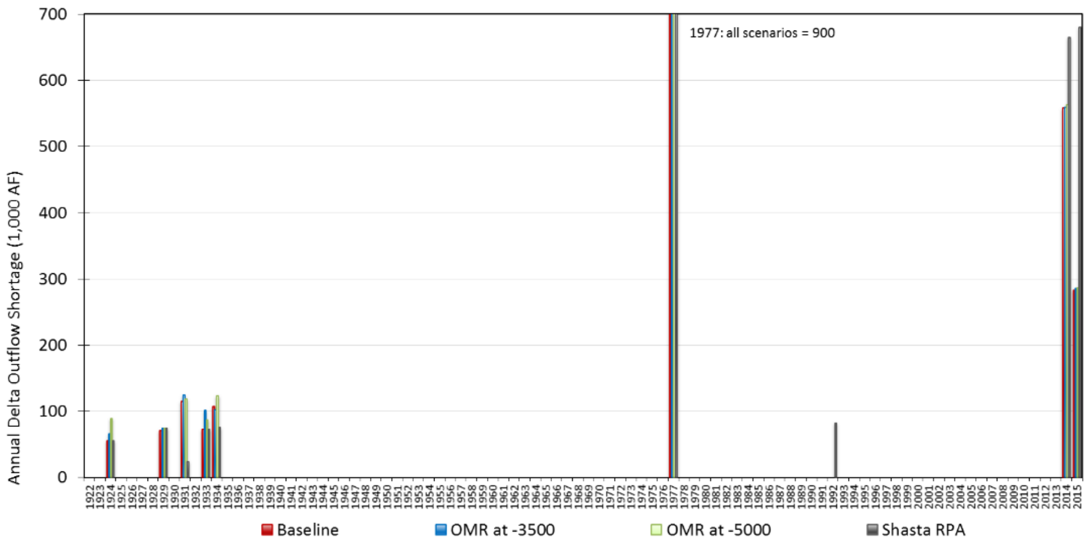


Figure 14: Annual Delta Outflow Shortage

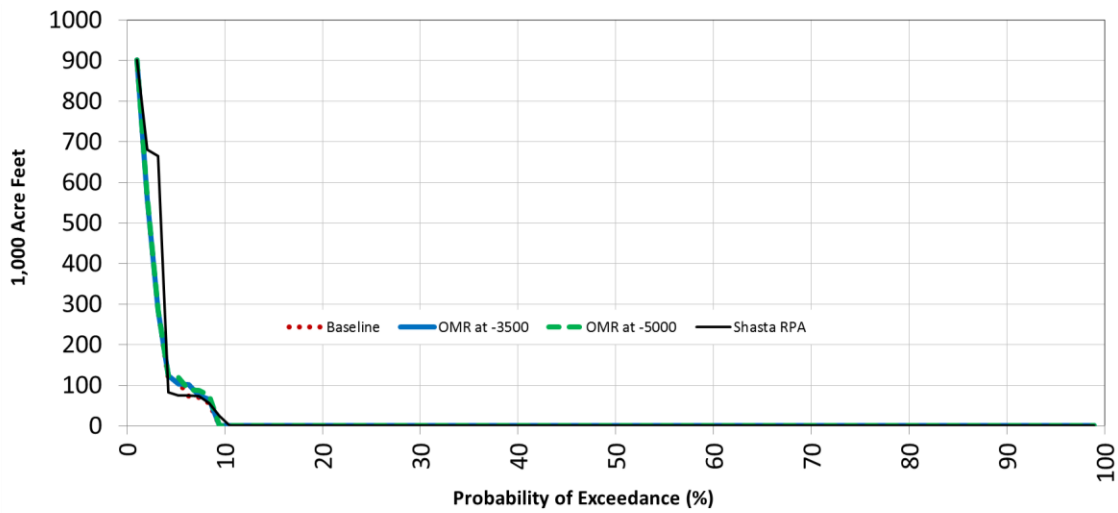


Figure 15: Exceedance Probability of Annual Outflow Shortage

Figure 17, and Figure 18 contain exceedance probability plots of Shasta, Oroville, and Folsom carryover storage. Shasta carryover is slightly affected by changes in OMR flow requirements while storage in the Shasta RPA scenario has higher storage. Oroville reservoir carryover storage is slightly affected by changes in OMR requirements, but assumptions in this modeling do not place a greater demands on Oroville to meet the Shasta RPA storage levels. Folsom carryover storage fluctuates with changes in OMR requirements, but Folsom storage is drawn down significantly to meet the Shasta RPA.

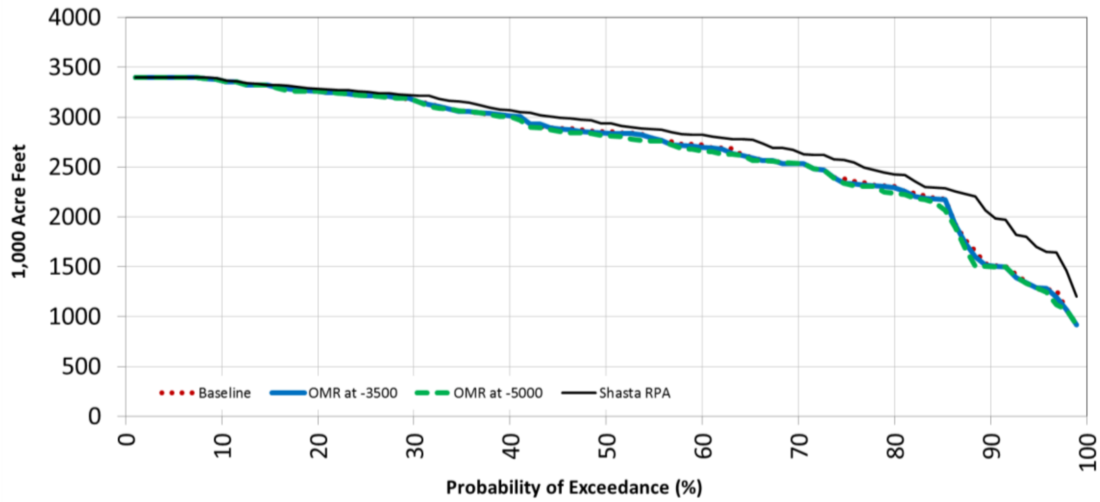


Figure 16: Exceedance Probability of Carryover (End of September) Shasta Storage

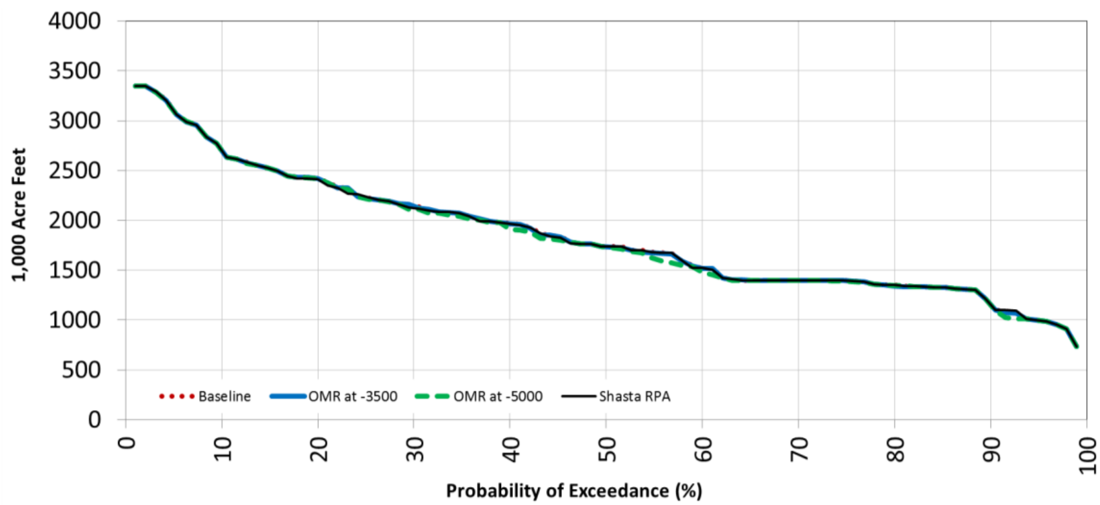


Figure 17: Exceedance Probability of Carryover (End of September) Oroville Storage

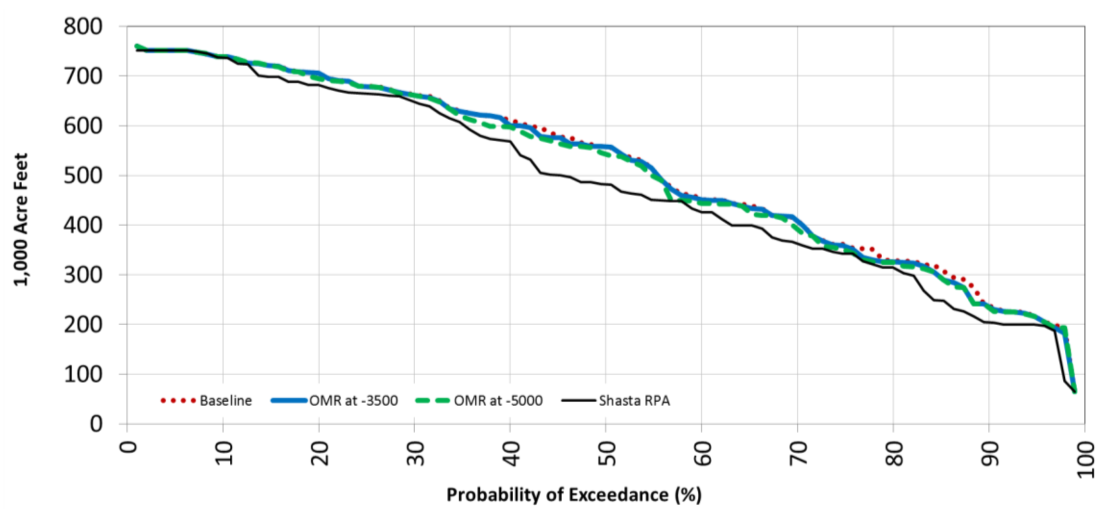


Figure 18: Exceedance Probability of Carryover (End of September) Folsom Storage

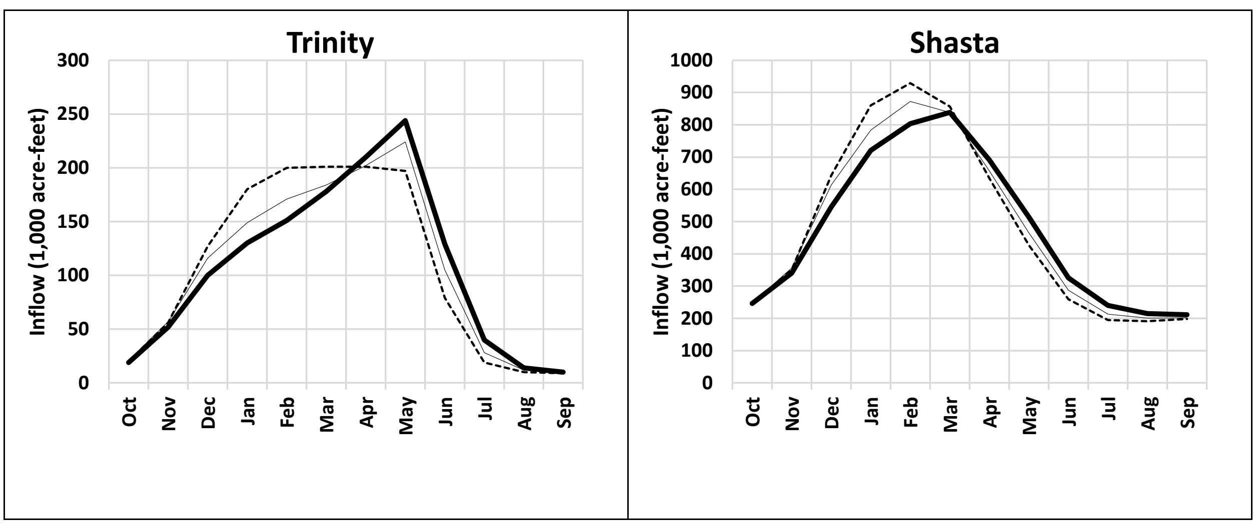
Climate Change Results

Future climate change could result in increases in air temperature, shifts in precipitation patterns, and rise in sea levels which can affect California's water supply and demand. Expected impacts to the SWP and CVP include increased consumptive use demands from agriculture due to higher temperatures, higher freshwater inflows from the Sacramento and San Joaquin rivers to resist salt water intrusion from higher sea-levels, shift in timing and volume of rain and snow-melt runoff and related hydrologic changes. While these impacts of climate changes are widely investigated, there is still a huge uncertainty around the magnitude of the effect of climate change on CVP SWP operations. For example, the extent of sea-level rise varies widely between different studied which only tend to increase as the projections move further into the future.

The CALFED Bay-Delta Program (CALFED) Independent Science Board (ISB) estimated ranges of sea level rise of 2.3 to 3.3 feet at mid-century and of 1.6 to 4.6 feet by the end of the century (CALFED Independent Science Board, 2007). Scenarios modeled by the California Climate Action Team (CAT) projected sea level rise increases along the California Coast of 1.0 to 1.5 feet above 2000 levels by 2050 and 1.8 to 4.6 feet by 2100 (Cayan et al. 2009). These kind of uncertainties add a new layer of complexity to the water reliability problems of the CVP/SWP projects.

To illustrate the effects of climate change on the CVP and SWP system, a comparison of the inflows into the major reservoirs is presented in Figure under the Q5 climate change scenario. The Q5 scenario presented here is a central estimate of the 112 climate change projections. Climate change projections contain a wide range of changes in temperature and precipitation patterns in the future where each projection may have a different estimate of reservoir inflows.

Figure *19* highlights the projected shifts in timing and volume of the inflows which could have a strong influence of water supply reliability under climate change. *Table 3* compares average annual inflow volume with and without climate change. North of Delta reservoir inflows under future climate change (year 2025) are expected to decrease slightly under Q5 scenario whereas the New Melones and Millerton Lake may receive slightly higher inflows.



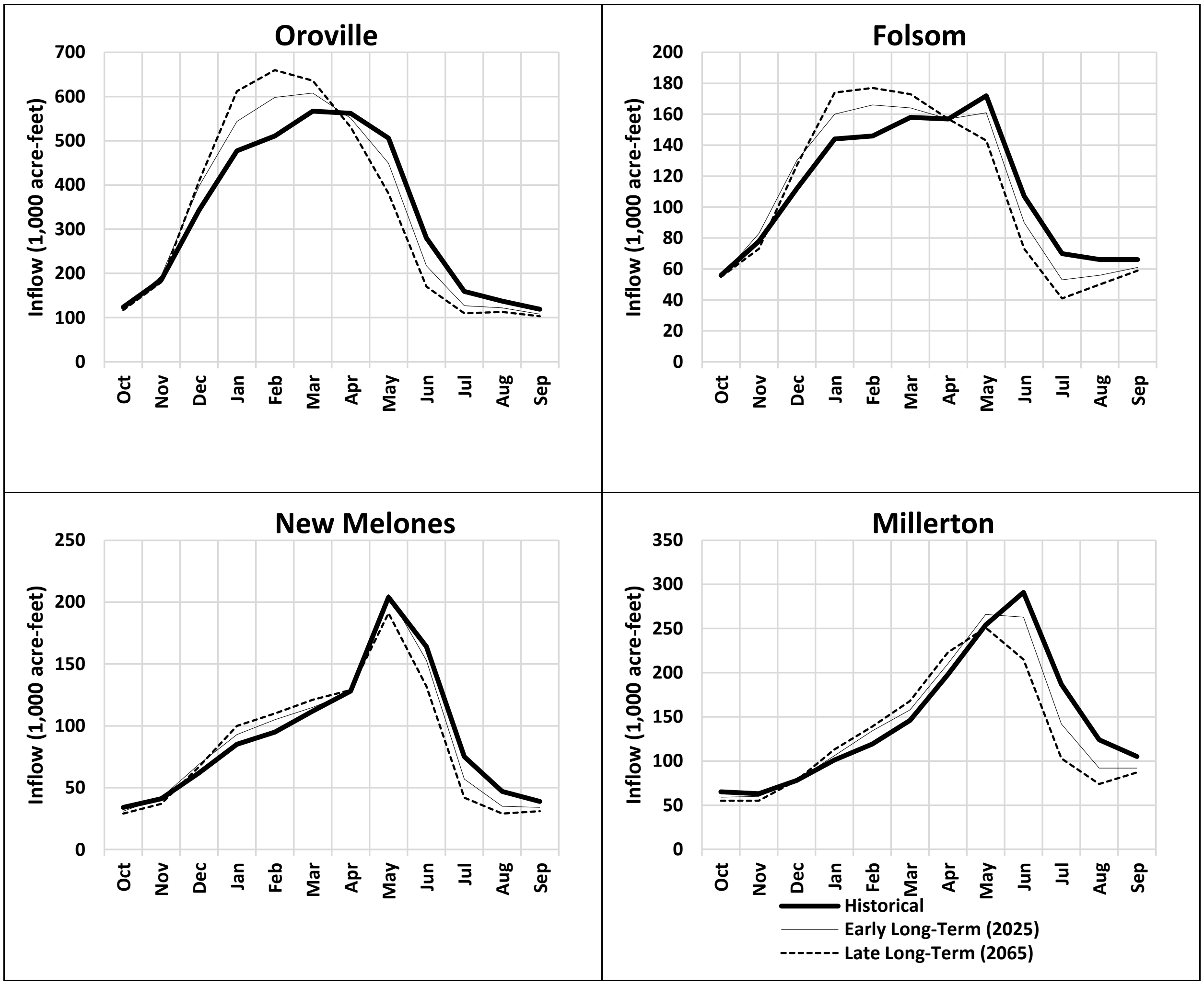


Figure 19: Influence of Climate Change on Reservoir Inflows.

In this analysis, climate assumptions include 15 centimeters (cm) of sea level rise along with changes in reservoir inflows as shown in Figure 19. Sea level rise results in increased salinity intrusion and a subsequent increase in delta outflow requirement to meet compliance of Delta salinity standards. In this analysis, a factor of 1.12 was applied based on a comparison of average annual minimum required delta flows between the studies with and without climate change to simulate the effects of sea level rise in the ProjectSim model.

Table 3: Annual Inflows to Reservoir with and without climate change

Major Reservoirs	Reservoir Inflows (1,000 acre-feet)		
	No Climate Change	Climate Change (ELT)	Change
Trinity	1,277	1,279	2
Shasta	5,690	5,735	45
Oroville	3,967	4,036	69
Folsom	1,332	1,336	4
New Melones	1,087	1,066	(21)
Millerton	1,730	1,660	(69)

Climate change hydrology representing the Early Long Term (ELT) was extracted from the 2015 DWR Delivery Capability Report CalSim II data set and input to ProjectSim to create a Baseline modeling scenario with climate change. The climate change ELT Baseline scenario is compared to the Baseline scenario without climate change to understand how system storage and Jones export may be affected by climate change.

Figure 20 contains and exceedance probability plot of Shasta Reservoir carryover storage for the ProjectSim Baseline and the ProjectSim Baseline with climate change using the ELT hydrology. Average annual Shasta carryover Storage is lower by about 130 TAF in the climate change scenario and average critical year storage is about 180 TAF lower. Figure 21 contains average annual change in Jones export by water year type due to climate change, the average critical reduction of about 120 TAF will reduce reliability to all CVP contractors and Exchange Contractors. Figure 22 contains an exceedance probability plot of annual Jones export, the greatest reduction in exports occurs in the driest years.

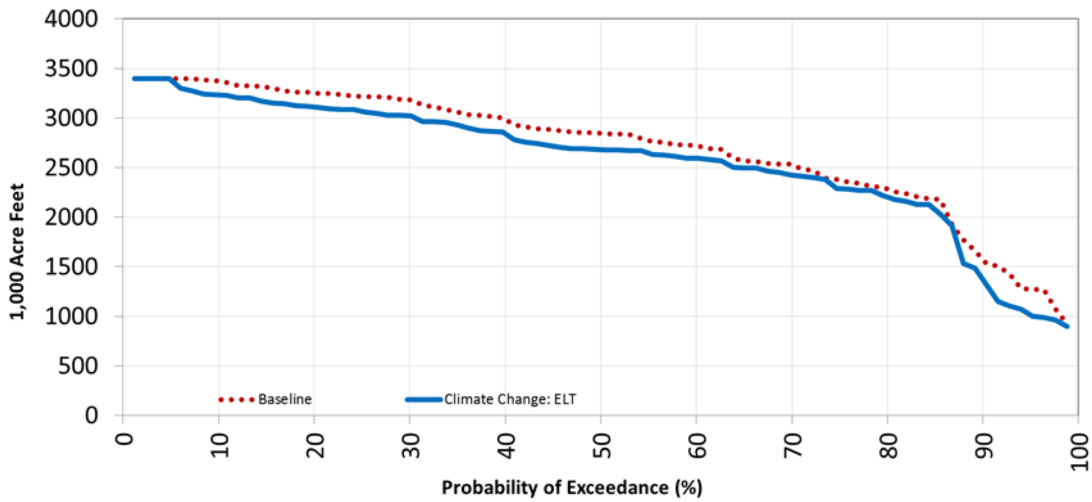


Figure 20 – Shasta Carryover Storage for Baseline and Baseline with Climate Change

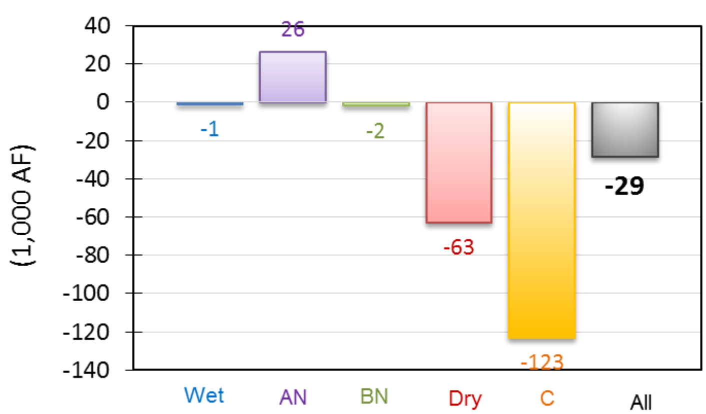


Figure 21 – Average Annual Change in CVP Jones Export (Climate Change ELT minus Baseline)

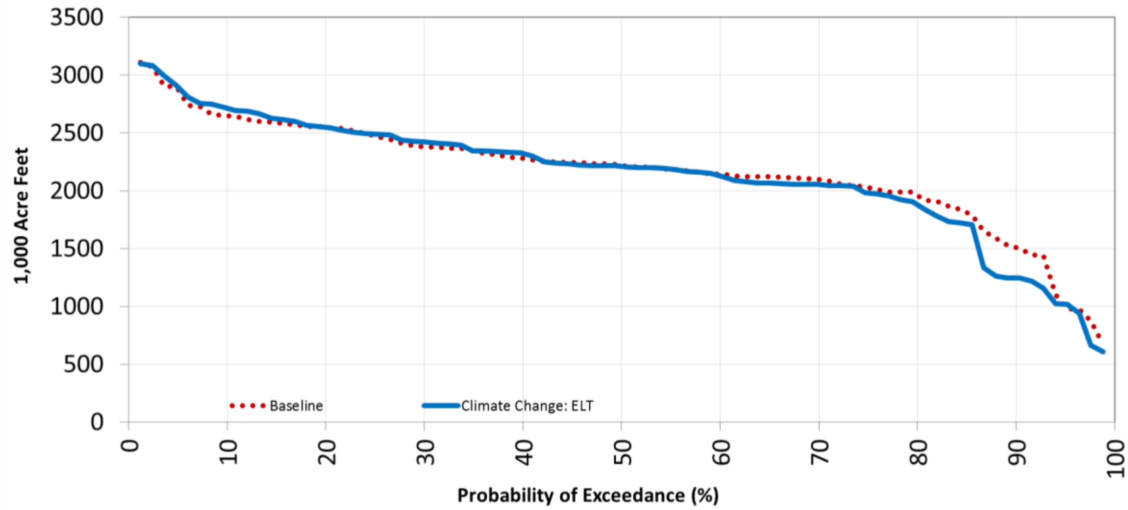


Figure 22 – Exceedance Probability of Annual CVP Jones Export

References

Cayan, D., M. Tyree, M. Dettinger, H. Hidalgo, T. Das, E. Maurer, P. Bromirski, N. Graham, and R. Flick. 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2008 Climate Change Scenarios Assessment.

CALFED Independent Science Board. 2007. Sea Level Rise and Delta Planning. September 6, 2007—Letter from Jeffrey Mount, Chair, CALFED Independent Science Board, to Michael Healey, Lead Scientist, CALFED Bay-Delta Program. Available: <http://science.calwater.ca.gov/pdf/isb/meeting_082807/ISB_response_to_ls_sea_level_09070207.pdf>.

APPENDIX L.7

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

"SOD DELIVERY WORKBOOK MODEL,"
DANIEL B. STEINER, APRIL 2017

KAWEAH RIVER BASIN REGIONAL
WATER MANAGEMENT GROUP

Memorandum

Subject: **SOD Delivery Workbook Model**
From: **Daniel B. Steiner**

1. Introduction

The Central Valley Project (CVP) is experiencing an evolving regulatory playing field. Coupled with extreme hydrologic conditions, namely the recent multi-year drought, water delivery reliability throughout the CVP is an ongoing question. Providing guidance at a planning level has been CalSim II the jointly-developed model of Reclamation and the Department of Water Resources. Recently a spreadsheet model (ProjectSim) has been developed to simulate CVP/SWP operations based on the recent changes and experience that the recent drought has provided. The spreadsheet model allows quick modifications to operational criteria, and has allowed the capturing of recent drought operations. The model has also incorporated the hydrologic period since 2003 through 2015.

This SOD Delivery Workbook Model (model) was developed to post-process CVP South of Delta pumping results derived from ProjectSim (or CalSim II) and "allocate" available water to the Exchange Contractors, Refuges, and CVP Agricultural and M&I contractors. This model provides a refinement of how water from the Delta is allocated based on priority protocols and the intent to fully exercise available water from San Luis Reservoir each year.

2. Model Processing and Delivery Protocols

The model is provided input regarding CVP SOD pumping as a monthly time-series of data, e.g., October 1921 through September 2015. Also provided as input hydrology are time-series data for inflow to the Mendota Pool from the Kings River Basin and the divertible flow from the San Joaquin River.

The model is provided water delivery parameters for each sector of CVP SOD water use. The parameters represent monthly delivery patterns, and for some uses a geographical context. Table 1 illustrates the currently assumed delivery parameters.

Table 1. Water Delivery Parameters.

	ExC Norm	ExC Crit	ExC MP %	MP WR	Refuge L2	Ref MP %	M&I	100-51% Ag	MP Ag %	50-0% Ag
JAN	5	0	0.90	0	17	0.69	10	105	0.02	34
FEB	25	17	0.90	7	13	0.65	10	120	0.02	58
MAR	64	30	0.90	3	4	0.79	10	92	0.02	100
APR	82	60	0.90	2	6	0.79	10	127	0.02	160
MAY	117	86	0.85	4	20	0.72	15	189	0.02	260
JUN	136	126	0.85	8	8	0.79	16	305	0.02	320
JUL	149	130	0.80	15	8	0.72	16	379	0.02	370
AUG	150	120	0.80	16	13	0.51	17	273	0.02	270
SEP	56	42	0.95	10	58	0.62	14	87	0.02	120
OCT	27	20	0.95	4	48	0.66	10	57	0.02	70
NOV	29	19	0.95	3	29	0.63	10	42	0.02	40
DEC	0	0	0.90	0	26	0.69	10	60	0.02	34
	840	650		71	249	0.66	148	1,836		1,836

The distinction of geographical context for the Exchange Contractors, Refuges and CVP Agricultural contractors associates with the amount of their deliveries that are being satisfied from inflow to the Mendota Pool from the Kings and San Joaquin Rivers. Assumptions are also provided to the model regarding losses from the Delta Mendota Canal (60 TAF per year), the Mendota Pool (96 TAF per year) and San Luis Reservoir evaporation (36 TAF per year).

The model develops a storage balance in San Luis Reservoir based on a monthly mass balance of supply (pumping) from the Delta, losses, deliveries based on user input for each year for each sector's "allocation" and the usable water from the Kings and San Joaquin Rivers at the Mendota Pool. The allocations work on a calendar year basis for the Exchange Contractors and Mendota Pool Water Right sectors, and a March through February contract year basis for all CVP contractors and the Refuges. The Refuges and Mendota Pool Water Right sectors are provided the same percentage entitlement as the Exchange Contractors. CVP Agricultural Contractors are assumed to be cut in allocation up to 25 percent before CVP M&I Contractors receive a cut. Both CVP contractor sectors receive equal additional cuts up to a maximum of 50 percent shortage to the M&I sector. CVP Agricultural Contractors will continue to receive cuts until a zero allocation. The Exchange Contractors receive entitlement to their full contract amount except for Shasta Critical years at which time they are entitled to about 77% of their full contract amount. The Refuges (L2) and the Mendota Pool Water Right sector follow the protocol of the Exchange Contractors. During times when the CVP Agricultural sector has been decreased to zero allocation, the Exchange Contractors, Refuges and Mendota Pool Water Right sectors will share an equal decrease (if any) in percentage delivery to maintain the viability of San Luis Reservoir.

As a result of the model user selecting allocations for each sector the forward-looking San Luis Reservoir balance is shown. When a future month of San Luis Reservoir indicates less than an assumed approximate 38,000 acre-feet of minimum storage (typically July-August) the model user will adjust one or more sector's allocation to achieve a "viable" operation that includes maintaining at least the minimum storage. This method of processing is assuming perfect forward-looking knowledge of inflows, pumping and patterned deliveries, and is to be considered a "best case" planning determination of water availability. The allocations shown for the examples could be different if entities "source shifted" their demand from canal source to a different source, essentially any action that affects the "low point" of CVP San Luis Reservoir would affect the results of the model.

3. Sample Results

The model was employed to refine the results of several ProjectSim scenarios. The several ProjectSim scenarios investigated were:

1. Base (CalSim II-Like Baseline)
2. Proposed Amended Shasta RPA
3. OMR Flows > -3,500 cfs (Base adaptation)
4. OMR Flows > 5,000 cfs (Base adaptation)
5. ELT (Early Long-term Climate Change – DWR2015)

Reference MBK Engineers report Reliability of *SWP Supplies and CVP Westside Supplies* for further information and assumptions for these scenarios.

Table 2 illustrates the results for the four scenarios. The results are shown as full entitlement delivery levels for the Exchange Contractors and allocations to CVP contractors.

Specific to the Exchange Contractors, Table 3 illustrates the apparent shortage to the entitlement of the entities based solely on the fulfillment of the Exchange Contract from a "Delta" supply. Information separate from derivation of results from this model but informative in relation to the shortages portrayed for the Exchange Contract are data shown in Table 4, and represent the simulated deliveries of the Friant Division under pre-SJRRP and full flow release SJRRP conditions. These results were derived from use of the Friant Workbook Model as described in the memorandum titled *Extension of Friant Workbook Model Revised Results of SJRRP Analysis*. Although not the only tool to assist in fulfilling the Exchange Contract, at times there appears to be insufficient supply even from Friant to ameliorate shortages to the Exchange Contract from the Delta supply.

Table 2. CVP Deliveries. (Values shown as percentage of entitlement or contract)

2003 Ave	95	95	95	95	94	49	46	50	52	46	73	72	73	76	73
2015 Ave	94	94	95	95	NA	48	45	49	51	NA	72	71	73	75	NA
	ExC/WR/Refuge					CVP Ag					CVP M&I				
WY	BASE	ShaRPA	OMR3500	OMR5000	ELT	BASE	ShaRPA	OMR3500	OMR5000	ELT	BASE	ShaRPA	OMR3500	OMR5000	ELT
1922	100	100	100	100	100	65	65	65	65	57	90	90	90	90	82
1923	100	100	100	100	100	61	59	61	64	73	86	84	86	89	98
1924	77	73	77	77	52	3	0	5	6	0	50	50	50	50	50
1925	100	100	100	100	100	37	38	38	41	40	62	63	63	66	65
1926	100	100	100	100	100	30	35	32	34	33	50	60	57	59	58
1927	100	100	100	100	100	49	39	48	50	43	74	64	73	75	68
1928	100	100	100	100	100	41	15	43	46	27	66	50	68	71	52
1929	100	100	100	100	82	0	1	0	2	0	50	50	50	50	50
1930	100	100	100	100	100	31	40	32	39	20	56	65	57	64	50
1931	50	56	54	53	52	0	0	0	0	0	50	50	50	50	50
1932	77	77	77	77	77	46	46	59	56	60	71	71	84	81	85
1933	77	67	77	77	49	14	0	9	0	0	50	50	50	50	50
1934	66	58	71	74	71	0	0	0	0	0	50	50	50	50	50
1935	100	100	100	100	100	44	49	45	48	39	69	74	70	73	64
1936	100	100	100	100	100	54	64	50	50	50	79	89	75	75	75
1937	100	100	100	100	100	99	94	100	100	96	100	100	100	100	100
1938	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1939	100	100	100	100	88	5	5	5	6	0	50	50	50	50	50
1940	100	100	100	100	100	49	50	50	61	55	74	75	75	86	80
1941	100	100	100	100	100	95	84	96	88	78	100	100	100	100	100
1942	100	100	100	100	100	50	50	50	50	59	75	75	75	75	84
1943	100	100	100	100	100	85	69	85	87	57	100	94	100	100	82
1944	79	99	81	88	76	0	0	0	0	0	50	50	50	50	50
1945	100	100	100	100	100	72	71	71	74	59	97	97	96	99	84
1946	100	100	100	100	100	57	57	58	64	65	82	82	83	89	90
1947	100	100	100	100	100	36	31	40	44	22	61	56	65	69	50
1948	100	100	100	100	100	32	32	33	38	37	57	57	58	63	62
1949	100	100	100	100	100	48	49	50	61	55	73	74	75	86	80
1950	100	100	100	100	100	39	37	42	39	47	64	61	67	64	72
1951	100	100	100	100	100	62	61	61	68	71	87	86	86	93	96
1952	100	100	100	100	100	97	92	99	96	95	100	100	100	100	100
1953	100	100	100	100	100	24	22	25	31	26	50	50	50	56	51
1954	100	100	100	100	100	36	28	38	44	39	61	53	63	69	64
1955	100	100	100	100	100	47	48	50	59	56	72	73	75	84	81
1956	100	100	100	100	100	86	86	86	85	72	100	100	100	100	97
1957	100	100	100	100	100	10	10	25	25	2	50	50	50	50	50
1958	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1959	100	100	100	100	100	12	8	13	21	2	50	50	50	50	50
1960	100	100	100	100	100	49	46	50	65	54	74	71	75	90	79
1961	100	100	100	100	100	33	35	41	39	34	58	61	66	64	59
1962	100	100	100	100	100	46	42	46	63	56	71	67	71	88	81
1963	100	100	100	100	100	61	55	62	59	55	86	80	87	84	80
1964	100	100	100	100	100	14	23	20	25	19	50	50	50	50	50
1965	100	100	100	100	100	67	62	67	67	75	92	87	92	92	100
1966	100	100	100	100	100	35	33	34	39	28	60	58	59	64	53
1967	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1968	100	100	100	100	100	43	42	44	50	37	68	67	69	75	62
1969	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1970	100	100	100	100	100	21	13	21	27	13	50	50	50	52	50
1971	100	100	100	100	100	46	42	46	44	43	71	67	71	69	68
1972	100	100	100	100	100	27	28	30	39	30	52	53	55	64	55

Table 2. CVP Deliveries - continued. (Values shown as percentage of entitlement or contract)

2003 Ave	95	95	95	95	94	49	46	50	52	46	73	72	73	76	73
2015 Ave	94	94	95	95	NA	48	45	49	51	NA	72	71	73	75	NA
	ExC/WR/Refuge					CVP Ag					CVP M&I				
WY	BASE	ShaRPA	OMR3500	OMR5000	ELT	BASE	ShaRPA	OMR3500	OMR5000	ELT	BASE	ShaRPA	OMR3500	OMR5000	ELT
1973	100	100	100	100	100	82	82	82	84	70	100	100	100	100	95
1974	100	100	100	100	100	72	70	72	72	76	97	95	97	97	100
1975	100	100	100	100	100	34	34	35	38	34	59	59	60	63	59
1976	100	100	100	100	100	39	27	43	49	31	64	52	68	74	56
1977	18	22	16	14	14	0	0	0	0	0	50	50	50	50	50
1978	100	100	100	100	100	100	99	100	100	100	100	100	100	100	100
1979	100	100	100	100	100	50	50	50	58	55	75	75	75	83	80
1980	100	100	100	100	100	100	100	100	100	97	100	100	100	100	100
1981	100	100	100	100	100	22	22	22	29	15	50	50	50	54	50
1982	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1983	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1984	100	100	100	100	100	69	60	71	73	58	100	85	96	98	83
1985	100	100	100	100	100	37	39	36	36	18	62	64	61	61	50
1986	100	100	100	100	100	94	82	95	95	79	100	100	100	100	100
1987	36	50	38	45	54	0	0	0	0	0	50	50	50	50	50
1988	100	100	100	100	100	34	0	39	46	38	59	50	64	71	63
1989	100	100	100	100	100	30	42	29	28	12	55	55	54	53	50
1990	100	100	100	100	100	16	18	23	26	30	50	50	50	51	55
1991	77	77	77	77	76	17	3	18	15	0	50	50	50	50	50
1992	45	36	47	53	33	0	0	0	0	0	50	50	50	50	50
1993	100	100	100	100	100	66	81	64	66	50	91	100	89	91	75
1994	77	77	77	77	77	50	23	49	59	43	75	50	74	84	68
1995	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1996	100	100	100	100	100	75	71	77	75	77	100	100	100	100	100
1997	100	100	100	100	97	28	15	28	29	0	53	50	53	54	50
1998	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1999	100	100	100	100	100	59	57	61	64	62	84	82	86	89	87
2000	100	100	100	100	100	37	36	37	40	31	62	61	62	65	56
2001	100	100	100	100	100	39	37	39	47	42	64	62	64	72	67
2002	100	100	100	100	100	36	37	37	50	42	61	62	62	75	67
2003	100	100	100	100	100	50	50	50	58	56	75	75	75	83	81
2004	100	100	100	100		45	44	47	45		72	71	72	70	
2005	100	100	100	100		97	98	98	98		100	100	100	100	
2006	100	100	100	100		82	77	83	84		100	100	100	100	
2007	97	100	100	100		0	4	0	4		50	50	50	50	
2008	100	100	100	100		16	11	32	32		50	50	57	57	
2009	100	100	100	100		37	35	34	35		62	60	59	60	
2010	100	100	100	100		39	39	42	48		64	64	67	73	
2011	100	100	100	100		100	100	100	100		100	100	100	100	
2012	100	100	100	100		32	32	34	43		57	57	59	68	
2013	100	100	100	100		30	32	30	32		55	57	55	57	
2014	2	0	15	14		0	0	0	0		50	50	50	50	
2015	77	66	77	77		14	0	14	11		50	50	50	50	

Highlight notes Shasta Critical years.

Table 3. Exchange Contract Shortage Based on Delta Supply Only.

WY	BASE ExC Short frm Entit Percent	BASE ExC Short Volume TAF	ShasRPA ExC Short frm Entit Percent	ShasRPA ExC Short Volume TAF	OMR3500 ExC Short frm Entit Percent	OMR3500 ExC Short Volume TAF	OMR5000 ExC Short frm Entit Percent	OMR5000 ExC Short Volume TAF	ELT ExC Short frm Entit Percent	ELT ExC Short Volume TAF
1922	0	0	0	0	0	0	0	0	0	0
1923	0	0	0	0	0	0	0	0	0	0
1924	0	0	4	34	0	0	0	0	25	210
1925	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	18	151
1930	0	0	0	0	0	0	0	0	0	0
1931	27	227	21	176	23	193	24	202	25	210
1932	0	0	0	0	0	0	0	0	0	0
1933	0	0	10	84	0	0	0	0	28	235
1934	11	92	19	160	6	50	3	25	6	50
1935	0	0	0	0	0	0	0	0	0	0
1936	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	0
1939	0	0	0	0	0	0	0	0	12	101
1940	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0
1943	0	0	0	0	0	0	0	0	0	0
1944	21	176	1	8	19	160	12	101	24	202
1945	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0

Table 3. Exchange Contract Shortage Based on Delta Supply Only (continued).

	BASE		ShasRPA		OMR3500		OMR5000		ELT	
	ExC Short frm Entit	ExC Short Volume	ExC Short frm Entit	ExC Short Volume	ExC Short frm Entit	ExC Short Volume	ExC Short frm Entit	ExC Short Volume	ExC Short frm Entit	ExC Short Volume
WY	Percent	TAF	Percent	TAF	Percent	TAF	Percent	TAF	Percent	TAF
1969	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0
1977	59	496	55	462	61	512	63	529	63	529
1978	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0
1987	64	538	50	420	62	521	55	462	46	386
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	1	8
1992	32	269	41	344	30	252	24	202	44	370
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	3	25
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0		
2005	0	0	0	0	0	0	0	0		
2006	0	0	0	0	0	0	0	0		
2007	3	25	0	0	0	0	0	0		
2008	0	0	0	0	0	0	0	0		
2009	0	0	0	0	0	0	0	0		
2010	0	0	0	0	0	0	0	0		
2011	0	0	0	0	0	0	0	0		
2012	0	0	0	0	0	0	0	0		
2013	0	0	0	0	0	0	0	0		
2014	75	630	77	647	62	521	63	529		
2015	0	0	11	92	0	0	0	0		

Highlight notes Shasta Critical years.

Table 4. Water Deliveries from Friant Division – Pre-SJRRP and SJRRP Conditions.

	Friant Delivery			Total Friant Delivery	
	Feb-Mar Pre	Feb-Mar SJRRP		Feb-Mar Pre-SJRRP	Feb-Mar SJRRP
Year	TAF	TAF	Year	TAF	TAF
1922	1,886	1,649	1969	1,784	1,757
1923	1,309	1,179	1970	1,236	961
1924	442	301	1971	1,149	904
1925	1,067	858	1972	989	735
1926	1,077	786	1973	1,674	1,352
1927	1,640	1,303	1974	1,759	1,442
1928	1,143	925	1975	1,544	1,275
1929	644	480	1976	619	515
1930	664	469	1977	193	190
1931	327	182	1978	2,023	1,908
1932	1,592	1,316	1979	1,592	1,270
1933	1,040	800	1980	1,994	1,669
1934	586	422	1981	1,053	987
1935	1,515	1,153	1982	2,018	1,914
1936	1,513	1,257	1983	1,946	1,910
1937	1,614	1,472	1984	1,478	1,169
1938	1,896	1,825	1985	1,067	832
1939	760	590	1986	1,853	1,712
1940	1,479	1,173	1987	541	534
1941	1,958	1,713	1988	669	478
1942	1,961	1,542	1989	734	522
1943	1,444	1,223	1990	557	381
1944	1,070	952	1991	782	564
1945	1,833	1,494	1992	731	488
1946	1,418	1,138	1993	2,007	1,676
1947	1,014	830	1994	813	749
1948	856	629	1995	2,169	2,071
1949	985	742	1996	1,654	1,470
1950	1,316	1,053	1997	1,534	1,270
1951	1,206	912	1998	1,788	1,703
1952	1,747	1,671	1999	1,265	1,062
1953	1,018	824	2000	1,552	1,187
1954	1,066	796	2001	892	691
1955	1,060	852	2002	967	723
1956	1,968	1,526	2003	1,213	933
1957	1,161	1,008	2004	1,025	718
1958	1,734	1,592	2005	2,031	1,940
1959	807	787	2006	1,867	1,806
1960	640	450	2007	464	324
1961	455	316	2008	872	644
1962	1,588	1,294	2009	1,236	949
1963	1,646	1,348	2010	1,913	1,474
1964	1,041	857	2011	1,990	1,917
1965	1,719	1,342	2012	726	580
1966	1,287	1,039	2013	663	468
1967	2,002	1,910	2014	331	192
1968	787	649	2015	138	136

APPENDIX L.8

KAWEAH BASIN IMPORTED WATER VULNERABILITY STUDY

"EXTENSION OF FRIANT WORKBOOK MODEL REVISED RESULTS OF SJRRP ANALYSIS," DANIEL B. STEINER, APRIL 2017

KAWEAH RIVER BASIN REGIONAL WATER MANAGEMENT GROUP

Memorandum

Subject: **Extension of Friant Workbook Model**
Revised Results of SJRRP Analysis

From: **Daniel B. Steiner**

1. Introduction

The Friant Division Simulation Model (model) provides a tool that can depict Friant Division water diversions and operations during a long-term simulation period. The model was developed during the era of litigation over release requirements from Friant which ultimately led to the San Joaquin River Restoration Program (SJRRP), and was used by Friant entitles during settlement discussions. A key facet of the model is canal diversions that vary from year to year based on an annually variable water supply. The monthly distribution of an annual diversion is based on the historical delivery practices of the contractors as they have reacted to the varying water supply. Minimum required releases below Friant Dam for riparian and contractor users can be modeled as can alternative required downstream flow regimes. Flood control operations for Millerton Lake and the lower San Joaquin River are based on the rainflood space reservation requirements specified by the U.S. Army Corps of Engineers (USACE). The flood control operation during the snowmelt runoff period recognizes the competing objectives of water supply and flood control, and attempts to maximize water supply carryover storage (into summer) while reducing the potential for downstream flooding. Documentation of the model is provided in the document Friant Division Simulation Model, July 2005.

The model was initially developed using hydrology for 1922-2004, and was previously extended through 2009. Subsequently additional flood and drought periods have occurred which would provide additional robustness to the model. This memorandum presents the results of the extended model for 1922 through 2016.

2. Hydrology and Stream Release Requirements

For 1922 through 2004 the model incorporates operations upstream of Millerton Lake consistent with the "Base Plan" results described in Evaluation of Potential Increases in Millerton Lake Water Supply Resulting from Changes in Upper San Joaquin River Basin Projects Operation, Phase 2, U. S. Bureau of Reclamation, October 2000. Derived from that study and included as hydrologic input to the model are inflow to Millerton Lake and the monthly storage at Mammoth Pool. Actual reported hydrology is incorporated into the model for the period subsequent to 2004. Two operation scenarios are investigated: (1) pre-SJRRP depicting the "117" once-existing riparian and losses demand below Friant Dam (associated with the settlement discussions), and (2) the assumed full SJRRP release (Method 3.1 hydrograph) occurring at Friant Dam.

3. Results

Results from the simulation model include many hydrologic parameters. Two primary parameters are the river release and canal diversions. Table 1 illustrates the total river release and total canal diversions as simulated by the model for the 95-year investigation period. The information is provided in terms of averages for the entire period and by averages within SJRRP year types.

Table 1. Total River Releases and Total Canal Diversions.

	Total River Release (1,000 acre-feet)		
	Current Release Requirement	Restoration Flow Method 3.1	Difference
Wet	1182	1286	104
Normal-wet	243	524	281
Normal-dry	119	361	242
Dry	117	307	190
Critcal-High	117	259	142
Critical-Low	117	121	5
All	365	572	207

Note: Values summed for water year - October-September

	Total Canal Diversions (1,000 acre-feet)		
	Current Release Requirement	Restoration Flow Method 3.1	Difference
Wet	1974	1826	-148
Normal-wet	1641	1349	-292
Normal-dry	1095	879	-216
Dry	749	591	-158
Critcal-High	498	364	-134
Critical-Low	229	226	-3
All	1316	1111	-205

Note: Values summed for contract year - March-February

The total canal diversions described in Table 1 include diversions for canal losses. In terms of Class 1, Class 2 and "Other" deliveries, Table 2 provides averages for these parameters within SJRRP year types and for the entire investigation period.

Table 2. Friant Deliveries.

	Class 1			Class 2			Other		
	Current	SJRRP	Difference	Current	SJRRP	Difference	Current	SJRRP	Difference
Wet	800	800	0	873	769	-103	238	194	-44
Normal-wet	800	799	-1	567	412	-155	211	75	-136
Normal-dry	797	752	-45	176	44	-132	58	20	-39
Dry	653	511	-142	6	0	-6	26	17	-9
Critcal-High	430	299	-131	0	0	0	5	2	-3
Critical-Low	163	160	-3	0	0	0	3	3	0
All	743	700	-43	383	280	-103	127	68	-59

	Total Annual System Deliveries		
	Current	SJRRP	Difference
Wet	1911	1763	-148
Normal-wet	1578	1286	-292
Normal-dry	1032	816	-216
Dry	686	528	-158
Critcal-High	435	301	-134
Critical-Low	166	163	-3
All	1253	1048	-205

Note: Values summed for contract year - March-February

Sequential year-to-year and rank-ordered annual results are shown in Table 3 for total river releases and Table 4 for total canal releases. The total canal releases are disaggregated for Class 1 deliveries (Table 5), Class 2 deliveries (Table 6), Other deliveries (Table 7), and total annual system deliveries (Table 8).

The annual average delivery of Class 1 and Class 2 water to each Long-term Friant Division water contractor is shown in Table 9 for current operations and the reduction to deliveries using the SJRRP Method 3.1 hydrograph. The reduction in delivery of Other water is noted in the tables, but is not disaggregated among the contractors.

Table 3. Total River Releases.

Total River Release (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	Restoration Flow Method 3.1	Difference		Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	516	625	109		1983		2,773	2,826	53
1923	117	429	312		1969		2,125	2,112	-13
1924	117	259	142		1995		1,429	1,500	71
1925	117	328	211		1938		1,644	1,738	95
1926	137	361	225		1978		1,146	1,184	37
1927	129	478	348		1982		931	1,015	84
1928	117	360	244		2011		1,139	1,274	135
1929	117	315	198		1967		917	1,013	96
1930	117	314	198		2006		1,169	1,279	110
1931	117	259	142		1998	Wet	1,314	1,278	-36
1932	126	413	287		1986		1,120	1,104	-16
1933	117	355	238		1980		898	1,139	241
1934	117	283	167		1956		837	1,082	244
1935	139	460	321		1952		963	1,012	49
1936	306	493	186		2005		814	900	86
1937	670	860	189		1997		1,198	1,549	350
1938	1,644	1,738	95		1993		467	675	208
1939	117	328	211		1941		754	921	168
1940	205	461	255		1958		816	834	18
1941	754	921	168		1922		516	625	109
1942	159	513	354		1965		238	559	320
1943	425	706	282		1942		159	513	354
1944	117	375	259		1937		670	860	189
1945	315	597	282		1996		355	581	226
1946	189	445	256		1974		201	562	361
1947	117	357	240		1945		315	597	282
1948	117	369	252		1943		425	706	282
1949	117	362	245		1984		397	713	315
1950	117	381	265		1932		126	413	287
1951	469	733	265		1973		288	505	217
1952	963	1,012	49		2010		144	481	337
1953	117	370	253		1927	Normal-Wet	129	478	348
1954	130	382	252		1963		176	470	294
1955	117	361	245		1962		117	395	279
1956	837	1,082	244		1935		139	460	321
1957	117	384	267		1940		205	461	255
1958	816	834	18		1951		469	733	265
1959	117	333	216		1936		306	493	186
1960	117	308	191		1979		162	454	292
1961	117	259	142		1975		126	449	323
1962	117	395	279		2000		117	441	324
1963	176	470	294		1946		189	445	256
1964	117	329	212		1923		117	429	312
1965	238	559	320		1999		117	411	294
1966	135	380	244		2009		117	401	284
1967	917	1,013	96		2003		117	400	284
1968	117	315	198		1970		117	400	283
1969	2,125	2,112	-13		1925		117	328	211
1970	117	400	283		1971		117	396	279
1971	117	396	279		1957		117	384	267
1972	117	345	228		1954		130	382	252
1973	288	505	217		1950		117	381	265
1974	201	562	361		2016		117	305	188
1975	126	449	323		1966		135	380	244
1976	117	259	142		1944		117	375	259
1977	117	121	5		1953		117	370	253
1978	1,146	1,184	37		1948		117	369	252
1979	162	454	292		2002		117	363	246
1980	898	1,139	241		1949	Normal-Dry	117	362	245
1981	117	349	232		1926		137	361	225
1982	931	1,015	84		1955		117	361	245
1983	2,773	2,826	53		1928		117	360	244
1984	397	713	315		2004		117	357	241
1985	117	357	240		1985		117	357	240
1986	1,120	1,104	-16		1947		117	357	240
1987	117	298	181		2008		117	349	232
1988	117	309	192		1933		117	355	238
1989	117	331	215		1981		117	349	232
1990	117	295	178		2001		117	348	232
1991	117	338	221		1972		117	345	228
1992	117	303	186		1991		117	338	221
1993	467	675	208		1959		117	333	216
1994	117	307	190		1989		117	331	215
1995	1,429	1,500	71		1964		117	329	212
1996	355	581	226		1939		117	328	211
1997	1,198	1,549	350		1929		117	315	198
1998	1,314	1,278	-36		1988		117	309	192
1999	117	411	294		1968		117	315	198
2000	117	441	324		1930		117	314	198
2001	117	348	232		2013	Normal-Dry	117	314	197
2002	117	363	246		2012		117	308	192
2003	117	400	284		1960		117	308	191
2004	117	357	241		1994		117	307	190
2005	814	900	86		1992		117	303	186
2006	1,169	1,279	110		1987		117	298	181
2007	117	282	165		1990		117	295	178
2008	117	349	232		1934		117	283	167
2009	117	401	284		2007		117	282	165
2010	144	481	337		1961		117	259	142
2011	1,139	1,274	135		1976		117	259	142
2012	117	308	192		2014	Crit-High	117	259	142
2013	117	314	197		1931		117	259	142
2014	117	259	142		1924		117	259	142
2015	117	121	5		1977	CL	117	121	5
2016	117	305	188		2015		117	121	5
Ave All	365	572	207		Wet Ave		1,182	1,286	104
Max	2,773	2,826			Normal-wet Ave		243	524	281
Min	117	121			Normal-dry Ave		119	361	242
					Dry Ave		117	307	190
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		117	259	142
Dry Ave	117	279	163		Critical-L Ave		117	121	5

Note: Values summed for water year - October-September

Table 4. Total Canal Diversions.

Total Canal Diversions (1,000 acre-feet)

Chronological Listing

Year	Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	1,949	1,712	-237
1923	1,372	1,242	-130
1924	505	364	-141
1925	1,130	921	-209
1926	1,140	849	-291
1927	1,703	1,366	-337
1928	1,206	988	-218
1929	707	543	-165
1930	727	532	-195
1931	390	245	-145
1932	1,655	1,379	-276
1933	1,103	863	-240
1934	649	485	-164
1935	1,578	1,216	-362
1936	1,576	1,320	-256
1937	1,677	1,535	-143
1938	1,959	1,888	-71
1939	823	653	-171
1940	1,542	1,236	-306
1941	2,021	1,776	-245
1942	2,024	1,605	-419
1943	1,507	1,286	-221
1944	1,133	1,015	-118
1945	1,896	1,557	-339
1946	1,481	1,201	-280
1947	1,077	893	-184
1948	919	692	-227
1949	1,048	805	-243
1950	1,379	1,116	-263
1951	1,269	975	-294
1952	1,810	1,734	-75
1953	1,081	887	-194
1954	1,129	859	-271
1955	1,123	915	-208
1956	2,031	1,589	-442
1957	1,224	1,071	-152
1958	1,797	1,655	-142
1959	870	850	-20
1960	703	513	-190
1961	518	379	-140
1962	1,651	1,357	-294
1963	1,709	1,411	-298
1964	1,104	920	-184
1965	1,782	1,405	-378
1966	1,350	1,102	-248
1967	2,065	1,973	-92
1968	850	712	-138
1969	1,847	1,820	-27
1970	1,299	1,024	-276
1971	1,212	967	-245
1972	1,052	798	-254
1973	1,737	1,415	-322
1974	1,822	1,505	-317
1975	1,607	1,338	-269
1976	682	578	-105
1977	256	253	-3
1978	2,086	1,971	-115
1979	1,655	1,333	-322
1980	2,057	1,732	-325
1981	1,116	1,050	-67
1982	2,081	1,977	-103
1983	2,009	1,973	-36
1984	1,541	1,232	-309
1985	1,130	895	-236
1986	1,916	1,775	-141
1987	604	597	-7
1988	732	541	-191
1989	797	585	-213
1990	620	444	-176
1991	845	627	-218
1992	794	551	-244
1993	2,070	1,739	-331
1994	876	812	-64
1995	2,232	2,134	-98
1996	1,717	1,533	-184
1997	1,597	1,333	-265
1998	1,851	1,766	-85
1999	1,328	1,125	-203
2000	1,615	1,250	-366
2001	955	754	-200
2002	1,030	786	-244
2003	1,276	996	-280
2004	1,088	781	-307
2005	2,094	2,003	-90
2006	1,930	1,869	-61
2007	527	387	-139
2008	935	707	-229
2009	1,299	1,012	-287
2010	1,976	1,537	-439
2011	2,053	1,980	-73
2012	789	643	-146
2013	726	531	-195
2014	394	255	-139
2015	201	199	-3
2016	1,000	817	-184
Ave All	1,316	1,111	-205
Max	2,232	2,134	
Min	201	199	
Original Dry Year Classification (Driest 20% Years)			
Dry Ave	645	506	-138

Descending Order of Wetness

Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1983	Wet	2,009	1,973	-36
1969		1,847	1,820	-27
1995		2,232	2,134	-98
1938		1,959	1,888	-71
1978		2,086	1,971	-115
1982		2,081	1,977	-103
2011		2,053	1,980	-73
1967		2,065	1,973	-92
2006		1,930	1,869	-61
1998		1,851	1,766	-85
1986		1,916	1,775	-141
1980		2,057	1,732	-325
1956		2,031	1,589	-442
1952		1,810	1,734	-75
2005		2,094	2,003	-90
1997		1,597	1,333	-265
1993		2,070	1,739	-331
1941		2,021	1,776	-245
1958		1,797	1,655	-142
1922	Normal-Wet	1,949	1,712	-237
1965		1,782	1,405	-378
1942		2,024	1,605	-419
1937		1,677	1,535	-143
1996		1,717	1,533	-184
1974		1,822	1,505	-317
1945		1,896	1,557	-339
1943		1,507	1,286	-221
1984		1,541	1,232	-309
1932		1,655	1,379	-276
1973		1,737	1,415	-322
2010		1,976	1,537	-439
1927		1,703	1,366	-337
1963		1,709	1,411	-298
1962		1,651	1,357	-294
1935		1,578	1,216	-362
1940		1,542	1,236	-306
1951		1,269	975	-294
1936		1,576	1,320	-256
1979		1,655	1,333	-322
1975		1,607	1,338	-269
2000		1,615	1,250	-366
1946		1,481	1,201	-280
1923		1,372	1,242	-130
1999		1,328	1,125	-203
2009		1,299	1,012	-287
2003	Normal-Dry	1,276	996	-280
1970		1,299	1,024	-276
1925		1,130	921	-209
1971		1,212	967	-245
1957		1,224	1,071	-152
1954		1,129	859	-271
1950		1,379	1,116	-263
2016		1,000	817	-184
1966		1,350	1,102	-248
1944		1,133	1,015	-118
1953		1,081	887	-194
1948		919	692	-227
2002		1,030	786	-244
1949		1,048	805	-243
1926		1,140	849	-291
1955		1,123	915	-208
1928		1,206	988	-218
2004		1,088	781	-307
1985		1,130	895	-236
1947		1,077	893	-184
2008		935	707	-229
1933		1,103	863	-240
1981		1,116	1,050	-67
2001		955	754	-200
1972		1,052	798	-254
1991		845	627	-218
1959		870	850	-20
1989		797	585	-213
1964	Normal-Dry	1,104	920	-184
1939		823	653	-171
1929		707	543	-165
1988		732	541	-191
1968		850	712	-138
1930		727	532	-195
2013		726	531	-195
2012		789	643	-146
1960		703	513	-190
1994		876	812	-64
1992		794	551	-244
1987		604	597	-7
1990		620	444	-176
1934		649	485	-164
2007		527	387	-139
1961	Crit-High	518	379	-140
1976		682	578	-105
2014		394	255	-139
1931		390	245	-145
1924		505	364	-141
1977	CL	256	253	-3
2015		201	199	-3
Wet Ave		1,974	1,826	-148
Normal-wet Ave		1,641	1,349	-292
Normal-dry Ave		1,095	879	-216
Dry Ave		749	591	-158
Critical-H Ave		498	364	-134
Critical-L Ave		229	226	-3

Note: Values summed for contract year - March-February

Table 5. Class 1 Deliveries.

Class 1 Deliveries (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	Restoration Flow Method 3.1	Difference		Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	800	800	0		1983	Wet	800	800	0
1923	800	800	0		1969		800	800	0
1924	442	301	-141		1995		800	800	0
1925	800	800	0		1938		800	800	0
1926	799	786	-13		1978		800	800	0
1927	800	799	-1		1982		800	799	-1
1928	800	800	0		2011		800	800	0
1929	644	480	-165		1967		800	800	0
1930	664	469	-195		2006		800	800	0
1931	312	173	-140		1998		800	799	0
1932	800	800	0		1986		800	800	0
1933	800	800	0		1980		800	796	-4
1934	569	422	-148		1956		800	800	0
1935	800	800	0		1952		800	800	0
1936	800	798	-2		2005		800	800	0
1937	800	800	0		1997		800	799	-1
1938	800	800	0		1993		800	800	0
1939	757	590	-168		1941		800	800	0
1940	800	795	-5		1958		800	800	0
1941	800	800	0		1922	Normal-Wet	800	800	0
1942	800	800	0		1965		800	800	0
1943	800	798	-2		1942		800	800	0
1944	800	800	0		1937		800	800	0
1945	800	800	0		1996		800	800	0
1946	798	796	-2		1974		800	800	0
1947	800	800	0		1945		800	800	0
1948	800	629	-171		1943		800	798	-2
1949	800	742	-58		1984		800	800	0
1950	800	800	0		1932		800	800	0
1951	799	800	1		1973		800	799	-1
1952	800	800	0		2010		800	800	0
1953	800	800	0		1927		800	799	-1
1954	800	796	-4		1963		800	800	0
1955	800	780	-20		1962		800	800	0
1956	800	800	0		1935		800	800	0
1957	800	800	0		1940		800	795	-5
1958	800	800	0		1951		799	800	1
1959	800	787	-13		1936		800	798	-2
1960	640	450	-190		1979		800	796	-4
1961	455	316	-140		1975		800	800	0
1962	800	800	0		2000		800	800	0
1963	800	800	0		1946		798	796	-2
1964	800	711	-89		1923		800	800	0
1965	800	800	0		1999		800	800	0
1966	799	800	1		2009		800	800	0
1967	800	800	0		2003	Normal-Dry	800	800	0
1968	782	644	-138		1970		800	800	0
1969	800	800	0		1925		800	800	0
1970	800	800	0		1971		800	800	0
1971	800	800	0		1957		800	800	0
1972	800	735	-65		1954		800	796	-4
1973	800	799	-1		1950		800	800	0
1974	800	800	0		2016		800	748	-52
1975	800	800	0		1966		799	800	1
1976	610	515	-95		1944		800	800	0
1977	187	184	-3		1953		800	800	0
1978	800	800	0		1948		800	629	-171
1979	800	796	-4		2002		800	723	-77
1980	800	796	-4		1949		800	742	-58
1981	800	800	0		1926		799	786	-13
1982	800	799	-1		1955		800	780	-20
1983	800	800	0		1928		800	800	0
1984	800	800	0		2004		800	708	-92
1985	800	800	0		1985		800	800	0
1986	800	800	0		1947		800	800	0
1987	541	534	-7		2008		800	644	-156
1988	669	478	-191		1933		800	800	0
1989	734	522	-213		1981		800	800	0
1990	557	381	-176		2001		800	691	-109
1991	782	564	-218		1972		800	735	-65
1992	659	475	-184		1991		782	564	-218
1993	800	800	0		1959		800	787	-13
1994	667	660	-7		1989		734	522	-213
1995	800	800	0		1964	Normal-Dry	800	711	-89
1996	800	800	0		1939		757	590	-168
1997	800	799	-1		1929		644	480	-165
1998	800	799	0		1988		669	478	-191
1999	800	800	0		1968		782	644	-138
2000	800	800	0		1930		664	469	-195
2001	800	691	-109		2013		663	468	-195
2002	800	723	-77		2012		726	580	-146
2003	800	800	0		1960		640	450	-190
2004	800	708	-92		1994		667	660	-7
2005	800	800	0		1992		659	475	-184
2006	800	800	0		1987		541	534	-7
2007	464	324	-139		1990		557	381	-176
2008	800	644	-156		1934		569	422	-148
2009	800	800	0		2007		464	324	-139
2010	800	800	0		1961	Crit-High	455	316	-140
2011	800	800	0		1976		610	515	-95
2012	726	580	-146		2014		331	192	-139
2013	663	468	-195		1931		312	173	-140
2014	331	192	-139		1924		442	301	-141
2015	138	136	-3		1977	CL	187	184	-3
2016	800	748	-52		2015		138	136	-3
Ave All	743	700	-43		Wet Ave		800	800	0
Max	800	800			Normal-wet Ave		800	799	-1
Min	138	136			Normal-dry Ave		797	752	-45
					Dry Ave		653	511	-142
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		430	299	-131
Dry Ave	558	431	-127		Critical-L Ave		163	160	-3

Note: Values summed for contract year - March-February

Table 6. Class 2 Deliveries.

Class 2 Deliveries (1,000 acre-feet)								
Chronological Listing				Descending Order of Wetness				
Year	Current Release Requirement	Restoration Flow Method 3.1	Difference	Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	845	686	-159	1983	Wet	890	881	-10
1923	509	379	-130	1969		892	858	-33
1924	0	0	0	1995		1,062	974	-88
1925	267	58	-209	1938		932	852	-81
1926	124	0	-124	1978		1,005	895	-110
1927	573	485	-88	1982		822	693	-129
1928	224	110	-114	2011		948	875	-73
1929	0	0	0	1967		965	889	-76
1930	0	0	0	2006		884	825	-59
1931	0	0	0	1998		818	753	-65
1932	641	516	-125	1986		812	677	-135
1933	240	0	-240	1980		873	623	-250
1934	0	0	0	1956		854	693	-161
1935	503	350	-153	1952		841	767	-74
1936	546	351	-195	2005		875	807	-68
1937	586	477	-109	1997		489	355	-134
1938	932	852	-81	1993		893	737	-156
1939	0	0	0	1941		885	755	-129
1940	390	311	-79	1958		838	703	-135
1941	885	755	-129	1922	Normal-Wet	845	686	-159
1942	805	604	-202	1965		698	486	-212
1943	552	333	-219	1942		805	604	-202
1944	265	147	-118	1937		586	477	-109
1945	670	564	-106	1996		614	499	-115
1946	369	318	-50	1974		645	454	-190
1947	115	27	-88	1945		670	564	-106
1948	56	0	-56	1943		552	333	-219
1949	185	0	-185	1984		503	350	-152
1950	233	33	-200	1932		641	516	-125
1951	332	76	-255	1973		562	366	-196
1952	841	767	-74	2010		701	528	-173
1953	218	24	-194	1927		573	485	-88
1954	187	0	-187	1963		698	548	-150
1955	187	0	-187	1962		582	438	-144
1956	854	693	-161	1935		503	350	-153
1957	288	208	-80	1940		390	311	-79
1958	838	703	-135	1951		332	76	-255
1959	7	0	-7	1936		546	351	-195
1960	0	0	0	1979		537	329	-207
1961	0	0	0	1975		561	465	-96
1962	582	438	-144	2000		485	387	-98
1963	698	548	-150	1946		369	318	-50
1964	95	0	-95	1923		509	379	-130
1965	698	486	-212	1999		416	262	-154
1966	199	100	-99	2009		425	149	-276
1967	965	889	-76	2003	Normal-Dry	412	133	-279
1968	0	0	0	1970		380	161	-219
1969	892	858	-33	1925		267	58	-209
1970	380	161	-219	1971		349	104	-245
1971	349	104	-245	1957		288	208	-80
1972	124	0	-124	1954		187	0	-187
1973	562	366	-196	1950		233	33	-200
1974	645	454	-190	2016		132	0	-132
1975	561	465	-96	1966		199	100	-99
1976	0	0	0	1944		265	147	-118
1977	0	0	0	1953		218	24	-194
1978	1,005	895	-110	1948		56	0	-56
1979	537	329	-207	2002		167	0	-167
1980	873	623	-250	1949		185	0	-185
1981	156	114	-42	1926		124	0	-124
1982	822	693	-129	1955		187	0	-187
1983	890	881	-10	1928		224	110	-114
1984	503	350	-152	2004		111	0	-111
1985	145	26	-119	1985		145	26	-119
1986	812	677	-135	1947		115	27	-88
1987	0	0	0	2008		72	0	-72
1988	0	0	0	1933		240	0	-240
1989	0	0	0	1981		156	114	-42
1990	0	0	0	2001		92	0	-92
1991	0	0	0	1972		124	0	-124
1992	0	0	0	1991		0	0	0
1993	893	737	-156	1959		7	0	-7
1994	0	0	0	1989		0	0	0
1995	1,062	974	-88	1964	Normal-Dry	95	0	-95
1996	614	499	-115	1939		0	0	0
1997	489	355	-134	1929		0	0	0
1998	818	753	-65	1988		0	0	0
1999	416	262	-154	1968		0	0	0
2000	485	387	-98	1930		0	0	0
2001	92	0	-92	2013		0	0	0
2002	167	0	-167	2012		0	0	0
2003	412	133	-279	1960		0	0	0
2004	111	0	-111	1994		0	0	0
2005	875	807	-68	1992		0	0	0
2006	884	825	-59	1987		0	0	0
2007	0	0	0	1990		0	0	0
2008	72	0	-72	1934		0	0	0
2009	425	149	-276	2007		0	0	0
2010	701	528	-173	1961	Crit-High	0	0	0
2011	948	875	-73	1976		0	0	0
2012	0	0	0	2014		0	0	0
2013	0	0	0	1931		0	0	0
2014	0	0	0	1924		0	0	0
2015	0	0	0	1977	CL	0	0	0
2016	132	0	-132	2015		0	0	0
Ave All	383	280	-103	Wet Ave		873	769	-103
Max	1,062	974		Normal-wet Ave		567	412	-155
Min	0	0		Normal-dry Ave		176	44	-132
				Dry Ave		6	0	-6
Original Dry Year Classification (Driest 20% Years)				Critical-H Ave		0	0	0
Dry Ave	4	0	-4	Critical-L Ave		0	0	0

Note: Values summed for contract year - March-February

Table 7. Other Deliveries.

Table 6									
Other Deliveries (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	Restoration Flow Method 3.1	Difference		Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	241	163	-78		1983	Wet	256	230	-26
1923	0	0	0		1969		92	99	7
1924	0	0	0		1995		307	297	-10
1925	0	0	0		1938		164	173	9
1926	153	0	-153		1978		217	213	-4
1927	267	19	-248		1982		396	422	27
1928	119	15	-104		2011		242	241	-1
1929	0	0	0		1967		237	221	-16
1930	0	0	0		2006		183	181	-2
1931	15	10	-5		1998		171	151	-19
1932	152	0	-152		1986		241	235	-6
1933	0	0	0		1980		321	250	-71
1934	17	0	-17		1956		315	33	-281
1935	212	3	-209		1952		106	105	-1
1936	168	109	-59		2005		356	333	-23
1937	228	195	-33		1997		245	116	-129
1938	164	173	9		1993		315	140	-175
1939	3	0	-3		1941		273	158	-115
1940	289	66	-223		1958		96	89	-7
1941	273	158	-115		1922	Normal-Wet	241	163	-78
1942	356	139	-217		1965		222	56	-166
1943	92	93	1		1942		356	139	-217
1944	6	6	0		1937		228	195	-33
1945	363	130	-233		1996		240	171	-69
1946	251	24	-228		1974		315	188	-127
1947	99	3	-96		1945		363	130	-233
1948	0	0	0		1943		92	93	1
1949	0	0	0		1984		176	19	-157
1950	283	220	-63		1932		152	0	-152
1951	76	35	-40		1973		312	187	-126
1952	106	105	-1		2010		412	146	-266
1953	0	0	0		1927		267	19	-248
1954	80	0	-80		1963		148	0	-148
1955	72	72	0		1962		206	55	-150
1956	315	33	-281		1935		212	3	-209
1957	72	0	-72		1940		289	66	-223
1958	96	89	-7		1951		76	35	-40
1959	0	0	0		1936		168	109	-59
1960	0	0	0		1979		255	144	-111
1961	0	0	0		1975		183	10	-173
1962	206	55	-150		2000		267	0	-267
1963	148	0	-148		1946		251	24	-228
1964	146	146	0		1923		0	0	0
1965	222	56	-166		1999		49	0	-49
1966	289	139	-150		2009		10	0	-10
1967	237	221	-16		2003	Normal-Dry	1	0	-1
1968	6	6	0		1970		57	0	-57
1969	92	99	7		1925		0	0	0
1970	57	0	-57		1971		0	0	0
1971	0	0	0		1957		72	0	-72
1972	65	0	-65		1954		80	0	-80
1973	312	187	-126		1950		283	220	-63
1974	315	188	-127		2016		6	6	0
1975	183	10	-173		1966		289	139	-150
1976	9	0	-9		1944		6	6	0
1977	6	6	0		1953		0	0	0
1978	217	213	-4		1948		0	0	0
1979	255	144	-111		2002		0	0	0
1980	321	250	-71		1949		0	0	0
1981	97	72	-25		1926		153	0	-153
1982	396	422	27		1955		72	72	0
1983	256	230	-26		1928		119	15	-104
1984	176	19	-157		2004		113	10	-104
1985	123	6	-117		1985		123	6	-117
1986	241	235	-6		1947		99	3	-96
1987	0	0	0		2008		0	0	0
1988	0	0	0		1933		0	0	0
1989	0	0	0		1981		97	72	-25
1990	0	0	0		2001		0	0	0
1991	0	0	0		1972		65	0	-65
1992	72	13	-60		1991		0	0	0
1993	315	140	-175		1959		0	0	0
1994	146	89	-57		1989		0	0	0
1995	307	297	-10		1964	Normal-Dry	146	146	0
1996	240	171	-69		1939		3	0	-3
1997	245	116	-129		1929		0	0	0
1998	171	151	-19		1988		0	0	0
1999	49	0	-49		1968		6	6	0
2000	267	0	-267		1930		0	0	0
2001	0	0	0		2013		0	0	0
2002	0	0	0		2012		0	0	0
2003	1	0	-1		1960		0	0	0
2004	113	10	-104		1994		146	89	-57
2005	356	333	-23		1992		72	13	-60
2006	183	181	-2		1987		0	0	0
2007	0	0	0		1990		0	0	0
2008	0	0	0		1934		17	0	-17
2009	10	0	-10		2007		0	0	0
2010	412	146	-266		1961	Crit-High	0	0	0
2011	242	241	-1		1976		9	0	-9
2012	0	0	0		2014		0	0	0
2013	0	0	0		1931		15	10	-5
2014	0	0	0		1924		0	0	0
2015	0	0	0		1977	CL	6	6	0
2016	6	6	0		2015		0	0	0
Ave All	127	68	-59		Wet Ave		238	194	-44
Max	412	422			Normal-wet Ave		211	75	-136
Min	0	0			Normal-dry Ave		58	20	-39
					Dry Ave		26	17	-9
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		5	2	-3
Dry Ave	19	12	-7		Critical-L Ave		3	3	0

Note: Values summed for contract year - March-February

Table 8. Total Annual System Deliveries.

Total Annual System Deliveries (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	Restoration Flow Method 3.1	Difference		Year		Current Release Requirement	Restoration Flow Method 3.1	Difference
1922	1,886	1,649	-237		1983	Wet	1,946	1,910	-36
1923	1,309	1,179	-130		1969		1,784	1,757	-27
1924	442	301	-141		1995		2,169	2,071	-98
1925	1,067	858	-209		1938		1,896	1,825	-71
1926	1,077	786	-291		1978		2,023	1,908	-115
1927	1,640	1,303	-337		1982		2,018	1,914	-103
1928	1,143	925	-218		2011		1,990	1,917	-73
1929	644	480	-165		1967		2,002	1,910	-92
1930	664	469	-195		2006		1,867	1,806	-61
1931	327	182	-145		1998		1,788	1,703	-85
1932	1,592	1,316	-276		1986		1,853	1,712	-141
1933	1,040	800	-240		1980		1,994	1,669	-325
1934	586	422	-164		1956		1,968	1,526	-442
1935	1,515	1,153	-362		1952		1,747	1,671	-75
1936	1,513	1,257	-256		2005		2,031	1,940	-90
1937	1,614	1,472	-143		1997		1,534	1,270	-265
1938	1,896	1,825	-71		1993		2,007	1,676	-331
1939	760	590	-171		1941		1,958	1,713	-245
1940	1,479	1,173	-306		1958		1,734	1,592	-142
1941	1,958	1,713	-245		1922	Normal-Wet	1,886	1,649	-237
1942	1,961	1,542	-419		1965		1,719	1,342	-378
1943	1,444	1,223	-221		1942		1,961	1,542	-419
1944	1,070	952	-118		1937		1,614	1,472	-143
1945	1,833	1,494	-339		1996		1,654	1,470	-184
1946	1,418	1,138	-280		1974		1,759	1,442	-317
1947	1,014	830	-184		1945		1,833	1,494	-339
1948	856	629	-227		1943		1,444	1,223	-221
1949	985	742	-243		1984		1,478	1,169	-309
1950	1,316	1,053	-263		1932		1,592	1,316	-276
1951	1,206	912	-294		1973		1,674	1,352	-322
1952	1,747	1,671	-75		2010		1,913	1,474	-439
1953	1,018	824	-194		1927		1,640	1,303	-337
1954	1,066	796	-271		1963		1,646	1,348	-298
1955	1,060	852	-208		1962		1,588	1,294	-294
1956	1,968	1,526	-442		1935		1,515	1,153	-362
1957	1,161	1,008	-152		1940		1,479	1,173	-306
1958	1,734	1,592	-142		1951		1,206	912	-294
1959	807	787	-20		1936		1,513	1,257	-256
1960	640	450	-190		1979		1,592	1,270	-322
1961	455	316	-140		1975		1,544	1,275	-269
1962	1,588	1,294	-294		2000		1,552	1,187	-366
1963	1,646	1,348	-298		1946		1,418	1,138	-280
1964	1,041	857	-184		1923		1,309	1,179	-130
1965	1,719	1,342	-378		1999		1,265	1,062	-203
1966	1,287	1,039	-248		2009		1,236	949	-287
1967	2,002	1,910	-92		2003	Normal-Dry	1,213	933	-280
1968	787	649	-138		1970		1,236	961	-276
1969	1,784	1,757	-27		1925		1,067	858	-209
1970	1,236	961	-276		1971		1,149	904	-245
1971	1,149	904	-245		1957		1,161	1,008	-152
1972	989	735	-254		1954		1,066	796	-271
1973	1,674	1,352	-322		1950		1,316	1,053	-263
1974	1,759	1,442	-317		2016		937	754	-184
1975	1,544	1,275	-269		1966		1,287	1,039	-248
1976	619	515	-105		1944		1,070	952	-118
1977	193	190	-3		1953		1,018	824	-194
1978	2,023	1,908	-115		1948		856	629	-227
1979	1,592	1,270	-322		2002		967	723	-244
1980	1,994	1,669	-325		1949		985	742	-243
1981	1,053	987	-67		1926		1,077	786	-291
1982	2,018	1,914	-103		1955		1,060	852	-208
1983	1,946	1,910	-36		1928		1,143	925	-218
1984	1,478	1,169	-309		2004		1,025	718	-307
1985	1,067	832	-236		1985		1,067	832	-236
1986	1,853	1,712	-141		1947		1,014	830	-184
1987	541	534	-7		2008		872	644	-229
1988	669	478	-191		1933		1,040	800	-240
1989	734	522	-213		1981		1,053	987	-67
1990	557	381	-176		2001		892	691	-200
1991	782	564	-218		1972		989	735	-254
1992	731	488	-244		1991		782	564	-218
1993	2,007	1,676	-331		1959		807	787	-20
1994	813	749	-64		1989		734	522	-213
1995	2,169	2,071	-98		1964	Normal-Dry	1,041	857	-184
1996	1,654	1,470	-184		1939		760	590	-171
1997	1,534	1,270	-265		1929		644	480	-165
1998	1,788	1,703	-85		1988		669	478	-191
1999	1,265	1,062	-203		1968		787	649	-138
2000	1,552	1,187	-366		1930		664	469	-195
2001	892	691	-200		2013		663	468	-195
2002	967	723	-244		2012		726	580	-146
2003	1,213	933	-280		1960		640	450	-190
2004	1,025	718	-307		1994		813	749	-64
2005	2,031	1,940	-90		1992		731	488	-244
2006	1,867	1,806	-61		1987		541	534	-7
2007	464	324	-139		1990		557	381	-176
2008	872	644	-229		1934		586	422	-164
2009	1,236	949	-287		2007		464	324	-139
2010	1,913	1,474	-439		1961	Crit-High	455	316	-140
2011	1,990	1,917	-73		1976		619	515	-105
2012	726	580	-146		2014		331	192	-139
2013	663	468	-195		1931		327	182	-145
2014	331	192	-139		1924		442	301	-141
2015	138	136	-3		1977	CL	193	190	-3
2016	937	754	-184		2015		138	136	-3
Ave All	1,253	1,048	-205		Wet Ave		1,911	1,763	-148
Max	2,169	2,071			Normal-wet Ave		1,578	1,286	-292
Min	138	136			Normal-dry Ave		1,032	816	-216
					Dry Ave		686	528	-158
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		435	301	-134
Dry Ave	582	443	-138		Critical-L Ave		166	163	-3

Note: Values summed for contract year - March-February

Table 9. Average Deliveries by Contractor.

Average Deliveries and Reductions to Deliveries by Contractor - Acre-feet								
			Current Releases		SJRRP		Average Reduction	
	Full Contract		Average Delivery		Average Delivery		Average Delivery	
	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
Friant-Kern Canal Agricultural								
Arvin-Edison WSD	40,000	311,675	37,152	85,109	35,005	62,201	-2,147	-22,908
Delano-Earlimart ID	108,800	74,500	101,054	20,344	95,214	14,868	-5,841	-5,476
Exeter ID	11,500	19,000	10,681	5,188	10,064	3,792	-617	-1,396
Fresno ID		75,000		20,480		14,968		-5,512
Garfield WD	3,500		3,251		3,063		-188	
International WD	1,200		1,115		1,050		-64	
Ivanhoe ID	7,700	7,900	7,152	2,157	6,738	1,577	-413	-581
Lewis Creek WD	1,450		1,347		1,269		-78	
Lindmore ID	33,000	22,000	30,651	6,008	28,879	4,391	-1,771	-1,617
Lindsay-Strathmore ID	27,500		25,542		24,066		-1,476	
Lower Tule River ID	61,200	238,000	56,843	64,991	53,558	47,498	-3,285	-17,493
Orange Cove ID	39,200		36,409		34,305		-2,104	
Porterville ID	16,000	30,000	14,861	8,192	14,002	5,987	-859	-2,205
Saucelito ID	21,200	32,800	19,691	8,957	18,553	6,546	-1,138	-2,411
Shafter-Wasco ID	50,000	39,600	46,440	10,814	43,756	7,903	-2,684	-2,911
Southern San Joaquin MUD	97,000	50,000	90,094	13,653	84,887	9,979	-5,207	-3,675
Stone Corral ID	10,000		9,288		8,751		-537	
Tea Pot Dome WD	7,500		6,966		6,563		-403	
Terra Bella ID	29,000		26,935		25,379		-1,557	
Tulare ID	30,000	141,000	27,864	38,503	26,254	28,140	-1,610	-10,363
Madera Canal Agricultural								
Chowchilla WD	55,000	160,000	51,084	43,691	48,132	31,931	-2,952	-11,760
Madera ID	85,000	186,000	78,948	50,791	74,386	37,120	-4,563	-13,671
San Joaquin River Agricultural								
Gravelly Ford WD		14,000		3,823		2,794		-1,029
Friant Division M&I								
City of Fresno	60,000		55,728		52,507		-3,221	
City of Orange Cove	1,400		1,300		1,225		-75	
City of Lindsay	2,500		2,322		2,188		-134	
Fresno County Water Works District No. 18	150		139		131		-8	
Madera County	200		186		175		-11	
Total	800,000	1,401,475	743,045	382,700	700,099	279,694	-42,945	-103,006
Average %			93	27	88	20	-5	-7
Other water delivered:				127,095		67,920		-59,175

The delivery of Class 1 and Class 2 water to each Long-term Friant Division water contractor has been calculated by the model for each downstream release scenario. The system-wide Class 1 and Class 2 water deliveries is disaggregated among the contractors by allocating the modeled system-wide deliveries to each contractor in proportion to each contractor's contractual entitlement contribution to the system-wide contractual total. Results of this disaggregation procedure are shown in tables included in Appendix A, for the comparison of current deliveries with deliveries using the SJRRP Method 3.1 hydrograph. The simulated annual delivery of Class 1 and Class 2 water to each contractor by year and by year type grouping is provided.

Concerning the availability of "other water" which is an indication of imminent or occurring Friant "spill" water Table 10 and Table 11 provide the frequency and quantity for which other water is being delivered by the model and the remaining releases to the San Joaquin River which are in excess of minimum releases. Table 10 and Table 11 provide this information for the pre-SJRRP condition and Table 12 and Table 13 provide the information under the assumptions of SJRRP releases.

Table 10. Other Water – Pre-SJRRP Conditions

Pre-SJRRP Conditions													
Total Other Delivery													
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	12	74	72	80	77	6	77	0	0	0	398	241
1923	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	39	80	0	0	0	0	119	153
1927	0	0	0	0	35	14	77	72	77	0	0	0	275	267
1928	0	0	0	12	15	41	20	58	0	0	0	0	145	119
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	15
1932	0	0	0	0	15	0	77	74	0	0	0	0	166	152
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	17	0	0	0	0	0	17	17
1935	0	0	0	0	0	0	77	80	49	0	0	0	207	212
1936	0	0	0	0	6	76	6	80	0	0	0	0	168	168
1937	0	0	0	0	6	6	6	6	77	0	0	0	101	228
1938	0	0	0	60	72	6	6	6	71	74	0	0	296	164
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1940	0	0	0	0	3	61	77	80	40	0	0	0	261	289
1941	0	0	0	25	6	80	6	6	77	23	0	0	223	273
1942	0	0	0	9	72	80	77	80	75	0	0	0	394	356
1943	0	0	0	0	44	6	6	80	0	0	0	0	136	92
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1945	0	0	0	0	6	14	77	79	24	0	0	0	200	363
1946	0	0	74	74	21	11	61	80	0	0	0	0	321	251
1947	0	0	0	57	42	38	0	62	0	0	0	0	198	99
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	11	52	0	0	0	0	63	283
1951	0	0	74	74	72	3	0	0	0	0	0	0	223	76
1952	0	0	0	0	72	6	6	6	77	10	0	0	178	106
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	80	0	0	0	0	80	80
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	72
1956	0	0	0	0	72	80	77	80	77	0	0	0	387	315
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	72
1958	0	0	0	0	72	6	6	6	77	0	0	0	168	96
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	70	60	3	0	0	0	134	206
1963	0	0	0	0	72	8	67	51	0	0	0	0	198	148
1964	0	0	0	22	0	0	0	0	0	0	0	0	22	146
1965	0	0	0	74	72	0	0	2	22	0	0	0	170	222
1966	0	29	74	74	21	30	77	59	0	0	0	0	364	289
1967	0	0	0	50	72	80	6	6	71	74	0	0	360	237
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1969	0	0	0	0	6	6	6	6	0	74	0	0	98	92
1970	0	0	0	0	0	26	0	0	0	0	0	0	26	57
1971	0	0	0	0	30	0	0	0	0	0	0	0	30	0
1972	0	0	0	0	0	37	0	0	0	0	0	0	37	65
1973	0	0	0	0	27	6	77	6	77	0	0	0	194	312
1974	0	0	0	74	72	80	77	80	77	0	0	0	461	315
1975	0	0	0	0	0	0	77	78	27	0	0	0	183	183
1976	0	0	0	0	0	9	0	0	0	0	0	0	9	9
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1978	0	0	0	0	6	6	6	6	71	74	0	0	169	217
1979	0	0	0	54	0	80	77	80	12	0	0	0	304	255
1980	0	0	0	0	6	6	77	80	77	80	0	0	326	321
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	97
1982	0	0	0	25	72	80	6	80	77	19	0	0	359	396
1983	57	71	0	0	6	6	6	6	0	74	0	0	226	256
1984	0	71	0	74	19	64	27	45	0	0	0	0	299	176
1985	0	0	0	20	21	14	57	47	0	0	0	0	158	123
1986	0	0	0	0	6	6	77	80	77	0	0	0	246	241
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	72
1993	0	0	0	0	72	80	77	80	77	0	0	0	387	315
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	146
1995	0	0	0	74	72	6	77	6	71	74	0	0	381	307
1996	0	0	0	0	72	6	77	80	71	0	0	0	306	240
1997	0	0	0	0	6	80	77	80	2	0	0	0	245	245
1998	0	0	0	0	6	6	6	6	0	74	0	0	98	171
1999	0	0	0	56	23	12	0	16	21	0	0	0	128	49
2000	0	0	0	0	0	79	76	80	33	0	0	0	267	267
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	1	0	0	0	1	1
2004	0	0	0	0	0	12	15	14	0	0	0	0	41	113
2005	0	0	0	0	72	80	77	6	77	20	0	0	333	356
2006	0	0	0	22	72	80	6	6	77	14	0	0	278	183
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	10	0	0	0	0	10	10
2010	0	0	0	0	0	80	76	80	31	0	0	0	266	412
2011	0	0	0	74	72	6	6	80	73	77	0	0	388	242
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	6
2017	0	0	0	0	6								6	
Avg 22-16	1	2	2	11	18	18	23	26	20	8	0	0	129	127

Table 11. River Releases in Excess of Minimum Requirements – Pre-SJRRP Conditions

Pre-SJRRP Conditions														
Release abv Minimum (TAF)														
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	0	11	35	6	104	167	77	0	0	0	399	354
1923	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	20	0	0	0	0	20	20
1927	0	0	0	0	0	0	1	0	12	0	0	0	13	13
1928	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	9	0	0	0	0	0	9	9
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	15	7	0	0	0	0	22	91
1936	0	0	0	0	69	0	82	38	0	0	0	0	190	206
1937	0	0	0	0	85	106	168	167	27	0	0	0	554	701
1938	0	0	0	0	232	277	293	396	293	37	0	0	1,527	1,295
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	37
1940	0	0	0	0	37	0	8	44	0	0	0	0	88	201
1941	0	0	0	0	149	17	167	158	146	0	0	0	637	496
1942	0	0	0	0	8	11	23	0	0	0	0	0	42	49
1943	0	0	0	15	0	144	99	50	0	0	0	0	308	293
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	183
1945	0	0	0	0	183	0	15	0	0	0	0	0	198	45
1946	0	0	7	22	0	0	0	42	0	0	0	0	72	42
1947	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	352
1951	0	15	223	79	35	0	0	0	0	0	0	0	352	63
1952	0	0	0	46	17	179	191	249	165	0	0	0	846	784
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	13	0	0	0	0	13	13
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	498
1956	0	0	188	274	36	13	20	104	86	0	0	0	721	223
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1958	0	0	0	0	17	179	189	160	155	0	0	0	699	682
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	59
1963	0	0	0	0	59	0	0	0	0	0	0	0	59	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	122
1965	0	0	0	80	41	0	0	0	0	0	0	0	122	17
1966	0	0	13	3	0	0	2	0	0	0	0	0	19	22
1967	0	0	0	0	20	114	187	179	87	214	0	0	800	781
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	490
1969	0	0	0	180	310	270	307	432	425	84	0	0	2,008	1,518
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	86	1	67	18	0	0	0	171	212
1974	0	0	0	32	8	6	17	6	15	0	0	0	84	44
1975	0	0	0	0	0	0	9	0	0	0	0	0	9	9
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	187
1978	0	0	0	0	187	178	184	273	141	67	0	0	1,029	842
1979	0	0	0	0	0	7	16	22	0	0	0	0	45	398
1980	0	0	0	144	208	89	117	114	80	28	0	0	781	429
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	112
1982	0	0	0	0	112	112	189	218	183	0	0	0	814	1,539
1983	0	71	204	234	328	305	322	373	515	305	0	0	2,656	2,100
1984	0	21	199	60	0	0	0	0	0	0	0	0	280	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	293
1986	0	0	0	0	293	237	108	189	177	0	0	0	1,003	710
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1993	0	0	0	0	17	16	122	109	86	0	0	0	351	334
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	135
1995	0	0	0	7	128	182	208	262	155	370	0	0	1,312	1,191
1996	0	0	0	0	14	112	13	100	0	0	0	0	238	1,137
1997	0	0	100	676	136	43	12	114	0	0	0	0	1,082	354
1998	0	0	0	0	184	93	170	178	281	290	0	0	1,197	1,013
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	26
2005	0	0	0	0	26	103	111	277	181	0	0	0	698	790
2006	0	0	0	0	118	113	269	281	271	0	0	0	1,052	934
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	11	0	17	0	0	0	0	27	303
2011	0	0	97	57	122	190	170	179	136	72	0	0	1,022	747
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	794
2017	0	0	0	470	324								794	
Avg 22-16	0	1	11	20	34	34	41	53	39	15	0	0	248	256

Table 12. Other Water – SJRRP Conditions

							SJRRP Conditions Total Other Delivery							
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	0	32	72	0	77	5	77	0	0	0	265	163
1923	0	0	0	0	3	0	0	0	0	0	0	0	3	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	19	0	0	0	19	19
1928	0	0	0	0	0	0	0	15	0	0	0	0	15	15
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1932	0	0	0	0	10	0	0	0	0	0	0	0	10	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1936	0	0	0	0	3	7	0	79	16	0	0	0	106	109
1937	0	0	0	0	6	6	6	6	67	0	0	0	90	195
1938	0	0	0	38	72	6	6	6	75	79	0	0	283	173
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	14	46	0	0	0	61	66
1941	0	0	0	0	6	20	6	4	0	0	0	0	36	158
1942	0	0	0	67	60	0	0	64	3	0	0	0	195	139
1943	0	0	0	0	72	6	0	77	10	0	0	0	165	93
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1945	0	0	0	0	6	0	0	0	0	0	0	0	6	130
1946	0	0	47	74	10	0	0	4	0	0	0	0	134	24
1947	0	0	0	0	20	0	0	3	0	0	0	0	22	3
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	220
1951	0	0	74	74	72	0	0	0	0	0	0	0	220	35
1952	0	0	0	0	35	6	6	6	77	9	0	0	140	105
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	72
1956	0	0	0	0	72	33	0	0	0	0	0	0	106	33
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	6	6	77	0	0	0	89	89
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	55
1963	0	0	0	0	55	0	0	0	0	0	0	0	55	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	146
1965	0	0	0	74	72	0	0	0	0	0	0	0	146	56
1966	0	0	0	46	10	1	1	58	0	0	0	0	115	139
1967	0	0	0	8	72	79	6	6	51	80	0	0	301	221
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1969	0	0	0	0	6	6	6	6	3	78	0	0	104	99
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	77	0	0	0	77	187
1974	0	0	0	74	36	38	0	80	70	0	0	0	297	188
1975	0	0	0	0	0	0	0	0	10	0	0	0	10	10
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1978	0	0	0	0	6	6	6	6	77	77	0	0	178	213
1979	0	0	0	41	0	31	0	59	49	0	0	0	180	144
1980	0	0	0	0	6	3	0	80	77	63	0	0	228	250
1981	0	0	0	16	11	0	0	0	0	0	0	0	27	72
1982	0	0	0	0	72	80	6	80	77	22	0	0	338	422
1983	80	71	0	0	6	6	6	6	0	74	0	0	249	230
1984	0	59	0	74	5	19	0	0	0	0	0	0	156	19
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1986	0	0	0	0	6	6	77	74	77	0	0	0	241	235
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	13
1993	0	0	0	0	13	0	77	62	0	0	0	0	152	140
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	89
1995	0	0	0	17	72	6	77	6	71	74	0	0	324	297
1996	0	0	0	0	62	6	72	64	23	0	0	0	227	171
1997	0	0	0	0	6	70	0	41	0	0	0	0	116	116
1998	0	0	0	0	5	1	6	6	6	75	0	0	98	151
1999	0	0	0	38	20	0	0	0	0	0	0	0	58	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	10
2005	0	0	0	0	10	80	77	6	77	18	0	0	268	333
2006	0	0	0	2	72	80	6	6	77	12	0	0	256	181
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	146
2011	0	0	0	74	72	6	6	80	77	72	0	0	387	241
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	6
2017	0	0	0	0	6								6	
Avg 22-16	1	1	1	8	13	6	6	11	14	8	0	0	69	68

Table 13. River Releases in Excess of Minimum Requirements – SJRRP Conditions.

SJRRP Conditions														
Release abv Minimum (TAF)														
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	0	0	20	0	3	65	10	0	0	0	98	77
1923	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0	36
1936	0	0	0	0	36	0	0	0	0	0	0	0	36	105
1937	0	0	0	0	105	70	88	90	0	0	0	0	353	366
1938	0	0	0	0	118	187	270	278	184	28	0	0	1,065	947
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0	126
1941	0	0	0	0	126	0	69	53	0	0	0	0	248	122
1942	0	0	0	0	0	0	0	0	0	0	0	0	0	133
1943	0	0	0	120	14	88	0	0	0	0	0	0	222	88
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	100
1945	0	0	0	0	100	0	0	0	0	0	0	0	100	6
1946	0	0	0	6	0	0	0	0	0	0	0	0	6	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	276
1951	0	0	193	62	21	0	0	0	0	0	0	0	276	0
1952	0	0	0	0	0	92	78	76	93	0	0	0	339	339
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	408
1956	0	0	129	257	22	0	0	0	0	0	0	0	408	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	75	71	15	0	0	0	160	160
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	43
1965	0	0	0	14	29	0	0	0	0	0	0	0	43	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	5
1967	0	0	0	0	5	0	73	70	0	191	0	0	339	334
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	292
1969	0	0	0	114	178	186	267	279	358	56	0	0	1,438	1,146
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	21	0	0	0	21	76
1974	0	0	0	55	0	0	0	3	0	0	0	0	58	3
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	133
1978	0	0	0	0	133	79	85	173	59	57	0	0	586	452
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	381
1980	0	0	0	182	199	38	0	14	18	15	0	0	465	84
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	20
1982	0	0	0	0	20	10	87	137	87	0	0	0	342	998
1983	4	56	204	219	194	273	263	233	409	298	0	0	2,153	1,704
1984	0	0	185	44	0	0	0	0	0	0	0	0	228	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	232
1986	0	0	0	0	232	181	7	0	9	0	0	0	430	198
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	2	0	0	0	0	0	2	2
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	20
1995	0	0	0	0	20	110	111	165	58	362	0	0	827	807
1996	0	0	0	0	0	75	0	0	0	0	0	0	75	950
1997	0	0	94	659	122	0	0	0	0	0	0	0	875	63
1998	0	0	0	0	63	6	77	92	101	264	0	0	605	541
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	15	3	144	65	0	0	0	227	250
2006	0	0	0	0	23	100	182	156	145	0	0	0	606	583
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	213
2011	0	0	145	41	28	80	84	99	68	57	0	0	601	387
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	714
2017	0	0	0	403	311								714	
Avg 22-16	0	1	10	19	19	17	19	23	18	14	0	0	139	147

4. Additional Comments and Considerations

The results provided in this memorandum are derived from use of the Friant Division Simulation Model (Excel Workbook). These results will differ slightly from results derived from the CALSIM II depiction of the Friant Division. The reasons for differences have been documented, and primarily concern the non-modeling of the land-use and other water supplies available to the service area of the Madera Canal service area. Comparison of the modeling results shows a tendency for the workbook model to slightly "over-deliver" water to the Madera Canal component, particularly during wet periods.

Also, the modeled inflow to Millerton for the post-2003 era relies upon the actual historical record of inflow rather than a systematic modeling of the upstream facilities as performed for the 1922-2004 period. As such, the inflow used for the extended period of modeling could be indicative of operational anomalies not consistent with normal upstream operations.

Recent experience has illustrated that release requirements from Friant Dam to maintain flow at Gravelly Ford consistently exceeds the historically-based "117" TAF. A current estimate of the required flow approaches 130,000 acre-feet per year. For consistency with settlement discussion modeling the "current" condition of hydrology has not been adjusted.

The model's water supply protocols were developed, tested and validated with the historical record that occurred prior to year 2000. During settlement discussions with the assumed hydrology at the time these protocols provided viable operations for the Friant Division under a wide range of alternative river release flow regimes. Upon extension of the investigation period with inclusion of historically-based Friant inflow it now appears that the water supply protocols can produce exceedence of the assumed minimum operating pool when operating with the SJRRP Method 3.1 hydrograph (see Figure 1). This excursion happens during 2007 and 2014, two relatively very dry years with unprecedented low inflows during the fall and winter. Rather than refine the protocols at this time which may have implications during other years, and without review of the historical upstream operation for inconsistency with operational requirements the excursion below minimum storage is allowed in the simulated operation. Use of the diversion results shown for those years should note that diversions may be overstated.

The results presented herein assume water availability for the Friant Division without consideration of any need to assist in satisfying the obligations of Reclamation towards the Exchange Contract. Recent history has shown the potential for requiring releases from Friant for such purpose. To that end, water available for Friant Division diversions may at times be overstated.

The previously described SJRRP results are from the outcome of applying the "Method 3.1" protocols to define the SJRRP hydrograph below Friant Dam. In past investigations there has been interest in the results should the restoration flow requirements be modeled to include the "10 percent buffer" increase in flow described in the settlement. For that assumption the month-by-month flow requirements of the "SJRRP+10" have been defined as 110% of Method 3.1 hydrograph requirements. The following results are provided, and the simulated annual delivery of Class 1 and Class 2 water to each contractor by year and by year type grouping is provided in Appendix B.

Table 14. Total River Releases and Total Canal Diversions – SJRRP+10
Table 15. Friant Deliveries – SJRRP+10
Table 16. Total River Releases – SJRRP+10
Table 17. Total Canal Releases – SJRRP+10
Table 18. Class 1 Deliveries – SJRRP+10
Table 19. Class 2 Deliveries – SJRRP+10
Table 20. Other Deliveries – SJRRP+10
Table 21. Total Annual System Deliveries – SJRRP+10
Table 22. Average Deliveries by Contractor – SJRRP+10
Table 23. Other Water – SJRRP+10 Conditions
Table 24. River Releases in Excess of Minimum Requirements – SJRRP+10 Conditions

Figure 1. Millerton Lake and River Release Hydrograph.

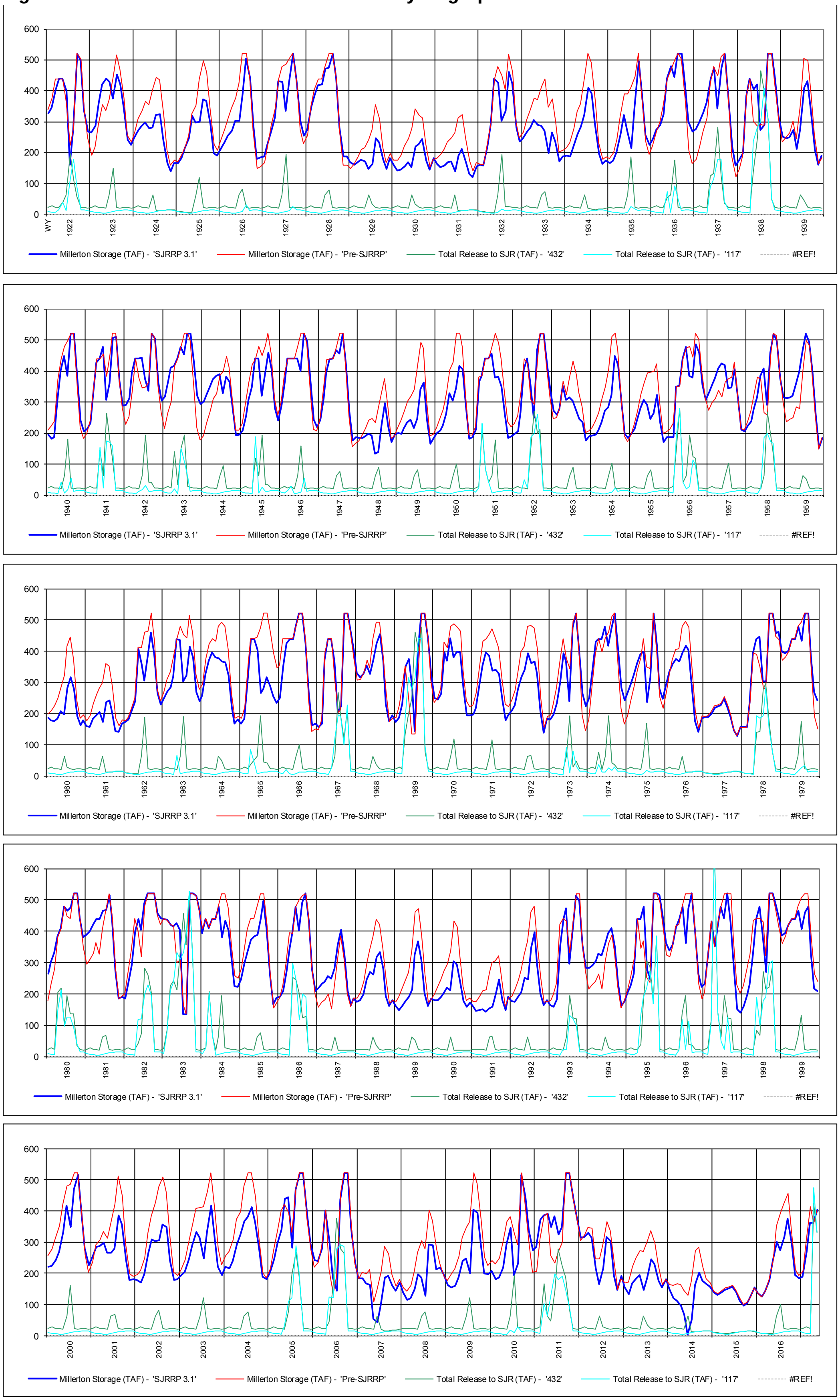


Table 14. Total River Releases and Total Canal Diversions – SJRRP+10.

Averages by Year-type

	Total River Release (1,000 acre-feet)		
	Current Release Requirement	SJRRP+10	Difference
Wet	1182	1312	130
Normal-wet	243	568	325
Normal-dry	119	397	278
Dry	117	338	221
Critcal-High	117	285	168
Critical-Low	117	133	17
All	365	606	241

Note: Values summed for water year - October-September

Averages by Year-type

	Total Canal Diversions (1,000 acre-feet)		
	Current Release Requirement	SJRRP+10	Difference
Wet	1974	1789	-184
Normal-wet	1641	1312	-329
Normal-dry	1095	841	-253
Dry	749	569	-180
Critcal-High	498	335	-163
Critical-Low	229	214	-15
All	1316	1077	-239

Note: Values summed for contract year - March-February

Table 15. Friant Deliveries – SJRRP+10.

	Class 1			Class 2			Other		
	Current	SJRRP+10	Difference	Current	SJRRP+10	Difference	Current	SJRRP+10	Difference
Wet	800	800	0	873	748	-124	238	179	-60
Normal-wet	800	799	0	567	385	-182	211	65	-147
Normal-dry	797	732	-65	176	28	-148	58	18	-40
Dry	653	490	-163	6	0	-6	26	16	-10
Critcal-High	430	271	-159	0	0	0	5	1	-4
Critical-Low	163	148	-15	0	0	0	3	3	0
All	743	689	-54	383	263	-119	127	61	-66

Note: Values summed for contract year - March-February

	Total Annual System Deliveries		
	Current	SJRRP+10	Difference
Wet	1911	1726	-184
Normal-wet	1578	1249	-329
Normal-dry	1032	778	-253
Dry	686	506	-180
Critcal-High	435	272	-163
Critical-Low	166	151	-15
All	1253	1014	-239

Note: Values summed for contract year - March-February

Table 16. Total River Releases – SJRRP+10.

Total River Release (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	SJRRP+10	Difference		Year		Current Release Requirement	SJRRP+10	Difference
1922	516	683	167		1983	Wet	2,773	2,822	49
1923	117	472	355		1969		2,125	2,126	1
1924	117	285	168		1995		1,429	1,514	85
1925	117	360	244		1938		1,644	1,768	124
1926	137	398	261		1978		1,146	1,186	40
1927	129	525	396		1982		931	1,018	87
1928	117	396	280		2011		1,139	1,238	99
1929	117	347	230		1967		917	1,096	179
1930	117	346	229		2006		1,169	1,285	116
1931	117	285	168		1998		1,314	1,321	7
1932	126	454	328		1986		1,120	1,162	42
1933	117	390	273		1980		898	1,135	237
1934	117	312	195		1956		837	1,138	301
1935	139	506	367		1952		963	1,033	70
1936	306	529	222		2005		814	920	106
1937	670	884	213		1997		1,198	1,637	439
1938	1,644	1,768	124		1993		467	741	274
1939	117	361	244		1941		754	894	140
1940	205	507	302		1958		816	899	83
1941	754	894	140		1922	Normal-Wet	516	683	167
1942	159	608	449		1965		238	599	361
1943	425	735	310		1942		159	608	449
1944	117	413	296		1937		670	884	213
1945	315	635	320		1996		355	633	278
1946	189	487	298		1974		201	599	398
1947	117	392	276		1945		315	635	320
1948	117	405	289		1943		425	735	310
1949	117	398	281		1984		397	759	361
1950	117	420	303		1932		126	454	328
1951	469	767	298		1973		288	532	244
1952	963	1,033	70		2010		144	530	385
1953	117	407	290		1927		129	525	396
1954	130	420	290		1963		176	517	341
1955	117	397	281		1962		117	435	318
1956	837	1,138	301		1935		139	506	367
1957	117	422	305		1940		205	507	302
1958	816	899	83		1951		469	767	298
1959	117	366	249		1936		306	529	222
1960	117	338	222		1979		162	499	337
1961	117	285	168		1975		126	494	367
1962	117	435	318		2000		117	485	369
1963	176	517	341		1946		189	487	298
1964	117	361	245		1923		117	472	355
1965	238	599	361		1999		117	452	335
1966	135	418	282		2009		117	441	324
1967	917	1,096	179		2003	Normal-Dry	117	440	324
1968	117	347	230		1970		117	440	323
1969	2,125	2,126	1		1925		117	360	244
1970	117	440	323		1971		117	435	319
1971	117	435	319		1957		117	422	305
1972	117	379	263		1954		130	420	290
1973	288	532	244		1950		117	420	303
1974	201	599	398		2016		117	335	218
1975	126	494	367		1966		135	418	282
1976	117	285	168		1944		117	413	296
1977	117	133	17		1953		117	407	290
1978	1,146	1,186	40		1948		117	405	289
1979	162	499	337		2002		117	399	282
1980	898	1,135	237		1949		117	398	281
1981	117	384	267		1926		137	398	261
1982	931	1,018	87		1955		117	397	281
1983	2,773	2,822	49		1928		117	396	280
1984	397	759	361		2004		117	393	276
1985	117	393	276		1985		117	393	276
1986	1,120	1,162	42		1947		117	392	276
1987	117	328	211		2008		117	384	267
1988	117	340	223		1933		117	390	273
1989	117	365	248		1981		117	384	267
1990	117	324	208		2001		117	383	267
1991	117	372	255		1972		117	379	263
1992	117	333	217		1991		117	372	255
1993	467	741	274		1959		117	366	249
1994	117	338	221		1989		117	365	248
1995	1,429	1,514	85		1964	Normal-Dry	117	361	245
1996	355	633	278		1939		117	361	244
1997	1,198	1,637	439		1929		117	347	230
1998	1,314	1,321	7		1988		117	340	223
1999	117	452	335		1968		117	347	230
2000	117	485	369		1930		117	346	229
2001	117	383	267		2013		117	345	228
2002	117	399	282		2012		117	339	222
2003	117	440	324		1960		117	338	222
2004	117	393	276		1994		117	338	221
2005	814	920	106		1992		117	333	217
2006	1,169	1,285	116		1987		117	328	211
2007	117	310	193		1990		117	324	208
2008	117	384	267		1934		117	312	195
2009	117	441	324		2007		117	310	193
2010	144	530	385		1961	Crit-High	117	285	168
2011	1,139	1,238	99		1976		117	285	168
2012	117	339	222		2014		117	285	168
2013	117	345	228		1931		117	285	168
2014	117	285	168		1924		117	285	168
2015	117	133	17		1977	CL	117	133	17
2016	117	335	218		2015		117	133	17
Ave All	365	606	241		Wet Ave		1,182	1,312	130
Max	2,773	2,822			Normal-wet Ave		243	568	325
Min	117	133			Normal-dry Ave		119	397	278
					Dry Ave		117	338	221
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		117	285	168
Dry Ave	117	307	191		Critical-L Ave		117	133	17

Note: Values summed for water year - October-September

Table 17. Total Canal Releases – SJRRP+10.

Total Canal Diversions (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	SJRRP+10	Difference		Year		Current Release Requirement	SJRRP+10	Difference
1922	1,949	1,652	-297		1983	Wet	2,009	1,960	-49
1923	1,372	1,210	-162		1969		1,847	1,796	-51
1924	505	339	-166		1995		2,232	2,117	-115
1925	1,130	888	-242		1938		1,959	1,850	-109
1926	1,140	813	-327		1978		2,086	1,961	-124
1927	1,703	1,338	-365		1982		2,081	1,983	-98
1928	1,206	930	-276		2011		2,053	1,988	-65
1929	707	515	-192		1967		2,065	1,870	-195
1930	727	500	-226		2006		1,930	1,838	-92
1931	390	216	-174		1998		1,851	1,743	-108
1932	1,655	1,342	-314		1986		1,916	1,721	-194
1933	1,103	829	-274		1980		2,057	1,714	-343
1934	649	456	-193		1956		2,031	1,576	-455
1935	1,578	1,170	-409		1952		1,810	1,727	-83
1936	1,576	1,297	-279		2005		2,094	1,992	-102
1937	1,677	1,485	-192		1997		1,597	1,245	-352
1938	1,959	1,850	-109		1993		2,070	1,603	-467
1939	823	641	-182		1941		2,021	1,719	-302
1940	1,542	1,220	-322		1958		1,797	1,598	-199
1941	2,021	1,719	-302		1922	Normal-Wet	1,949	1,652	-297
1942	2,024	1,568	-456		1965		1,782	1,354	-429
1943	1,507	1,268	-239		1942		2,024	1,568	-456
1944	1,133	965	-168		1937		1,677	1,485	-192
1945	1,896	1,510	-386		1996		1,717	1,458	-259
1946	1,481	1,157	-324		1974		1,822	1,471	-351
1947	1,077	868	-209		1945		1,896	1,510	-386
1948	919	656	-263		1943		1,507	1,268	-239
1949	1,048	770	-279		1984		1,541	1,194	-347
1950	1,379	1,080	-299		1932		1,655	1,342	-314
1951	1,269	929	-339		1973		1,737	1,388	-349
1952	1,810	1,727	-83		2010		1,976	1,529	-447
1953	1,081	849	-232		1927		1,703	1,338	-365
1954	1,129	820	-309		1963		1,709	1,376	-334
1955	1,123	879	-244		1962		1,651	1,306	-344
1956	2,031	1,576	-455		1935		1,578	1,170	-409
1957	1,224	991	-233		1940		1,542	1,220	-322
1958	1,797	1,598	-199		1951		1,269	929	-339
1959	870	811	-59		1936		1,576	1,297	-279
1960	703	483	-221		1979		1,655	1,307	-348
1961	518	353	-165		1975		1,607	1,306	-301
1962	1,651	1,306	-344		2000		1,615	1,206	-410
1963	1,709	1,376	-334		1946		1,481	1,157	-324
1964	1,104	888	-216		1923		1,372	1,210	-162
1965	1,782	1,354	-429		1999		1,328	1,095	-233
1966	1,350	1,066	-284		2009		1,299	972	-326
1967	2,065	1,870	-195		2003	Normal-Dry	1,276	957	-320
1968	850	709	-141		1970		1,299	994	-305
1969	1,847	1,796	-51		1925		1,130	888	-242
1970	1,299	994	-305		1971		1,212	927	-285
1971	1,212	927	-285		1957		1,224	991	-233
1972	1,052	764	-288		1954		1,129	820	-309
1973	1,737	1,388	-349		1950		1,379	1,080	-299
1974	1,822	1,471	-351		2016		1,000	786	-214
1975	1,607	1,306	-301		1966		1,350	1,066	-284
1976	682	537	-145		1944		1,133	965	-168
1977	256	241	-15		1953		1,081	849	-232
1978	2,086	1,961	-124		1948		919	656	-263
1979	1,655	1,307	-348		2002		1,030	750	-280
1980	2,057	1,714	-343		1949		1,048	770	-279
1981	1,116	1,026	-90		1926		1,140	813	-327
1982	2,081	1,983	-98		1955		1,123	879	-244
1983	2,009	1,960	-49		1928		1,206	930	-276
1984	1,541	1,194	-347		2004		1,088	736	-352
1985	1,130	860	-271		1985		1,130	860	-271
1986	1,916	1,721	-194		1947		1,077	868	-209
1987	604	563	-41		2008		935	672	-263
1988	732	510	-222		1933		1,103	829	-274
1989	797	552	-245		1981		1,116	1,026	-90
1990	620	415	-205		2001		955	720	-235
1991	845	594	-252		1972		1,052	764	-288
1992	794	510	-284		1991		845	594	-252
1993	2,070	1,603	-467		1959		870	811	-59
1994	876	853	-22		1989		797	552	-245
1995	2,232	2,117	-115		1964	Normal-Dry	1,104	888	-216
1996	1,717	1,458	-259		1939		823	641	-182
1997	1,597	1,245	-352		1929		707	515	-192
1998	1,851	1,743	-108		1988		732	510	-222
1999	1,328	1,095	-233		1968		850	709	-141
2000	1,615	1,206	-410		1930		727	500	-226
2001	955	720	-235		2013		726	500	-226
2002	1,030	750	-280		2012		789	602	-187
2003	1,276	957	-320		1960		703	483	-221
2004	1,088	736	-352		1994		876	853	-22
2005	2,094	1,992	-102		1992		794	510	-284
2006	1,930	1,838	-92		1987		604	563	-41
2007	527	386	-141		1990		620	415	-205
2008	935	672	-263		1934		649	456	-193
2009	1,299	972	-326		2007		527	386	-141
2010	1,976	1,529	-447		1961	Crit-High	518	353	-165
2011	2,053	1,988	-65		1976		682	537	-145
2012	789	602	-187		2014		394	230	-165
2013	726	500	-226		1931		390	216	-174
2014	394	230	-165		1924		505	339	-166
2015	201	187	-14		1977	CL	256	241	-15
2016	1,000	786	-214		2015		201	187	-14
Ave All	1,316	1,077	-239		Wet Ave		1,974	1,789	-184
Max	2,232	2,117			Normal-wet Ave		1,641	1,312	-329
Min	201	187			Normal-dry Ave		1,095	841	-253
					Dry Ave		749	569	-180
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		498	335	-163
Dry Ave	645	483	-161		Critical-L Ave		229	214	-15

Note: Values summed for contract year - March-February

Table 18. Class 1 Deliveries – SJRRP+10.

Class 1 Deliveries (1,000 acre-feet)								
Chronological Listing				Descending Order of Wetness				
Year	Current Release Requirement	SJRRP+10	Difference	Year		Current Release Requirement	SJRRP+10	Difference
1922	800	800	0	1983	Wet	800	800	0
1923	800	800	0	1969		800	800	0
1924	442	276	-166	1995		800	800	0
1925	800	800	0	1938		800	800	0
1926	799	750	-49	1978		800	800	0
1927	800	800	0	1982		800	799	-1
1928	800	800	0	2011		800	800	0
1929	644	452	-192	1967		800	799	-1
1930	664	437	-226	2006		800	800	0
1931	312	147	-165	1998		800	799	-1
1932	800	800	0	1986		800	800	0
1933	800	766	-34	1980		800	796	-4
1934	569	393	-176	1956		800	800	0
1935	800	797	-3	1952		800	800	0
1936	800	799	-1	2005		800	800	0
1937	800	800	0	1997		800	800	0
1938	800	800	0	1993		800	800	0
1939	757	578	-179	1941		800	800	0
1940	800	800	0	1958		800	800	0
1941	800	800	0	1922	Normal-Wet	800	800	0
1942	800	800	0	1965		800	800	0
1943	800	799	-1	1942		800	800	0
1944	800	800	0	1937		800	800	0
1945	800	800	0	1996		800	800	0
1946	798	800	2	1974		800	800	0
1947	800	800	0	1945		800	800	0
1948	800	593	-207	1943		800	799	-1
1949	800	707	-93	1984		800	796	-3
1950	800	797	-3	1932		800	800	0
1951	799	800	1	1973		800	799	-1
1952	800	800	0	2010		800	800	0
1953	800	786	-14	1927		800	800	0
1954	800	757	-42	1963		800	800	0
1955	800	744	-56	1962		800	800	0
1956	800	800	0	1935		800	797	-3
1957	800	800	0	1940		800	800	0
1958	800	800	0	1951		799	800	1
1959	800	748	-52	1936		800	799	-1
1960	640	420	-221	1979		800	797	-3
1961	455	290	-165	1975		800	800	0
1962	800	800	0	2000		800	799	-1
1963	800	800	0	1946		798	800	2
1964	800	679	-121	1923		800	800	0
1965	800	800	0	1999		800	800	0
1966	799	800	1	2009		800	800	0
1967	800	799	-1	2003	Normal-Dry	800	800	0
1968	782	641	-141	1970		800	800	0
1969	800	800	0	1925		800	800	0
1970	800	800	0	1971		800	800	0
1971	800	800	0	1957		800	800	0
1972	800	701	-99	1954		800	757	-42
1973	800	799	-1	1950		800	797	-3
1974	800	800	0	2016		800	718	-82
1975	800	800	0	1966		799	800	1
1976	610	474	-136	1944		800	800	0
1977	187	172	-15	1953		800	786	-14
1978	800	800	0	1948		800	593	-207
1979	800	797	-3	2002		800	687	-113
1980	800	796	-4	1949		800	707	-93
1981	800	800	0	1926		799	750	-49
1982	800	799	-1	1955		800	744	-56
1983	800	800	0	1928		800	800	0
1984	800	796	-3	2004		800	673	-127
1985	800	791	-9	1985		800	791	-9
1986	800	800	0	1947		800	800	0
1987	541	500	-41	2008		800	609	-191
1988	669	447	-222	1933		800	766	-34
1989	734	489	-245	1981		800	800	0
1990	557	352	-205	2001		800	657	-143
1991	782	531	-252	1972		800	701	-99
1992	659	445	-214	1991		782	531	-252
1993	800	800	0	1959		800	748	-52
1994	667	710	43	1989		734	489	-245
1995	800	800	0	1964	Normal-Dry	800	679	-121
1996	800	800	0	1939		757	578	-179
1997	800	800	0	1929		644	452	-192
1998	800	799	-1	1988		669	447	-222
1999	800	800	0	1968		782	641	-141
2000	800	799	-1	1930		664	437	-226
2001	800	657	-143	2013		663	437	-226
2002	800	687	-113	2012		726	539	-187
2003	800	800	0	1960		640	420	-221
2004	800	673	-127	1994		667	710	43
2005	800	800	0	1992		659	445	-214
2006	800	800	0	1987		541	500	-41
2007	464	323	-141	1990		557	352	-205
2008	800	609	-191	1934		569	393	-176
2009	800	800	0	2007		464	323	-141
2010	800	800	0	1961	Crit-High	455	290	-165
2011	800	800	0	1976		610	474	-136
2012	726	539	-187	2014		331	167	-165
2013	663	437	-226	1931		312	147	-165
2014	331	167	-165	1924		442	276	-166
2015	138	124	-14	1977	CL	187	172	-15
2016	800	718	-82	2015		138	124	-14
Ave All	743	689	-54	Wet Ave		800	800	0
Max	800	800		Normal-wet Ave		800	799	0
Min	138	124		Normal-dry Ave		797	732	-65
				Dry Ave		653	490	-163
Original Dry Year Classification (Driest 20% Years)				Critical-H Ave		430	271	-159
Dry Ave	558	409	-149	Critical-L Ave		163	148	-15

Note: Values summed for contract year - March-February

Table 19. Class 2 Deliveries – SJRRP+10.

Class 2 Deliveries (1,000 acre-feet)								
Chronological Listing				Descending Order of Wetness				
Year	Current Release Requirement	SJRRP+10	Difference	Year	Type	Current Release Requirement	SJRRP+10	Difference
1922	845	679	-166	1983	Wet	890	856	-34
1923	509	347	-162	1969		892	831	-60
1924	0	0	0	1995		1,062	961	-101
1925	267	25	-242	1938		932	812	-120
1926	124	0	-124	1978		1,005	904	-101
1927	573	475	-98	1982		822	725	-97
1928	224	67	-157	2011		948	885	-63
1929	0	0	0	1967		965	844	-121
1930	0	0	0	2006		884	785	-99
1931	0	0	0	1998		818	688	-130
1932	641	479	-162	1986		812	671	-141
1933	240	0	-240	1980		873	708	-166
1934	0	0	0	1956		854	685	-168
1935	503	308	-195	1952		841	760	-81
1936	546	355	-191	2005		875	799	-76
1937	586	384	-202	1997		489	254	-235
1938	932	812	-120	1993		893	663	-230
1939	0	0	0	1941		885	682	-203
1940	390	324	-65	1958		838	702	-137
1941	885	682	-203	1922	Normal-Wet	845	679	-166
1942	805	597	-208	1965		698	446	-252
1943	552	339	-213	1942		805	597	-208
1944	265	97	-168	1937		586	384	-202
1945	670	527	-143	1996		614	434	-180
1946	369	252	-116	1974		645	447	-198
1947	115	5	-110	1945		670	527	-143
1948	56	0	-56	1943		552	339	-213
1949	185	0	-185	1984		503	320	-182
1950	233	0	-233	1932		641	479	-162
1951	332	42	-290	1973		562	358	-204
1952	841	760	-81	2010		701	520	-181
1953	218	0	-218	1927		573	475	-98
1954	187	0	-187	1963		698	513	-185
1955	187	0	-187	1962		582	399	-183
1956	854	685	-168	1935		503	308	-195
1957	288	128	-160	1940		390	324	-65
1958	838	702	-137	1951		332	42	-290
1959	7	0	-7	1936		546	355	-191
1960	0	0	0	1979		537	333	-204
1961	0	0	0	1975		561	443	-118
1962	582	399	-183	2000		485	343	-142
1963	698	513	-185	1946		369	252	-116
1964	95	0	-95	1923		509	347	-162
1965	698	446	-252	1999		416	232	-184
1966	199	83	-116	2009		425	109	-316
1967	965	844	-121	2003	Normal-Dry	412	94	-319
1968	0	0	0	1970		380	131	-249
1969	892	831	-60	1925		267	25	-242
1970	380	131	-249	1971		349	64	-285
1971	349	64	-285	1957		288	128	-160
1972	124	0	-124	1954		187	0	-187
1973	562	358	-204	1950		233	0	-233
1974	645	447	-198	2016		132	0	-132
1975	561	443	-118	1966		199	83	-116
1976	0	0	0	1944		265	97	-168
1977	0	0	0	1953		218	0	-218
1978	1,005	904	-101	1948		56	0	-56
1979	537	333	-204	2002		167	0	-167
1980	873	708	-166	1949		185	0	-185
1981	156	91	-66	1926		124	0	-124
1982	822	725	-97	1955		187	0	-187
1983	890	856	-34	1928		224	67	-157
1984	503	320	-182	2004		111	0	-111
1985	145	0	-145	1985		145	0	-145
1986	812	671	-141	1947		115	5	-110
1987	0	0	0	2008		72	0	-72
1988	0	0	0	1933		240	0	-240
1989	0	0	0	1981		156	91	-66
1990	0	0	0	2001		92	0	-92
1991	0	0	0	1972		124	0	-124
1992	0	0	0	1991		0	0	0
1993	893	663	-230	1959		7	0	-7
1994	0	0	0	1989		0	0	0
1995	1,062	961	-101	1964	Normal-Dry	95	0	-95
1996	614	434	-180	1939		0	0	0
1997	489	254	-235	1929		0	0	0
1998	818	688	-130	1988		0	0	0
1999	416	232	-184	1968		0	0	0
2000	485	343	-142	1930		0	0	0
2001	92	0	-92	2013		0	0	0
2002	167	0	-167	2012		0	0	0
2003	412	94	-319	1960		0	0	0
2004	111	0	-111	1994		0	0	0
2005	875	799	-76	1992		0	0	0
2006	884	785	-99	1987		0	0	0
2007	0	0	0	1990		0	0	0
2008	72	0	-72	1934		0	0	0
2009	425	109	-316	2007		0	0	0
2010	701	520	-181	1961	Crit-High	0	0	0
2011	948	885	-63	1976		0	0	0
2012	0	0	0	2014		0	0	0
2013	0	0	0	1931		0	0	0
2014	0	0	0	1924		0	0	0
2015	0	0	0	1977	CL	0	0	0
2016	132	0	-132	2015		0	0	0
Ave All	383	263	-119	Wet Ave		873	748	-124
Max	1,062	961		Normal-wet Ave		567	385	-182
Min	0	0		Normal-dry Ave		176	28	-148
				Dry Ave		6	0	-6
Original Dry Year Classification (Driest 20% Years)				Critical-H Ave		0	0	0
Dry Ave	4	0	-4	Critical-L Ave		0	0	0

Note: Values summed for contract year - March-February

Table 20. Other Deliveries – SJRRP+10.

Other Deliveries (1,000 acre-feet)									
Chronological Listing					Descending Order of Wetness				
Year	Current Release Requirement	SJRRP+10	Difference		Year		Current Release Requirement	SJRRP+10	Difference
1922	241	110	-131		1983	Wet	256	241	-15
1923	0	0	0		1969		92	101	9
1924	0	0	0		1995		307	293	-14
1925	0	0	0		1938		164	175	11
1926	153	0	-153		1978		217	194	-23
1927	267	0	-267		1982		396	396	0
1928	119	0	-119		2011		242	240	-2
1929	0	0	0		1967		237	163	-74
1930	0	0	0		2006		183	190	7
1931	15	6	-9		1998		171	194	23
1932	152	0	-152		1986		241	187	-54
1933	0	0	0		1980		321	147	-173
1934	17	0	-17		1956		315	28	-287
1935	212	2	-210		1952		106	104	-2
1936	168	81	-87		2005		356	330	-26
1937	228	237	9		1997		245	128	-117
1938	164	175	11		1993		315	78	-237
1939	3	0	-3		1941		273	174	-99
1940	289	32	-257		1958		96	33	-63
1941	273	174	-99		1922	Normal-Wet	241	110	-131
1942	356	108	-247		1965		222	44	-177
1943	92	67	-25		1942		356	108	-247
1944	6	6	0		1937		228	237	9
1945	363	120	-244		1996		240	161	-78
1946	251	42	-209		1974		315	162	-153
1947	99	0	-99		1945		363	120	-244
1948	0	0	0		1943		92	67	-25
1949	0	0	0		1984		176	14	-161
1950	283	220	-63		1932		152	0	-152
1951	76	25	-51		1973		312	168	-145
1952	106	104	-2		2010		412	146	-266
1953	0	0	0		1927		267	0	-267
1954	80	0	-80		1963		148	0	-148
1955	72	72	0		1962		206	45	-161
1956	315	28	-287		1935		212	2	-210
1957	72	0	-72		1940		289	32	-257
1958	96	33	-63		1951		76	25	-51
1959	0	0	0		1936		168	81	-87
1960	0	0	0		1979		255	113	-142
1961	0	0	0		1975		183	0	-183
1962	206	45	-161		2000		267	0	-267
1963	148	0	-148		1946		251	42	-209
1964	146	146	0		1923		0	0	0
1965	222	44	-177		1999		49	0	-49
1966	289	120	-169		2009		10	0	-10
1967	237	163	-74		2003	Normal-Dry	1	0	-1
1968	6	6	0		1970		57	0	-57
1969	92	101	9		1925		0	0	0
1970	57	0	-57		1971		0	0	0
1971	0	0	0		1957		72	0	-72
1972	65	0	-65		1954		80	0	-80
1973	312	168	-145		1950		283	220	-63
1974	315	162	-153		2016		6	6	0
1975	183	0	-183		1966		289	120	-169
1976	9	0	-9		1944		6	6	0
1977	6	6	0		1953		0	0	0
1978	217	194	-23		1948		0	0	0
1979	255	113	-142		2002		0	0	0
1980	321	147	-173		1949		0	0	0
1981	97	72	-25		1926		153	0	-153
1982	396	396	0		1955		72	72	0
1983	256	241	-15		1928		119	0	-119
1984	176	14	-161		2004		113	0	-113
1985	123	6	-117		1985		123	6	-117
1986	241	187	-54		1947		99	0	-99
1987	0	0	0		2008		0	0	0
1988	0	0	0		1933		0	0	0
1989	0	0	0		1981		97	72	-25
1990	0	0	0		2001		0	0	0
1991	0	0	0		1972		65	0	-65
1992	72	2	-71		1991		0	0	0
1993	315	78	-237		1959		0	0	0
1994	146	81	-65		1989		0	0	0
1995	307	293	-14		1964	Normal-Dry	146	146	0
1996	240	161	-78		1939		3	0	-3
1997	245	128	-117		1929		0	0	0
1998	171	194	23		1988		0	0	0
1999	49	0	-49		1968		6	6	0
2000	267	0	-267		1930		0	0	0
2001	0	0	0		2013		0	0	0
2002	0	0	0		2012		0	0	0
2003	1	0	-1		1960		0	0	0
2004	113	0	-113		1994		146	81	-65
2005	356	330	-26		1992		72	2	-71
2006	183	190	7		1987		0	0	0
2007	0	0	0		1990		0	0	0
2008	0	0	0		1934		17	0	-17
2009	10	0	-10		2007		0	0	0
2010	412	146	-266		1961	Crit-High	0	0	0
2011	242	240	-2		1976		9	0	-9
2012	0	0	0		2014		0	0	0
2013	0	0	0		1931		15	6	-9
2014	0	0	0		1924		0	0	0
2015	0	0	0		1977	CL	6	6	0
2016	6	6	0		2015		0	0	0
Ave All	127	61	-66		Wet Ave		238	179	-60
Max	412	396			Normal-wet Ave		211	65	-147
Min	0	0			Normal-dry Ave		58	18	-40
					Dry Ave		26	16	-10
Original Dry Year Classification (Driest 20% Years)					Critical-H Ave		5	1	-4
Dry Ave	19	11	-8		Critical-L Ave		3	3	0

Note: Values summed for contract year - March-February

Table 21. Total Annual System Deliveries – SJRRP+10.

Total Annual System Deliveries (1,000 acre-feet)

Chronological Listing

Year	Current Release Requirement	SJRRP+10	Difference
1922	1,886	1,589	-297
1923	1,309	1,147	-162
1924	442	276	-166
1925	1,067	825	-242
1926	1,077	750	-327
1927	1,640	1,275	-365
1928	1,143	867	-276
1929	644	452	-192
1930	664	437	-226
1931	327	153	-174
1932	1,592	1,279	-314
1933	1,040	766	-274
1934	586	393	-193
1935	1,515	1,107	-409
1936	1,513	1,234	-279
1937	1,614	1,422	-192
1938	1,896	1,787	-109
1939	760	578	-182
1940	1,479	1,157	-322
1941	1,958	1,656	-302
1942	1,961	1,505	-456
1943	1,444	1,205	-239
1944	1,070	902	-168
1945	1,833	1,447	-386
1946	1,418	1,094	-324
1947	1,014	805	-209
1948	856	593	-263
1949	985	707	-279
1950	1,316	1,017	-299
1951	1,206	866	-339
1952	1,747	1,664	-83
1953	1,018	786	-232
1954	1,066	757	-309
1955	1,060	816	-244
1956	1,968	1,513	-455
1957	1,161	928	-233
1958	1,734	1,535	-199
1959	807	748	-59
1960	640	420	-221
1961	455	290	-165
1962	1,588	1,243	-344
1963	1,646	1,313	-334
1964	1,041	825	-216
1965	1,719	1,291	-429
1966	1,287	1,003	-284
1967	2,002	1,807	-195
1968	787	646	-141
1969	1,784	1,733	-51
1970	1,236	931	-305
1971	1,149	864	-285
1972	989	701	-288
1973	1,674	1,325	-349
1974	1,759	1,408	-351
1975	1,544	1,243	-301
1976	619	474	-145
1977	193	178	-15
1978	2,023	1,898	-124
1979	1,592	1,244	-348
1980	1,994	1,651	-343
1981	1,053	963	-90
1982	2,018	1,920	-98
1983	1,946	1,897	-49
1984	1,478	1,131	-347
1985	1,067	797	-271
1986	1,853	1,658	-194
1987	541	500	-41
1988	669	447	-222
1989	734	489	-245
1990	557	352	-205
1991	782	531	-252
1992	731	447	-284
1993	2,007	1,540	-467
1994	813	790	-22
1995	2,169	2,054	-115
1996	1,654	1,395	-259
1997	1,534	1,182	-352
1998	1,788	1,680	-108
1999	1,265	1,032	-233
2000	1,552	1,143	-410
2001	892	657	-235
2002	967	687	-280
2003	1,213	894	-320
2004	1,025	673	-352
2005	2,031	1,929	-102
2006	1,867	1,775	-92
2007	464	323	-141
2008	872	609	-263
2009	1,236	909	-326
2010	1,913	1,466	-447
2011	1,990	1,925	-65
2012	726	539	-187
2013	663	437	-226
2014	331	167	-165
2015	138	124	-14
2016	937	723	-214
Ave All	1,253	1,014	-239
Max	2,169	2,054	
Min	138	124	
Original Dry Year Classification (Driest 20% Years)			
Dry Ave	582	420	-161

Descending Order of Wetness

Year		Current Release Requirement	SJRRP+10	Difference
1983	Wet	1,946	1,897	-49
1969		1,784	1,733	-51
1995		2,169	2,054	-115
1938		1,896	1,787	-109
1978		2,023	1,898	-124
1982		2,018	1,920	-98
2011		1,990	1,925	-65
1967		2,002	1,807	-195
2006		1,867	1,775	-92
1998		1,788	1,680	-108
1986		1,853	1,658	-194
1980		1,994	1,651	-343
1956		1,968	1,513	-455
1952		1,747	1,664	-83
2005		2,031	1,929	-102
1997		1,534	1,182	-352
1993		2,007	1,540	-467
1941		1,958	1,656	-302
1958		1,734	1,535	-199
1922	Normal-Wet	1,886	1,589	-297
1965		1,719	1,291	-429
1942		1,961	1,505	-456
1937		1,614	1,422	-192
1996		1,654	1,395	-259
1974		1,759	1,408	-351
1945		1,833	1,447	-386
1943		1,444	1,205	-239
1984		1,478	1,131	-347
1932		1,592	1,279	-314
1973		1,674	1,325	-349
2010		1,913	1,466	-447
1927		1,640	1,275	-365
1963		1,646	1,313	-334
1962		1,588	1,243	-344
1935		1,515	1,107	-409
1940		1,479	1,157	-322
1951		1,206	866	-339
1936		1,513	1,234	-279
1979		1,592	1,244	-348
1975		1,544	1,243	-301
2000		1,552	1,143	-410
1946		1,418	1,094	-324
1923		1,309	1,147	-162
1999		1,265	1,032	-233
2009		1,236	909	-326
2003	Normal-Dry	1,213	894	-320
1970		1,236	931	-305
1925		1,067	825	-242
1971		1,149	864	-285
1957		1,161	928	-233
1954		1,066	757	-309
1950		1,316	1,017	-299
2016		937	723	-214
1966		1,287	1,003	-284
1944		1,070	902	-168
1953		1,018	786	-232
1948		856	593	-263
2002		967	687	-280
1949		985	707	-279
1926		1,077	750	-327
1955		1,060	816	-244
1928		1,143	867	-276
2004		1,025	673	-352
1985		1,067	797	-271
1947		1,014	805	-209
2008		872	609	-263
1933		1,040	766	-274
1981		1,053	963	-90
2001		892	657	-235
1972		989	701	-288
1991		782	531	-252
1959		807	748	-59
1989		734	489	-245
1964	Normal-Dry	1,041	825	-216
1939		760	578	-182
1929		644	452	-192
1988		669	447	-222
1968		787	646	-141
1930		664	437	-226
2013		663	437	-226
2012		726	539	-187
1960		640	420	-221
1994		813	790	-22
1992		731	447	-284
1987		541	500	-41
1990		557	352	-205
1934		586	393	-193
2007		464	323	-141
1961	Crit-High	455	290	-165
1976		619	474	-145
2014		331	167	-165
1931		327	153	-174
1924		442	276	-166
1977	CL	193	178	-15
2015		138	124	-14
Wet Ave		1,911	1,726	-184
Normal-wet Ave		1,578	1,249	-329
Normal-dry Ave		1,032	778	-253
Dry Ave		686	506	-180
Critical-H Ave		435	272	-163
Critical-L Ave		166	151	-15

Note: Values summed for contract year - March-February

Table 22. Average Deliveries by Contractor – SJRRP+10.

Average Deliveries and Reductions to Deliveries by Contractor - Acre-feet								
			Current Releases		SJRRP+10		Average Reduction	
	Full Contract		Average Delivery		Average Delivery		Average Delivery	
	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
Friant-Kern Canal Agricultural								
Arvin-Edison WSD	40,000	311,675	37,152	85,109	34,467	58,540	-2,686	-26,569
Delano-Earlimart ID	108,800	74,500	101,054	20,344	93,749	13,993	-7,305	-6,351
Exeter ID	11,500	19,000	10,681	5,188	9,909	3,569	-772	-1,620
Fresno ID		75,000		20,480		14,087		-6,394
Garfield WD	3,500		3,251		3,016		-235	
International WD	1,200		1,115		1,034		-81	
Ivanhoe ID	7,700	7,900	7,152	2,157	6,635	1,484	-517	-673
Lewis Creek WD	1,450		1,347		1,249		-97	
Lindmore ID	33,000	22,000	30,651	6,008	28,435	4,132	-2,216	-1,875
Lindsay-Strathmore ID	27,500		25,542		23,696		-1,846	
Lower Tule River ID	61,200	238,000	56,843	64,991	52,734	44,702	-4,109	-20,289
Orange Cove ID	39,200		36,409		33,777		-2,632	
Porterville ID	16,000	30,000	14,861	8,192	13,787	5,635	-1,074	-2,557
Saucelito ID	21,200	32,800	19,691	8,957	18,267	6,161	-1,423	-2,796
Shafter-Wasco ID	50,000	39,600	46,440	10,814	43,083	7,438	-3,357	-3,376
Southern San Joaquin MUD	97,000	50,000	90,094	13,653	83,582	9,391	-6,512	-4,262
Stone Corral ID	10,000		9,288		8,617		-671	
Tea Pot Dome WD	7,500		6,966		6,463		-504	
Terra Bella ID	29,000		26,935		24,988		-1,947	
Tulare ID	30,000	141,000	27,864	38,503	25,850	26,483	-2,014	-12,020
Madera Canal Agricultural								
Chowchilla WD	55,000	160,000	51,084	43,691	47,392	30,052	-3,693	-13,639
Madera ID	85,000	186,000	78,948	50,791	73,242	34,935	-5,707	-15,856
San Joaquin River Agricultural								
Gravelly Ford WD		14,000		3,823		2,630		-1,193
Friant Division M&I								
City of Fresno	60,000		55,728		51,700		-4,028	
City of Orange Cove	1,400		1,300		1,206		-94	
City of Lindsay	2,500		2,322		2,154		-168	
Fresno County Water Works District No. 18	150		139		129		-10	
Madera County	200		186		172		-13	
Total	800,000	1,401,475	743,045	382,700	689,334	263,229	-53,710	-119,471
Average %			93	27	86	19	-7	-9
Other water delivered:				127,095		61,255		-65,840

Table 23. Other Water – SJRRP+10 Conditions.

SJRRP+10 Conditions Total Other Delivery														
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	0	23	72	0	77	6	2	0	0	0	181	110
1923	0	0	0	5	19	0	0	0	0	0	0	0	24	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1932	0	0	0	0	6	0	0	0	0	0	0	0	6	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1936	0	0	0	0	2	1	0	61	12	0	0	0	77	81
1937	0	0	0	0	6	5	6	6	77	0	0	0	100	237
1938	0	0	0	71	72	6	6	6	77	79	0	0	318	175
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	27	0	0	0	27	32
1941	0	0	0	0	6	14	0	6	0	2	0	0	27	174
1942	0	0	16	74	64	0	0	0	36	0	0	0	189	108
1943	0	0	0	0	72	6	0	56	5	0	0	0	139	67
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1945	0	0	0	0	6	0	0	0	0	0	0	0	6	120
1946	0	0	37	74	9	0	0	42	0	0	0	0	162	42
1947	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	220
1951	0	0	74	74	72	0	0	0	0	0	0	0	220	25
1952	0	0	0	0	25	6	6	6	77	8	0	0	128	104
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	72
1956	0	0	0	0	72	28	0	0	0	0	0	0	100	28
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	6	6	21	0	0	0	33	33
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	45
1963	0	0	0	0	45	0	0	0	0	0	0	0	45	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	146
1965	0	0	0	74	72	0	0	0	0	0	0	0	146	44
1966	0	0	0	35	9	0	0	47	0	0	0	0	92	120
1967	0	0	0	1	72	0	6	6	73	78	0	0	236	163
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1969	0	0	0	0	6	6	6	6	4	79	0	0	107	101
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	60	0	0	0	60	168
1974	0	0	0	74	34	32	0	70	59	0	0	0	269	162
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1978	0	0	0	0	6	6	6	6	77	76	0	0	177	194
1979	0	0	0	23	0	21	0	41	45	0	0	0	130	113
1980	0	0	0	0	6	3	0	72	0	64	0	0	144	147
1981	0	0	0	1	8	0	0	0	0	0	0	0	9	72
1982	0	0	0	0	72	80	6	80	77	14	0	0	329	396
1983	62	71	0	0	6	6	6	6	0	74	0	0	231	241
1984	0	68	0	74	7	14	0	0	0	0	0	0	163	14
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1986	0	0	0	0	6	6	77	80	24	0	0	0	193	187
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1993	0	0	0	0	2	0	0	78	0	0	0	0	79	78
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	81
1995	0	0	0	8	72	6	77	6	71	74	0	0	315	293
1996	0	0	0	0	58	6	0	80	70	0	0	0	214	161
1997	0	0	0	0	6	67	0	55	0	0	0	0	128	128
1998	0	0	0	0	6	0	5	6	6	78	0	0	101	194
1999	0	0	0	35	64	0	0	0	0	0	0	0	99	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	80	77	6	77	17	0	0	258	330
2006	0	0	0	0	72	80	6	6	77	20	0	0	262	190
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	146
2011	0	0	0	74	72	6	6	80	77	71	0	0	386	240
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	6
2017	0	0	0	0	6								6	
Avg 22-16	1	1	1	8	13	5	4	10	12	8	0	0	62	61

Table 24. River Releases in Excess of Minimum Requirements – SJRRP+10 Conditions.

SJRRP+10 Conditions Release abv Minimum (TAF)														
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	WY Total	CY Total
1922	0	0	0	0	18	0	4	82	0	0	0	0	103	85
1923	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1924	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1925	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1926	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1927	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1928	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1933	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1934	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	0	0	0	0	0	26
1936	0	0	0	0	26	0	0	0	0	0	0	0	26	83
1937	0	0	0	0	83	61	81	86	16	0	0	0	326	371
1938	0	0	0	0	127	175	190	253	257	24	0	0	1,027	900
1939	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0	86
1941	0	0	0	0	86	0	0	67	0	0	0	0	153	111
1942	0	0	0	43	0	0	0	0	0	0	0	0	43	119
1943	0	0	0	108	12	82	0	0	0	0	0	0	201	82
1944	0	0	0	0	0	0	0	0	0	0	0	0	0	88
1945	0	0	0	0	88	0	0	0	0	0	0	0	88	4
1946	0	0	0	4	0	0	0	0	0	0	0	0	4	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	263
1951	0	0	185	59	19	0	0	0	0	0	0	0	263	0
1952	0	0	0	0	0	79	94	92	28	0	0	0	293	293
1953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0	397
1956	0	0	121	255	21	0	0	0	0	0	0	0	397	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	82	76	0	0	0	0	158	158
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	32
1965	0	0	0	4	28	0	0	0	0	0	0	0	32	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1967	0	0	0	0	3	0	83	83	0	186	0	0	355	352
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	290
1969	0	0	0	104	186	194	233	265	345	57	0	0	1,385	1,095
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	44
1974	0	0	0	44	0	0	0	0	0	0	0	0	44	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	130
1978	0	0	0	0	130	86	93	91	73	54	0	0	528	398
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	358
1980	0	0	0	161	197	32	0	0	0	3	0	0	394	35
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	16
1982	0	0	0	0	16	17	74	100	70	0	0	0	277	917
1983	0	52	202	217	185	196	272	265	397	295	0	0	2,082	1,652
1984	0	0	184	42	0	0	0	0	0	0	0	0	226	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	221
1986	0	0	0	0	221	175	21	3	0	0	0	0	421	199
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	24
1995	0	0	0	0	24	98	96	151	44	360	0	0	773	750
1996	0	0	0	0	0	70	0	7	0	0	0	0	77	973
1997	0	0	119	657	120	0	0	0	0	0	0	0	897	83
1998	0	0	0	0	83	1	64	78	91	263	0	0	580	497
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	4	13	78	84	0	0	0	179	195
2006	0	0	0	0	16	15	193	158	163	0	0	0	544	528
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	160
2011	0	0	104	39	17	88	92	18	84	54	0	0	497	336
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	703
2017	0	0	0	393	310								703	
Avg 22-16	0	1	10	18	18	14	18	21	17	14	0	0	130	137

Appendix A
Class 1 and Class 2 Deliveries by Contractor
Pre-SJRRP and SJRRP Conditions

Arvin-Edison WSD
Delano-Earlimart ID
Exeter ID
Fresno ID
Garfield WD
International WD
Ivanhoe ID
Lewis Creek WD
Lindmore ID
Lindsay-Strathmore ID
Lower Tule River ID
Orange Cove ID
Porterville ID
Saucelito ID
Shafter-Wasco ID
Southern San Joaquin MUD
Stone Corral ID
Tea Pot Dome WD
Terra Bella ID
Tulare ID
Chowchilla WD
Madera ID
Gravelly Ford WD
City of Fresno
City of Orange Cove
City of Lindsay
Fresno County Water Works District No. 18
Madera County
System

Arvin-Edison WSD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	40.0	188.0	228.0	0.0	-35.4	-35.4	40.0	152.6	192.6
1923	40.0	113.3	153.3	0.0	-29.0	-29.0	40.0	84.3	124.3
1924	22.1	0.0	22.1	-7.0	0.0	-7.0	15.1	0.0	15.1
1925	40.0	59.3	99.3	0.0	-46.5	-46.5	40.0	12.8	52.8
1926	40.0	27.7	67.6	-0.7	-27.7	-28.3	39.3	0.0	39.3
1927	40.0	127.5	167.5	0.0	-19.6	-19.6	40.0	107.9	147.8
1928	40.0	49.8	89.8	0.0	-25.3	-25.3	40.0	24.5	64.5
1929	32.2	0.0	32.2	-8.2	0.0	-8.2	24.0	0.0	24.0
1930	33.2	0.0	33.2	-9.8	0.0	-9.8	23.4	0.0	23.4
1931	15.6	0.0	15.6	-7.0	0.0	-7.0	8.6	0.0	8.6
1932	40.0	142.5	182.5	0.0	-27.7	-27.7	40.0	114.8	154.7
1933	40.0	53.5	93.5	0.0	-53.4	-53.4	40.0	0.1	40.1
1934	28.5	0.0	28.5	-7.4	0.0	-7.4	21.1	0.0	21.1
1935	40.0	111.9	151.9	0.0	-34.0	-34.0	40.0	77.9	117.9
1936	40.0	121.4	161.4	-0.1	-43.4	-43.5	39.9	78.0	117.9
1937	40.0	130.4	170.4	0.0	-24.3	-24.3	40.0	106.1	146.1
1938	40.0	207.3	247.3	0.0	-18.0	-18.0	40.0	189.4	229.4
1939	37.9	0.0	37.9	-8.4	0.0	-8.4	29.5	0.0	29.5
1940	40.0	86.7	126.7	-0.2	-17.5	-17.7	39.8	69.2	109.0
1941	40.0	196.7	236.7	0.0	-28.8	-28.8	40.0	168.0	208.0
1942	40.0	179.1	219.1	0.0	-44.9	-44.9	40.0	134.2	174.2
1943	40.0	122.8	162.8	-0.1	-48.7	-48.9	39.9	74.1	113.9
1944	40.0	58.9	98.9	0.0	-26.3	-26.3	40.0	32.6	72.6
1945	40.0	149.0	189.0	0.0	-23.6	-23.6	40.0	125.4	165.4
1946	39.9	82.0	121.9	-0.1	-11.2	-11.3	39.8	70.8	110.6
1947	40.0	25.6	65.6	0.0	-19.6	-19.6	40.0	6.0	46.0
1948	40.0	12.5	52.5	-8.5	-12.5	-21.1	31.5	0.0	31.5
1949	40.0	41.2	81.2	-2.9	-41.2	-44.1	37.1	0.0	37.1
1950	40.0	51.8	91.8	0.0	-44.4	-44.4	40.0	7.4	47.4
1951	39.9	73.7	113.7	0.1	-56.7	-56.7	40.0	17.0	57.0
1952	40.0	187.0	227.0	0.0	-16.5	-16.5	40.0	170.5	210.5
1953	40.0	48.5	88.5	0.0	-43.2	-43.2	40.0	5.4	45.4
1954	40.0	41.5	81.5	-0.2	-41.5	-41.7	39.8	0.0	39.8
1955	40.0	41.7	81.7	-1.0	-41.7	-42.7	39.0	0.0	39.0
1956	40.0	189.9	229.9	0.0	-35.8	-35.8	40.0	154.1	194.1
1957	40.0	64.2	104.2	0.0	-17.8	-17.8	40.0	46.4	86.4
1958	40.0	186.5	226.5	0.0	-30.1	-30.1	40.0	156.4	196.4
1959	40.0	1.5	41.5	-0.7	-1.5	-2.2	39.3	0.0	39.3
1960	32.0	0.0	32.0	-9.5	0.0	-9.5	22.5	0.0	22.5
1961	22.8	0.0	22.8	-7.0	0.0	-7.0	15.8	0.0	15.8
1962	40.0	129.5	169.5	0.0	-32.0	-32.0	40.0	97.5	137.5
1963	40.0	155.3	195.3	0.0	-33.3	-33.3	40.0	121.9	161.9
1964	40.0	21.1	61.1	-4.4	-21.1	-25.5	35.6	0.0	35.6
1965	40.0	155.2	195.2	0.0	-47.1	-47.1	40.0	108.1	148.1
1966	40.0	44.2	84.2	0.0	-22.0	-21.9	40.0	22.2	62.2
1967	40.0	214.5	254.5	0.0	-16.8	-16.8	40.0	197.7	237.7
1968	39.1	0.0	39.1	-6.9	0.0	-6.9	32.2	0.0	32.2
1969	40.0	198.3	238.3	0.0	-7.4	-7.4	40.0	190.9	230.9
1970	40.0	84.6	124.5	0.0	-48.8	-48.8	40.0	35.7	75.7
1971	40.0	77.7	117.7	0.0	-54.6	-54.6	40.0	23.1	63.1
1972	40.0	27.6	67.6	-3.3	-27.6	-30.9	36.7	0.0	36.7
1973	40.0	124.9	164.9	0.0	-43.5	-43.6	40.0	81.3	121.3
1974	40.0	143.3	183.3	0.0	-42.3	-42.3	40.0	101.0	141.0
1975	40.0	124.8	164.8	0.0	-21.4	-21.4	40.0	103.4	143.4
1976	30.5	0.0	30.5	-4.8	0.0	-4.8	25.7	0.0	25.7
1977	9.4	0.0	9.4	-0.2	0.0	-0.2	9.2	0.0	9.2
1978	40.0	223.6	263.6	0.0	-24.5	-24.5	40.0	199.0	239.0
1979	40.0	119.4	159.4	-0.2	-46.1	-46.3	39.8	73.3	113.1
1980	40.0	194.2	234.2	-0.2	-55.6	-55.8	39.8	138.6	178.4
1981	40.0	34.7	74.7	0.0	-9.3	-9.3	40.0	25.5	65.5
1982	40.0	182.8	222.8	-0.1	-28.6	-28.7	39.9	154.2	194.1
1983	40.0	198.0	238.0	0.0	-2.1	-2.1	40.0	195.8	235.8
1984	40.0	111.8	151.8	0.0	-33.9	-33.9	40.0	77.9	117.9
1985	40.0	32.2	72.2	0.0	-26.4	-26.4	40.0	5.8	45.8
1986	40.0	180.5	220.5	0.0	-30.0	-30.0	40.0	150.5	190.5
1987	27.0	0.0	27.0	-0.4	0.0	-0.4	26.7	0.0	26.7
1988	33.5	0.0	33.5	-9.6	0.0	-9.6	23.9	0.0	23.9
1989	36.7	0.0	36.7	-10.6	0.0	-10.6	26.1	0.0	26.1
1990	27.9	0.0	27.9	-8.8	0.0	-8.8	19.1	0.0	19.1
1991	39.1	0.0	39.1	-10.9	0.0	-10.9	28.2	0.0	28.2
1992	33.0	0.0	33.0	-9.2	0.0	-9.2	23.8	0.0	23.8
1993	40.0	198.5	238.5	0.0	-34.7	-34.7	40.0	163.9	203.9
1994	33.3	0.0	33.3	-0.4	0.0	-0.4	33.0	0.0	33.0
1995	40.0	236.1	276.1	0.0	-19.5	-19.5	40.0	216.6	256.6
1996	40.0	136.6	176.6	0.0	-25.6	-25.6	40.0	111.0	151.0
1997	40.0	108.8	148.8	-0.1	-29.8	-29.9	39.9	79.0	119.0
1998	40.0	181.9	221.9	0.0	-14.4	-14.5	40.0	167.5	207.4
1999	40.0	92.5	132.5	0.0	-34.3	-34.3	40.0	58.2	98.2
2000	40.0	107.8	147.8	0.0	-21.9	-21.9	40.0	86.0	126.0
2001	40.0	20.4	60.4	-5.4	-20.4	-25.8	34.6	0.0	34.6
2002	40.0	37.1	77.1	-3.8	-37.1	-41.0	36.2	0.0	36.2
2003	40.0	91.7	131.7	0.0	-62.0	-62.0	40.0	29.7	69.7
2004	40.0	24.8	64.8	-4.6	-24.8	-29.4	35.4	0.0	35.4
2005	40.0	194.6	234.6	0.0	-15.1	-15.1	40.0	179.5	219.5
2006	40.0	196.6	236.6	0.0	-13.1	-13.1	40.0	183.5	223.5
2007	23.2	0.0	23.2	-7.0	0.0	-7.0	16.2	0.0	16.2
2008	40.0	16.1	56.1	-7.8	-16.1	-23.9	32.2	0.0	32.2
2009	40.0	94.6	134.6	0.0	-61.4	-61.4	40.0	33.1	73.1
2010	40.0	155.9	195.9	0.0	-38.4	-38.4	40.0	117.5	157.5
2011	40.0	210.8	250.8	0.0	-16.1	-16.1	40.0	194.7	234.7
2012	36.3	0.0	36.3	-7.3	0.0	-7.3	29.0	0.0	29.0
2013	33.1	0.0	33.1	-9.8	0.0	-9.8	23.4	0.0	23.4
2014	16.6	0.0	16.6	-7.0	0.0	-7.0	9.6	0.0	9.6
2015	6.9	0.0	6.9	-0.1	0.0	-0.1	6.8	0.0	6.8
2016	40.0	29.3	69.3	-2.6	-29.3	-31.9	37.4	0.0	37.4
Ave All	37.2	85.1	122.3	-2.1	-22.9	-25.1	35.0	62.2	97.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	27.9	1.0	28.9	-6.4	-1.0	-7.3	21.5	0.0	21.5

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	40.0	198.0	238.0	0.0	-2.1	-2.1	40.0	195.8	235.8
1969		40.0	198.3	238.3	0.0	-7.4	-7.4	40.0	190.9	230.9
1995		40.0	236.1	276.1	0.0	-19.5	-19.5	40.0	216.6	256.6
1938		40.0	207.3	247.3	0.0	-18.0	-18.0	40.0	189.4	229.4
1978		40.0	223.6	263.6	0.0	-24.5	-24.5	40.0	199.0	239.0
1982		40.0	182.8	222.8	-0.1	-28.6	-28.7	39.9	154.2	194.1
2011		40.0	210.8	250.8	0.0	-16.1	-16.1	40.0	194.7	234.7
1967		40.0	214.5	254.5	0.0	-16.8	-16.8	40.0	197.7	237.7
2006		40.0	196.6	236.6	0.0	-13.1	-13.1	40.0	183.5	223.5
1998		40.0	181.9	221.9	0.0	-14.4	-14.5	40.0	167.5	207.4
1986		40.0	180.5	220.5	0.0	-30.0	-30.0	40.0	150.5	190.5
1980		40.0	194.2	234.2	-0.2	-55.6	-55.8	39.8	138.6	178.4
1956		40.0	189.9	229.9	0.0	-35.8	-35.8	40.0	154.1	194.1
1952		40.0	187.0	227.0	0.0	-16.5	-16.5	40.0	170.5	210.5
2005		40.0	194.6	234.6	0.0	-15.1	-15.1	40.0	179.5	219.5
1997		40.0	108.8	148.8	-0.1	-29.8	-29.9	39.9	79.0	119.0
1993		40.0	198.5	238.5	0.0	-34.7	-34.7	40.0	163.9	203.9
1941		40.0	196.7	236.7	0.0	-28.8	-28.8	40.0	168.0	208.0
1958		40.0	186.5	226.5	0.0	-30.1	-30.1	40.0	156.4	196.4
1922	Normal-Wet	40.0	188.0	228.0	0.0	-35.4	-35.4	40.0	152.6	192.6
1965		40.0	155.2	195.2	0.0	-47.1	-47.1	40.0	108.1	148.1
1942		40.0	179.1	219.1	0.0	-44.9	-44.9	40.0	134.2	174.2
1937		40.0	130.4	170.4	0.0	-24.3	-24.3	40.0	106.1	146.1
1996		40.0	136.6	176.6	0.0	-25.6	-25.6	40.0	111.0	151.0
1974		40.0	143.3	183.3	0.0	-42.3	-42.3	40.0	101.0	141.0
1945		40.0	149.0	189.0	0.0	-23.6	-23.6	40.0	125.4	165.4
1943		40.0	122.8	162.8	-0.1	-48.7	-48.9	39.9	74.1	113.9
1984		40.0	111.8	151.8	0.0	-33.9	-33.9	40.0	77.9	117.9
1932		40.0	142.5	182.5	0.0	-27.7	-27.7	40.0	114.8	154.7
1973		40.0	124.9	164.9	0.0	-43.5	-43.6	40.0	81.3	121.3
2010		40.0	155.9	195.9	0.0	-38.4	-38.4	40.0	117.5	157.5
1927		40.0	127.5	167.5	0.0	-19.6	-19.6	40.0	107.9	147.8
1963		40.0	155.3	195.3	0.0	-33.3	-33.3	40.0	121.9	161.9
1962		40.0	129.5	169.5	0.0	-32.0	-32.0	40.0	97.5	137.5
1935		40.0	111.9	151.9	0.0	-34.0	-34.0	40.0	77.9	117.9
1940		40.0	86.7	126.7	-0.2	-17.5	-17.7	39.8	69.2	109.0
1951		39.9	73.7	113.7	0.1	-56.7	-56.7	40.0	17.0	57.0
1936		40.0	121.4	161.4	-0.1	-43.4	-43.5	39.9	78.0	117.9
1979		40.0	119.4	159.4	-0.2	-46.1	-46.3	39.8	73.3	113.1
1975		40.0	124.8	164.8	0.0	-21.4	-21.4	40.0	103.4	143.4
2000		40.0	107.8	147.8	0.0	-21.9	-21.9	40.0	86.0	126.0
1946		39.9	82.0	121.9	-0.1	-11.2	-11.3	39.8	70.8	110.6
1923		40.0	113.3	153.3	0.0	-29.0	-29.0	40.0	84.3	124.3
1999		40.0	92.5	132.5	0.0	-34.3	-34.3	40.0	58.2	98.2
2009		40.0	94.6	134.6	0.0	-61.4	-61.4	40.0	33.1	73.1
2003	Normal-Dry	40.0	91.7	131.7	0.0	-62.0	-62.0	40.0	29.7	69.7
1970		40.0	84.6	124.5	0.0	-48.8	-48.8	40.0	35.7	75.7
1925		40.0	59.3	99.3	0.0	-46.5	-46.5	40.0	12.8	52.8
1971		40.0	77.7	117.7	0.0	-54.6	-54.6	40.0	23.1	63.1
1957		40.0	64.2	104.2	0.0	-17.8	-17.8	40.0	46.4	86.4
1954		40.0	41.5	81.5	-0.2	-41.5	-41.7	39.8	0.0	39.8
1950		40.0	51.8	91.8	0.0	-44.4	-44.4	40.0	7.4	47.4
2016		40.0	29.3	69.3	-2.6	-29.3	-31.9	37.4	0.0	37.4
1966		40.0	44.2	84.2	0.0	-22.0	-21.9	40.0	22.2	62.2
1944		40.0	58.9	98.9	0.0	-26.3	-26.3	40.0	32.6	72.6
1953		40.0	48.5	88.5	0.0	-43.2	-43.2	40.0	5.4	45.4
1948		40.0	12.5	52.5	-8.5	-12.5	-21.1	31.5	0.0	31.5
2002		40.0	37.1	77.1	-3.8	-37.1	-41.0	36.2	0.0	36.2
1949		40.0	41.2	81.2	-2.9	-41.2	-44.1	37.1	0.0	37.1
1926		40.0	27.7	67.6	-0.7	-27.7	-28.3	39.3	0.0	39.3
1955		40.0	41.7	81.7	-1.0	-41.7	-42.7	39.0	0.0	39.0
1928		40.0	49.8	89.8	0.0	-25.3	-25.3	40.0	24.5	64.5
2004		40.0	24.8	64.8	-4.6	-24.8	-29.4	35.4	0.0	35.4
1985		40.0	32.2	72.2	0.0	-26.4	-26.4	40.0	5.8	45.8
1947		40.0	25.6	65.6	0.0	-19.6	-19.6	40.0	6.0	46.0
2008		40.0	16.1	56.1	-7.8	-16.1	-23.9	32.2	0.0	32.2
1933		40.0	53.5	93.5	0.0	-53.4	-53.4	40.0	0.1	40.1
1981		40.0	34.7	74.7	0.0	-9.3	-9.3	40.0	25.5	65.5
2001		40.0	20.4	60.4	-5.4	-20.4	-25.8	34.6	0.0	34.6
1972		40.0	27.6	67.6	-3.3	-27.6	-30.9	36.7	0.0	36.7
1991		39.1	0.0	39.1	-10.9	0.0	-10.9	28.2	0.0	28.2
1959		40.0	1.5	41.5	-0.7	-1.5	-2.2	39.3	0.0	39.3
1989		36.7	0.0	36.7	-10.6	0.0	-10.6	26.1	0.0	26.1
1964	Normal-Dry	40.0	21.1	61.1	-4.4	-21.1	-25.5	35.6	0.0	35.6
1939		37.9	0.0	37.9	-8.4	0.0	-8.4	29.5	0.0	29.5
1929		32.2	0.0	32.2	-8.2	0.0	-8.2	24.0	0.0	24.0
1988		33.5	0.0	33.5	-9.6	0.0	-9.6	23.9	0.0	23.9
1968		39.1	0.0	39.1	-6.9	0.0	-6.9	32.2	0.0	32.2
1930		33.2	0.0	33.2	-9.8	0.0	-9.8	23.4	0.0	23.4
2013		33.1	0.0	33.1	-9.8	0.0	-9.8	23.4	0.0	23.4
2012		36.3	0.0	36.3	-7.3	0.0	-7.3	29.0	0.0	29.0
1960		32.0	0.0	32.0	-9.5	0.0	-9.5	22.5	0.0	22.5
1994		33.3	0.0	33.3	-0.4	0.0	-0.4	33.0	0.0	33.0
1992		33.0	0.0	33.0	-9.2	0.0	-9.2	23.8	0.0	23.8
1987		27.0	0.0	27.0	-0.4	0.0	-0.4	26.7	0.0	26.7
1990		27.9	0.0	27.9	-8.8	0.0	-8.8	19.1	0.0	19.1
1934		28.5	0.0	28.5	-7.4	0.0	-7.4	21.1	0.0	21.1
2007		23.2	0.0	23.2	-7.0	0.0	-7.0	16.2	0.0	16.2
1961	Crit-High	22.8	0.0	22.8	-7.0	0.0	-7.0	15.8	0.0	15.8
1976		30.5	0.0	30.5	-4.8	0.0	-4.8	25.7	0.0	25.7
2014		16.6	0.0	16.6	-7.0	0.0	-7.0	9.6	0.0	9.6
1931		15.6	0.0	15.6	-7.0	0.0	-7.0	8.6	0.0	8.6
1924		22.1	0.0	22.1	-7.0	0.0	-7.0	15.1	0.0	15.1
1977	CL	9.4	0.0	9.4	-0.2	0.0	-0.2	9.2	0.0	9.2
2015		6.9	0.0	6.9	-0.1	0.0	-0.1	6.8	0.0	6.8
Wet Ave		40.0	194.0	234.0	0.0	-23.0	-23.0	40.0	171.0	211.0
Normal-wet Ave		40.0	126.1	166.1	0.0	-34.5	-34.5	40.0	91.6	131.6
Normal-dry Ave		39.8	39.2	79.1	-2.2	-29.3	-31.6	37.6	9.9	47.5
Dry Ave		32.7	1.4	34.1	-7.1	-1.4	-8.5	25.6	0.0	25.6
Critical-H Ave		21.5	0.0	21.5	-6.5	0.0	-6.5	15.0	0.0	15.0
Critical-L Ave		8.1	0.0	8.1	-0.1	0.0	-0.1	8.0	0.0	8.0

Note: Values reported by contract year (March-February)

Delano-Earlimart ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	108.8	44.9	153.7	0.0	-8.5	-8.5	108.8	36.5	145.3
1923	108.8	27.1	135.9	0.0	-6.9	-6.9	108.8	20.1	128.9
1924	60.1	0.0	60.1	-19.2	0.0	-19.2	41.0	0.0	41.0
1925	108.8	14.2	123.0	0.0	-11.1	-11.1	108.8	3.1	111.9
1926	108.7	6.6	115.3	-1.8	-6.6	-8.4	106.9	0.0	106.9
1927	108.8	30.5	139.3	-0.1	-4.7	-4.8	108.7	25.8	134.5
1928	108.8	11.9	120.7	0.0	-6.0	-6.0	108.8	5.8	114.6
1929	87.6	0.0	87.6	-22.4	0.0	-22.4	65.2	0.0	65.2
1930	90.2	0.0	90.2	-26.5	0.0	-26.5	63.7	0.0	63.7
1931	42.5	0.0	42.5	-19.0	0.0	-19.0	23.5	0.0	23.5
1932	108.8	34.1	142.9	0.0	-6.6	-6.6	108.8	27.4	136.2
1933	108.8	12.8	121.6	0.0	-12.8	-12.8	108.8	0.0	108.8
1934	77.4	0.0	77.4	-20.1	0.0	-20.1	57.3	0.0	57.3
1935	108.8	26.7	135.5	0.0	-8.1	-8.1	108.8	18.6	127.4
1936	108.8	29.0	137.8	-0.3	-10.4	-10.7	108.5	18.6	127.2
1937	108.8	31.2	140.0	0.0	-5.8	-5.8	108.8	25.3	134.1
1938	108.8	49.6	158.4	0.0	-4.3	-4.3	108.8	45.3	154.1
1939	103.0	0.0	103.0	-22.8	0.0	-22.8	80.2	0.0	80.2
1940	108.8	20.7	129.5	-0.6	-4.2	-4.8	108.2	16.5	124.7
1941	108.8	47.0	155.8	0.0	-6.9	-6.9	108.8	40.2	149.0
1942	108.8	42.8	151.6	0.0	-10.7	-10.7	108.8	32.1	140.9
1943	108.8	29.4	138.2	-0.3	-11.7	-12.0	108.5	17.7	126.2
1944	108.8	14.1	122.9	0.0	-6.3	-6.3	108.8	7.8	116.6
1945	108.8	35.6	144.4	0.0	-5.6	-5.6	108.8	30.0	138.8
1946	108.6	19.6	128.2	-0.3	-2.7	-3.0	108.2	16.9	125.2
1947	108.8	6.1	114.9	0.0	-4.7	-4.7	108.8	1.4	110.2
1948	108.8	3.0	111.8	-23.2	-3.0	-26.2	85.6	0.0	85.6
1949	108.8	9.9	118.7	-7.9	-9.9	-17.7	100.9	0.0	100.9
1950	108.8	12.4	121.2	0.0	-10.6	-10.6	108.8	1.8	110.6
1951	108.6	17.6	126.3	0.2	-13.6	-13.4	108.8	4.1	112.9
1952	108.8	44.7	153.5	0.0	-3.9	-3.9	108.8	40.8	149.6
1953	108.8	11.6	120.4	0.0	-10.3	-10.3	108.8	1.3	110.1
1954	108.8	9.9	118.7	-0.5	-9.9	-10.5	108.2	0.0	108.2
1955	108.8	10.0	118.8	-2.8	-10.0	-12.7	106.0	0.0	106.0
1956	108.8	45.4	154.2	0.0	-8.6	-8.6	108.8	36.8	145.6
1957	108.8	15.3	124.1	0.0	-4.3	-4.3	108.8	11.1	119.9
1958	108.8	44.6	153.4	0.0	-7.2	-7.2	108.8	37.4	146.2
1959	108.8	0.4	109.2	-1.8	-0.4	-2.1	107.0	0.0	107.0
1960	87.1	0.0	87.1	-25.9	0.0	-25.9	61.2	0.0	61.2
1961	61.9	0.0	61.9	-19.0	0.0	-19.0	42.9	0.0	42.9
1962	108.8	30.9	139.7	0.0	-7.6	-7.6	108.8	23.3	132.1
1963	108.8	37.1	145.9	0.0	-8.0	-8.0	108.8	29.1	137.9
1964	108.8	5.0	113.8	-12.1	-5.0	-17.1	96.7	0.0	96.7
1965	108.8	37.1	145.9	0.0	-11.3	-11.2	108.8	25.8	134.6
1966	108.7	10.6	119.3	0.1	-5.2	-5.2	108.8	5.3	114.1
1967	108.8	51.3	160.1	-0.1	-4.0	-4.1	108.7	47.3	156.0
1968	106.3	0.0	106.3	-18.8	0.0	-18.8	87.5	0.0	87.5
1969	108.8	47.4	156.2	0.0	-1.8	-1.8	108.8	45.6	154.4
1970	108.8	20.2	129.0	0.0	-11.7	-11.6	108.8	8.5	117.3
1971	108.8	18.6	127.4	0.0	-13.0	-13.0	108.8	5.5	114.3
1972	108.8	6.6	115.4	-8.9	-6.6	-15.5	99.9	0.0	99.9
1973	108.8	29.8	138.6	-0.1	-10.4	-10.5	108.7	19.4	128.2
1974	108.8	34.3	143.1	0.0	-10.1	-10.1	108.8	24.1	132.9
1975	108.8	29.8	138.6	0.0	-5.1	-5.1	108.8	24.7	133.5
1976	83.0	0.0	83.0	-12.9	0.0	-12.9	70.0	0.0	70.0
1977	25.4	0.0	25.4	-0.4	0.0	-0.4	25.0	0.0	25.0
1978	108.8	53.4	162.2	0.0	-5.9	-5.9	108.8	47.6	156.3
1979	108.8	28.5	137.3	-0.5	-11.0	-11.5	108.3	17.5	125.8
1980	108.8	46.4	155.2	-0.5	-13.3	-13.8	108.3	33.1	141.4
1981	108.8	8.3	117.1	0.0	-2.2	-2.2	108.8	6.1	114.9
1982	108.8	43.7	152.5	-0.2	-6.8	-7.0	108.6	36.9	145.5
1983	108.8	47.3	156.1	0.0	-0.5	-0.5	108.8	46.8	155.6
1984	108.8	26.7	135.5	0.0	-8.1	-8.1	108.8	18.6	127.4
1985	108.8	7.7	116.4	0.0	-6.3	-6.3	108.8	1.4	110.2
1986	108.8	43.2	152.0	0.0	-7.2	-7.2	108.8	36.0	144.8
1987	73.6	0.0	73.6	-1.0	0.0	-1.0	72.6	0.0	72.6
1988	91.0	0.0	91.0	-26.0	0.0	-26.0	65.0	0.0	65.0
1989	99.8	0.0	99.8	-28.9	0.0	-28.9	70.9	0.0	70.9
1990	75.8	0.0	75.8	-23.9	0.0	-23.9	51.9	0.0	51.9
1991	106.4	0.0	106.4	-29.7	0.0	-29.7	76.7	0.0	76.7
1992	89.6	0.0	89.6	-25.0	0.0	-25.0	64.6	0.0	64.6
1993	108.8	47.5	156.3	0.0	-8.3	-8.3	108.8	39.2	148.0
1994	90.7	0.0	90.7	-1.0	0.0	-1.0	89.7	0.0	89.7
1995	108.8	56.4	165.2	0.0	-4.7	-4.7	108.8	51.8	160.6
1996	108.8	32.7	141.5	0.0	-6.1	-6.1	108.8	26.5	135.3
1997	108.8	26.0	134.8	-0.2	-7.1	-7.3	108.6	18.9	127.5
1998	108.8	43.5	152.2	-0.1	-3.4	-3.5	108.7	40.0	148.7
1999	108.8	22.1	130.9	0.0	-8.2	-8.2	108.8	13.9	122.7
2000	108.8	25.8	134.6	0.0	-5.2	-5.2	108.8	20.6	129.4
2001	108.8	4.9	113.7	-14.8	-4.9	-19.7	94.0	0.0	94.0
2002	108.8	8.9	117.7	-10.5	-8.9	-19.3	98.3	0.0	98.3
2003	108.8	21.9	130.7	0.0	-14.8	-14.8	108.8	7.1	115.9
2004	108.8	5.9	114.7	-12.4	-5.9	-18.4	96.4	0.0	96.4
2005	108.8	46.5	155.3	0.0	-3.6	-3.6	108.8	42.9	151.7
2006	108.8	47.0	155.8	0.0	-3.1	-3.1	108.8	43.9	152.7
2007	63.1	0.0	63.1	-18.9	0.0	-18.9	44.1	0.0	44.1
2008	108.8	3.9	112.7	-21.2	-3.9	-25.1	87.6	0.0	87.6
2009	108.8	22.6	131.4	0.0	-14.7	-14.7	108.8	7.9	116.7
2010	108.8	37.3	146.1	0.0	-9.2	-9.2	108.8	28.1	136.9
2011	108.8	50.4	159.2	0.0	-3.9	-3.9	108.8	46.5	155.3
2012	98.7	0.0	98.7	-19.8	0.0	-19.8	78.9	0.0	78.9
2013	90.2	0.0	90.2	-26.5	0.0	-26.5	63.6	0.0	63.6
2014	45.1	0.0	45.1	-18.9	0.0	-18.9	26.1	0.0	26.1
2015	18.8	0.0	18.8	-0.4	0.0	-0.4	18.5	0.0	18.5
2016	108.8	7.0	115.8	-7.1	-7.0	-14.1	101.7	0.0	101.7
Ave All	101.1	20.3	121.4	-5.8	-5.5	-11.3	95.2	14.9	110.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	75.9	0.2	76.1	-17.3	-0.2	-17.5	58.6	0.0	58.6

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	108.8	47.3	156.1	0.0	-0.5	-0.5	108.8	46.8	155.6
1969		108.8	47.4	156.2	0.0	-1.8	-1.8	108.8	45.6	154.4
1995		108.8	56.4	165.2	0.0	-4.7	-4.7	108.8	51.8	160.6
1938		108.8	49.6	158.4	0.0	-4.3	-4.3	108.8	45.3	154.1
1978		108.8	53.4	162.2	0.0	-5.9	-5.9	108.8	47.6	156.3
1982		108.8	43.7	152.5	-0.2	-6.8	-7.0	108.6	36.9	145.5
2011		108.8	50.4	159.2	0.0	-3.9	-3.9	108.8	46.5	155.3
1967		108.8	51.3	160.1	-0.1	-4.0	-4.1	108.7	47.3	156.0
2006		108.8	47.0	155.8	0.0	-3.1	-3.1	108.8	43.9	152.7
1998		108.8	43.5	152.2	-0.1	-3.4	-3.5	108.7	40.0	148.7
1986		108.8	43.2	152.0	0.0	-7.2	-7.2	108.8	36.0	144.8
1980		108.8	46.4	155.2	-0.5	-13.3	-13.8	108.3	33.1	141.4
1956		108.8	45.4	154.2	0.0	-8.6	-8.6	108.8	36.8	145.6
1952		108.8	44.7	153.5	0.0	-3.9	-3.9	108.8	40.8	149.6
2005		108.8	46.5	155.3	0.0	-3.6	-3.6	108.8	42.9	151.7
1997		108.8	26.0	134.8	-0.2	-7.1	-7.3	108.6	18.9	127.5
1993		108.8	47.5	156.3	0.0	-8.3	-8.3	108.8	39.2	148.0
1941		108.8	47.0	155.8	0.0	-6.9	-6.9	108.8	40.2	149.0
1958		108.8	44.6	153.4	0.0	-7.2	-7.2	108.8	37.4	146.2
1922	Normal-Wet	108.8	44.9	153.7	0.0	-8.5	-8.5	108.8	36.5	145.3
1965		108.8	37.1	145.9	0.0	-11.3	-11.2	108.8	25.8	134.6
1942		108.8	42.8	151.6	0.0	-10.7	-10.7	108.8	32.1	140.9
1937		108.8	31.2	140.0	0.0	-5.8	-5.8	108.8	25.3	134.1
1996		108.8	32.7	141.5	0.0	-6.1	-6.1	108.8	26.5	135.3
1974		108.8	34.3	143.1	0.0	-10.1	-10.1	108.8	24.1	132.9
1945		108.8	35.6	144.4	0.0	-5.6	-5.6	108.8	30.0	138.8
1943		108.8	29.4	138.2	-0.3	-11.7	-12.0	108.5	17.7	126.2
1984		108.8	26.7	135.5	0.0	-8.1	-8.1	108.8	18.6	127.4
1932		108.8	34.1	142.9	0.0	-6.6	-6.6	108.8	27.4	136.2
1973		108.8	29.8	138.6	-0.1	-10.4	-10.5	108.7	19.4	128.2
2010		108.8	37.3	146.1	0.0	-9.2	-9.2	108.8	28.1	136.9
1927		108.8	30.5	139.3	-0.1	-4.7	-4.8	108.7	25.8	134.5
1963		108.8	37.1	145.9	0.0	-8.0	-8.0	108.8	29.1	137.9
1962		108.8	30.9	139.7	0.0	-7.6	-7.6	108.8	23.3	132.1
1935		108.8	26.7	135.5	0.0	-8.1	-8.1	108.8	18.6	127.4
1940		108.8	20.7	129.5	-0.6	-4.2	-4.8	108.2	16.5	124.7
1951		108.6	17.6	126.3	0.2	-13.6	-13.4	108.8	4.1	112.9
1936		108.8	29.0	137.8	-0.3	-10.4	-10.7	108.5	18.6	127.2
1979		108.8	28.5	137.3	-0.5	-11.0	-11.5	108.3	17.5	125.8
1975		108.8	29.8	138.6	0.0	-5.1	-5.1	108.8	24.7	133.5
2000		108.8	25.8	134.6	0.0	-5.2	-5.2	108.8	20.6	129.4
1946		108.6	19.6	128.2	-0.3	-2.7	-3.0	108.2	16.9	125.2
1923		108.8	27.1	135.9	0.0	-6.9	-6.9	108.8	20.1	128.9
1999		108.8	22.1	130.9	0.0	-8.2	-8.2	108.8	13.9	122.7
2009		108.8	22.6	131.4	0.0	-14.7	-14.7	108.8	7.9	116.7
2003	Normal-Dry	108.8	21.9	130.7	0.0	-14.8	-14.8	108.8	7.1	115.9
1970		108.8	20.2	129.0	0.0	-11.7	-11.6	108.8	8.5	117.3
1925		108.8	14.2	123.0	0.0	-11.1	-11.1	108.8	3.1	111.9
1971		108.8	18.6	127.4	0.0	-13.0	-13.0	108.8	5.5	114.3
1957		108.8	15.3	124.1	0.0	-4.3	-4.3	108.8	11.1	119.9
1954		108.8	9.9	118.7	-0.5	-9.9	-10.5	108.2	0.0	108.2
1950		108.8	12.4	121.2	0.0	-10.6	-10.6	108.8	1.8	110.6
2016		108.8	7.0	115.8	-7.1	-7.0	-14.1	101.7	0.0	101.7
1966		108.7	10.6	119.3	0.1	-5.2	-5.2	108.8	5.3	114.1
1944		108.8	14.1	122.9	0.0	-6.3	-6.3	108.8	7.8	116.6
1953		108.8	11.6	120.4	0.0	-10.3	-10.3	108.8	1.3	110.1
1948		108.8	3.0	111.8	-23.2	-3.0	-26.2	85.6	0.0	85.6
2002		108.8	8.9	117.7	-10.5	-8.9	-19.3	98.3	0.0	98.3
1949		108.8	9.9	118.7	-7.9	-9.9	-17.7	100.9	0.0	100.9
1926		108.7	6.6	115.3	-1.8	-6.6	-8.4	106.9	0.0	106.9
1955		108.8	10.0	118.8	-2.8	-10.0	-12.7	106.0	0.0	106.0
1928		108.8	11.9	120.7	0.0	-6.0	-6.0	108.8	5.8	114.6
2004		108.8	5.9	114.7	-12.4	-5.9	-18.4	96.4	0.0	96.4
1985		108.8	7.7	116.4	0.0	-6.3	-6.3	108.8	1.4	110.2
1947		108.8	6.1	114.9	0.0	-4.7	-4.7	108.8	1.4	110.2
2008		108.8	3.9	112.7	-21.2	-3.9	-25.1	87.6	0.0	87.6
1933		108.8	12.8	121.6	0.0	-12.8	-12.8	108.8	0.0	108.8
1981		108.8	8.3	117.1	0.0	-2.2	-2.2	108.8	6.1	114.9
2001		108.8	4.9	113.7	-14.8	-4.9	-19.7	94.0	0.0	94.0
1972		108.8	6.6	115.4	-8.9	-6.6	-15.5	99.9	0.0	99.9
1991		106.4	0.0	106.4	-29.7	0.0	-29.7	76.7	0.0	76.7
1959		108.8	0.4	109.2	-1.8	-0.4	-2.1	107.0	0.0	107.0
1989		99.8	0.0	99.8	-28.9	0.0	-28.9	70.9	0.0	70.9
1964	Normal-Dry	108.8	5.0	113.8	-12.1	-5.0	-17.1	96.7	0.0	96.7
1939		103.0	0.0	103.0	-22.8	0.0	-22.8	80.2	0.0	80.2
1929		87.6	0.0	87.6	-22.4	0.0	-22.4	65.2	0.0	65.2
1988		91.0	0.0	91.0	-26.0	0.0	-26.0	65.0	0.0	65.0
1968		106.3	0.0	106.3	-18.8	0.0	-18.8	87.5	0.0	87.5
1930		90.2	0.0	90.2	-26.5	0.0	-26.5	63.7	0.0	63.7
2013		90.2	0.0	90.2	-26.5	0.0	-26.5	63.6	0.0	63.6
2012		98.7	0.0	98.7	-19.8	0.0	-19.8	78.9	0.0	78.9
1960		87.1	0.0	87.1	-25.9	0.0	-25.9	61.2	0.0	61.2
1994		90.7	0.0	90.7	-1.0	0.0	-1.0	89.7	0.0	89.7
1992		89.6	0.0	89.6	-25.0	0.0	-25.0	64.6	0.0	64.6
1987		73.6	0.0	73.6	-1.0	0.0	-1.0	72.6	0.0	72.6
1990		75.8	0.0	75.8	-23.9	0.0	-23.9	51.9	0.0	51.9
1934		77.4	0.0	77.4	-20.1	0.0	-20.1	57.3	0.0	57.3
2007		63.1	0.0	63.1	-18.9	0.0	-18.9	44.1	0.0	44.1
1961	Crit-High	61.9	0.0	61.9	-19.0	0.0	-19.0	42.9	0.0	42.9
1976		83.0	0.0	83.0	-12.9	0.0	-12.9	70.0	0.0	70.0
2014		45.1	0.0	45.1	-18.9	0.0	-18.9	26.1	0.0	26.1
1931		42.5	0.0	42.5	-19.0	0.0	-19.0	23.5	0.0	23.5
1924		60.1	0.0	60.1	-19.2	0.0	-19.2	41.0	0.0	41.0
1977	CL	25.4	0.0	25.4	-0.4	0.0	-0.4	25.0	0.0	25.0
2015		18.8	0.0	18.8	-0.4	0.0	-0.4	18.5	0.0	18.5
	Wet Ave	108.8	46.4	155.2	-0.1	-5.5	-5.6	108.7	40.9	149.6
	Normal-wet Ave	108.8	30.2	138.9	-0.1	-8.2	-8.3	108.7	21.9	130.6
	Normal-dry Ave	108.4	9.4	117.8	-6.1	-7.0	-13.1	102.3	2.4	104.6
	Dry Ave	88.9	0.3	89.2	-19.4	-0.3	-19.7	69.5	0.0	69.5
	Critical-H Ave	58.5	0.0	58.5	-17.8	0.0	-17.8	40.7	0.0	40.7
	Critical-L Ave	22.1	0.0	22.1	-0.4	0.0	-0.4	21.7	0.0	21.7

Note: Values reported by contract year (March-February)

Exeter ID

Deliveries - Chronological Listing

	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
Year	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	11.5	11.5	23.0	0.0	-2.2	-2.2	11.5	9.3	20.8
1923	11.5	6.9	18.4	0.0	-1.8	-1.8	11.5	5.1	16.6
1924	6.4	0.0	6.4	-2.0	0.0	-2.0	4.3	0.0	4.3
1925	11.5	3.6	15.1	0.0	-2.8	-2.8	11.5	0.8	12.3
1926	11.5	1.7	13.2	-0.2	-1.7	-1.9	11.3	0.0	11.3
1927	11.5	7.8	19.3	0.0	-1.2	-1.2	11.5	6.6	18.1
1928	11.5	3.0	14.5	0.0	-1.5	-1.5	11.5	1.5	13.0
1929	9.3	0.0	9.3	-2.4	0.0	-2.4	6.9	0.0	6.9
1930	9.5	0.0	9.5	-2.8	0.0	-2.8	6.7	0.0	6.7
1931	4.5	0.0	4.5	-2.0	0.0	-2.0	2.5	0.0	2.5
1932	11.5	8.7	20.2	0.0	-1.7	-1.7	11.5	7.0	18.5
1933	11.5	3.3	14.8	0.0	-3.3	-3.3	11.5	0.0	11.5
1934	8.2	0.0	8.2	-2.1	0.0	-2.1	6.1	0.0	6.1
1935	11.5	6.8	18.3	0.0	-2.1	-2.1	11.5	4.7	16.2
1936	11.5	7.4	18.9	0.0	-2.6	-2.7	11.5	4.8	16.2
1937	11.5	7.9	19.4	0.0	-1.5	-1.5	11.5	6.5	18.0
1938	11.5	12.6	24.1	0.0	-1.1	-1.1	11.5	11.5	23.0
1939	10.9	0.0	10.9	-2.4	0.0	-2.4	8.5	0.0	8.5
1940	11.5	5.3	16.8	-0.1	-1.1	-1.1	11.4	4.2	15.7
1941	11.5	12.0	23.5	0.0	-1.8	-1.8	11.5	10.2	21.7
1942	11.5	10.9	22.4	0.0	-2.7	-2.7	11.5	8.2	19.7
1943	11.5	7.5	19.0	0.0	-3.0	-3.0	11.5	4.5	16.0
1944	11.5	3.6	15.1	0.0	-1.6	-1.6	11.5	2.0	13.5
1945	11.5	9.1	20.6	0.0	-1.4	-1.4	11.5	7.6	19.1
1946	11.5	5.0	16.5	0.0	-0.7	-0.7	11.4	4.3	15.8
1947	11.5	1.6	13.1	0.0	-1.2	-1.2	11.5	0.4	11.9
1948	11.5	0.8	12.3	-2.5	-0.8	-3.2	9.0	0.0	9.0
1949	11.5	2.5	14.0	-0.8	-2.5	-3.3	10.7	0.0	10.7
1950	11.5	3.2	14.7	0.0	-2.7	-2.7	11.5	0.5	12.0
1951	11.5	4.5	16.0	0.0	-3.5	-3.4	11.5	1.0	12.5
1952	11.5	11.4	22.9	0.0	-1.0	-1.0	11.5	10.4	21.9
1953	11.5	3.0	14.5	0.0	-2.6	-2.6	11.5	0.3	11.8
1954	11.5	2.5	14.0	-0.1	-2.5	-2.6	11.4	0.0	11.4
1955	11.5	2.5	14.0	-0.3	-2.5	-2.8	11.2	0.0	11.2
1956	11.5	11.6	23.1	0.0	-2.2	-2.2	11.5	9.4	20.9
1957	11.5	3.9	15.4	0.0	-1.1	-1.1	11.5	2.8	14.3
1958	11.5	11.4	22.9	0.0	-1.8	-1.8	11.5	9.5	21.0
1959	11.5	0.1	11.6	-0.2	-0.1	-0.3	11.3	0.0	11.3
1960	9.2	0.0	9.2	-2.7	0.0	-2.7	6.5	0.0	6.5
1961	6.5	0.0	6.5	-2.0	0.0	-2.0	4.5	0.0	4.5
1962	11.5	7.9	19.4	0.0	-2.0	-2.0	11.5	5.9	17.4
1963	11.5	9.5	21.0	0.0	-2.0	-2.0	11.5	7.4	18.9
1964	11.5	1.3	12.8	-1.3	-1.3	-2.6	10.2	0.0	10.2
1965	11.5	9.5	21.0	0.0	-2.9	-2.9	11.5	6.6	18.1
1966	11.5	2.7	14.2	0.0	-1.3	-1.3	11.5	1.4	12.9
1967	11.5	13.1	24.6	0.0	-1.0	-1.0	11.5	12.1	23.5
1968	11.2	0.0	11.2	-2.0	0.0	-2.0	9.3	0.0	9.3
1969	11.5	12.1	23.6	0.0	-0.5	-0.5	11.5	11.6	23.1
1970	11.5	5.2	16.6	0.0	-3.0	-3.0	11.5	2.2	13.7
1971	11.5	4.7	16.2	0.0	-3.3	-3.3	11.5	1.4	12.9
1972	11.5	1.7	13.2	-0.9	-1.7	-2.6	10.6	0.0	10.6
1973	11.5	7.6	19.1	0.0	-2.7	-2.7	11.5	5.0	16.5
1974	11.5	8.7	20.2	0.0	-2.6	-2.6	11.5	6.2	17.7
1975	11.5	7.6	19.1	0.0	-1.3	-1.3	11.5	6.3	17.8
1976	8.8	0.0	8.8	-1.4	0.0	-1.4	7.4	0.0	7.4
1977	2.7	0.0	2.7	0.0	0.0	0.0	2.6	0.0	2.6
1978	11.5	13.6	25.1	0.0	-1.5	-1.5	11.5	12.1	23.6
1979	11.5	7.3	18.8	-0.1	-2.8	-2.9	11.4	4.5	15.9
1980	11.5	11.8	23.3	-0.1	-3.4	-3.4	11.4	8.5	19.9
1981	11.5	2.1	13.6	0.0	-0.6	-0.6	11.5	1.6	13.1
1982	11.5	11.1	22.6	0.0	-1.7	-1.8	11.5	9.4	20.9
1983	11.5	12.1	23.6	0.0	-0.1	-0.1	11.5	11.9	23.4
1984	11.5	6.8	18.3	0.0	-2.1	-2.1	11.5	4.7	16.2
1985	11.5	2.0	13.5	0.0	-1.6	-1.6	11.5	0.4	11.9
1986	11.5	11.0	22.5	0.0	-1.8	-1.8	11.5	9.2	20.7
1987	7.8	0.0	7.8	-0.1	0.0	-0.1	7.7	0.0	7.7
1988	9.6	0.0	9.6	-2.8	0.0	-2.8	6.9	0.0	6.9
1989	10.6	0.0	10.6	-3.1	0.0	-3.1	7.5	0.0	7.5
1990	8.0	0.0	8.0	-2.5	0.0	-2.5	5.5	0.0	5.5
1991	11.2	0.0	11.2	-3.1	0.0	-3.1	8.1	0.0	8.1
1992	9.5	0.0	9.5	-2.6	0.0	-2.6	6.8	0.0	6.8
1993	11.5	12.1	23.6	0.0	-2.1	-2.1	11.5	10.0	21.5
1994	9.6	0.0	9.6	-0.1	0.0	-0.1	9.5	0.0	9.5
1995	11.5	14.4	25.9	0.0	-1.2	-1.2	11.5	13.2	24.7
1996	11.5	8.3	19.8	0.0	-1.6	-1.6	11.5	6.8	18.3
1997	11.5	6.6	18.1	0.0	-1.8	-1.8	11.5	4.8	16.3
1998	11.5	11.1	22.6	0.0	-0.9	-0.9	11.5	10.2	21.7
1999	11.5	5.6	17.1	0.0	-2.1	-2.1	11.5	3.5	15.0
2000	11.5	6.6	18.1	0.0	-1.3	-1.3	11.5	5.2	16.7
2001	11.5	1.2	12.7	-1.6	-1.2	-2.8	9.9	0.0	9.9
2002	11.5	2.3	13.8	-1.1	-2.3	-3.4	10.4	0.0	10.4
2003	11.5	5.6	17.1	0.0	-3.8	-3.8	11.5	1.8	13.3
2004	11.5	1.5	13.0	-1.3	-1.5	-2.8	10.2	0.0	10.2
2005	11.5	11.9	23.4	0.0	-0.9	-0.9	11.5	10.9	22.4
2006	11.5	12.0	23.5	0.0	-0.8	-0.8	11.5	11.2	22.7
2007	6.7	0.0	6.7	-2.0	0.0	-2.0	4.7	0.0	4.7
2008	11.5	1.0	12.5	-2.2	-1.0	-3.2	9.3	0.0	9.3
2009	11.5	5.8	17.3	0.0	-3.7	-3.7	11.5	2.0	13.5
2010	11.5	9.5	21.0	0.0	-2.3	-2.3	11.5	7.2	18.7
2011	11.5	12.9	24.4	0.0	-1.0	-1.0	11.5	11.9	23.4
2012	10.4	0.0	10.4	-2.1	0.0	-2.1	8.3	0.0	8.3
2013	9.5	0.0	9.5	-2.8	0.0	-2.8	6.7	0.0	6.7
2014	4.8	0.0	4.8	-2.0	0.0	-2.0	2.8	0.0	2.8
2015	2.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0
2016	11.5	1.8	13.3	-0.7	-1.8	-2.5	10.8	0.0	10.8
Ave All	10.7	5.2	15.9	-0.6	-1.4	-2.0	10.1	3.8	13.9
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	8.0	0.1	8.1	-1.8	-0.1	-1.9	6.2	0.0	6.2

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

		Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
Year		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	11.5	12.1	23.6	0.0	-0.1	-0.1	11.5	11.9	23.4
1969		11.5	12.1	23.6	0.0	-0.5	-0.5	11.5	11.6	23.1
1995		11.5	14.4	25.9	0.0	-1.2	-1.2	11.5	13.2	24.7
1938		11.5	12.6	24.1	0.0	-1.1	-1.1	11.5	11.5	23.0
1978		11.5	13.6	25.1	0.0	-1.5	-1.5	11.5	12.1	23.6
1982		11.5	11.1	22.6	0.0	-1.7	-1.8	11.5	9.4	20.9
2011		11.5	12.9	24.4	0.0	-1.0	-1.0	11.5	11.9	23.4
1967		11.5	13.1	24.6	0.0	-1.0	-1.0	11.5	12.1	23.5
2006		11.5	12.0	23.5	0.0	-0.8	-0.8	11.5	11.2	22.7
1998		11.5	11.1	22.6	0.0	-0.9	-0.9	11.5	10.2	21.7
1986		11.5	11.0	22.5	0.0	-1.8	-1.8	11.5	9.2	20.7
1980		11.5	11.8	23.3	-0.1	-3.4	-3.4	11.4	8.5	19.9
1956		11.5	11.6	23.1	0.0	-2.2	-2.2	11.5	9.4	20.9
1952		11.5	11.4	22.9	0.0	-1.0	-1.0	11.5	10.4	21.9
2005		11.5	11.9	23.4	0.0	-0.9	-0.9	11.5	10.9	22.4
1997		11.5	6.6	18.1	0.0	-1.8	-1.8	11.5	4.8	16.3
1993		11.5	12.1	23.6	0.0	-2.1	-2.1	11.5	10.0	21.5
1941		11.5	12.0	23.5	0.0	-1.8	-1.8	11.5	10.2	21.7
1958		11.5	11.4	22.9	0.0	-1.8	-1.8	11.5	9.5	21.0
1922	Normal-Wet	11.5	11.5	23.0	0.0	-2.2	-2.2	11.5	9.3	20.8
1965		11.5	9.5	21.0	0.0	-2.9	-2.9	11.5	6.6	18.1
1942		11.5	10.9	22.4	0.0	-2.7	-2.7	11.5	8.2	19.7
1937		11.5	7.9	19.4	0.0	-1.5	-1.5	11.5	6.5	18.0
1996		11.5	8.3	19.8	0.0	-1.6	-1.6	11.5	6.8	18.3
1974		11.5	8.7	20.2	0.0	-2.6	-2.6	11.5	6.2	17.7
1945		11.5	9.1	20.6	0.0	-1.4	-1.4	11.5	7.6	19.1
1943		11.5	7.5	19.0	0.0	-3.0	-3.0	11.5	4.5	16.0
1984		11.5	6.8	18.3	0.0	-2.1	-2.1	11.5	4.7	16.2
1932		11.5	8.7	20.2	0.0	-1.7	-1.7	11.5	7.0	18.5
1973		11.5	7.6	19.1	0.0	-2.7	-2.7	11.5	5.0	16.5
2010		11.5	9.5	21.0	0.0	-2.3	-2.3	11.5	7.2	18.7
1927		11.5	7.8	19.3	0.0	-1.2	-1.2	11.5	6.6	18.1
1963		11.5	9.5	21.0	0.0	-2.0	-2.0	11.5	7.4	18.9
1962		11.5	7.9	19.4	0.0	-2.0	-2.0	11.5	5.9	17.4
1935		11.5	6.8	18.3	0.0	-2.1	-2.1	11.5	4.7	16.2
1940		11.5	5.3	16.8	-0.1	-1.1	-1.1	11.4	4.2	15.7
1951		11.5	4.5	16.0	0.0	-3.5	-3.4	11.5	1.0	12.5
1936		11.5	7.4	18.9	0.0	-2.6	-2.7	11.5	4.8	16.2
1979		11.5	7.3	18.8	-0.1	-2.8	-2.9	11.4	4.5	15.9
1975		11.5	7.6	19.1	0.0	-1.3	-1.3	11.5	6.3	17.8
2000		11.5	6.6	18.1	0.0	-1.3	-1.3	11.5	5.2	16.7
1946		11.5	5.0	16.5	0.0	-0.7	-0.7	11.4	4.3	15.8
1923		11.5	6.9	18.4	0.0	-1.8	-1.8	11.5	5.1	16.6
1999		11.5	5.6	17.1	0.0	-2.1	-2.1	11.5	3.5	15.0
2009		11.5	5.8	17.3	0.0	-3.7	-3.7	11.5	2.0	13.5
2003	Normal-Dry	11.5	5.6	17.1	0.0	-3.8	-3.8	11.5	1.8	13.3
1970		11.5	5.2	16.6	0.0	-3.0	-3.0	11.5	2.2	13.7
1925		11.5	3.6	15.1	0.0	-2.8	-2.8	11.5	0.8	12.3
1971		11.5	4.7	16.2	0.0	-3.3	-3.3	11.5	1.4	12.9
1957		11.5	3.9	15.4	0.0	-1.1	-1.1	11.5	2.8	14.3
1954		11.5	2.5	14.0	-0.1	-2.5	-2.6	11.4	0.0	11.4
1950		11.5	3.2	14.7	0.0	-2.7	-2.7	11.5	0.5	12.0
2016		11.5	1.8	13.3	-0.7	-1.8	-2.5	10.8	0.0	10.8
1966		11.5	2.7	14.2	0.0	-1.3	-1.3	11.5	1.4	12.9
1944		11.5	3.6	15.1	0.0	-1.6	-1.6	11.5	2.0	13.5
1953		11.5	3.0	14.5	0.0	-2.6	-2.6	11.5	0.3	11.8
1948		11.5	0.8	12.3	-2.5	-0.8	-3.2	9.0	0.0	9.0
2002		11.5	2.3	13.8	-1.1	-2.3	-3.4	10.4	0.0	10.4
1949		11.5	2.5	14.0	-0.8	-2.5	-3.3	10.7	0.0	10.7
1926		11.5	1.7	13.2	-0.2	-1.7	-1.9	11.3	0.0	11.3
1955		11.5	2.5	14.0	-0.3	-2.5	-2.8	11.2	0.0	11.2
1928		11.5	3.0	14.5	0.0	-1.5	-1.5	11.5	1.5	13.0
2004		11.5	1.5	13.0	-1.3	-1.5	-2.8	10.2	0.0	10.2
1985		11.5	2.0	13.5	0.0	-1.6	-1.6	11.5	0.4	11.9
1947		11.5	1.6	13.1	0.0	-1.2	-1.2	11.5	0.4	11.9
2008		11.5	1.0	12.5	-2.2	-1.0	-3.2	9.3	0.0	9.3
1933		11.5	3.3	14.8	0.0	-3.3	-3.3	11.5	0.0	11.5
1981		11.5	2.1	13.6	0.0	-0.6	-0.6	11.5	1.6	13.1
2001		11.5	1.2	12.7	-1.6	-1.2	-2.8	9.9	0.0	9.9
1972		11.5	1.7	13.2	-0.9	-1.7	-2.6	10.6	0.0	10.6
1991		11.2	0.0	11.2	-3.1	0.0	-3.1	8.1	0.0	8.1
1959		11.5	0.1	11.6	-0.2	-0.1	-0.3	11.3	0.0	11.3
1989		10.6	0.0	10.6	-3.1	0.0	-3.1	7.5	0.0	7.5
1964	Normal-Dry	11.5	1.3	12.8	-1.3	-1.3	-2.6	10.2	0.0	10.2
1939		10.9	0.0	10.9	-2.4	0.0	-2.4	8.5	0.0	8.5
1929		9.3	0.0	9.3	-2.4	0.0	-2.4	6.9	0.0	6.9
1988		9.6	0.0	9.6	-2.8	0.0	-2.8	6.9	0.0	6.9
1968		11.2	0.0	11.2	-2.0	0.0	-2.0	9.3	0.0	9.3
1930		9.5	0.0	9.5	-2.8	0.0	-2.8	6.7	0.0	6.7
2013		9.5	0.0	9.5	-2.8	0.0	-2.8	6.7	0.0	6.7
2012		10.4	0.0	10.4	-2.1	0.0	-2.1	8.3	0.0	8.3
1960		9.2	0.0	9.2	-2.7	0.0	-2.7	6.5	0.0	6.5
1994		9.6	0.0	9.6	-0.1	0.0	-0.1	9.5	0.0	9.5
1992		9.5	0.0	9.5	-2.6	0.0	-2.6	6.8	0.0	6.8
1987		7.8	0.0	7.8	-0.1	0.0	-0.1	7.7	0.0	7.7
1990		8.0	0.0	8.0	-2.5	0.0	-2.5	5.5	0.0	5.5
1934		8.2	0.0	8.2	-2.1	0.0	-2.1	6.1	0.0	6.1
2007		6.7	0.0	6.7	-2.0	0.0	-2.0	4.7	0.0	4.7
1961	Crit-High	6.5	0.0	6.5	-2.0	0.0	-2.0	4.5	0.0	4.5
1976		8.8	0.0	8.8	-1.4	0.0	-1.4	7.4	0.0	7.4
2014		4.8	0.0	4.8	-2.0	0.0	-2.0	2.8	0.0	2.8
1931		4.5	0.0	4.5	-2.0	0.0	-2.0	2.5	0.0	2.5
1924		6.4	0.0	6.4	-2.0	0.0	-2.0	4.3	0.0	4.3
1977	CL	2.7	0.0	2.7	0.0	0.0	0.0	2.6	0.0	2.6
2015		2.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0
Wet Ave		11.5	11.8	23.3	0.0	-1.4	-1.4	11.5	10.4	21.9
Normal-wet Ave		11.5	7.7	19.2	0.0	-2.1	-2.1	11.5	5.6	17.1
Normal-dry Ave		11.5	2.4	13.8	-0.6	-1.8	-2.4	10.8	0.6	11.4
Dry Ave		9.4	0.1	9.5	-2.0	-0.1	-2.1	7.3	0.0	7.3
Critical-H Ave		6.2	0.0	6.2	-1.9	0.0	-1.9	4.3	0.0	4.3
Critical-L Ave		2.3	0.0	2.3	0.0	0.0	0.0	2.3	0.0	2.3

Note: Values reported by contract year (March-February)

Fresno ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	0.0	45.2	45.2	0.0	-8.5	-8.5	0.0	36.7	36.7
1923	0.0	27.3	27.3	0.0	-7.0	-7.0	0.0	20.3	20.3
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1925	0.0	14.3	14.3	0.0	-11.2	-11.2	0.0	3.1	3.1
1926	0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1927	0.0	30.7	30.7	0.0	-4.7	-4.7	0.0	26.0	26.0
1928	0.0	12.0	12.0	0.0	-6.1	-6.1	0.0	5.9	5.9
1929	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.0	34.3	34.3	0.0	-6.7	-6.7	0.0	27.6	27.6
1933	0.0	12.9	12.9	0.0	-12.8	-12.8	0.0	0.0	0.0
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1935	0.0	26.9	26.9	0.0	-8.2	-8.2	0.0	18.7	18.7
1936	0.0	29.2	29.2	0.0	-10.4	-10.4	0.0	18.8	18.8
1937	0.0	31.4	31.4	0.0	-5.9	-5.9	0.0	25.5	25.5
1938	0.0	49.9	49.9	0.0	-4.3	-4.3	0.0	45.6	45.6
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1940	0.0	20.9	20.9	0.0	-4.2	-4.2	0.0	16.7	16.7
1941	0.0	47.3	47.3	0.0	-6.9	-6.9	0.0	40.4	40.4
1942	0.0	43.1	43.1	0.0	-10.8	-10.8	0.0	32.3	32.3
1943	0.0	29.6	29.6	0.0	-11.7	-11.7	0.0	17.8	17.8
1944	0.0	14.2	14.2	0.0	-6.3	-6.3	0.0	7.8	7.8
1945	0.0	35.9	35.9	0.0	-5.7	-5.7	0.0	30.2	30.2
1946	0.0	19.7	19.7	0.0	-2.7	-2.7	0.0	17.0	17.0
1947	0.0	6.2	6.2	0.0	-4.7	-4.7	0.0	1.4	1.4
1948	0.0	3.0	3.0	0.0	-3.0	-3.0	0.0	0.0	0.0
1949	0.0	9.9	9.9	0.0	-9.9	-9.9	0.0	0.0	0.0
1950	0.0	12.5	12.5	0.0	-10.7	-10.7	0.0	1.8	1.8
1951	0.0	17.7	17.7	0.0	-13.7	-13.7	0.0	4.1	4.1
1952	0.0	45.0	45.0	0.0	-4.0	-4.0	0.0	41.0	41.0
1953	0.0	11.7	11.7	0.0	-10.4	-10.4	0.0	1.3	1.3
1954	0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1955	0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1956	0.0	45.7	45.7	0.0	-8.6	-8.6	0.0	37.1	37.1
1957	0.0	15.4	15.4	0.0	-4.3	-4.3	0.0	11.2	11.2
1958	0.0	44.9	44.9	0.0	-7.2	-7.2	0.0	37.6	37.6
1959	0.0	0.4	0.4	0.0	-0.4	-0.4	0.0	0.0	0.0
1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962	0.0	31.2	31.2	0.0	-7.7	-7.7	0.0	23.5	23.5
1963	0.0	37.4	37.4	0.0	-8.0	-8.0	0.0	29.3	29.3
1964	0.0	5.1	5.1	0.0	-5.1	-5.1	0.0	0.0	0.0
1965	0.0	37.3	37.3	0.0	-11.3	-11.3	0.0	26.0	26.0
1966	0.0	10.6	10.6	0.0	-5.3	-5.3	0.0	5.4	5.4
1967	0.0	51.6	51.6	0.0	-4.0	-4.0	0.0	47.6	47.6
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	0.0	47.7	47.7	0.0	-1.8	-1.8	0.0	45.9	45.9
1970	0.0	20.3	20.3	0.0	-11.7	-11.7	0.0	8.6	8.6
1971	0.0	18.7	18.7	0.0	-13.1	-13.1	0.0	5.6	5.6
1972	0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1973	0.0	30.0	30.0	0.0	-10.5	-10.5	0.0	19.6	19.6
1974	0.0	34.5	34.5	0.0	-10.2	-10.2	0.0	24.3	24.3
1975	0.0	30.0	30.0	0.0	-5.1	-5.1	0.0	24.9	24.9
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.0	53.8	53.8	0.0	-5.9	-5.9	0.0	47.9	47.9
1979	0.0	28.7	28.7	0.0	-11.1	-11.1	0.0	17.6	17.6
1980	0.0	46.7	46.7	0.0	-13.4	-13.4	0.0	33.4	33.4
1981	0.0	8.4	8.4	0.0	-2.2	-2.2	0.0	6.1	6.1
1982	0.0	44.0	44.0	0.0	-6.9	-6.9	0.0	37.1	37.1
1983	0.0	47.6	47.6	0.0	-0.5	-0.5	0.0	47.1	47.1
1984	0.0	26.9	26.9	0.0	-8.2	-8.2	0.0	18.7	18.7
1985	0.0	7.8	7.8	0.0	-6.4	-6.4	0.0	1.4	1.4
1986	0.0	43.4	43.4	0.0	-7.2	-7.2	0.0	36.2	36.2
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	0.0	47.8	47.8	0.0	-8.3	-8.3	0.0	39.4	39.4
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	56.8	56.8	0.0	-4.7	-4.7	0.0	52.1	52.1
1996	0.0	32.9	32.9	0.0	-6.2	-6.2	0.0	26.7	26.7
1997	0.0	26.2	26.2	0.0	-7.2	-7.2	0.0	19.0	19.0
1998	0.0	43.8	43.8	0.0	-3.5	-3.5	0.0	40.3	40.3
1999	0.0	22.3	22.3	0.0	-8.2	-8.2	0.0	14.0	14.0
2000	0.0	26.0	26.0	0.0	-5.3	-5.3	0.0	20.7	20.7
2001	0.0	4.9	4.9	0.0	-4.9	-4.9	0.0	0.0	0.0
2002	0.0	8.9	8.9	0.0	-8.9	-8.9	0.0	0.0	0.0
2003	0.0	22.1	22.1	0.0	-14.9	-14.9	0.0	7.1	7.1
2004	0.0	6.0	6.0	0.0	-6.0	-6.0	0.0	0.0	0.0
2005	0.0	46.8	46.8	0.0	-3.6	-3.6	0.0	43.2	43.2
2006	0.0	47.3	47.3	0.0	-3.2	-3.2	0.0	44.1	44.1
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.0	3.9	3.9	0.0	-3.9	-3.9	0.0	0.0	0.0
2009	0.0	22.8	22.8	0.0	-14.8	-14.8	0.0	8.0	8.0
2010	0.0	37.5	37.5	0.0	-9.2	-9.2	0.0	28.3	28.3
2011	0.0	50.7	50.7	0.0	-3.9	-3.9	0.0	46.8	46.8
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	7.0	7.0	0.0	-7.0	-7.0	0.0	0.0	0.0
Ave All	0.0	20.5	20.5	0.0	-5.5	-5.5	0.0	15.0	15.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.0	0.2	0.2	0.0	-0.2	-0.2	0.0	0.0	0.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	0.0	47.6	47.6	0.0	-0.5	-0.5	0.0	47.1	47.1
1969		0.0	47.7	47.7	0.0	-1.8	-1.8	0.0	45.9	45.9
1995		0.0	56.8	56.8	0.0	-4.7	-4.7	0.0	52.1	52.1
1938		0.0	49.9	49.9	0.0	-4.3	-4.3	0.0	45.6	45.6
1978		0.0	53.8	53.8	0.0	-5.9	-5.9	0.0	47.9	47.9
1982		0.0	44.0	44.0	0.0	-6.9	-6.9	0.0	37.1	37.1
2011		0.0	50.7	50.7	0.0	-3.9	-3.9	0.0	46.8	46.8
1967		0.0	51.6	51.6	0.0	-4.0	-4.0	0.0	47.6	47.6
2006		0.0	47.3	47.3	0.0	-3.2	-3.2	0.0	44.1	44.1
1998		0.0	43.8	43.8	0.0	-3.5	-3.5	0.0	40.3	40.3
1986		0.0	43.4	43.4	0.0	-7.2	-7.2	0.0	36.2	36.2
1980		0.0	46.7	46.7	0.0	-13.4	-13.4	0.0	33.4	33.4
1956		0.0	45.7	45.7	0.0	-8.6	-8.6	0.0	37.1	37.1
1952		0.0	45.0	45.0	0.0	-4.0	-4.0	0.0	41.0	41.0
2005		0.0	46.8	46.8	0.0	-3.6	-3.6	0.0	43.2	43.2
1997		0.0	26.2	26.2	0.0	-7.2	-7.2	0.0	19.0	19.0
1993		0.0	47.8	47.8	0.0	-8.3	-8.3	0.0	39.4	39.4
1941		0.0	47.3	47.3	0.0	-6.9	-6.9	0.0	40.4	40.4
1958		0.0	44.9	44.9	0.0	-7.2	-7.2	0.0	37.6	37.6
1922	Normal-Wet	0.0	45.2	45.2	0.0	-8.5	-8.5	0.0	36.7	36.7
1965		0.0	37.3	37.3	0.0	-11.3	-11.3	0.0	26.0	26.0
1942		0.0	43.1	43.1	0.0	-10.8	-10.8	0.0	32.3	32.3
1937		0.0	31.4	31.4	0.0	-5.9	-5.9	0.0	25.5	25.5
1996		0.0	32.9	32.9	0.0	-6.2	-6.2	0.0	26.7	26.7
1974		0.0	34.5	34.5	0.0	-10.2	-10.2	0.0	24.3	24.3
1945		0.0	35.9	35.9	0.0	-5.7	-5.7	0.0	30.2	30.2
1943		0.0	29.6	29.6	0.0	-11.7	-11.7	0.0	17.8	17.8
1984		0.0	26.9	26.9	0.0	-8.2	-8.2	0.0	18.7	18.7
1932		0.0	34.3	34.3	0.0	-6.7	-6.7	0.0	27.6	27.6
1973		0.0	30.0	30.0	0.0	-10.5	-10.5	0.0	19.6	19.6
2010		0.0	37.5	37.5	0.0	-9.2	-9.2	0.0	28.3	28.3
1927		0.0	30.7	30.7	0.0	-4.7	-4.7	0.0	26.0	26.0
1963		0.0	37.4	37.4	0.0	-8.0	-8.0	0.0	29.3	29.3
1962		0.0	31.2	31.2	0.0	-7.7	-7.7	0.0	23.5	23.5
1935		0.0	26.9	26.9	0.0	-8.2	-8.2	0.0	18.7	18.7
1940		0.0	20.9	20.9	0.0	-4.2	-4.2	0.0	16.7	16.7
1951		0.0	17.7	17.7	0.0	-13.7	-13.7	0.0	4.1	4.1
1936		0.0	29.2	29.2	0.0	-10.4	-10.4	0.0	18.8	18.8
1979		0.0	28.7	28.7	0.0	-11.1	-11.1	0.0	17.6	17.6
1975		0.0	30.0	30.0	0.0	-5.1	-5.1	0.0	24.9	24.9
2000		0.0	26.0	26.0	0.0	-5.3	-5.3	0.0	20.7	20.7
1946		0.0	19.7	19.7	0.0	-2.7	-2.7	0.0	17.0	17.0
1923		0.0	27.3	27.3	0.0	-7.0	-7.0	0.0	20.3	20.3
1999		0.0	22.3	22.3	0.0	-8.2	-8.2	0.0	14.0	14.0
2009		0.0	22.8	22.8	0.0	-14.8	-14.8	0.0	8.0	8.0
2003	Normal-Dry	0.0	22.1	22.1	0.0	-14.9	-14.9	0.0	7.1	7.1
1970		0.0	20.3	20.3	0.0	-11.7	-11.7	0.0	8.6	8.6
1925		0.0	14.3	14.3	0.0	-11.2	-11.2	0.0	3.1	3.1
1971		0.0	18.7	18.7	0.0	-13.1	-13.1	0.0	5.6	5.6
1957		0.0	15.4	15.4	0.0	-4.3	-4.3	0.0	11.2	11.2
1954		0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1950		0.0	12.5	12.5	0.0	-10.7	-10.7	0.0	1.8	1.8
2016		0.0	7.0	7.0	0.0	-7.0	-7.0	0.0	0.0	0.0
1966		0.0	10.6	10.6	0.0	-5.3	-5.3	0.0	5.4	5.4
1944		0.0	14.2	14.2	0.0	-6.3	-6.3	0.0	7.8	7.8
1953		0.0	11.7	11.7	0.0	-10.4	-10.4	0.0	1.3	1.3
1948		0.0	3.0	3.0	0.0	-3.0	-3.0	0.0	0.0	0.0
2002		0.0	8.9	8.9	0.0	-8.9	-8.9	0.0	0.0	0.0
1949		0.0	9.9	9.9	0.0	-9.9	-9.9	0.0	0.0	0.0
1926		0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1955		0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1928		0.0	12.0	12.0	0.0	-6.1	-6.1	0.0	5.9	5.9
2004		0.0	6.0	6.0	0.0	-6.0	-6.0	0.0	0.0	0.0
1985		0.0	7.8	7.8	0.0	-6.4	-6.4	0.0	1.4	1.4
1947		0.0	6.2	6.2	0.0	-4.7	-4.7	0.0	1.4	1.4
2008		0.0	3.9	3.9	0.0	-3.9	-3.9	0.0	0.0	0.0
1933		0.0	12.9	12.9	0.0	-12.8	-12.8	0.0	0.0	0.0
1981		0.0	8.4	8.4	0.0	-2.2	-2.2	0.0	6.1	6.1
2001		0.0	4.9	4.9	0.0	-4.9	-4.9	0.0	0.0	0.0
1972		0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1991		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959		0.0	0.4	0.4	0.0	-0.4	-0.4	0.0	0.0	0.0
1989		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964	Normal-Dry	0.0	5.1	5.1	0.0	-5.1	-5.1	0.0	0.0	0.0
1939		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1929		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1934		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wet Ave	0.0	46.7	46.7	0.0	-5.5	-5.5	0.0	41.2	41.2
	Normal-wet Ave	0.0	30.4	30.4	0.0	-8.3	-8.3	0.0	22.0	22.0
	Normal-dry Ave	0.0	9.4	9.4	0.0	-7.1	-7.1	0.0	2.4	2.4
	Dry Ave	0.0	0.3	0.3	0.0	-0.3	-0.3	0.0	0.0	0.0
	Critical-H Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Critical-L Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

Garfield WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1923	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1924	1.9	0.0	1.9	-0.6	0.0	-0.6	1.3	0.0	1.3
1925	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1926	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1927	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1928	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1929	2.8	0.0	2.8	-0.7	0.0	-0.7	2.1	0.0	2.1
1930	2.9	0.0	2.9	-0.9	0.0	-0.9	2.0	0.0	2.0
1931	1.4	0.0	1.4	-0.6	0.0	-0.6	0.8	0.0	0.8
1932	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1933	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1934	2.5	0.0	2.5	-0.6	0.0	-0.6	1.8	0.0	1.8
1935	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1936	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1937	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1938	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1939	3.3	0.0	3.3	-0.7	0.0	-0.7	2.6	0.0	2.6
1940	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1941	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1942	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1943	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1944	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1945	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1946	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1947	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1948	3.5	0.0	3.5	-0.7	0.0	-0.7	2.8	0.0	2.8
1949	3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
1950	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1951	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1952	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1953	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1954	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1955	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1956	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1957	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1958	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1959	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1960	2.8	0.0	2.8	-0.8	0.0	-0.8	2.0	0.0	2.0
1961	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1962	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1963	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1964	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
1965	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1966	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1967	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1968	3.4	0.0	3.4	-0.6	0.0	-0.6	2.8	0.0	2.8
1969	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1970	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1971	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1972	3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
1973	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1974	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1975	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1976	2.7	0.0	2.7	-0.4	0.0	-0.4	2.3	0.0	2.3
1977	0.8	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
1978	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1979	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1980	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1981	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1982	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1983	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1984	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1985	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1986	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1987	2.4	0.0	2.4	0.0	0.0	0.0	2.3	0.0	2.3
1988	2.9	0.0	2.9	-0.8	0.0	-0.8	2.1	0.0	2.1
1989	3.2	0.0	3.2	-0.9	0.0	-0.9	2.3	0.0	2.3
1990	2.4	0.0	2.4	-0.8	0.0	-0.8	1.7	0.0	1.7
1991	3.4	0.0	3.4	-1.0	0.0	-1.0	2.5	0.0	2.5
1992	2.9	0.0	2.9	-0.8	0.0	-0.8	2.1	0.0	2.1
1993	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1994	2.9	0.0	2.9	0.0	0.0	0.0	2.9	0.0	2.9
1995	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1996	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1997	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1998	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1999	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2000	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2001	3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
2002	3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
2003	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2004	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
2005	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2006	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2007	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
2008	3.5	0.0	3.5	-0.7	0.0	-0.7	2.8	0.0	2.8
2009	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2010	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2011	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2012	3.2	0.0	3.2	-0.6	0.0	-0.6	2.5	0.0	2.5
2013	2.9	0.0	2.9	-0.9	0.0	-0.9	2.0	0.0	2.0
2014	1.4	0.0	1.4	-0.6	0.0	-0.6	0.8	0.0	0.8
2015	0.6	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.6
2016	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
Ave All	3.3	0.0	3.3	-0.2	0.0	-0.2	3.1	0.0	3.1

Original Dry Year Classification (Driest 20% Years)

Dry Ave	2.4	0.0	2.4	-0.6	0.0	-0.6	1.9	0.0	1.9

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1969		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1995		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1938		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1978		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1982		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2011		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1967		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2006		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1998		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1986		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1980		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1956		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1952		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2005		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1997		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1993		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1941		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1958		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1922	Normal-Wet	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1965		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1942		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1937		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1996		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1974		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1945		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1943		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1984		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1932		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1973		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2010		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1927		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1963		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1962		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1935		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1940		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1951		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1936		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1979		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1975		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2000		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1946		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1923		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1999		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2009		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2003	Normal-Dry	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1970		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1925		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1971		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1957		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1954		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1950		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2016		3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
1966		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1944		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1953		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1948		3.5	0.0	3.5	-0.7	0.0	-0.7	2.8	0.0	2.8
2002		3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
1949		3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
1926		3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1955		3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1928		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2004		3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
1985		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1947		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2008		3.5	0.0	3.5	-0.7	0.0	-0.7	2.8	0.0	2.8
1933		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1981		3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2001		3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
1972		3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
1991		3.4	0.0	3.4	-1.0	0.0	-1.0	2.5	0.0	2.5
1959		3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1989		3.2	0.0	3.2	-0.9	0.0	-0.9	2.3	0.0	2.3
1964	Normal-Dry	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
1939		3.3	0.0	3.3	-0.7	0.0	-0.7	2.6	0.0	2.6
1929		2.8	0.0	2.8	-0.7	0.0	-0.7	2.1	0.0	2.1
1988		2.9	0.0	2.9	-0.8	0.0	-0.8	2.1	0.0	2.1
1968		3.4	0.0	3.4	-0.6	0.0	-0.6	2.8	0.0	2.8
1930		2.9	0.0	2.9	-0.9	0.0	-0.9	2.0	0.0	2.0
2013		2.9	0.0	2.9	-0.9	0.0	-0.9	2.0	0.0	2.0
2012		3.2	0.0	3.2	-0.6	0.0	-0.6	2.5	0.0	2.5
1960		2.8	0.0	2.8	-0.8	0.0	-0.8	2.0	0.0	2.0
1994		2.9	0.0	2.9	0.0	0.0	0.0	2.9	0.0	2.9
1992		2.9	0.0	2.9	-0.8	0.0	-0.8	2.1	0.0	2.1
1987		2.4	0.0	2.4	0.0	0.0	0.0	2.3	0.0	2.3
1990		2.4	0.0	2.4	-0.8	0.0	-0.8	1.7	0.0	1.7
1934		2.5	0.0	2.5	-0.6	0.0	-0.6	1.8	0.0	1.8
2007		2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1961	Crit-High	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1976		2.7	0.0	2.7	-0.4	0.0	-0.4	2.3	0.0	2.3
2014		1.4	0.0	1.4	-0.6	0.0	-0.6	0.8	0.0	0.8
1931		1.4	0.0	1.4	-0.6	0.0	-0.6	0.8	0.0	0.8
1924		1.9	0.0	1.9	-0.6	0.0	-0.6	1.3	0.0	1.3
1977	CL	0.8	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
2015		0.6	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.6
	Wet Ave	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	Normal-wet Ave	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	Normal-dry Ave	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
	Dry Ave	2.9	0.0	2.9	-0.6	0.0	-0.6	2.2	0.0	2.2
	Critical-H Ave	1.9	0.0	1.9	-0.6	0.0	-0.6	1.3	0.0	1.3
	Critical-L Ave	0.7	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.7

Note: Values reported by contract year (March-February)

International WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1923	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1924	0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1925	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1926	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1927	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1928	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1929	1.0	0.0	1.0	-0.2	0.0	-0.2	0.7	0.0	0.7
1930	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1931	0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1932	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1933	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1934	0.9	0.0	0.9	-0.2	0.0	-0.2	0.6	0.0	0.6
1935	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1936	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1937	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1938	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1939	1.1	0.0	1.1	-0.3	0.0	-0.3	0.9	0.0	0.9
1940	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1941	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1942	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1943	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1944	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1945	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1946	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1947	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1948	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1949	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1950	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1951	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1952	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1953	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1954	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1955	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1956	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1957	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1958	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1959	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1960	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1961	0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1962	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1963	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1964	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1965	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1966	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1967	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1968	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1969	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1970	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1971	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1972	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1973	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1974	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1975	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1976	0.9	0.0	0.9	-0.1	0.0	-0.1	0.8	0.0	0.8
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1979	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1980	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1981	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1982	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1983	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1984	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1985	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1986	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1987	0.8	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
1988	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1989	1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1990	0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1991	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1992	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1993	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1994	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
1995	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1996	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1997	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1998	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1999	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2000	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2001	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
2002	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
2003	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2004	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
2005	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2006	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2007	0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
2008	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
2009	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2010	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2011	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2012	1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
2013	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2014	0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
2015	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
Ave All	1.1	0.0	1.1	-0.1	0.0	-0.1	1.1	0.0	1.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1969		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1995		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1938		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1978		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1982		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2011		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1967		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2006		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1998		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1986		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1980		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1956		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1952		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2005		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1997		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1993		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1941		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1958		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1922	Normal-Wet	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1965		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1942		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1937		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1996		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1974		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1945		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1943		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1984		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1932		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1973		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2010		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1927		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1963		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1962		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1935		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1940		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1951		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1936		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1979		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1975		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2000		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1946		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1923		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1999		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2009		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2003	Normal-Dry	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1970		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1925		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1971		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1957		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1954		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1950		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2016		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1966		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1944		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1953		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1948		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
2002		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1949		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1926		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1955		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1928		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2004		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1985		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1947		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2008		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1933		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1981		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2001		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1972		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1991		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1959		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1989		1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1964	Normal-Dry	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1939		1.1	0.0	1.1	-0.3	0.0	-0.3	0.9	0.0	0.9
1929		1.0	0.0	1.0	-0.2	0.0	-0.2	0.7	0.0	0.7
1988		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1968		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1930		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2013		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2012		1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
1960		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1994		1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
1992		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1987		0.8	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
1990		0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1934		0.9	0.0	0.9	-0.2	0.0	-0.2	0.6	0.0	0.6
2007		0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1961	Crit-High	0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1976		0.9	0.0	0.9	-0.1	0.0	-0.1	0.8	0.0	0.8
2014		0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1931		0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1924		0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
Normal-wet Ave		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
Normal-dry Ave		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
Dry Ave		1.0	0.0	1.0	-0.2	0.0	-0.2	0.8	0.0	0.8
Critical-H Ave		0.6	0.0	0.6	-0.2	0.0	-0.2	0.4	0.0	0.4
Critical-L Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2

Note: Values reported by contract year (March-February)

Ivanhoe ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1923	7.7	2.9	10.6	0.0	-0.7	-0.7	7.7	2.1	9.8
1924	4.3	0.0	4.3	-1.4	0.0	-1.4	2.9	0.0	2.9
1925	7.7	1.5	9.2	0.0	-1.2	-1.2	7.7	0.3	8.0
1926	7.7	0.7	8.4	-0.1	-0.7	-0.8	7.6	0.0	7.6
1927	7.7	3.2	10.9	0.0	-0.5	-0.5	7.7	2.7	10.4
1928	7.7	1.3	9.0	0.0	-0.6	-0.6	7.7	0.6	8.3
1929	6.2	0.0	6.2	-1.6	0.0	-1.6	4.6	0.0	4.6
1930	6.4	0.0	6.4	-1.9	0.0	-1.9	4.5	0.0	4.5
1931	3.0	0.0	3.0	-1.3	0.0	-1.3	1.7	0.0	1.7
1932	7.7	3.6	11.3	0.0	-0.7	-0.7	7.7	2.9	10.6
1933	7.7	1.4	9.1	0.0	-1.4	-1.4	7.7	0.0	7.7
1934	5.5	0.0	5.5	-1.4	0.0	-1.4	4.1	0.0	4.1
1935	7.7	2.8	10.5	0.0	-0.9	-0.9	7.7	2.0	9.7
1936	7.7	3.1	10.8	0.0	-1.1	-1.1	7.7	2.0	9.7
1937	7.7	3.3	11.0	0.0	-0.6	-0.6	7.7	2.7	10.4
1938	7.7	5.3	13.0	0.0	-0.5	-0.5	7.7	4.8	12.5
1939	7.3	0.0	7.3	-1.6	0.0	-1.6	5.7	0.0	5.7
1940	7.7	2.2	9.9	0.0	-0.4	-0.5	7.7	1.8	9.4
1941	7.7	5.0	12.7	0.0	-0.7	-0.7	7.7	4.3	12.0
1942	7.7	4.5	12.2	0.0	-1.1	-1.1	7.7	3.4	11.1
1943	7.7	3.1	10.8	0.0	-1.2	-1.3	7.7	1.9	9.6
1944	7.7	1.5	9.2	0.0	-0.7	-0.7	7.7	0.8	8.5
1945	7.7	3.8	11.5	0.0	-0.6	-0.6	7.7	3.2	10.9
1946	7.7	2.1	9.8	0.0	-0.3	-0.3	7.7	1.8	9.5
1947	7.7	0.6	8.3	0.0	-0.5	-0.5	7.7	0.2	7.9
1948	7.7	0.3	8.0	-1.6	-0.3	-2.0	6.1	0.0	6.1
1949	7.7	1.0	8.7	-0.6	-1.0	-1.6	7.1	0.0	7.1
1950	7.7	1.3	9.0	0.0	-1.1	-1.1	7.7	0.2	7.9
1951	7.7	1.9	9.6	0.0	-1.4	-1.4	7.7	0.4	8.1
1952	7.7	4.7	12.4	0.0	-0.4	-0.4	7.7	4.3	12.0
1953	7.7	1.2	8.9	0.0	-1.1	-1.1	7.7	0.1	7.8
1954	7.7	1.1	8.8	0.0	-1.1	-1.1	7.7	0.0	7.7
1955	7.7	1.1	8.8	-0.2	-1.1	-1.3	7.5	0.0	7.5
1956	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1957	7.7	1.6	9.3	0.0	-0.5	-0.5	7.7	1.2	8.9
1958	7.7	4.7	12.4	0.0	-0.8	-0.8	7.7	4.0	11.7
1959	7.7	0.0	7.7	-0.1	0.0	-0.2	7.6	0.0	7.6
1960	6.2	0.0	6.2	-1.8	0.0	-1.8	4.3	0.0	4.3
1961	4.4	0.0	4.4	-1.3	0.0	-1.3	3.0	0.0	3.0
1962	7.7	3.3	11.0	0.0	-0.8	-0.8	7.7	2.5	10.2
1963	7.7	3.9	11.6	0.0	-0.8	-0.8	7.7	3.1	10.8
1964	7.7	0.5	8.2	-0.9	-0.5	-1.4	6.8	0.0	6.8
1965	7.7	3.9	11.6	0.0	-1.2	-1.2	7.7	2.7	10.4
1966	7.7	1.1	8.8	0.0	-0.6	-0.6	7.7	0.6	8.3
1967	7.7	5.4	13.1	0.0	-0.4	-0.4	7.7	5.0	12.7
1968	7.5	0.0	7.5	-1.3	0.0	-1.3	6.2	0.0	6.2
1969	7.7	5.0	12.7	0.0	-0.2	-0.2	7.7	4.8	12.5
1970	7.7	2.1	9.8	0.0	-1.2	-1.2	7.7	0.9	8.6
1971	7.7	2.0	9.7	0.0	-1.4	-1.4	7.7	0.6	8.3
1972	7.7	0.7	8.4	-0.6	-0.7	-1.3	7.1	0.0	7.1
1973	7.7	3.2	10.9	0.0	-1.1	-1.1	7.7	2.1	9.8
1974	7.7	3.6	11.3	0.0	-1.1	-1.1	7.7	2.6	10.3
1975	7.7	3.2	10.9	0.0	-0.5	-0.5	7.7	2.6	10.3
1976	5.9	0.0	5.9	-0.9	0.0	-0.9	5.0	0.0	5.0
1977	1.8	0.0	1.8	0.0	0.0	0.0	1.8	0.0	1.8
1978	7.7	5.7	13.4	0.0	-0.6	-0.6	7.7	5.0	12.7
1979	7.7	3.0	10.7	0.0	-1.2	-1.2	7.7	1.9	9.5
1980	7.7	4.9	12.6	0.0	-1.4	-1.4	7.7	3.5	11.2
1981	7.7	0.9	8.6	0.0	-0.2	-0.2	7.7	0.6	8.3
1982	7.7	4.6	12.3	0.0	-0.7	-0.7	7.7	3.9	11.6
1983	7.7	5.0	12.7	0.0	-0.1	-0.1	7.7	5.0	12.7
1984	7.7	2.8	10.5	0.0	-0.9	-0.9	7.7	2.0	9.7
1985	7.7	0.8	8.5	0.0	-0.7	-0.7	7.7	0.1	7.8
1986	7.7	4.6	12.3	0.0	-0.8	-0.8	7.7	3.8	11.5
1987	5.2	0.0	5.2	-0.1	0.0	-0.1	5.1	0.0	5.1
1988	6.4	0.0	6.4	-1.8	0.0	-1.8	4.6	0.0	4.6
1989	7.1	0.0	7.1	-2.0	0.0	-2.0	5.0	0.0	5.0
1990	5.4	0.0	5.4	-1.7	0.0	-1.7	3.7	0.0	3.7
1991	7.5	0.0	7.5	-2.1	0.0	-2.1	5.4	0.0	5.4
1992	6.3	0.0	6.3	-1.8	0.0	-1.8	4.6	0.0	4.6
1993	7.7	5.0	12.7	0.0	-0.9	-0.9	7.7	4.2	11.9
1994	6.4	0.0	6.4	-0.1	0.0	-0.1	6.4	0.0	6.4
1995	7.7	6.0	13.7	0.0	-0.5	-0.5	7.7	5.5	13.2
1996	7.7	3.5	11.2	0.0	-0.6	-0.6	7.7	2.8	10.5
1997	7.7	2.8	10.5	0.0	-0.8	-0.8	7.7	2.0	9.7
1998	7.7	4.6	12.3	0.0	-0.4	-0.4	7.7	4.2	11.9
1999	7.7	2.3	10.0	0.0	-0.9	-0.9	7.7	1.5	9.2
2000	7.7	2.7	10.4	0.0	-0.6	-0.6	7.7	2.2	9.9
2001	7.7	0.5	8.2	-1.0	-0.5	-1.6	6.7	0.0	6.7
2002	7.7	0.9	8.6	-0.7	-0.9	-1.7	7.0	0.0	7.0
2003	7.7	2.3	10.0	0.0	-1.6	-1.6	7.7	0.8	8.5
2004	7.7	0.6	8.3	-0.9	-0.6	-1.5	6.8	0.0	6.8
2005	7.7	4.9	12.6	0.0	-0.4	-0.4	7.7	4.6	12.3
2006	7.7	5.0	12.7	0.0	-0.3	-0.3	7.7	4.7	12.4
2007	4.5	0.0	4.5	-1.3	0.0	-1.3	3.1	0.0	3.1
2008	7.7	0.4	8.1	-1.5	-0.4	-1.9	6.2	0.0	6.2
2009	7.7	2.4	10.1	0.0	-1.6	-1.6	7.7	0.8	8.5
2010	7.7	4.0	11.7	0.0	-1.0	-1.0	7.7	3.0	10.7
2011	7.7	5.3	13.0	0.0	-0.4	-0.4	7.7	4.9	12.6
2012	7.0	0.0	7.0	-1.4	0.0	-1.4	5.6	0.0	5.6
2013	6.4	0.0	6.4	-1.9	0.0	-1.9	4.5	0.0	4.5
2014	3.2	0.0	3.2	-1.3	0.0	-1.3	1.9	0.0	1.9
2015	1.3	0.0	1.3	0.0	0.0	0.0	1.3	0.0	1.3
2016	7.7	0.7	8.4	-0.5	-0.7	-1.2	7.2	0.0	7.2
Ave All	7.2	2.2	9.3	-0.4	-0.6	-1.0	6.7	1.6	8.3
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	5.4	0.0	5.4	-1.2	0.0	-1.2	4.1	0.0	4.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	7.7	5.0	12.7	0.0	-0.1	-0.1	7.7	5.0	12.7
1969		7.7	5.0	12.7	0.0	-0.2	-0.2	7.7	4.8	12.5
1995		7.7	6.0	13.7	0.0	-0.5	-0.5	7.7	5.5	13.2
1938		7.7	5.3	13.0	0.0	-0.5	-0.5	7.7	4.8	12.5
1978		7.7	5.7	13.4	0.0	-0.6	-0.6	7.7	5.0	12.7
1982		7.7	4.6	12.3	0.0	-0.7	-0.7	7.7	3.9	11.6
2011		7.7	5.3	13.0	0.0	-0.4	-0.4	7.7	4.9	12.6
1967		7.7	5.4	13.1	0.0	-0.4	-0.4	7.7	5.0	12.7
2006		7.7	5.0	12.7	0.0	-0.3	-0.3	7.7	4.7	12.4
1998		7.7	4.6	12.3	0.0	-0.4	-0.4	7.7	4.2	11.9
1986		7.7	4.6	12.3	0.0	-0.8	-0.8	7.7	3.8	11.5
1980		7.7	4.9	12.6	0.0	-1.4	-1.4	7.7	3.5	11.2
1956		7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1952		7.7	4.7	12.4	0.0	-0.4	-0.4	7.7	4.3	12.0
2005		7.7	4.9	12.6	0.0	-0.4	-0.4	7.7	4.6	12.3
1997		7.7	2.8	10.5	0.0	-0.8	-0.8	7.7	2.0	9.7
1993		7.7	5.0	12.7	0.0	-0.9	-0.9	7.7	4.2	11.9
1941		7.7	5.0	12.7	0.0	-0.7	-0.7	7.7	4.3	12.0
1958		7.7	4.7	12.4	0.0	-0.8	-0.8	7.7	4.0	11.7
1922	Normal-Wet	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1965		7.7	3.9	11.6	0.0	-1.2	-1.2	7.7	2.7	10.4
1942		7.7	4.5	12.2	0.0	-1.1	-1.1	7.7	3.4	11.1
1937		7.7	3.3	11.0	0.0	-0.6	-0.6	7.7	2.7	10.4
1996		7.7	3.5	11.2	0.0	-0.6	-0.6	7.7	2.8	10.5
1974		7.7	3.6	11.3	0.0	-1.1	-1.1	7.7	2.6	10.3
1945		7.7	3.8	11.5	0.0	-0.6	-0.6	7.7	3.2	10.9
1943		7.7	3.1	10.8	0.0	-1.2	-1.3	7.7	1.9	9.6
1984		7.7	2.8	10.5	0.0	-0.9	-0.9	7.7	2.0	9.7
1932		7.7	3.6	11.3	0.0	-0.7	-0.7	7.7	2.9	10.6
1973		7.7	3.2	10.9	0.0	-1.1	-1.1	7.7	2.1	9.8
2010		7.7	4.0	11.7	0.0	-1.0	-1.0	7.7	3.0	10.7
1927		7.7	3.2	10.9	0.0	-0.5	-0.5	7.7	2.7	10.4
1963		7.7	3.9	11.6	0.0	-0.8	-0.8	7.7	3.1	10.8
1962		7.7	3.3	11.0	0.0	-0.8	-0.8	7.7	2.5	10.2
1935		7.7	2.8	10.5	0.0	-0.9	-0.9	7.7	2.0	9.7
1940		7.7	2.2	9.9	0.0	-0.4	-0.5	7.7	1.8	9.4
1951		7.7	1.9	9.6	0.0	-1.4	-1.4	7.7	0.4	8.1
1936		7.7	3.1	10.8	0.0	-1.1	-1.1	7.7	2.0	9.7
1979		7.7	3.0	10.7	0.0	-1.2	-1.2	7.7	1.9	9.5
1975		7.7	3.2	10.9	0.0	-0.5	-0.5	7.7	2.6	10.3
2000		7.7	2.7	10.4	0.0	-0.6	-0.6	7.7	2.2	9.9
1946		7.7	2.1	9.8	0.0	-0.3	-0.3	7.7	1.8	9.5
1923		7.7	2.9	10.6	0.0	-0.7	-0.7	7.7	2.1	9.8
1999		7.7	2.3	10.0	0.0	-0.9	-0.9	7.7	1.5	9.2
2009		7.7	2.4	10.1	0.0	-1.6	-1.6	7.7	0.8	8.5
2003	Normal-Dry	7.7	2.3	10.0	0.0	-1.6	-1.6	7.7	0.8	8.5
1970		7.7	2.1	9.8	0.0	-1.2	-1.2	7.7	0.9	8.6
1925		7.7	1.5	9.2	0.0	-1.2	-1.2	7.7	0.3	8.0
1971		7.7	2.0	9.7	0.0	-1.4	-1.4	7.7	0.6	8.3
1957		7.7	1.6	9.3	0.0	-0.5	-0.5	7.7	1.2	8.9
1954		7.7	1.1	8.8	0.0	-1.1	-1.1	7.7	0.0	7.7
1950		7.7	1.3	9.0	0.0	-1.1	-1.1	7.7	0.2	7.9
2016		7.7	0.7	8.4	-0.5	-0.7	-1.2	7.2	0.0	7.2
1966		7.7	1.1	8.8	0.0	-0.6	-0.6	7.7	0.6	8.3
1944		7.7	1.5	9.2	0.0	-0.7	-0.7	7.7	0.8	8.5
1953		7.7	1.2	8.9	0.0	-1.1	-1.1	7.7	0.1	7.8
1948		7.7	0.3	8.0	-1.6	-0.3	-2.0	6.1	0.0	6.1
2002		7.7	0.9	8.6	-0.7	-0.9	-1.7	7.0	0.0	7.0
1949		7.7	1.0	8.7	-0.6	-1.0	-1.6	7.1	0.0	7.1
1926		7.7	0.7	8.4	-0.1	-0.7	-0.8	7.6	0.0	7.6
1955		7.7	1.1	8.8	-0.2	-1.1	-1.3	7.5	0.0	7.5
1928		7.7	1.3	9.0	0.0	-0.6	-0.6	7.7	0.6	8.3
2004		7.7	0.6	8.3	-0.9	-0.6	-1.5	6.8	0.0	6.8
1985		7.7	0.8	8.5	0.0	-0.7	-0.7	7.7	0.1	7.8
1947		7.7	0.6	8.3	0.0	-0.5	-0.5	7.7	0.2	7.9
2008		7.7	0.4	8.1	-1.5	-0.4	-1.9	6.2	0.0	6.2
1933		7.7	1.4	9.1	0.0	-1.4	-1.4	7.7	0.0	7.7
1981		7.7	0.9	8.6	0.0	-0.2	-0.2	7.7	0.6	8.3
2001		7.7	0.5	8.2	-1.0	-0.5	-1.6	6.7	0.0	6.7
1972		7.7	0.7	8.4	-0.6	-0.7	-1.3	7.1	0.0	7.1
1991		7.5	0.0	7.5	-2.1	0.0	-2.1	5.4	0.0	5.4
1959		7.7	0.0	7.7	-0.1	0.0	-0.2	7.6	0.0	7.6
1989		7.1	0.0	7.1	-2.0	0.0	-2.0	5.0	0.0	5.0
1964	Normal-Dry	7.7	0.5	8.2	-0.9	-0.5	-1.4	6.8	0.0	6.8
1939		7.3	0.0	7.3	-1.6	0.0	-1.6	5.7	0.0	5.7
1929		6.2	0.0	6.2	-1.6	0.0	-1.6	4.6	0.0	4.6
1988		6.4	0.0	6.4	-1.8	0.0	-1.8	4.6	0.0	4.6
1968		7.5	0.0	7.5	-1.3	0.0	-1.3	6.2	0.0	6.2
1930		6.4	0.0	6.4	-1.9	0.0	-1.9	4.5	0.0	4.5
2013		6.4	0.0	6.4	-1.9	0.0	-1.9	4.5	0.0	4.5
2012		7.0	0.0	7.0	-1.4	0.0	-1.4	5.6	0.0	5.6
1960		6.2	0.0	6.2	-1.8	0.0	-1.8	4.3	0.0	4.3
1994		6.4	0.0	6.4	-0.1	0.0	-0.1	6.4	0.0	6.4
1992		6.3	0.0	6.3	-1.8	0.0	-1.8	4.6	0.0	4.6
1987		5.2	0.0	5.2	-0.1	0.0	-0.1	5.1	0.0	5.1
1990		5.4	0.0	5.4	-1.7	0.0	-1.7	3.7	0.0	3.7
1934		5.5	0.0	5.5	-1.4	0.0	-1.4	4.1	0.0	4.1
2007		4.5	0.0	4.5	-1.3	0.0	-1.3	3.1	0.0	3.1
1961	Crit-High	4.4	0.0	4.4	-1.3	0.0	-1.3	3.0	0.0	3.0
1976		5.9	0.0	5.9	-0.9	0.0	-0.9	5.0	0.0	5.0
2014		3.2	0.0	3.2	-1.3	0.0	-1.3	1.9	0.0	1.9
1931		3.0	0.0	3.0	-1.3	0.0	-1.3	1.7	0.0	1.7
1924		4.3	0.0	4.3	-1.4	0.0	-1.4	2.9	0.0	2.9
1977	CL	1.8	0.0	1.8	0.0	0.0	0.0	1.8	0.0	1.8
2015		1.3	0.0	1.3	0.0	0.0	0.0	1.3	0.0	1.3
Wet Ave		7.7	4.9	12.6	0.0	-0.6	-0.6	7.7	4.3	12.0
Normal-wet Ave		7.7	3.2	10.9	0.0	-0.9	-0.9	7.7	2.3	10.0
Normal-dry Ave		7.7	1.0	8.7	-0.4	-0.7	-1.2	7.2	0.3	7.5
Dry Ave		6.3	0.0	6.3	-1.4	0.0	-1.4	4.9	0.0	4.9
Critical-H Ave		4.1	0.0	4.1	-1.3	0.0	-1.3	2.9	0.0	2.9
Critical-L Ave		1.6	0.0	1.6	0.0	0.0	0.0	1.5	0.0	1.5

Note: Values reported by contract year (March-February)

Lewis Creek WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1923	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1924	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1925	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1926	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1927	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1928	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1929	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1930	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1931	0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1932	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1933	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1934	1.0	0.0	1.0	-0.3	0.0	-0.3	0.8	0.0	0.8
1935	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1936	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1937	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1938	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1939	1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1940	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1941	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1942	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1943	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1944	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1945	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1946	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1948	1.5	0.0	1.5	-0.3	0.0	-0.3	1.1	0.0	1.1
1949	1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1950	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1951	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1952	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1953	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1954	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1955	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1956	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1957	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1958	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1959	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1960	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1961	0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1962	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1963	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1964	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1965	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1966	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1967	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1968	1.4	0.0	1.4	-0.3	0.0	-0.3	1.2	0.0	1.2
1969	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1970	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1971	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1972	1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1973	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1974	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1975	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1976	1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1979	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1980	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1981	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1982	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1983	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1984	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1985	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1986	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1987	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
1988	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1989	1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1990	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1991	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1992	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1993	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1994	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1995	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1996	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1997	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1998	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2000	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2001	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
2002	1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
2003	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2004	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
2005	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2006	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2007	0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
2008	1.5	0.0	1.5	-0.3	0.0	-0.3	1.2	0.0	1.2
2009	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2010	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2011	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2012	1.3	0.0	1.3	-0.3	0.0	-0.3	1.1	0.0	1.1
2013	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2014	0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
2015	0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
Ave All	1.3	0.0	1.3	-0.1	0.0	-0.1	1.3	0.0	1.3
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	1.0	0.0	1.0	-0.2	0.0	-0.2	0.8	0.0	0.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1969		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1995		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1938		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1978		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1982		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2011		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1967		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2006		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1998		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1980		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1956		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1952		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2005		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1997		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1993		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1941		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1958		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1922	Normal-Wet	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1965		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1942		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1937		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1996		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1974		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1945		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1943		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1984		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1932		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1973		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2010		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1927		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1963		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1962		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1935		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1940		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1951		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1936		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1979		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1975		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2000		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1946		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1923		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1999		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2009		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2003	Normal-Dry	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1970		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1925		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1971		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1957		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1954		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1950		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2016		1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
1966		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1944		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1953		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1948		1.5	0.0	1.5	-0.3	0.0	-0.3	1.1	0.0	1.1
2002		1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1949		1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1926		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1955		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1928		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2004		1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1985		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1947		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2008		1.5	0.0	1.5	-0.3	0.0	-0.3	1.2	0.0	1.2
1933		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1981		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2001		1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1972		1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1991		1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1959		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1989		1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1964	Normal-Dry	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1939		1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1929		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1988		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1968		1.4	0.0	1.4	-0.3	0.0	-0.3	1.2	0.0	1.2
1930		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2013		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2012		1.3	0.0	1.3	-0.3	0.0	-0.3	1.1	0.0	1.1
1960		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1994		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1992		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1987		1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
1990		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1934		1.0	0.0	1.0	-0.3	0.0	-0.3	0.8	0.0	0.8
2007		0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1961	Crit-High	0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1976		1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
2014		0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1931		0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1924		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-dry Ave		1.4	0.0	1.4	-0.1	0.0	-0.1	1.4	0.0	1.4
Dry Ave		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
Critical-H Ave		0.8	0.0	0.8	-0.2	0.0	-0.2	0.5	0.0	0.5
Critical-L Ave		0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3

Note: Values reported by contract year (March-February)

Lindmore ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	33.0	13.3	46.3	0.0	-2.5	-2.5	33.0	10.8	43.8
1923	33.0	8.0	41.0	0.0	-2.0	-2.0	33.0	5.9	38.9
1924	18.2	0.0	18.2	-5.8	0.0	-5.8	12.4	0.0	12.4
1925	33.0	4.2	37.2	0.0	-3.3	-3.3	33.0	0.9	33.9
1926	33.0	2.0	34.9	-0.6	-2.0	-2.5	32.4	0.0	32.4
1927	33.0	9.0	42.0	0.0	-1.4	-1.4	33.0	7.6	40.6
1928	33.0	3.5	36.5	0.0	-1.8	-1.8	33.0	1.7	34.7
1929	26.6	0.0	26.6	-6.8	0.0	-6.8	19.8	0.0	19.8
1930	27.4	0.0	27.4	-8.0	0.0	-8.0	19.3	0.0	19.3
1931	12.9	0.0	12.9	-5.8	0.0	-5.8	7.1	0.0	7.1
1932	33.0	10.1	43.1	0.0	-2.0	-2.0	33.0	8.1	41.1
1933	33.0	3.8	36.8	0.0	-3.8	-3.8	33.0	0.0	33.0
1934	23.5	0.0	23.5	-6.1	0.0	-6.1	17.4	0.0	17.4
1935	33.0	7.9	40.9	0.0	-2.4	-2.4	33.0	5.5	38.5
1936	33.0	8.6	41.6	-0.1	-3.1	-3.1	32.9	5.5	38.4
1937	33.0	9.2	42.2	0.0	-1.7	-1.7	33.0	7.5	40.5
1938	33.0	14.6	47.6	0.0	-1.3	-1.3	33.0	13.4	46.4
1939	31.2	0.0	31.2	-6.9	0.0	-6.9	24.3	0.0	24.3
1940	33.0	6.1	39.1	-0.2	-1.2	-1.4	32.8	4.9	37.7
1941	33.0	13.9	46.9	0.0	-2.0	-2.0	33.0	11.9	44.9
1942	33.0	12.6	45.6	0.0	-3.2	-3.2	33.0	9.5	42.5
1943	33.0	8.7	41.7	-0.1	-3.4	-3.5	32.9	5.2	38.1
1944	33.0	4.2	37.2	0.0	-1.9	-1.9	33.0	2.3	35.3
1945	33.0	10.5	43.5	0.0	-1.7	-1.7	33.0	8.9	41.9
1946	32.9	5.8	38.7	-0.1	-0.8	-0.9	32.8	5.0	37.8
1947	33.0	1.8	34.8	0.0	-1.4	-1.4	33.0	0.4	33.4
1948	33.0	0.9	33.9	-7.1	-0.9	-7.9	25.9	0.0	25.9
1949	33.0	2.9	35.9	-2.4	-2.9	-5.3	30.6	0.0	30.6
1950	33.0	3.7	36.7	0.0	-3.1	-3.1	33.0	0.5	33.5
1951	32.9	5.2	38.2	0.1	-4.0	-4.0	33.0	1.2	34.2
1952	33.0	13.2	46.2	0.0	-1.2	-1.2	33.0	12.0	45.0
1953	33.0	3.4	36.4	0.0	-3.0	-3.0	33.0	0.4	33.4
1954	33.0	2.9	35.9	-0.2	-2.9	-3.1	32.8	0.0	32.8
1955	33.0	2.9	35.9	-0.8	-2.9	-3.8	32.2	0.0	32.2
1956	33.0	13.4	46.4	0.0	-2.5	-2.5	33.0	10.9	43.9
1957	33.0	4.5	37.5	0.0	-1.3	-1.3	33.0	3.3	36.3
1958	33.0	13.2	46.2	0.0	-2.1	-2.1	33.0	11.0	44.0
1959	33.0	0.1	33.1	-0.5	-0.1	-0.6	32.5	0.0	32.5
1960	26.4	0.0	26.4	-7.8	0.0	-7.8	18.6	0.0	18.6
1961	18.8	0.0	18.8	-5.8	0.0	-5.8	13.0	0.0	13.0
1962	33.0	9.1	42.1	0.0	-2.3	-2.3	33.0	6.9	39.9
1963	33.0	11.0	44.0	0.0	-2.4	-2.4	33.0	8.6	41.6
1964	33.0	1.5	34.5	-3.7	-1.5	-5.2	29.3	0.0	29.3
1965	33.0	11.0	43.9	0.0	-3.3	-3.3	33.0	7.6	40.6
1966	33.0	3.1	36.1	0.0	-1.5	-1.5	33.0	1.6	34.6
1967	33.0	15.1	48.1	0.0	-1.2	-1.2	33.0	14.0	46.9
1968	32.2	0.0	32.2	-5.7	0.0	-5.7	26.6	0.0	26.6
1969	33.0	14.0	47.0	0.0	-0.5	-0.5	33.0	13.5	46.5
1970	33.0	6.0	39.0	0.0	-3.4	-3.4	33.0	2.5	35.5
1971	33.0	5.5	38.5	0.0	-3.9	-3.9	33.0	1.6	34.6
1972	33.0	2.0	35.0	-2.7	-2.0	-4.6	30.3	0.0	30.3
1973	33.0	8.8	41.8	0.0	-3.1	-3.1	33.0	5.7	38.7
1974	33.0	10.1	43.1	0.0	-3.0	-3.0	33.0	7.1	40.1
1975	33.0	8.8	41.8	0.0	-1.5	-1.5	33.0	7.3	40.3
1976	25.2	0.0	25.2	-3.9	0.0	-3.9	21.2	0.0	21.2
1977	7.7	0.0	7.7	-0.1	0.0	-0.1	7.6	0.0	7.6
1978	33.0	15.8	48.8	0.0	-1.7	-1.7	33.0	14.0	47.0
1979	33.0	8.4	41.4	-0.2	-3.3	-3.4	32.8	5.2	38.0
1980	33.0	13.7	46.7	-0.2	-3.9	-4.1	32.8	9.8	42.6
1981	33.0	2.5	35.5	0.0	-0.7	-0.7	33.0	1.8	34.8
1982	33.0	12.9	45.9	-0.1	-2.0	-2.1	32.9	10.9	43.8
1983	33.0	14.0	47.0	0.0	-0.2	-0.2	33.0	13.8	46.8
1984	33.0	7.9	40.9	0.0	-2.4	-2.4	33.0	5.5	38.5
1985	33.0	2.3	35.3	0.0	-1.9	-1.8	33.0	0.4	33.4
1986	33.0	12.7	45.7	0.0	-2.1	-2.1	33.0	10.6	43.6
1987	22.3	0.0	22.3	-0.3	0.0	-0.3	22.0	0.0	22.0
1988	27.6	0.0	27.6	-7.9	0.0	-7.9	19.7	0.0	19.7
1989	30.3	0.0	30.3	-8.8	0.0	-8.8	21.5	0.0	21.5
1990	23.0	0.0	23.0	-7.2	0.0	-7.2	15.7	0.0	15.7
1991	32.3	0.0	32.3	-9.0	0.0	-9.0	23.3	0.0	23.3
1992	27.2	0.0	27.2	-7.6	0.0	-7.6	19.6	0.0	19.6
1993	33.0	14.0	47.0	0.0	-2.4	-2.4	33.0	11.6	44.6
1994	27.5	0.0	27.5	-0.3	0.0	-0.3	27.2	0.0	27.2
1995	33.0	16.7	49.7	0.0	-1.4	-1.4	33.0	15.3	48.3
1996	33.0	9.6	42.6	0.0	-1.8	-1.8	33.0	7.8	40.8
1997	33.0	7.7	40.7	-0.1	-2.1	-2.2	32.9	5.6	38.5
1998	33.0	12.8	45.8	0.0	-1.0	-1.0	33.0	11.8	44.8
1999	33.0	6.5	39.5	0.0	-2.4	-2.4	33.0	4.1	37.1
2000	33.0	7.6	40.6	0.0	-1.5	-1.5	33.0	6.1	39.1
2001	33.0	1.4	34.4	-4.5	-1.4	-5.9	28.5	0.0	28.5
2002	33.0	2.6	35.6	-3.2	-2.6	-5.8	29.8	0.0	29.8
2003	33.0	6.5	39.5	0.0	-4.4	-4.4	33.0	2.1	35.1
2004	33.0	1.7	34.7	-3.8	-1.7	-5.5	29.2	0.0	29.2
2005	33.0	13.7	46.7	0.0	-1.1	-1.1	33.0	12.7	45.7
2006	33.0	13.9	46.9	0.0	-0.9	-0.9	33.0	13.0	46.0
2007	19.1	0.0	19.1	-5.7	0.0	-5.7	13.4	0.0	13.4
2008	33.0	1.1	34.1	-6.4	-1.1	-7.6	26.6	0.0	26.6
2009	33.0	6.7	39.7	0.0	-4.3	-4.3	33.0	2.3	35.3
2010	33.0	11.0	44.0	0.0	-2.7	-2.7	33.0	8.3	41.3
2011	33.0	14.9	47.9	0.0	-1.1	-1.1	33.0	13.7	46.7
2012	29.9	0.0	29.9	-6.0	0.0	-6.0	23.9	0.0	23.9
2013	27.3	0.0	27.3	-8.0	0.0	-8.0	19.3	0.0	19.3
2014	13.7	0.0	13.7	-5.7	0.0	-5.7	7.9	0.0	7.9
2015	5.7	0.0	5.7	-0.1	0.0	-0.1	5.6	0.0	5.6
2016	33.0	2.1	35.1	-2.1	-2.1	-4.2	30.9	0.0	30.9
Ave All	30.7	6.0	36.7	-1.8	-1.6	-3.4	28.9	4.4	33.3

Original Dry Year Classification (Driest 20% Years)

Dry Ave	23.0	0.1	23.1	-5.2	-0.1	-5.3	17.8	0.0	17.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	33.0	14.0	47.0	0.0	-0.2	-0.2	33.0	13.8	46.8
1969		33.0	14.0	47.0	0.0	-0.5	-0.5	33.0	13.5	46.5
1995		33.0	16.7	49.7	0.0	-1.4	-1.4	33.0	15.3	48.3
1938		33.0	14.6	47.6	0.0	-1.3	-1.3	33.0	13.4	46.4
1978		33.0	15.8	48.8	0.0	-1.7	-1.7	33.0	14.0	47.0
1982		33.0	12.9	45.9	-0.1	-2.0	-2.1	32.9	10.9	43.8
2011		33.0	14.9	47.9	0.0	-1.1	-1.1	33.0	13.7	46.7
1967		33.0	15.1	48.1	0.0	-1.2	-1.2	33.0	14.0	46.9
2006		33.0	13.9	46.9	0.0	-0.9	-0.9	33.0	13.0	46.0
1998		33.0	12.8	45.8	0.0	-1.0	-1.0	33.0	11.8	44.8
1986		33.0	12.7	45.7	0.0	-2.1	-2.1	33.0	10.6	43.6
1980		33.0	13.7	46.7	-0.2	-3.9	-4.1	32.8	9.8	42.6
1956		33.0	13.4	46.4	0.0	-2.5	-2.5	33.0	10.9	43.9
1952		33.0	13.2	46.2	0.0	-1.2	-1.2	33.0	12.0	45.0
2005		33.0	13.7	46.7	0.0	-1.1	-1.1	33.0	12.7	45.7
1997		33.0	7.7	40.7	-0.1	-2.1	-2.2	32.9	5.6	38.5
1993		33.0	14.0	47.0	0.0	-2.4	-2.4	33.0	11.6	44.6
1941		33.0	13.9	46.9	0.0	-2.0	-2.0	33.0	11.9	44.9
1958		33.0	13.2	46.2	0.0	-2.1	-2.1	33.0	11.0	44.0
1922	Normal-Wet	33.0	13.3	46.3	0.0	-2.5	-2.5	33.0	10.8	43.8
1965		33.0	11.0	43.9	0.0	-3.3	-3.3	33.0	7.6	40.6
1942		33.0	12.6	45.6	0.0	-3.2	-3.2	33.0	9.5	42.5
1937		33.0	9.2	42.2	0.0	-1.7	-1.7	33.0	7.5	40.5
1996		33.0	9.6	42.6	0.0	-1.8	-1.8	33.0	7.8	40.8
1974		33.0	10.1	43.1	0.0	-3.0	-3.0	33.0	7.1	40.1
1945		33.0	10.5	43.5	0.0	-1.7	-1.7	33.0	8.9	41.9
1943		33.0	8.7	41.7	-0.1	-3.4	-3.5	32.9	5.2	38.1
1984		33.0	7.9	40.9	0.0	-2.4	-2.4	33.0	5.5	38.5
1932		33.0	10.1	43.1	0.0	-2.0	-2.0	33.0	8.1	41.1
1973		33.0	8.8	41.8	0.0	-3.1	-3.1	33.0	5.7	38.7
2010		33.0	11.0	44.0	0.0	-2.7	-2.7	33.0	8.3	41.3
1927		33.0	9.0	42.0	0.0	-1.4	-1.4	33.0	7.6	40.6
1963		33.0	11.0	44.0	0.0	-2.4	-2.4	33.0	8.6	41.6
1962		33.0	9.1	42.1	0.0	-2.3	-2.3	33.0	6.9	39.9
1935		33.0	7.9	40.9	0.0	-2.4	-2.4	33.0	5.5	38.5
1940		33.0	6.1	39.1	-0.2	-1.2	-1.4	32.8	4.9	37.7
1951		32.9	5.2	38.2	0.1	-4.0	-4.0	33.0	1.2	34.2
1936		33.0	8.6	41.6	-0.1	-3.1	-3.1	32.9	5.5	38.4
1979		33.0	8.4	41.4	-0.2	-3.3	-3.4	32.8	5.2	38.0
1975		33.0	8.8	41.8	0.0	-1.5	-1.5	33.0	7.3	40.3
2000		33.0	7.6	40.6	0.0	-1.5	-1.5	33.0	6.1	39.1
1946		32.9	5.8	38.7	-0.1	-0.8	-0.9	32.8	5.0	37.8
1923		33.0	8.0	41.0	0.0	-2.0	-2.0	33.0	5.9	38.9
1999		33.0	6.5	39.5	0.0	-2.4	-2.4	33.0	4.1	37.1
2009		33.0	6.7	39.7	0.0	-4.3	-4.3	33.0	2.3	35.3
2003	Normal-Dry	33.0	6.5	39.5	0.0	-4.4	-4.4	33.0	2.1	35.1
1970		33.0	6.0	39.0	0.0	-3.4	-3.4	33.0	2.5	35.5
1925		33.0	4.2	37.2	0.0	-3.3	-3.3	33.0	0.9	33.9
1971		33.0	5.5	38.5	0.0	-3.9	-3.9	33.0	1.6	34.6
1957		33.0	4.5	37.5	0.0	-1.3	-1.3	33.0	3.3	36.3
1954		33.0	2.9	35.9	-0.2	-2.9	-3.1	32.8	0.0	32.8
1950		33.0	3.7	36.7	0.0	-3.1	-3.1	33.0	0.5	33.5
2016		33.0	2.1	35.1	-2.1	-2.1	-4.2	30.9	0.0	30.9
1966		33.0	3.1	36.1	0.0	-1.5	-1.5	33.0	1.6	34.6
1944		33.0	4.2	37.2	0.0	-1.9	-1.9	33.0	2.3	35.3
1953		33.0	3.4	36.4	0.0	-3.0	-3.0	33.0	0.4	33.4
1948		33.0	0.9	33.9	-7.1	-0.9	-7.9	25.9	0.0	25.9
2002		33.0	2.6	35.6	-3.2	-2.6	-5.8	29.8	0.0	29.8
1949		33.0	2.9	35.9	-2.4	-2.9	-5.3	30.6	0.0	30.6
1926		33.0	2.0	34.9	-0.6	-2.0	-2.5	32.4	0.0	32.4
1955		33.0	2.9	35.9	-0.8	-2.9	-3.8	32.2	0.0	32.2
1928		33.0	3.5	36.5	0.0	-1.8	-1.8	33.0	1.7	34.7
2004		33.0	1.7	34.7	-3.8	-1.7	-5.5	29.2	0.0	29.2
1985		33.0	2.3	35.3	0.0	-1.9	-1.8	33.0	0.4	33.4
1947		33.0	1.8	34.8	0.0	-1.4	-1.4	33.0	0.4	33.4
2008		33.0	1.1	34.1	-6.4	-1.1	-7.6	26.6	0.0	26.6
1933		33.0	3.8	36.8	0.0	-3.8	-3.8	33.0	0.0	33.0
1981		33.0	2.5	35.5	0.0	-0.7	-0.7	33.0	1.8	34.8
2001		33.0	1.4	34.4	-4.5	-1.4	-5.9	28.5	0.0	28.5
1972		33.0	2.0	35.0	-2.7	-2.0	-4.6	30.3	0.0	30.3
1991		32.3	0.0	32.3	-9.0	0.0	-9.0	23.3	0.0	23.3
1959		33.0	0.1	33.1	-0.5	-0.1	-0.6	32.5	0.0	32.5
1989		30.3	0.0	30.3	-8.8	0.0	-8.8	21.5	0.0	21.5
1964	Normal-Dry	33.0	1.5	34.5	-3.7	-1.5	-5.2	29.3	0.0	29.3
1939		31.2	0.0	31.2	-6.9	0.0	-6.9	24.3	0.0	24.3
1929		26.6	0.0	26.6	-6.8	0.0	-6.8	19.8	0.0	19.8
1988		27.6	0.0	27.6	-7.9	0.0	-7.9	19.7	0.0	19.7
1968		32.2	0.0	32.2	-5.7	0.0	-5.7	26.6	0.0	26.6
1930		27.4	0.0	27.4	-8.0	0.0	-8.0	19.3	0.0	19.3
2013		27.3	0.0	27.3	-8.0	0.0	-8.0	19.3	0.0	19.3
2012		29.9	0.0	29.9	-6.0	0.0	-6.0	23.9	0.0	23.9
1960		26.4	0.0	26.4	-7.8	0.0	-7.8	18.6	0.0	18.6
1994		27.5	0.0	27.5	-0.3	0.0	-0.3	27.2	0.0	27.2
1992		27.2	0.0	27.2	-7.6	0.0	-7.6	19.6	0.0	19.6
1987		22.3	0.0	22.3	-0.3	0.0	-0.3	22.0	0.0	22.0
1990		23.0	0.0	23.0	-7.2	0.0	-7.2	15.7	0.0	15.7
1934		23.5	0.0	23.5	-6.1	0.0	-6.1	17.4	0.0	17.4
2007		19.1	0.0	19.1	-5.7	0.0	-5.7	13.4	0.0	13.4
1961	Crit-High	18.8	0.0	18.8	-5.8	0.0	-5.8	13.0	0.0	13.0
1976		25.2	0.0	25.2	-3.9	0.0	-3.9	21.2	0.0	21.2
2014		13.7	0.0	13.7	-5.7	0.0	-5.7	7.9	0.0	7.9
1931		12.9	0.0	12.9	-5.8	0.0	-5.8	7.1	0.0	7.1
1924		18.2	0.0	18.2	-5.8	0.0	-5.8	12.4	0.0	12.4
1977	CL	7.7	0.0	7.7	-0.1	0.0	-0.1	7.6	0.0	7.6
2015		5.7	0.0	5.7	-0.1	0.0	-0.1	5.6	0.0	5.6
Wet Ave		33.0	13.7	46.7	0.0	-1.6	-1.6	33.0	12.1	45.1
Normal-wet Ave		33.0	8.9	41.9	0.0	-2.4	-2.5	33.0	6.5	39.4
Normal-dry Ave		32.9	2.8	35.6	-1.9	-2.1	-3.9	31.0	0.7	31.7
Dry Ave		27.0	0.1	27.1	-5.9	-0.1	-6.0	21.1	0.0	21.1
Critical-H Ave		17.7	0.0	17.7	-5.4	0.0	-5.4	12.3	0.0	12.3
Critical-L Ave		6.7	0.0	6.7	-0.1	0.0	-0.1	6.6	0.0	6.6

Note: Values reported by contract year (March-February)

Lindsay-Strathmore ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1923	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1924	15.2	0.0	15.2	-4.8	0.0	-4.8	10.4	0.0	10.4
1925	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1926	27.5	0.0	27.5	-0.5	0.0	-0.5	27.0	0.0	27.0
1927	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1928	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1929	22.1	0.0	22.1	-5.7	0.0	-5.7	16.5	0.0	16.5
1930	22.8	0.0	22.8	-6.7	0.0	-6.7	16.1	0.0	16.1
1931	10.7	0.0	10.7	-4.8	0.0	-4.8	5.9	0.0	5.9
1932	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1933	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1934	19.6	0.0	19.6	-5.1	0.0	-5.1	14.5	0.0	14.5
1935	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1936	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1937	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1938	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1939	26.0	0.0	26.0	-5.8	0.0	-5.8	20.3	0.0	20.3
1940	27.5	0.0	27.5	-0.2	0.0	-0.2	27.3	0.0	27.3
1941	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1942	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1943	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1944	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1945	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1946	27.4	0.0	27.4	-0.1	0.0	-0.1	27.4	0.0	27.4
1947	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1948	27.5	0.0	27.5	-5.9	0.0	-5.9	21.6	0.0	21.6
1949	27.5	0.0	27.5	-2.0	0.0	-2.0	25.5	0.0	25.5
1950	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1951	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1952	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1953	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1954	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1955	27.5	0.0	27.5	-0.7	0.0	-0.7	26.8	0.0	26.8
1956	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1957	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1958	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1959	27.5	0.0	27.5	-0.4	0.0	-0.4	27.1	0.0	27.1
1960	22.0	0.0	22.0	-6.5	0.0	-6.5	15.5	0.0	15.5
1961	15.6	0.0	15.6	-4.8	0.0	-4.8	10.9	0.0	10.9
1962	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1963	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1964	27.5	0.0	27.5	-3.1	0.0	-3.1	24.4	0.0	24.4
1965	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1966	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1967	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1968	26.9	0.0	26.9	-4.7	0.0	-4.7	22.1	0.0	22.1
1969	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1970	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1971	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1972	27.5	0.0	27.5	-2.2	0.0	-2.2	25.3	0.0	25.3
1973	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1974	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1975	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1976	21.0	0.0	21.0	-3.3	0.0	-3.3	17.7	0.0	17.7
1977	6.4	0.0	6.4	-0.1	0.0	-0.1	6.3	0.0	6.3
1978	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1979	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1980	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1981	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1982	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1983	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1984	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1985	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1986	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1987	18.6	0.0	18.6	-0.2	0.0	-0.2	18.3	0.0	18.3
1988	23.0	0.0	23.0	-6.6	0.0	-6.6	16.4	0.0	16.4
1989	25.2	0.0	25.2	-7.3	0.0	-7.3	17.9	0.0	17.9
1990	19.2	0.0	19.2	-6.0	0.0	-6.0	13.1	0.0	13.1
1991	26.9	0.0	26.9	-7.5	0.0	-7.5	19.4	0.0	19.4
1992	22.7	0.0	22.7	-6.3	0.0	-6.3	16.3	0.0	16.3
1993	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1994	22.9	0.0	22.9	-0.2	0.0	-0.2	22.7	0.0	22.7
1995	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1996	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1997	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1998	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1999	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2000	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2001	27.5	0.0	27.5	-3.7	0.0	-3.7	23.8	0.0	23.8
2002	27.5	0.0	27.5	-2.6	0.0	-2.6	24.9	0.0	24.9
2003	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2004	27.5	0.0	27.5	-3.1	0.0	-3.1	24.4	0.0	24.4
2005	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2006	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2007	15.9	0.0	15.9	-4.8	0.0	-4.8	11.2	0.0	11.2
2008	27.5	0.0	27.5	-5.4	0.0	-5.4	22.1	0.0	22.1
2009	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2010	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2011	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2012	25.0	0.0	25.0	-5.0	0.0	-5.0	19.9	0.0	19.9
2013	22.8	0.0	22.8	-6.7	0.0	-6.7	16.1	0.0	16.1
2014	11.4	0.0	11.4	-4.8	0.0	-4.8	6.6	0.0	6.6
2015	4.8	0.0	4.8	-0.1	0.0	-0.1	4.7	0.0	4.7
2016	27.5	0.0	27.5	-1.8	0.0	-1.8	25.7	0.0	25.7
Ave All	25.5	0.0	25.5	-1.5	0.0	-1.5	24.1	0.0	24.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	19.2	0.0	19.2	-4.4	0.0	-4.4	14.8	0.0	14.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1969		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1995		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1938		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1978		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1982		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2011		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1967		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2006		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1998		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1986		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1980		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1956		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1952		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2005		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1997		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1993		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1941		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1958		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1922	Normal-Wet	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1965		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1942		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1937		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1996		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1974		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1945		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1943		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1984		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1932		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1973		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2010		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1927		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1963		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1962		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1935		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1940		27.5	0.0	27.5	-0.2	0.0	-0.2	27.3	0.0	27.3
1951		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1936		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1979		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1975		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2000		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1946		27.4	0.0	27.4	-0.1	0.0	-0.1	27.4	0.0	27.4
1923		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1999		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2009		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2003	Normal-Dry	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1970		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1925		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1971		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1957		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1954		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1950		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2016		27.5	0.0	27.5	-1.8	0.0	-1.8	25.7	0.0	25.7
1966		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1944		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1953		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1948		27.5	0.0	27.5	-5.9	0.0	-5.9	21.6	0.0	21.6
2002		27.5	0.0	27.5	-2.6	0.0	-2.6	24.9	0.0	24.9
1949		27.5	0.0	27.5	-2.0	0.0	-2.0	25.5	0.0	25.5
1926		27.5	0.0	27.5	-0.5	0.0	-0.5	27.0	0.0	27.0
1955		27.5	0.0	27.5	-0.7	0.0	-0.7	26.8	0.0	26.8
1928		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2004		27.5	0.0	27.5	-3.1	0.0	-3.1	24.4	0.0	24.4
1985		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1947		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2008		27.5	0.0	27.5	-5.4	0.0	-5.4	22.1	0.0	22.1
1933		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1981		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2001		27.5	0.0	27.5	-3.7	0.0	-3.7	23.8	0.0	23.8
1972		27.5	0.0	27.5	-2.2	0.0	-2.2	25.3	0.0	25.3
1991		26.9	0.0	26.9	-7.5	0.0	-7.5	19.4	0.0	19.4
1959		27.5	0.0	27.5	-0.4	0.0	-0.4	27.1	0.0	27.1
1989		25.2	0.0	25.2	-7.3	0.0	-7.3	17.9	0.0	17.9
1964	Normal-Dry	27.5	0.0	27.5	-3.1	0.0	-3.1	24.4	0.0	24.4
1939		26.0	0.0	26.0	-5.8	0.0	-5.8	20.3	0.0	20.3
1929		22.1	0.0	22.1	-5.7	0.0	-5.7	16.5	0.0	16.5
1988		23.0	0.0	23.0	-6.6	0.0	-6.6	16.4	0.0	16.4
1968		26.9	0.0	26.9	-4.7	0.0	-4.7	22.1	0.0	22.1
1930		22.8	0.0	22.8	-6.7	0.0	-6.7	16.1	0.0	16.1
2013		22.8	0.0	22.8	-6.7	0.0	-6.7	16.1	0.0	16.1
2012		25.0	0.0	25.0	-5.0	0.0	-5.0	19.9	0.0	19.9
1960		22.0	0.0	22.0	-6.5	0.0	-6.5	15.5	0.0	15.5
1994		22.9	0.0	22.9	-0.2	0.0	-0.2	22.7	0.0	22.7
1992		22.7	0.0	22.7	-6.3	0.0	-6.3	16.3	0.0	16.3
1987		18.6	0.0	18.6	-0.2	0.0	-0.2	18.3	0.0	18.3
1990		19.2	0.0	19.2	-6.0	0.0	-6.0	13.1	0.0	13.1
1934		19.6	0.0	19.6	-5.1	0.0	-5.1	14.5	0.0	14.5
2007		15.9	0.0	15.9	-4.8	0.0	-4.8	11.2	0.0	11.2
1961	Crit-High	15.6	0.0	15.6	-4.8	0.0	-4.8	10.9	0.0	10.9
1976		21.0	0.0	21.0	-3.3	0.0	-3.3	17.7	0.0	17.7
2014		11.4	0.0	11.4	-4.8	0.0	-4.8	6.6	0.0	6.6
1931		10.7	0.0	10.7	-4.8	0.0	-4.8	5.9	0.0	5.9
1924		15.2	0.0	15.2	-4.8	0.0	-4.8	10.4	0.0	10.4
1977	CL	6.4	0.0	6.4	-0.1	0.0	-0.1	6.3	0.0	6.3
2015		4.8	0.0	4.8	-0.1	0.0	-0.1	4.7	0.0	4.7
	Wet Ave	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
	Normal-wet Ave	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
	Normal-dry Ave	27.4	0.0	27.4	-1.5	0.0	-1.5	25.8	0.0	25.8
	Dry Ave	22.5	0.0	22.5	-4.9	0.0	-4.9	17.6	0.0	17.6
	Critical-H Ave	14.8	0.0	14.8	-4.5	0.0	-4.5	10.3	0.0	10.3
	Critical-L Ave	5.6	0.0	5.6	-0.1	0.0	-0.1	5.5	0.0	5.5

Note: Values reported by contract year (March-February)

Lower Tule River ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	61.2	143.6	204.8	0.0	-27.1	-27.1	61.2	116.5	177.7
1923	61.2	86.5	147.7	0.0	-22.1	-22.1	61.2	64.4	125.6
1924	33.8	0.0	33.8	-10.8	0.0	-10.8	23.1	0.0	23.1
1925	61.2	45.3	106.5	0.0	-35.5	-35.5	61.2	9.8	71.0
1926	61.2	21.1	82.3	-1.0	-21.1	-22.1	60.1	0.0	60.1
1927	61.2	97.3	158.5	-0.1	-15.0	-15.0	61.1	82.4	143.5
1928	61.2	38.0	99.2	0.0	-19.3	-19.3	61.2	18.7	79.9
1929	49.3	0.0	49.3	-12.6	0.0	-12.6	36.7	0.0	36.7
1930	50.8	0.0	50.8	-14.9	0.0	-14.9	35.8	0.0	35.8
1931	23.9	0.0	23.9	-10.7	0.0	-10.7	13.2	0.0	13.2
1932	61.2	108.8	170.0	0.0	-21.2	-21.2	61.2	87.6	148.8
1933	61.2	40.8	102.0	0.0	-40.8	-40.8	61.2	0.1	61.3
1934	43.5	0.0	43.5	-11.3	0.0	-11.3	32.2	0.0	32.2
1935	61.2	85.4	146.6	0.0	-25.9	-25.9	61.2	59.5	120.7
1936	61.2	92.7	153.9	-0.2	-33.1	-33.3	61.0	59.6	120.6
1937	61.2	99.6	160.8	0.0	-18.6	-18.6	61.2	81.0	142.2
1938	61.2	158.3	219.5	0.0	-13.7	-13.7	61.2	144.6	205.8
1939	57.9	0.0	57.9	-12.8	0.0	-12.8	45.1	0.0	45.1
1940	61.2	66.2	127.4	-0.3	-13.3	-13.7	60.9	52.9	113.7
1941	61.2	150.2	211.4	0.0	-22.0	-22.0	61.2	128.3	189.5
1942	61.2	136.7	197.9	0.0	-34.2	-34.3	61.2	102.5	163.7
1943	61.2	93.8	155.0	-0.2	-37.2	-37.4	61.0	56.6	117.6
1944	61.2	45.0	106.2	0.0	-20.1	-20.1	61.2	24.9	86.1
1945	61.2	113.8	175.0	0.0	-18.0	-18.0	61.2	95.8	157.0
1946	61.1	62.6	123.7	-0.2	-8.5	-8.7	60.9	54.1	115.0
1947	61.2	19.5	80.7	0.0	-14.9	-14.9	61.2	4.6	65.8
1948	61.2	9.6	70.8	-13.1	-9.6	-22.7	48.1	0.0	48.1
1949	61.2	31.5	92.7	-4.4	-31.5	-35.9	56.8	0.0	56.8
1950	61.2	39.5	100.7	0.0	-33.9	-33.9	61.2	5.7	66.9
1951	61.1	56.3	117.4	0.1	-43.3	-43.2	61.2	13.0	74.2
1952	61.2	142.8	204.0	0.0	-12.6	-12.6	61.2	130.2	191.4
1953	61.2	37.1	98.3	0.0	-33.0	-33.0	61.2	4.1	65.3
1954	61.2	31.7	92.9	-0.3	-31.7	-32.0	60.9	0.0	60.9
1955	61.2	31.8	93.0	-1.6	-31.8	-33.4	59.6	0.0	59.6
1956	61.2	145.0	206.2	0.0	-27.3	-27.3	61.2	117.6	178.8
1957	61.2	49.0	110.2	0.0	-13.6	-13.6	61.2	35.4	96.6
1958	61.2	142.4	203.6	0.0	-23.0	-23.0	61.2	119.4	180.6
1959	61.2	1.2	62.4	-1.0	-1.2	-2.2	60.2	0.0	60.2
1960	49.0	0.0	49.0	-14.5	0.0	-14.5	34.4	0.0	34.4
1961	34.8	0.0	34.8	-10.7	0.0	-10.7	24.2	0.0	24.2
1962	61.2	98.9	160.1	0.0	-24.4	-24.4	61.2	74.4	135.6
1963	61.2	118.6	179.8	0.0	-25.4	-25.4	61.2	93.1	154.3
1964	61.2	16.1	77.3	-6.8	-16.1	-22.9	54.4	0.0	54.4
1965	61.2	118.5	179.7	0.0	-36.0	-35.9	61.2	82.6	143.8
1966	61.2	33.8	94.9	0.0	-16.8	-16.7	61.2	17.0	78.2
1967	61.2	163.8	225.0	0.0	-12.8	-12.9	61.2	150.9	212.1
1968	59.8	0.0	59.8	-10.6	0.0	-10.6	49.2	0.0	49.2
1969	61.2	151.4	212.6	0.0	-5.7	-5.7	61.2	145.8	207.0
1970	61.2	64.6	125.7	0.0	-37.3	-37.2	61.2	27.3	88.5
1971	61.2	59.3	120.5	0.0	-41.7	-41.7	61.2	17.6	78.8
1972	61.2	21.1	82.3	-5.0	-21.1	-26.1	56.2	0.0	56.2
1973	61.2	95.4	156.6	0.0	-33.3	-33.3	61.2	62.1	123.3
1974	61.2	109.5	170.7	0.0	-32.3	-32.3	61.2	77.1	138.3
1975	61.2	95.3	156.5	0.0	-16.3	-16.3	61.2	79.0	140.2
1976	46.7	0.0	46.7	-7.3	0.0	-7.3	39.4	0.0	39.4
1977	14.3	0.0	14.3	-0.2	0.0	-0.2	14.1	0.0	14.1
1978	61.2	170.7	231.9	0.0	-18.7	-18.7	61.2	152.0	213.2
1979	61.2	91.2	152.4	-0.3	-35.2	-35.5	60.9	55.9	116.8
1980	61.2	148.3	209.5	-0.3	-42.5	-42.8	60.9	105.9	166.8
1981	61.2	26.5	87.7	0.0	-7.1	-7.1	61.2	19.4	80.6
1982	61.2	139.6	200.8	-0.1	-21.8	-21.9	61.1	117.8	178.8
1983	61.2	151.2	212.4	0.0	-1.6	-1.6	61.2	149.5	210.7
1984	61.2	85.3	146.5	0.0	-25.9	-25.9	61.2	59.5	120.7
1985	61.2	24.6	85.8	0.0	-20.2	-20.1	61.2	4.4	65.6
1986	61.2	137.9	199.1	0.0	-22.9	-22.9	61.2	114.9	176.1
1987	41.4	0.0	41.4	-0.6	0.0	-0.6	40.8	0.0	40.8
1988	51.2	0.0	51.2	-14.6	0.0	-14.6	36.6	0.0	36.6
1989	56.2	0.0	56.2	-16.3	0.0	-16.3	39.9	0.0	39.9
1990	42.6	0.0	42.6	-13.4	0.0	-13.4	29.2	0.0	29.2
1991	59.8	0.0	59.8	-16.7	0.0	-16.7	43.1	0.0	43.1
1992	50.4	0.0	50.4	-14.1	0.0	-14.1	36.4	0.0	36.4
1993	61.2	151.6	212.8	0.0	-26.5	-26.5	61.2	125.1	186.3
1994	51.0	0.0	51.0	-0.5	0.0	-0.5	50.5	0.0	50.5
1995	61.2	180.3	241.5	0.0	-14.9	-14.9	61.2	165.4	226.6
1996	61.2	104.3	165.5	0.0	-19.6	-19.6	61.2	84.7	145.9
1997	61.2	83.1	144.3	-0.1	-22.8	-22.9	61.1	60.4	121.4
1998	61.2	138.9	200.1	0.0	-11.0	-11.1	61.1	127.9	189.0
1999	61.2	70.6	131.8	0.0	-26.2	-26.2	61.2	44.5	105.7
2000	61.2	82.4	143.6	0.0	-16.7	-16.7	61.2	65.7	126.9
2001	61.2	15.5	76.7	-8.3	-15.5	-23.9	52.9	0.0	52.9
2002	61.2	28.3	89.5	-5.9	-28.3	-34.2	55.3	0.0	55.3
2003	61.2	70.0	131.2	0.0	-47.3	-47.3	61.2	22.7	83.9
2004	61.2	18.9	80.1	-7.0	-18.9	-25.9	54.2	0.0	54.2
2005	61.2	148.6	209.8	0.0	-11.5	-11.5	61.2	137.1	198.3
2006	61.2	150.1	211.3	0.0	-10.0	-10.0	61.2	140.1	201.3
2007	35.5	0.0	35.5	-10.7	0.0	-10.7	24.8	0.0	24.8
2008	61.2	12.3	73.5	-11.9	-12.3	-24.3	49.3	0.0	49.3
2009	61.2	72.2	133.4	0.0	-46.9	-46.9	61.2	25.3	86.5
2010	61.2	119.0	180.2	0.0	-29.3	-29.3	61.2	89.7	150.9
2011	61.2	161.0	222.2	0.0	-12.3	-12.3	61.2	148.7	209.9
2012	55.5	0.0	55.5	-11.2	0.0	-11.2	44.4	0.0	44.4
2013	50.7	0.0	50.7	-14.9	0.0	-14.9	35.8	0.0	35.8
2014	25.3	0.0	25.3	-10.6	0.0	-10.6	14.7	0.0	14.7
2015	10.6	0.0	10.6	-0.2	0.0	-0.2	10.4	0.0	10.4
2016	61.2	22.4	83.6	-4.0	-22.4	-26.3	57.2	0.0	57.2
Ave All	56.8	65.0	121.8	-3.3	-17.5	-20.8	53.6	47.5	101.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	42.7	0.7	43.4	-9.7	-0.7	-10.5	33.0	0.0	33.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	61.2	151.2	212.4	0.0	-1.6	-1.6	61.2	149.5	210.7
1969		61.2	151.4	212.6	0.0	-5.7	-5.7	61.2	145.8	207.0
1995		61.2	180.3	241.5	0.0	-14.9	-14.9	61.2	165.4	226.6
1938		61.2	158.3	219.5	0.0	-13.7	-13.7	61.2	144.6	205.8
1978		61.2	170.7	231.9	0.0	-18.7	-18.7	61.2	152.0	213.2
1982		61.2	139.6	200.8	-0.1	-21.8	-21.9	61.1	117.8	178.8
2011		61.2	161.0	222.2	0.0	-12.3	-12.3	61.2	148.7	209.9
1967		61.2	163.8	225.0	0.0	-12.8	-12.9	61.2	150.9	212.1
2006		61.2	150.1	211.3	0.0	-10.0	-10.0	61.2	140.1	201.3
1998		61.2	138.9	200.1	0.0	-11.0	-11.1	61.1	127.9	189.0
1986		61.2	137.9	199.1	0.0	-22.9	-22.9	61.2	114.9	176.1
1980		61.2	148.3	209.5	-0.3	-42.5	-42.8	60.9	105.9	166.8
1956		61.2	145.0	206.2	0.0	-27.3	-27.3	61.2	117.6	178.8
1952		61.2	142.8	204.0	0.0	-12.6	-12.6	61.2	130.2	191.4
2005		61.2	148.6	209.8	0.0	-11.5	-11.5	61.2	137.1	198.3
1997		61.2	83.1	144.3	-0.1	-22.8	-22.9	61.1	60.4	121.4
1993		61.2	151.6	212.8	0.0	-26.5	-26.5	61.2	125.1	186.3
1941		61.2	150.2	211.4	0.0	-22.0	-22.0	61.2	128.3	189.5
1958		61.2	142.4	203.6	0.0	-23.0	-23.0	61.2	119.4	180.6
1922	Normal-Wet	61.2	143.6	204.8	0.0	-27.1	-27.1	61.2	116.5	177.7
1965		61.2	118.5	179.7	0.0	-36.0	-35.9	61.2	82.6	143.8
1942		61.2	136.7	197.9	0.0	-34.2	-34.3	61.2	102.5	163.7
1937		61.2	99.6	160.8	0.0	-18.6	-18.6	61.2	81.0	142.2
1996		61.2	104.3	165.5	0.0	-19.6	-19.6	61.2	84.7	145.9
1974		61.2	109.5	170.7	0.0	-32.3	-32.3	61.2	77.1	138.3
1945		61.2	113.8	175.0	0.0	-18.0	-18.0	61.2	95.8	157.0
1943		61.2	93.8	155.0	-0.2	-37.2	-37.4	61.0	56.6	117.6
1984		61.2	85.3	146.5	0.0	-25.9	-25.9	61.2	59.5	120.7
1932		61.2	108.8	170.0	0.0	-21.2	-21.2	61.2	87.6	148.8
1973		61.2	95.4	156.6	0.0	-33.3	-33.3	61.2	62.1	123.3
2010		61.2	119.0	180.2	0.0	-29.3	-29.3	61.2	89.7	150.9
1927		61.2	97.3	158.5	-0.1	-15.0	-15.0	61.1	82.4	143.5
1963		61.2	118.6	179.8	0.0	-25.4	-25.4	61.2	93.1	154.3
1962		61.2	98.9	160.1	0.0	-24.4	-24.4	61.2	74.4	135.6
1935		61.2	85.4	146.6	0.0	-25.9	-25.9	61.2	59.5	120.7
1940		61.2	66.2	127.4	-0.3	-13.3	-13.7	60.9	52.9	113.7
1951		61.1	56.3	117.4	0.1	-43.3	-43.2	61.2	13.0	74.2
1936		61.2	92.7	153.9	-0.2	-33.1	-33.3	61.0	59.6	120.6
1979		61.2	91.2	152.4	-0.3	-35.2	-35.5	60.9	55.9	116.8
1975		61.2	95.3	156.5	0.0	-16.3	-16.3	61.2	79.0	140.2
2000		61.2	82.4	143.6	0.0	-16.7	-16.7	61.2	65.7	126.9
1946		61.1	62.6	123.7	-0.2	-8.5	-8.7	60.9	54.1	115.0
1923		61.2	86.5	147.7	0.0	-22.1	-22.1	61.2	64.4	125.6
1999		61.2	70.6	131.8	0.0	-26.2	-26.2	61.2	44.5	105.7
2009		61.2	72.2	133.4	0.0	-46.9	-46.9	61.2	25.3	86.5
2003	Normal-Dry	61.2	70.0	131.2	0.0	-47.3	-47.3	61.2	22.7	83.9
1970		61.2	64.6	125.7	0.0	-37.3	-37.2	61.2	27.3	88.5
1925		61.2	45.3	106.5	0.0	-35.5	-35.5	61.2	9.8	71.0
1971		61.2	59.3	120.5	0.0	-41.7	-41.7	61.2	17.6	78.8
1957		61.2	49.0	110.2	0.0	-13.6	-13.6	61.2	35.4	96.6
1954		61.2	31.7	92.9	-0.3	-31.7	-32.0	60.9	0.0	60.9
1950		61.2	39.5	100.7	0.0	-33.9	-33.9	61.2	5.7	66.9
2016		61.2	22.4	83.6	-4.0	-22.4	-26.3	57.2	0.0	57.2
1966		61.2	33.8	94.9	0.0	-16.8	-16.7	61.2	17.0	78.2
1944		61.2	45.0	106.2	0.0	-20.1	-20.1	61.2	24.9	86.1
1953		61.2	37.1	98.3	0.0	-33.0	-33.0	61.2	4.1	65.3
1948		61.2	9.6	70.8	-13.1	-9.6	-22.7	48.1	0.0	48.1
2002		61.2	28.3	89.5	-5.9	-28.3	-34.2	55.3	0.0	55.3
1949		61.2	31.5	92.7	-4.4	-31.5	-35.9	56.8	0.0	56.8
1926		61.2	21.1	82.3	-1.0	-21.1	-22.1	60.1	0.0	60.1
1955		61.2	31.8	93.0	-1.6	-31.8	-33.4	59.6	0.0	59.6
1928		61.2	38.0	99.2	0.0	-19.3	-19.3	61.2	18.7	79.9
2004		61.2	18.9	80.1	-7.0	-18.9	-25.9	54.2	0.0	54.2
1985		61.2	24.6	85.8	0.0	-20.2	-20.1	61.2	4.4	65.6
1947		61.2	19.5	80.7	0.0	-14.9	-14.9	61.2	4.6	65.8
2008		61.2	12.3	73.5	-11.9	-12.3	-24.3	49.3	0.0	49.3
1933		61.2	40.8	102.0	0.0	-40.8	-40.8	61.2	0.1	61.3
1981		61.2	26.5	87.7	0.0	-7.1	-7.1	61.2	19.4	80.6
2001		61.2	15.5	76.7	-8.3	-15.5	-23.9	52.9	0.0	52.9
1972		61.2	21.1	82.3	-5.0	-21.1	-26.1	56.2	0.0	56.2
1991		59.8	0.0	59.8	-16.7	0.0	-16.7	43.1	0.0	43.1
1959		61.2	1.2	62.4	-1.0	-1.2	-2.2	60.2	0.0	60.2
1989		56.2	0.0	56.2	-16.3	0.0	-16.3	39.9	0.0	39.9
1964	Normal-Dry	61.2	16.1	77.3	-6.8	-16.1	-22.9	54.4	0.0	54.4
1939		57.9	0.0	57.9	-12.8	0.0	-12.8	45.1	0.0	45.1
1929		49.3	0.0	49.3	-12.6	0.0	-12.6	36.7	0.0	36.7
1988		51.2	0.0	51.2	-14.6	0.0	-14.6	36.6	0.0	36.6
1968		59.8	0.0	59.8	-10.6	0.0	-10.6	49.2	0.0	49.2
1930		50.8	0.0	50.8	-14.9	0.0	-14.9	35.8	0.0	35.8
2013		50.7	0.0	50.7	-14.9	0.0	-14.9	35.8	0.0	35.8
2012		55.5	0.0	55.5	-11.2	0.0	-11.2	44.4	0.0	44.4
1960		49.0	0.0	49.0	-14.5	0.0	-14.5	34.4	0.0	34.4
1994		51.0	0.0	51.0	-0.5	0.0	-0.5	50.5	0.0	50.5
1992		50.4	0.0	50.4	-14.1	0.0	-14.1	36.4	0.0	36.4
1987		41.4	0.0	41.4	-0.6	0.0	-0.6	40.8	0.0	40.8
1990		42.6	0.0	42.6	-13.4	0.0	-13.4	29.2	0.0	29.2
1934		43.5	0.0	43.5	-11.3	0.0	-11.3	32.2	0.0	32.2
2007		35.5	0.0	35.5	-10.7	0.0	-10.7	24.8	0.0	24.8
1961	Crit-High	34.8	0.0	34.8	-10.7	0.0	-10.7	24.2	0.0	24.2
1976		46.7	0.0	46.7	-7.3	0.0	-7.3	39.4	0.0	39.4
2014		25.3	0.0	25.3	-10.6	0.0	-10.6	14.7	0.0	14.7
1931		23.9	0.0	23.9	-10.7	0.0	-10.7	13.2	0.0	13.2
1924		33.8	0.0	33.8	-10.8	0.0	-10.8	23.1	0.0	23.1
1977	CL	14.3	0.0	14.3	-0.2	0.0	-0.2	14.1	0.0	14.1
2015		10.6	0.0	10.6	-0.2	0.0	-0.2	10.4	0.0	10.4
Wet Ave		61.2	148.2	209.4	0.0	-17.6	-17.6	61.2	130.6	191.8
Normal-wet Ave		61.2	96.3	157.5	0.0	-26.4	-26.4	61.1	70.0	131.1
Normal-dry Ave		61.0	29.9	90.9	-3.4	-22.4	-25.8	57.5	7.6	65.1
Dry Ave		50.0	1.1	51.1	-10.9	-1.1	-12.0	39.1	0.0	39.1
Critical-H Ave		32.9	0.0	32.9	-10.0	0.0	-10.0	22.9	0.0	22.9
Critical-L Ave		12.5	0.0	12.5	-0.2	0.0	-0.2	12.2	0.0	12.2

Note: Values reported by contract year (March-February)

Orange Cove ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1923	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1924	21.7	0.0	21.7	-6.9	0.0	-6.9	14.8	0.0	14.8
1925	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1926	39.2	0.0	39.2	-0.7	0.0	-0.7	38.5	0.0	38.5
1927	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1928	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1929	31.6	0.0	31.6	-8.1	0.0	-8.1	23.5	0.0	23.5
1930	32.5	0.0	32.5	-9.6	0.0	-9.6	23.0	0.0	23.0
1931	15.3	0.0	15.3	-6.8	0.0	-6.8	8.5	0.0	8.5
1932	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1933	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1934	27.9	0.0	27.9	-7.2	0.0	-7.2	20.7	0.0	20.7
1935	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1936	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1937	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1938	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1939	37.1	0.0	37.1	-8.2	0.0	-8.2	28.9	0.0	28.9
1940	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1941	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1942	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1943	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1944	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1945	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1946	39.1	0.0	39.1	-0.1	0.0	-0.1	39.0	0.0	39.0
1947	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1948	39.2	0.0	39.2	-8.4	0.0	-8.4	30.8	0.0	30.8
1949	39.2	0.0	39.2	-2.8	0.0	-2.8	36.4	0.0	36.4
1950	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1951	39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1952	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1953	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1954	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1955	39.2	0.0	39.2	-1.0	0.0	-1.0	38.2	0.0	38.2
1956	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1957	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1958	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1959	39.2	0.0	39.2	-0.6	0.0	-0.6	38.6	0.0	38.6
1960	31.4	0.0	31.4	-9.3	0.0	-9.3	22.1	0.0	22.1
1961	22.3	0.0	22.3	-6.8	0.0	-6.8	15.5	0.0	15.5
1962	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1963	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1964	39.2	0.0	39.2	-4.3	0.0	-4.3	34.9	0.0	34.9
1965	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1966	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1967	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1968	38.3	0.0	38.3	-6.8	0.0	-6.8	31.5	0.0	31.5
1969	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1970	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1971	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1972	39.2	0.0	39.2	-3.2	0.0	-3.2	36.0	0.0	36.0
1973	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1974	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1975	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1976	29.9	0.0	29.9	-4.7	0.0	-4.7	25.2	0.0	25.2
1977	9.2	0.0	9.2	-0.2	0.0	-0.2	9.0	0.0	9.0
1978	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1979	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1980	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1981	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1982	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1983	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1984	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1985	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1986	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1987	26.5	0.0	26.5	-0.4	0.0	-0.4	26.2	0.0	26.2
1988	32.8	0.0	32.8	-9.4	0.0	-9.4	23.4	0.0	23.4
1989	36.0	0.0	36.0	-10.4	0.0	-10.4	25.6	0.0	25.6
1990	27.3	0.0	27.3	-8.6	0.0	-8.6	18.7	0.0	18.7
1991	38.3	0.0	38.3	-10.7	0.0	-10.7	27.6	0.0	27.6
1992	32.3	0.0	32.3	-9.0	0.0	-9.0	23.3	0.0	23.3
1993	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1994	32.7	0.0	32.7	-0.4	0.0	-0.4	32.3	0.0	32.3
1995	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1996	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1997	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1998	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1999	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2000	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2001	39.2	0.0	39.2	-5.3	0.0	-5.3	33.9	0.0	33.9
2002	39.2	0.0	39.2	-3.8	0.0	-3.8	35.4	0.0	35.4
2003	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2004	39.2	0.0	39.2	-4.5	0.0	-4.5	34.7	0.0	34.7
2005	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2006	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2007	22.7	0.0	22.7	-6.8	0.0	-6.8	15.9	0.0	15.9
2008	39.2	0.0	39.2	-7.6	0.0	-7.6	31.6	0.0	31.6
2009	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2010	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2011	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2012	35.6	0.0	35.6	-7.1	0.0	-7.1	28.4	0.0	28.4
2013	32.5	0.0	32.5	-9.6	0.0	-9.6	22.9	0.0	22.9
2014	16.2	0.0	16.2	-6.8	0.0	-6.8	9.4	0.0	9.4
2015	6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
2016	39.2	0.0	39.2	-2.5	0.0	-2.5	36.7	0.0	36.7
Ave All	36.4	0.0	36.4	-2.1	0.0	-2.1	34.3	0.0	34.3
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	27.3	0.0	27.3	-6.2	0.0	-6.2	21.1	0.0	21.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1969		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1995		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1938		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1978		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1982		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
2011		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1967		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2006		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1998		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1986		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1980		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1956		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1952		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2005		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1997		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1993		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1941		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1958		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1922	Normal-Wet	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1965		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1942		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1937		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1996		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1974		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1945		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1943		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1984		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1932		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1973		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2010		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1927		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1963		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1962		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1935		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1940		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1951		39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1936		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1979		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1975		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2000		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1946		39.1	0.0	39.1	-0.1	0.0	-0.1	39.0	0.0	39.0
1923		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1999		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2009		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2003	Normal-Dry	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1970		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1925		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1971		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1957		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1954		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1950		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2016		39.2	0.0	39.2	-2.5	0.0	-2.5	36.7	0.0	36.7
1966		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1944		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1953		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1948		39.2	0.0	39.2	-8.4	0.0	-8.4	30.8	0.0	30.8
2002		39.2	0.0	39.2	-3.8	0.0	-3.8	35.4	0.0	35.4
1949		39.2	0.0	39.2	-2.8	0.0	-2.8	36.4	0.0	36.4
1926		39.2	0.0	39.2	-0.7	0.0	-0.7	38.5	0.0	38.5
1955		39.2	0.0	39.2	-1.0	0.0	-1.0	38.2	0.0	38.2
1928		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2004		39.2	0.0	39.2	-4.5	0.0	-4.5	34.7	0.0	34.7
1985		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1947		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2008		39.2	0.0	39.2	-7.6	0.0	-7.6	31.6	0.0	31.6
1933		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1981		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2001		39.2	0.0	39.2	-5.3	0.0	-5.3	33.9	0.0	33.9
1972		39.2	0.0	39.2	-3.2	0.0	-3.2	36.0	0.0	36.0
1991		38.3	0.0	38.3	-10.7	0.0	-10.7	27.6	0.0	27.6
1959		39.2	0.0	39.2	-0.6	0.0	-0.6	38.6	0.0	38.6
1989		36.0	0.0	36.0	-10.4	0.0	-10.4	25.6	0.0	25.6
1964	Normal-Dry	39.2	0.0	39.2	-4.3	0.0	-4.3	34.9	0.0	34.9
1939		37.1	0.0	37.1	-8.2	0.0	-8.2	28.9	0.0	28.9
1929		31.6	0.0	31.6	-8.1	0.0	-8.1	23.5	0.0	23.5
1988		32.8	0.0	32.8	-9.4	0.0	-9.4	23.4	0.0	23.4
1968		38.3	0.0	38.3	-6.8	0.0	-6.8	31.5	0.0	31.5
1930		32.5	0.0	32.5	-9.6	0.0	-9.6	23.0	0.0	23.0
2013		32.5	0.0	32.5	-9.6	0.0	-9.6	22.9	0.0	22.9
2012		35.6	0.0	35.6	-7.1	0.0	-7.1	28.4	0.0	28.4
1960		31.4	0.0	31.4	-9.3	0.0	-9.3	22.1	0.0	22.1
1994		32.7	0.0	32.7	-0.4	0.0	-0.4	32.3	0.0	32.3
1992		32.3	0.0	32.3	-9.0	0.0	-9.0	23.3	0.0	23.3
1987		26.5	0.0	26.5	-0.4	0.0	-0.4	26.2	0.0	26.2
1990		27.3	0.0	27.3	-8.6	0.0	-8.6	18.7	0.0	18.7
1934		27.9	0.0	27.9	-7.2	0.0	-7.2	20.7	0.0	20.7
2007		22.7	0.0	22.7	-6.8	0.0	-6.8	15.9	0.0	15.9
1961	Crit-High	22.3	0.0	22.3	-6.8	0.0	-6.8	15.5	0.0	15.5
1976		29.9	0.0	29.9	-4.7	0.0	-4.7	25.2	0.0	25.2
2014		16.2	0.0	16.2	-6.8	0.0	-6.8	9.4	0.0	9.4
1931		15.3	0.0	15.3	-6.8	0.0	-6.8	8.5	0.0	8.5
1924		21.7	0.0	21.7	-6.9	0.0	-6.9	14.8	0.0	14.8
1977	CL	9.2	0.0	9.2	-0.2	0.0	-0.2	9.0	0.0	9.0
2015		6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
	Wet Ave	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
	Normal-wet Ave	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
	Normal-dry Ave	39.0	0.0	39.0	-2.2	0.0	-2.2	36.8	0.0	36.8
	Dry Ave	32.0	0.0	32.0	-7.0	0.0	-7.0	25.0	0.0	25.0
	Critical-H Ave	21.1	0.0	21.1	-6.4	0.0	-6.4	14.7	0.0	14.7
	Critical-L Ave	8.0	0.0	8.0	-0.1	0.0	-0.1	7.8	0.0	7.8

Note: Values reported by contract year (March-February)

Porterville ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	16.0	18.1	34.1	0.0	-3.4	-3.4	16.0	14.7	30.7
1923	16.0	10.9	26.9	0.0	-2.8	-2.8	16.0	8.1	24.1
1924	8.8	0.0	8.8	-2.8	0.0	-2.8	6.0	0.0	6.0
1925	16.0	5.7	21.7	0.0	-4.5	-4.5	16.0	1.2	17.2
1926	16.0	2.7	18.6	-0.3	-2.7	-2.9	15.7	0.0	15.7
1927	16.0	12.3	28.3	0.0	-1.9	-1.9	16.0	10.4	26.4
1928	16.0	4.8	20.8	0.0	-2.4	-2.4	16.0	2.4	18.4
1929	12.9	0.0	12.9	-3.3	0.0	-3.3	9.6	0.0	9.6
1930	13.3	0.0	13.3	-3.9	0.0	-3.9	9.4	0.0	9.4
1931	6.2	0.0	6.2	-2.8	0.0	-2.8	3.5	0.0	3.5
1932	16.0	13.7	29.7	0.0	-2.7	-2.7	16.0	11.0	27.0
1933	16.0	5.1	21.1	0.0	-5.1	-5.1	16.0	0.0	16.0
1934	11.4	0.0	11.4	-3.0	0.0	-3.0	8.4	0.0	8.4
1935	16.0	10.8	26.8	0.0	-3.3	-3.3	16.0	7.5	23.5
1936	16.0	11.7	27.7	0.0	-4.2	-4.2	16.0	7.5	23.5
1937	16.0	12.5	28.5	0.0	-2.3	-2.3	16.0	10.2	26.2
1938	16.0	20.0	36.0	0.0	-1.7	-1.7	16.0	18.2	34.2
1939	15.1	0.0	15.1	-3.4	0.0	-3.4	11.8	0.0	11.8
1940	16.0	8.3	24.3	-0.1	-1.7	-1.8	15.9	6.7	22.6
1941	16.0	18.9	34.9	0.0	-2.8	-2.8	16.0	16.2	32.2
1942	16.0	17.2	33.2	0.0	-4.3	-4.3	16.0	12.9	28.9
1943	16.0	11.8	27.8	0.0	-4.7	-4.7	16.0	7.1	23.1
1944	16.0	5.7	21.7	0.0	-2.5	-2.5	16.0	3.1	19.1
1945	16.0	14.3	30.3	0.0	-2.3	-2.3	16.0	12.1	28.1
1946	16.0	7.9	23.9	0.0	-1.1	-1.1	15.9	6.8	22.7
1947	16.0	2.5	18.5	0.0	-1.9	-1.9	16.0	0.6	16.6
1948	16.0	1.2	17.2	-3.4	-1.2	-4.6	12.6	0.0	12.6
1949	16.0	4.0	20.0	-1.2	-4.0	-5.1	14.8	0.0	14.8
1950	16.0	5.0	21.0	0.0	-4.3	-4.3	16.0	0.7	16.7
1951	16.0	7.1	23.1	0.0	-5.5	-5.4	16.0	1.6	17.6
1952	16.0	18.0	34.0	0.0	-1.6	-1.6	16.0	16.4	32.4
1953	16.0	4.7	20.7	0.0	-4.2	-4.2	16.0	0.5	16.5
1954	16.0	4.0	20.0	-0.1	-4.0	-4.1	15.9	0.0	15.9
1955	16.0	4.0	20.0	-0.4	-4.0	-4.4	15.6	0.0	15.6
1956	16.0	18.3	34.3	0.0	-3.4	-3.4	16.0	14.8	30.8
1957	16.0	6.2	22.2	0.0	-1.7	-1.7	16.0	4.5	20.5
1958	16.0	17.9	33.9	0.0	-2.9	-2.9	16.0	15.1	31.1
1959	16.0	0.1	16.1	-0.3	-0.1	-0.4	15.7	0.0	15.7
1960	12.8	0.0	12.8	-3.8	0.0	-3.8	9.0	0.0	9.0
1961	9.1	0.0	9.1	-2.8	0.0	-2.8	6.3	0.0	6.3
1962	16.0	12.5	28.5	0.0	-3.1	-3.1	16.0	9.4	25.4
1963	16.0	14.9	30.9	0.0	-3.2	-3.2	16.0	11.7	27.7
1964	16.0	2.0	18.0	-1.8	-2.0	-3.8	14.2	0.0	14.2
1965	16.0	14.9	30.9	0.0	-4.5	-4.5	16.0	10.4	26.4
1966	16.0	4.3	20.2	0.0	-2.1	-2.1	16.0	2.1	18.1
1967	16.0	20.6	36.6	0.0	-1.6	-1.6	16.0	19.0	35.0
1968	15.6	0.0	15.6	-2.8	0.0	-2.8	12.9	0.0	12.9
1969	16.0	19.1	35.1	0.0	-0.7	-0.7	16.0	18.4	34.4
1970	16.0	8.1	24.1	0.0	-4.7	-4.7	16.0	3.4	19.4
1971	16.0	7.5	23.5	0.0	-5.3	-5.3	16.0	2.2	18.2
1972	16.0	2.7	18.7	-1.3	-2.7	-4.0	14.7	0.0	14.7
1973	16.0	12.0	28.0	0.0	-4.2	-4.2	16.0	7.8	23.8
1974	16.0	13.8	29.8	0.0	-4.1	-4.1	16.0	9.7	25.7
1975	16.0	12.0	28.0	0.0	-2.1	-2.1	16.0	10.0	26.0
1976	12.2	0.0	12.2	-1.9	0.0	-1.9	10.3	0.0	10.3
1977	3.7	0.0	3.7	-0.1	0.0	-0.1	3.7	0.0	3.7
1978	16.0	21.5	37.5	0.0	-2.4	-2.4	16.0	19.2	35.2
1979	16.0	11.5	27.5	-0.1	-4.4	-4.5	15.9	7.1	23.0
1980	16.0	18.7	34.7	-0.1	-5.4	-5.4	15.9	13.3	29.3
1981	16.0	3.3	19.3	0.0	-0.9	-0.9	16.0	2.4	18.4
1982	16.0	17.6	33.6	0.0	-2.8	-2.8	16.0	14.8	30.8
1983	16.0	19.1	35.1	0.0	-0.2	-0.2	16.0	18.8	34.8
1984	16.0	10.8	26.8	0.0	-3.3	-3.3	16.0	7.5	23.5
1985	16.0	3.1	19.1	0.0	-2.5	-2.5	16.0	0.6	16.6
1986	16.0	17.4	33.4	0.0	-2.9	-2.9	16.0	14.5	30.5
1987	10.8	0.0	10.8	-0.1	0.0	-0.1	10.7	0.0	10.7
1988	13.4	0.0	13.4	-3.8	0.0	-3.8	9.6	0.0	9.6
1989	14.7	0.0	14.7	-4.3	0.0	-4.3	10.4	0.0	10.4
1990	11.1	0.0	11.1	-3.5	0.0	-3.5	7.6	0.0	7.6
1991	15.6	0.0	15.6	-4.4	0.0	-4.4	11.3	0.0	11.3
1992	13.2	0.0	13.2	-3.7	0.0	-3.7	9.5	0.0	9.5
1993	16.0	19.1	35.1	0.0	-3.3	-3.3	16.0	15.8	31.8
1994	13.3	0.0	13.3	-0.1	0.0	-0.1	13.2	0.0	13.2
1995	16.0	22.7	38.7	0.0	-1.9	-1.9	16.0	20.8	36.8
1996	16.0	13.1	29.1	0.0	-2.5	-2.5	16.0	10.7	26.7
1997	16.0	10.5	26.5	0.0	-2.9	-2.9	16.0	7.6	23.6
1998	16.0	17.5	33.5	0.0	-1.4	-1.4	16.0	16.1	32.1
1999	16.0	8.9	24.9	0.0	-3.3	-3.3	16.0	5.6	21.6
2000	16.0	10.4	26.4	0.0	-2.1	-2.1	16.0	8.3	24.3
2001	16.0	2.0	18.0	-2.2	-2.0	-4.1	13.8	0.0	13.8
2002	16.0	3.6	19.6	-1.5	-3.6	-5.1	14.5	0.0	14.5
2003	16.0	8.8	24.8	0.0	-6.0	-6.0	16.0	2.9	18.9
2004	16.0	2.4	18.4	-1.8	-2.4	-4.2	14.2	0.0	14.2
2005	16.0	18.7	34.7	0.0	-1.5	-1.5	16.0	17.3	33.3
2006	16.0	18.9	34.9	0.0	-1.3	-1.3	16.0	17.7	33.7
2007	9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
2008	16.0	1.6	17.6	-3.1	-1.6	-4.7	12.9	0.0	12.9
2009	16.0	9.1	25.1	0.0	-5.9	-5.9	16.0	3.2	19.2
2010	16.0	15.0	31.0	0.0	-3.7	-3.7	16.0	11.3	27.3
2011	16.0	20.3	36.3	0.0	-1.6	-1.6	16.0	18.7	34.7
2012	14.5	0.0	14.5	-2.9	0.0	-2.9	11.6	0.0	11.6
2013	13.3	0.0	13.3	-3.9	0.0	-3.9	9.4	0.0	9.4
2014	6.6	0.0	6.6	-2.8	0.0	-2.8	3.8	0.0	3.8
2015	2.8	0.0	2.8	-0.1	0.0	-0.1	2.7	0.0	2.7
2016	16.0	2.8	18.8	-1.0	-2.8	-3.9	15.0	0.0	15.0
Ave All	14.9	8.2	23.1	-0.9	-2.2	-3.1	14.0	6.0	20.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	11.2	0.1	11.3	-2.5	-0.1	-2.6	8.6	0.0	8.6

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	16.0	19.1	35.1	0.0	-0.2	-0.2	16.0	18.8	34.8
1969		16.0	19.1	35.1	0.0	-0.7	-0.7	16.0	18.4	34.4
1995		16.0	22.7	38.7	0.0	-1.9	-1.9	16.0	20.8	36.8
1938		16.0	20.0	36.0	0.0	-1.7	-1.7	16.0	18.2	34.2
1978		16.0	21.5	37.5	0.0	-2.4	-2.4	16.0	19.2	35.2
1982		16.0	17.6	33.6	0.0	-2.8	-2.8	16.0	14.8	30.8
2011		16.0	20.3	36.3	0.0	-1.6	-1.6	16.0	18.7	34.7
1967		16.0	20.6	36.6	0.0	-1.6	-1.6	16.0	19.0	35.0
2006		16.0	18.9	34.9	0.0	-1.3	-1.3	16.0	17.7	33.7
1998		16.0	17.5	33.5	0.0	-1.4	-1.4	16.0	16.1	32.1
1986		16.0	17.4	33.4	0.0	-2.9	-2.9	16.0	14.5	30.5
1980		16.0	18.7	34.7	-0.1	-5.4	-5.4	15.9	13.3	29.3
1956		16.0	18.3	34.3	0.0	-3.4	-3.4	16.0	14.8	30.8
1952		16.0	18.0	34.0	0.0	-1.6	-1.6	16.0	16.4	32.4
2005		16.0	18.7	34.7	0.0	-1.5	-1.5	16.0	17.3	33.3
1997		16.0	10.5	26.5	0.0	-2.9	-2.9	16.0	7.6	23.6
1993		16.0	19.1	35.1	0.0	-3.3	-3.3	16.0	15.8	31.8
1941		16.0	18.9	34.9	0.0	-2.8	-2.8	16.0	16.2	32.2
1958		16.0	17.9	33.9	0.0	-2.9	-2.9	16.0	15.1	31.1
1922	Normal-Wet	16.0	18.1	34.1	0.0	-3.4	-3.4	16.0	14.7	30.7
1965		16.0	14.9	30.9	0.0	-4.5	-4.5	16.0	10.4	26.4
1942		16.0	17.2	33.2	0.0	-4.3	-4.3	16.0	12.9	28.9
1937		16.0	12.5	28.5	0.0	-2.3	-2.3	16.0	10.2	26.2
1996		16.0	13.1	29.1	0.0	-2.5	-2.5	16.0	10.7	26.7
1974		16.0	13.8	29.8	0.0	-4.1	-4.1	16.0	9.7	25.7
1945		16.0	14.3	30.3	0.0	-2.3	-2.3	16.0	12.1	28.1
1943		16.0	11.8	27.8	0.0	-4.7	-4.7	16.0	7.1	23.1
1984		16.0	10.8	26.8	0.0	-3.3	-3.3	16.0	7.5	23.5
1932		16.0	13.7	29.7	0.0	-2.7	-2.7	16.0	11.0	27.0
1973		16.0	12.0	28.0	0.0	-4.2	-4.2	16.0	7.8	23.8
2010		16.0	15.0	31.0	0.0	-3.7	-3.7	16.0	11.3	27.3
1927		16.0	12.3	28.3	0.0	-1.9	-1.9	16.0	10.4	26.4
1963		16.0	14.9	30.9	0.0	-3.2	-3.2	16.0	11.7	27.7
1962		16.0	12.5	28.5	0.0	-3.1	-3.1	16.0	9.4	25.4
1935		16.0	10.8	26.8	0.0	-3.3	-3.3	16.0	7.5	23.5
1940		16.0	8.3	24.3	-0.1	-1.7	-1.8	15.9	6.7	22.6
1951		16.0	7.1	23.1	0.0	-5.5	-5.4	16.0	1.6	17.6
1936		16.0	11.7	27.7	0.0	-4.2	-4.2	16.0	7.5	23.5
1979		16.0	11.5	27.5	-0.1	-4.4	-4.5	15.9	7.1	23.0
1975		16.0	12.0	28.0	0.0	-2.1	-2.1	16.0	10.0	26.0
2000		16.0	10.4	26.4	0.0	-2.1	-2.1	16.0	8.3	24.3
1946		16.0	7.9	23.9	0.0	-1.1	-1.1	15.9	6.8	22.7
1923		16.0	10.9	26.9	0.0	-2.8	-2.8	16.0	8.1	24.1
1999		16.0	8.9	24.9	0.0	-3.3	-3.3	16.0	5.6	21.6
2009		16.0	9.1	25.1	0.0	-5.9	-5.9	16.0	3.2	19.2
2003	Normal-Dry	16.0	8.8	24.8	0.0	-6.0	-6.0	16.0	2.9	18.9
1970		16.0	8.1	24.1	0.0	-4.7	-4.7	16.0	3.4	19.4
1925		16.0	5.7	21.7	0.0	-4.5	-4.5	16.0	1.2	17.2
1971		16.0	7.5	23.5	0.0	-5.3	-5.3	16.0	2.2	18.2
1957		16.0	6.2	22.2	0.0	-1.7	-1.7	16.0	4.5	20.5
1954		16.0	4.0	20.0	-0.1	-4.0	-4.1	15.9	0.0	15.9
1950		16.0	5.0	21.0	0.0	-4.3	-4.3	16.0	0.7	16.7
2016		16.0	2.8	18.8	-1.0	-2.8	-3.9	15.0	0.0	15.0
1966		16.0	4.3	20.2	0.0	-2.1	-2.1	16.0	2.1	18.1
1944		16.0	5.7	21.7	0.0	-2.5	-2.5	16.0	3.1	19.1
1953		16.0	4.7	20.7	0.0	-4.2	-4.2	16.0	0.5	16.5
1948		16.0	1.2	17.2	-3.4	-1.2	-4.6	12.6	0.0	12.6
2002		16.0	3.6	19.6	-1.5	-3.6	-5.1	14.5	0.0	14.5
1949		16.0	4.0	20.0	-1.2	-4.0	-5.1	14.8	0.0	14.8
1926		16.0	2.7	18.6	-0.3	-2.7	-2.9	15.7	0.0	15.7
1955		16.0	4.0	20.0	-0.4	-4.0	-4.4	15.6	0.0	15.6
1928		16.0	4.8	20.8	0.0	-2.4	-2.4	16.0	2.4	18.4
2004		16.0	2.4	18.4	-1.8	-2.4	-4.2	14.2	0.0	14.2
1985		16.0	3.1	19.1	0.0	-2.5	-2.5	16.0	0.6	16.6
1947		16.0	2.5	18.5	0.0	-1.9	-1.9	16.0	0.6	16.6
2008		16.0	1.6	17.6	-3.1	-1.6	-4.7	12.9	0.0	12.9
1933		16.0	5.1	21.1	0.0	-5.1	-5.1	16.0	0.0	16.0
1981		16.0	3.3	19.3	0.0	-0.9	-0.9	16.0	2.4	18.4
2001		16.0	2.0	18.0	-2.2	-2.0	-4.1	13.8	0.0	13.8
1972		16.0	2.7	18.7	-1.3	-2.7	-4.0	14.7	0.0	14.7
1991		15.6	0.0	15.6	-4.4	0.0	-4.4	11.3	0.0	11.3
1959		16.0	0.1	16.1	-0.3	-0.1	-0.4	15.7	0.0	15.7
1989		14.7	0.0	14.7	-4.3	0.0	-4.3	10.4	0.0	10.4
1964	Normal-Dry	16.0	2.0	18.0	-1.8	-2.0	-3.8	14.2	0.0	14.2
1939		15.1	0.0	15.1	-3.4	0.0	-3.4	11.8	0.0	11.8
1929		12.9	0.0	12.9	-3.3	0.0	-3.3	9.6	0.0	9.6
1988		13.4	0.0	13.4	-3.8	0.0	-3.8	9.6	0.0	9.6
1968		15.6	0.0	15.6	-2.8	0.0	-2.8	12.9	0.0	12.9
1930		13.3	0.0	13.3	-3.9	0.0	-3.9	9.4	0.0	9.4
2013		13.3	0.0	13.3	-3.9	0.0	-3.9	9.4	0.0	9.4
2012		14.5	0.0	14.5	-2.9	0.0	-2.9	11.6	0.0	11.6
1960		12.8	0.0	12.8	-3.8	0.0	-3.8	9.0	0.0	9.0
1994		13.3	0.0	13.3	-0.1	0.0	-0.1	13.2	0.0	13.2
1992		13.2	0.0	13.2	-3.7	0.0	-3.7	9.5	0.0	9.5
1987		10.8	0.0	10.8	-0.1	0.0	-0.1	10.7	0.0	10.7
1990		11.1	0.0	11.1	-3.5	0.0	-3.5	7.6	0.0	7.6
1934		11.4	0.0	11.4	-3.0	0.0	-3.0	8.4	0.0	8.4
2007		9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
1961	Crit-High	9.1	0.0	9.1	-2.8	0.0	-2.8	6.3	0.0	6.3
1976		12.2	0.0	12.2	-1.9	0.0	-1.9	10.3	0.0	10.3
2014		6.6	0.0	6.6	-2.8	0.0	-2.8	3.8	0.0	3.8
1931		6.2	0.0	6.2	-2.8	0.0	-2.8	3.5	0.0	3.5
1924		8.8	0.0	8.8	-2.8	0.0	-2.8	6.0	0.0	6.0
1977	CL	3.7	0.0	3.7	-0.1	0.0	-0.1	3.7	0.0	3.7
2015		2.8	0.0	2.8	-0.1	0.0	-0.1	2.7	0.0	2.7
Wet Ave		16.0	18.7	34.7	0.0	-2.2	-2.2	16.0	16.5	32.5
Normal-wet Ave		16.0	12.1	28.1	0.0	-3.3	-3.3	16.0	8.8	24.8
Normal-dry Ave		15.9	3.8	19.7	-0.9	-2.8	-3.7	15.0	1.0	16.0
Dry Ave		13.1	0.1	13.2	-2.8	-0.1	-3.0	10.2	0.0	10.2
Critical-H Ave		8.6	0.0	8.6	-2.6	0.0	-2.6	6.0	0.0	6.0
Critical-L Ave		3.3	0.0	3.3	-0.1	0.0	-0.1	3.2	0.0	3.2

Saucelito ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	21.2	19.8	41.0	0.0	-3.7	-3.7	21.2	16.1	37.3
1923	21.2	11.9	33.1	0.0	-3.1	-3.0	21.2	8.9	30.1
1924	11.7	0.0	11.7	-3.7	0.0	-3.7	8.0	0.0	8.0
1925	21.2	6.2	27.4	0.0	-4.9	-4.9	21.2	1.3	22.5
1926	21.2	2.9	24.1	-0.4	-2.9	-3.3	20.8	0.0	20.8
1927	21.2	13.4	34.6	0.0	-2.1	-2.1	21.2	11.4	32.5
1928	21.2	5.2	26.4	0.0	-2.7	-2.7	21.2	2.6	23.8
1929	17.1	0.0	17.1	-4.4	0.0	-4.4	12.7	0.0	12.7
1930	17.6	0.0	17.6	-5.2	0.0	-5.2	12.4	0.0	12.4
1931	8.3	0.0	8.3	-3.7	0.0	-3.7	4.6	0.0	4.6
1932	21.2	15.0	36.2	0.0	-2.9	-2.9	21.2	12.1	33.3
1933	21.2	5.6	26.8	0.0	-5.6	-5.6	21.2	0.0	21.2
1934	15.1	0.0	15.1	-3.9	0.0	-3.9	11.2	0.0	11.2
1935	21.2	11.8	33.0	0.0	-3.6	-3.6	21.2	8.2	29.4
1936	21.2	12.8	34.0	-0.1	-4.6	-4.6	21.1	8.2	29.4
1937	21.2	13.7	34.9	0.0	-2.6	-2.6	21.2	11.2	32.4
1938	21.2	21.8	43.0	0.0	-1.9	-1.9	21.2	19.9	41.1
1939	20.1	0.0	20.1	-4.4	0.0	-4.4	15.6	0.0	15.6
1940	21.2	9.1	30.3	-0.1	-1.8	-2.0	21.1	7.3	28.4
1941	21.2	20.7	41.9	0.0	-3.0	-3.0	21.2	17.7	38.9
1942	21.2	18.8	40.0	0.0	-4.7	-4.7	21.2	14.1	35.3
1943	21.2	12.9	34.1	-0.1	-5.1	-5.2	21.1	7.8	28.9
1944	21.2	6.2	27.4	0.0	-2.8	-2.8	21.2	3.4	24.6
1945	21.2	15.7	36.9	0.0	-2.5	-2.5	21.2	13.2	34.4
1946	21.2	8.6	29.8	-0.1	-1.2	-1.2	21.1	7.5	28.5
1947	21.2	2.7	23.9	0.0	-2.1	-2.1	21.2	0.6	21.8
1948	21.2	1.3	22.5	-4.5	-1.3	-5.8	16.7	0.0	16.7
1949	21.2	4.3	25.5	-1.5	-4.3	-5.9	19.7	0.0	19.7
1950	21.2	5.4	26.6	0.0	-4.7	-4.7	21.2	0.8	22.0
1951	21.2	7.8	28.9	0.0	-6.0	-5.9	21.2	1.8	23.0
1952	21.2	19.7	40.9	0.0	-1.7	-1.7	21.2	17.9	39.1
1953	21.2	5.1	26.3	0.0	-4.5	-4.5	21.2	0.6	21.8
1954	21.2	4.4	25.6	-0.1	-4.4	-4.5	21.1	0.0	21.1
1955	21.2	4.4	25.6	-0.5	-4.4	-4.9	20.7	0.0	20.7
1956	21.2	20.0	41.2	0.0	-3.8	-3.8	21.2	16.2	37.4
1957	21.2	6.8	28.0	0.0	-1.9	-1.9	21.2	4.9	26.1
1958	21.2	19.6	40.8	0.0	-3.2	-3.2	21.2	16.5	37.7
1959	21.2	0.2	21.4	-0.3	-0.2	-0.5	20.9	0.0	20.9
1960	17.0	0.0	17.0	-5.0	0.0	-5.0	11.9	0.0	11.9
1961	12.1	0.0	12.1	-3.7	0.0	-3.7	8.4	0.0	8.4
1962	21.2	13.6	34.8	0.0	-3.4	-3.4	21.2	10.3	31.5
1963	21.2	16.3	37.5	0.0	-3.5	-3.5	21.2	12.8	34.0
1964	21.2	2.2	23.4	-2.4	-2.2	-4.6	18.8	0.0	18.8
1965	21.2	16.3	37.5	0.0	-5.0	-4.9	21.2	11.4	32.6
1966	21.2	4.7	25.8	0.0	-2.3	-2.3	21.2	2.3	23.5
1967	21.2	22.6	43.8	0.0	-1.8	-1.8	21.2	20.8	42.0
1968	20.7	0.0	20.7	-3.7	0.0	-3.7	17.1	0.0	17.1
1969	21.2	20.9	42.1	0.0	-0.8	-0.8	21.2	20.1	41.3
1970	21.2	8.9	30.1	0.0	-5.1	-5.1	21.2	3.8	25.0
1971	21.2	8.2	29.4	0.0	-5.7	-5.7	21.2	2.4	23.6
1972	21.2	2.9	24.1	-1.7	-2.9	-4.6	19.5	0.0	19.5
1973	21.2	13.1	34.3	0.0	-4.6	-4.6	21.2	8.6	29.7
1974	21.2	15.1	36.3	0.0	-4.5	-4.5	21.2	10.6	31.8
1975	21.2	13.1	34.3	0.0	-2.3	-2.3	21.2	10.9	32.1
1976	16.2	0.0	16.2	-2.5	0.0	-2.5	13.6	0.0	13.6
1977	5.0	0.0	5.0	-0.1	0.0	-0.1	4.9	0.0	4.9
1978	21.2	23.5	44.7	0.0	-2.6	-2.6	21.2	20.9	42.1
1979	21.2	12.6	33.8	-0.1	-4.9	-5.0	21.1	7.7	28.8
1980	21.2	20.4	41.6	-0.1	-5.9	-6.0	21.1	14.6	35.7
1981	21.2	3.7	24.9	0.0	-1.0	-1.0	21.2	2.7	23.9
1982	21.2	19.2	40.4	0.0	-3.0	-3.0	21.2	16.2	37.4
1983	21.2	20.8	42.0	0.0	-0.2	-0.2	21.2	20.6	41.8
1984	21.2	11.8	33.0	0.0	-3.6	-3.6	21.2	8.2	29.4
1985	21.2	3.4	24.6	0.0	-2.8	-2.8	21.2	0.6	21.8
1986	21.2	19.0	40.2	0.0	-3.2	-3.2	21.2	15.8	37.0
1987	14.3	0.0	14.3	-0.2	0.0	-0.2	14.1	0.0	14.1
1988	17.7	0.0	17.7	-5.1	0.0	-5.1	12.7	0.0	12.7
1989	19.5	0.0	19.5	-5.6	0.0	-5.6	13.8	0.0	13.8
1990	14.8	0.0	14.8	-4.7	0.0	-4.7	10.1	0.0	10.1
1991	20.7	0.0	20.7	-5.8	0.0	-5.8	14.9	0.0	14.9
1992	17.5	0.0	17.5	-4.9	0.0	-4.9	12.6	0.0	12.6
1993	21.2	20.9	42.1	0.0	-3.6	-3.6	21.2	17.2	38.4
1994	17.7	0.0	17.7	-0.2	0.0	-0.2	17.5	0.0	17.5
1995	21.2	24.8	46.0	0.0	-2.1	-2.1	21.2	22.8	44.0
1996	21.2	14.4	35.6	0.0	-2.7	-2.7	21.2	11.7	32.9
1997	21.2	11.5	32.7	0.0	-3.1	-3.2	21.2	8.3	29.5
1998	21.2	19.1	40.3	0.0	-1.5	-1.5	21.2	17.6	38.8
1999	21.2	9.7	30.9	0.0	-3.6	-3.6	21.2	6.1	27.3
2000	21.2	11.3	32.5	0.0	-2.3	-2.3	21.2	9.0	30.2
2001	21.2	2.1	23.3	-2.9	-2.1	-5.0	18.3	0.0	18.3
2002	21.2	3.9	25.1	-2.0	-3.9	-5.9	19.2	0.0	19.2
2003	21.2	9.6	30.8	0.0	-6.5	-6.5	21.2	3.1	24.3
2004	21.2	2.6	23.8	-2.4	-2.6	-5.0	18.8	0.0	18.8
2005	21.2	20.5	41.7	0.0	-1.6	-1.6	21.2	18.9	40.1
2006	21.2	20.7	41.9	0.0	-1.4	-1.4	21.2	19.3	40.5
2007	12.3	0.0	12.3	-3.7	0.0	-3.7	8.6	0.0	8.6
2008	21.2	1.7	22.9	-4.1	-1.7	-5.8	17.1	0.0	17.1
2009	21.2	10.0	31.2	0.0	-6.5	-6.5	21.2	3.5	24.7
2010	21.2	16.4	37.6	0.0	-4.0	-4.0	21.2	12.4	33.6
2011	21.2	22.2	43.4	0.0	-1.7	-1.7	21.2	20.5	41.7
2012	19.2	0.0	19.2	-3.9	0.0	-3.9	15.4	0.0	15.4
2013	17.6	0.0	17.6	-5.2	0.0	-5.2	12.4	0.0	12.4
2014	8.8	0.0	8.8	-3.7	0.0	-3.7	5.1	0.0	5.1
2015	3.7	0.0	3.7	-0.1	0.0	-0.1	3.6	0.0	3.6
2016	21.2	3.1	24.3	-1.4	-3.1	-4.5	19.8	0.0	19.8
Ave All	19.7	9.0	28.6	-1.1	-2.4	-3.5	18.6	6.5	25.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	14.8	0.1	14.9	-3.4	-0.1	-3.5	11.4	0.0	11.4

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	21.2	20.8	42.0	0.0	-0.2	-0.2	21.2	20.6	41.8
1969		21.2	20.9	42.1	0.0	-0.8	-0.8	21.2	20.1	41.3
1995		21.2	24.8	46.0	0.0	-2.1	-2.1	21.2	22.8	44.0
1938		21.2	21.8	43.0	0.0	-1.9	-1.9	21.2	19.9	41.1
1978		21.2	23.5	44.7	0.0	-2.6	-2.6	21.2	20.9	42.1
1982		21.2	19.2	40.4	0.0	-3.0	-3.0	21.2	16.2	37.4
2011		21.2	22.2	43.4	0.0	-1.7	-1.7	21.2	20.5	41.7
1967		21.2	22.6	43.8	0.0	-1.8	-1.8	21.2	20.8	42.0
2006		21.2	20.7	41.9	0.0	-1.4	-1.4	21.2	19.3	40.5
1998		21.2	19.1	40.3	0.0	-1.5	-1.5	21.2	17.6	38.8
1986		21.2	19.0	40.2	0.0	-3.2	-3.2	21.2	15.8	37.0
1980		21.2	20.4	41.6	-0.1	-5.9	-6.0	21.1	14.6	35.7
1956		21.2	20.0	41.2	0.0	-3.8	-3.8	21.2	16.2	37.4
1952		21.2	19.7	40.9	0.0	-1.7	-1.7	21.2	17.9	39.1
2005		21.2	20.5	41.7	0.0	-1.6	-1.6	21.2	18.9	40.1
1997		21.2	11.5	32.7	0.0	-3.1	-3.2	21.2	8.3	29.5
1993		21.2	20.9	42.1	0.0	-3.6	-3.6	21.2	17.2	38.4
1941		21.2	20.7	41.9	0.0	-3.0	-3.0	21.2	17.7	38.9
1958		21.2	19.6	40.8	0.0	-3.2	-3.2	21.2	16.5	37.7
1922	Normal-Wet	21.2	19.8	41.0	0.0	-3.7	-3.7	21.2	16.1	37.3
1965		21.2	16.3	37.5	0.0	-5.0	-4.9	21.2	11.4	32.6
1942		21.2	18.8	40.0	0.0	-4.7	-4.7	21.2	14.1	35.3
1937		21.2	13.7	34.9	0.0	-2.6	-2.6	21.2	11.2	32.4
1996		21.2	14.4	35.6	0.0	-2.7	-2.7	21.2	11.7	32.9
1974		21.2	15.1	36.3	0.0	-4.5	-4.5	21.2	10.6	31.8
1945		21.2	15.7	36.9	0.0	-2.5	-2.5	21.2	13.2	34.4
1943		21.2	12.9	34.1	-0.1	-5.1	-5.2	21.1	7.8	28.9
1984		21.2	11.8	33.0	0.0	-3.6	-3.6	21.2	8.2	29.4
1932		21.2	15.0	36.2	0.0	-2.9	-2.9	21.2	12.1	33.3
1973		21.2	13.1	34.3	0.0	-4.6	-4.6	21.2	8.6	29.7
2010		21.2	16.4	37.6	0.0	-4.0	-4.0	21.2	12.4	33.6
1927		21.2	13.4	34.6	0.0	-2.1	-2.1	21.2	11.4	32.5
1963		21.2	16.3	37.5	0.0	-3.5	-3.5	21.2	12.8	34.0
1962		21.2	13.6	34.8	0.0	-3.4	-3.4	21.2	10.3	31.5
1935		21.2	11.8	33.0	0.0	-3.6	-3.6	21.2	8.2	29.4
1940		21.2	9.1	30.3	-0.1	-1.8	-2.0	21.1	7.3	28.4
1951		21.2	7.8	28.9	0.0	-6.0	-5.9	21.2	1.8	23.0
1936		21.2	12.8	34.0	-0.1	-4.6	-4.6	21.1	8.2	29.4
1979		21.2	12.6	33.8	-0.1	-4.9	-5.0	21.1	7.7	28.8
1975		21.2	13.1	34.3	0.0	-2.3	-2.3	21.2	10.9	32.1
2000		21.2	11.3	32.5	0.0	-2.3	-2.3	21.2	9.0	30.2
1946		21.2	8.6	29.8	-0.1	-1.2	-1.2	21.1	7.5	28.5
1923		21.2	11.9	33.1	0.0	-3.1	-3.0	21.2	8.9	30.1
1999		21.2	9.7	30.9	0.0	-3.6	-3.6	21.2	6.1	27.3
2009		21.2	10.0	31.2	0.0	-6.5	-6.5	21.2	3.5	24.7
2003	Normal-Dry	21.2	9.6	30.8	0.0	-6.5	-6.5	21.2	3.1	24.3
1970		21.2	8.9	30.1	0.0	-5.1	-5.1	21.2	3.8	25.0
1925		21.2	6.2	27.4	0.0	-4.9	-4.9	21.2	1.3	22.5
1971		21.2	8.2	29.4	0.0	-5.7	-5.7	21.2	2.4	23.6
1957		21.2	6.8	28.0	0.0	-1.9	-1.9	21.2	4.9	26.1
1954		21.2	4.4	25.6	-0.1	-4.4	-4.5	21.1	0.0	21.1
1950		21.2	5.4	26.6	0.0	-4.7	-4.7	21.2	0.8	22.0
2016		21.2	3.1	24.3	-1.4	-3.1	-4.5	19.8	0.0	19.8
1966		21.2	4.7	25.8	0.0	-2.3	-2.3	21.2	2.3	23.5
1944		21.2	6.2	27.4	0.0	-2.8	-2.8	21.2	3.4	24.6
1953		21.2	5.1	26.3	0.0	-4.5	-4.5	21.2	0.6	21.8
1948		21.2	1.3	22.5	-4.5	-1.3	-5.8	16.7	0.0	16.7
2002		21.2	3.9	25.1	-2.0	-3.9	-5.9	19.2	0.0	19.2
1949		21.2	4.3	25.5	-1.5	-4.3	-5.9	19.7	0.0	19.7
1926		21.2	2.9	24.1	-0.4	-2.9	-3.3	20.8	0.0	20.8
1955		21.2	4.4	25.6	-0.5	-4.4	-4.9	20.7	0.0	20.7
1928		21.2	5.2	26.4	0.0	-2.7	-2.7	21.2	2.6	23.8
2004		21.2	2.6	23.8	-2.4	-2.6	-5.0	18.8	0.0	18.8
1985		21.2	3.4	24.6	0.0	-2.8	-2.8	21.2	0.6	21.8
1947		21.2	2.7	23.9	0.0	-2.1	-2.1	21.2	0.6	21.8
2008		21.2	1.7	22.9	-4.1	-1.7	-5.8	17.1	0.0	17.1
1933		21.2	5.6	26.8	0.0	-5.6	-5.6	21.2	0.0	21.2
1981		21.2	3.7	24.9	0.0	-1.0	-1.0	21.2	2.7	23.9
2001		21.2	2.1	23.3	-2.9	-2.1	-5.0	18.3	0.0	18.3
1972		21.2	2.9	24.1	-1.7	-2.9	-4.6	19.5	0.0	19.5
1991		20.7	0.0	20.7	-5.8	0.0	-5.8	14.9	0.0	14.9
1959		21.2	0.2	21.4	-0.3	-0.2	-0.5	20.9	0.0	20.9
1989		19.5	0.0	19.5	-5.6	0.0	-5.6	13.8	0.0	13.8
1964	Normal-Dry	21.2	2.2	23.4	-2.4	-2.2	-4.6	18.8	0.0	18.8
1939		20.1	0.0	20.1	-4.4	0.0	-4.4	15.6	0.0	15.6
1929		17.1	0.0	17.1	-4.4	0.0	-4.4	12.7	0.0	12.7
1988		17.7	0.0	17.7	-5.1	0.0	-5.1	12.7	0.0	12.7
1968		20.7	0.0	20.7	-3.7	0.0	-3.7	17.1	0.0	17.1
1930		17.6	0.0	17.6	-5.2	0.0	-5.2	12.4	0.0	12.4
2013		17.6	0.0	17.6	-5.2	0.0	-5.2	12.4	0.0	12.4
2012		19.2	0.0	19.2	-3.9	0.0	-3.9	15.4	0.0	15.4
1960		17.0	0.0	17.0	-5.0	0.0	-5.0	11.9	0.0	11.9
1994		17.7	0.0	17.7	-0.2	0.0	-0.2	17.5	0.0	17.5
1992		17.5	0.0	17.5	-4.9	0.0	-4.9	12.6	0.0	12.6
1987		14.3	0.0	14.3	-0.2	0.0	-0.2	14.1	0.0	14.1
1990		14.8	0.0	14.8	-4.7	0.0	-4.7	10.1	0.0	10.1
1934		15.1	0.0	15.1	-3.9	0.0	-3.9	11.2	0.0	11.2
2007		12.3	0.0	12.3	-3.7	0.0	-3.7	8.6	0.0	8.6
1961	Crit-High	12.1	0.0	12.1	-3.7	0.0	-3.7	8.4	0.0	8.4
1976		16.2	0.0	16.2	-2.5	0.0	-2.5	13.6	0.0	13.6
2014		8.8	0.0	8.8	-3.7	0.0	-3.7	5.1	0.0	5.1
1931		8.3	0.0	8.3	-3.7	0.0	-3.7	4.6	0.0	4.6
1924		11.7	0.0	11.7	-3.7	0.0	-3.7	8.0	0.0	8.0
1977	CL	5.0	0.0	5.0	-0.1	0.0	-0.1	4.9	0.0	4.9
2015		3.7	0.0	3.7	-0.1	0.0	-0.1	3.6	0.0	3.6
Wet Ave		21.2	20.4	41.6	0.0	-2.4	-2.4	21.2	18.0	39.2
Normal-wet Ave		21.2	13.3	34.5	0.0	-3.6	-3.6	21.2	9.6	30.8
Normal-dry Ave		21.1	4.1	25.2	-1.2	-3.1	-4.3	19.9	1.0	21.0
Dry Ave		17.3	0.1	17.5	-3.8	-0.1	-3.9	13.5	0.0	13.5
Critical-H Ave		11.4	0.0	11.4	-3.5	0.0	-3.5	7.9	0.0	7.9
Critical-L Ave		4.3	0.0	4.3	-0.1	0.0	-0.1	4.2	0.0	4.2

Note: Values reported by contract year (March-February)

Shafter-Wasco ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	50.0	23.9	73.9	0.0	-4.5	-4.5	50.0	19.4	69.4
1923	50.0	14.4	64.4	0.0	-3.7	-3.7	50.0	10.7	60.7
1924	27.6	0.0	27.6	-8.8	0.0	-8.8	18.8	0.0	18.8
1925	50.0	7.5	57.5	0.0	-5.9	-5.9	50.0	1.6	51.6
1926	50.0	3.5	53.5	-0.8	-3.5	-4.4	49.1	0.0	49.1
1927	50.0	16.2	66.2	-0.1	-2.5	-2.5	49.9	13.7	63.7
1928	50.0	6.3	56.3	0.0	-3.2	-3.2	50.0	3.1	53.1
1929	40.3	0.0	40.3	-10.3	0.0	-10.3	30.0	0.0	30.0
1930	41.5	0.0	41.5	-12.2	0.0	-12.2	29.3	0.0	29.3
1931	19.5	0.0	19.5	-8.7	0.0	-8.7	10.8	0.0	10.8
1932	50.0	18.1	68.1	0.0	-3.5	-3.5	50.0	14.6	64.6
1933	50.0	6.8	56.8	0.0	-6.8	-6.8	50.0	0.0	50.0
1934	35.6	0.0	35.6	-9.2	0.0	-9.2	26.3	0.0	26.3
1935	50.0	14.2	64.2	0.0	-4.3	-4.3	50.0	9.9	59.9
1936	50.0	15.4	65.4	-0.1	-5.5	-5.6	49.9	9.9	59.8
1937	50.0	16.6	66.6	0.0	-3.1	-3.1	50.0	13.5	63.5
1938	50.0	26.3	76.3	0.0	-2.3	-2.3	50.0	24.1	74.1
1939	47.3	0.0	47.3	-10.5	0.0	-10.5	36.8	0.0	36.8
1940	50.0	11.0	61.0	-0.3	-2.2	-2.5	49.7	8.8	58.5
1941	50.0	25.0	75.0	0.0	-3.7	-3.7	50.0	21.3	71.3
1942	50.0	22.8	72.8	0.0	-5.7	-5.7	50.0	17.1	67.0
1943	50.0	15.6	65.6	-0.2	-6.2	-6.3	49.8	9.4	59.3
1944	50.0	7.5	57.5	0.0	-3.3	-3.3	50.0	4.1	54.1
1945	50.0	18.9	68.9	0.0	-3.0	-3.0	50.0	15.9	65.9
1946	49.9	10.4	60.3	-0.1	-1.4	-1.6	49.7	9.0	58.7
1947	50.0	3.2	53.2	0.0	-2.5	-2.5	50.0	0.8	50.8
1948	50.0	1.6	51.6	-10.7	-1.6	-12.3	39.3	0.0	39.3
1949	50.0	5.2	55.2	-3.6	-5.2	-8.8	46.4	0.0	46.4
1950	50.0	6.6	56.6	0.0	-5.6	-5.6	50.0	0.9	50.9
1951	49.9	9.4	59.3	0.1	-7.2	-7.1	50.0	2.2	52.2
1952	50.0	23.8	73.8	0.0	-2.1	-2.1	50.0	21.7	71.7
1953	50.0	6.2	56.2	0.0	-5.5	-5.5	50.0	0.7	50.7
1954	50.0	5.3	55.3	-0.3	-5.3	-5.5	49.7	0.0	49.7
1955	50.0	5.3	55.3	-1.3	-5.3	-6.6	48.7	0.0	48.7
1956	50.0	24.1	74.1	0.0	-4.5	-4.5	50.0	19.6	69.6
1957	50.0	8.2	58.2	0.0	-2.3	-2.3	50.0	5.9	55.9
1958	50.0	23.7	73.7	0.0	-3.8	-3.8	50.0	19.9	69.9
1959	50.0	0.2	50.2	-0.8	-0.2	-1.0	49.2	0.0	49.2
1960	40.0	0.0	40.0	-11.9	0.0	-11.9	28.1	0.0	28.1
1961	28.5	0.0	28.5	-8.7	0.0	-8.7	19.7	0.0	19.7
1962	50.0	16.4	66.4	0.0	-4.1	-4.1	50.0	12.4	62.4
1963	50.0	19.7	69.7	0.0	-4.2	-4.2	50.0	15.5	65.5
1964	50.0	2.7	52.7	-5.5	-2.7	-8.2	44.5	0.0	44.5
1965	50.0	19.7	69.7	0.0	-6.0	-6.0	50.0	13.7	63.7
1966	50.0	5.6	55.6	0.0	-2.8	-2.8	50.0	2.8	52.8
1967	50.0	27.3	77.3	0.0	-2.1	-2.2	50.0	25.1	75.1
1968	48.9	0.0	48.9	-8.6	0.0	-8.6	40.2	0.0	40.2
1969	50.0	25.2	75.2	0.0	-0.9	-0.9	50.0	24.3	74.3
1970	50.0	10.7	60.7	0.0	-6.2	-6.2	50.0	4.5	54.5
1971	50.0	9.9	59.9	0.0	-6.9	-6.9	50.0	2.9	52.9
1972	50.0	3.5	53.5	-4.1	-3.5	-7.6	45.9	0.0	45.9
1973	50.0	15.9	65.9	0.0	-5.5	-5.6	50.0	10.3	60.3
1974	50.0	18.2	68.2	0.0	-5.4	-5.4	50.0	12.8	62.8
1975	50.0	15.9	65.9	0.0	-2.7	-2.7	50.0	13.1	63.1
1976	38.1	0.0	38.1	-5.9	0.0	-5.9	32.2	0.0	32.2
1977	11.7	0.0	11.7	-0.2	0.0	-0.2	11.5	0.0	11.5
1978	50.0	28.4	78.4	0.0	-3.1	-3.1	50.0	25.3	75.3
1979	50.0	15.2	65.2	-0.2	-5.9	-6.1	49.8	9.3	59.1
1980	50.0	24.7	74.7	-0.2	-7.1	-7.3	49.8	17.6	67.4
1981	50.0	4.4	54.4	0.0	-1.2	-1.2	50.0	3.2	53.2
1982	50.0	23.2	73.2	-0.1	-3.6	-3.7	49.9	19.6	69.5
1983	50.0	25.2	75.2	0.0	-0.3	-0.3	50.0	24.9	74.9
1984	50.0	14.2	64.2	0.0	-4.3	-4.3	50.0	9.9	59.9
1985	50.0	4.1	54.1	0.0	-3.4	-3.3	50.0	0.7	50.7
1986	50.0	22.9	72.9	0.0	-3.8	-3.8	50.0	19.1	69.1
1987	33.8	0.0	33.8	-0.4	0.0	-0.4	33.4	0.0	33.4
1988	41.8	0.0	41.8	-12.0	0.0	-12.0	29.9	0.0	29.9
1989	45.9	0.0	45.9	-13.3	0.0	-13.3	32.6	0.0	32.6
1990	34.8	0.0	34.8	-11.0	0.0	-11.0	23.8	0.0	23.8
1991	48.9	0.0	48.9	-13.6	0.0	-13.6	35.2	0.0	35.2
1992	41.2	0.0	41.2	-11.5	0.0	-11.5	29.7	0.0	29.7
1993	50.0	25.2	75.2	0.0	-4.4	-4.4	50.0	20.8	70.8
1994	41.7	0.0	41.7	-0.4	0.0	-0.4	41.2	0.0	41.2
1995	50.0	30.0	80.0	0.0	-2.5	-2.5	50.0	27.5	77.5
1996	50.0	17.4	67.4	0.0	-3.3	-3.3	50.0	14.1	64.1
1997	50.0	13.8	63.8	-0.1	-3.8	-3.9	49.9	10.0	60.0
1998	50.0	23.1	73.1	0.0	-1.8	-1.9	50.0	21.3	71.2
1999	50.0	11.7	61.7	0.0	-4.4	-4.4	50.0	7.4	57.4
2000	50.0	13.7	63.7	0.0	-2.8	-2.8	50.0	10.9	60.9
2001	50.0	2.6	52.6	-6.8	-2.6	-9.4	43.2	0.0	43.2
2002	50.0	4.7	54.7	-4.8	-4.7	-9.5	45.2	0.0	45.2
2003	50.0	11.6	61.6	0.0	-7.9	-7.9	50.0	3.8	53.8
2004	50.0	3.1	53.1	-5.7	-3.1	-8.9	44.3	0.0	44.3
2005	50.0	24.7	74.7	0.0	-1.9	-1.9	50.0	22.8	72.8
2006	50.0	25.0	75.0	0.0	-1.7	-1.7	50.0	23.3	73.3
2007	29.0	0.0	29.0	-8.7	0.0	-8.7	20.3	0.0	20.3
2008	50.0	2.0	52.0	-9.8	-2.0	-11.8	40.2	0.0	40.2
2009	50.0	12.0	62.0	0.0	-7.8	-7.8	50.0	4.2	54.2
2010	50.0	19.8	69.8	0.0	-4.9	-4.9	50.0	14.9	64.9
2011	50.0	26.8	76.8	0.0	-2.1	-2.1	50.0	24.7	74.7
2012	45.4	0.0	45.4	-9.1	0.0	-9.1	36.3	0.0	36.3
2013	41.4	0.0	41.4	-12.2	0.0	-12.2	29.2	0.0	29.2
2014	20.7	0.0	20.7	-8.7	0.0	-8.7	12.0	0.0	12.0
2015	8.7	0.0	8.7	-0.2	0.0	-0.2	8.5	0.0	8.5
2016	50.0	3.7	53.7	-3.3	-3.7	-7.0	46.7	0.0	46.7
Ave All	46.4	10.8	57.3	-2.7	-2.9	-5.6	43.8	7.9	51.7
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	34.9	0.1	35.0	-7.9	-0.1	-8.1	26.9	0.0	26.9

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	50.0	25.2	75.2	0.0	-0.3	-0.3	50.0	24.9	74.9
1969		50.0	25.2	75.2	0.0	-0.9	-0.9	50.0	24.3	74.3
1995		50.0	30.0	80.0	0.0	-2.5	-2.5	50.0	27.5	77.5
1938		50.0	26.3	76.3	0.0	-2.3	-2.3	50.0	24.1	74.1
1978		50.0	28.4	78.4	0.0	-3.1	-3.1	50.0	25.3	75.3
1982		50.0	23.2	73.2	-0.1	-3.6	-3.7	49.9	19.6	69.5
2011		50.0	26.8	76.8	0.0	-2.1	-2.1	50.0	24.7	74.7
1967		50.0	27.3	77.3	0.0	-2.1	-2.2	50.0	25.1	75.1
2006		50.0	25.0	75.0	0.0	-1.7	-1.7	50.0	23.3	73.3
1998		50.0	23.1	73.1	0.0	-1.8	-1.9	50.0	21.3	71.2
1986		50.0	22.9	72.9	0.0	-3.8	-3.8	50.0	19.1	69.1
1980		50.0	24.7	74.7	-0.2	-7.1	-7.3	49.8	17.6	67.4
1956		50.0	24.1	74.1	0.0	-4.5	-4.5	50.0	19.6	69.6
1952		50.0	23.8	73.8	0.0	-2.1	-2.1	50.0	21.7	71.7
2005		50.0	24.7	74.7	0.0	-1.9	-1.9	50.0	22.8	72.8
1997		50.0	13.8	63.8	-0.1	-3.8	-3.9	49.9	10.0	60.0
1993		50.0	25.2	75.2	0.0	-4.4	-4.4	50.0	20.8	70.8
1941		50.0	25.0	75.0	0.0	-3.7	-3.7	50.0	21.3	71.3
1958		50.0	23.7	73.7	0.0	-3.8	-3.8	50.0	19.9	69.9
1922	Normal-Wet	50.0	23.9	73.9	0.0	-4.5	-4.5	50.0	19.4	69.4
1965		50.0	19.7	69.7	0.0	-6.0	-6.0	50.0	13.7	63.7
1942		50.0	22.8	72.8	0.0	-5.7	-5.7	50.0	17.1	67.0
1937		50.0	16.6	66.6	0.0	-3.1	-3.1	50.0	13.5	63.5
1996		50.0	17.4	67.4	0.0	-3.3	-3.3	50.0	14.1	64.1
1974		50.0	18.2	68.2	0.0	-5.4	-5.4	50.0	12.8	62.8
1945		50.0	18.9	68.9	0.0	-3.0	-3.0	50.0	15.9	65.9
1943		50.0	15.6	65.6	-0.2	-6.2	-6.3	49.8	9.4	59.3
1984		50.0	14.2	64.2	0.0	-4.3	-4.3	50.0	9.9	59.9
1932		50.0	18.1	68.1	0.0	-3.5	-3.5	50.0	14.6	64.6
1973		50.0	15.9	65.9	0.0	-5.5	-5.6	50.0	10.3	60.3
2010		50.0	19.8	69.8	0.0	-4.9	-4.9	50.0	14.9	64.9
1927		50.0	16.2	66.2	-0.1	-2.5	-2.5	49.9	13.7	63.7
1963		50.0	19.7	69.7	0.0	-4.2	-4.2	50.0	15.5	65.5
1962		50.0	16.4	66.4	0.0	-4.1	-4.1	50.0	12.4	62.4
1935		50.0	14.2	64.2	0.0	-4.3	-4.3	50.0	9.9	59.9
1940		50.0	11.0	61.0	-0.3	-2.2	-2.5	49.7	8.8	58.5
1951		49.9	9.4	59.3	0.1	-7.2	-7.1	50.0	2.2	52.2
1936		50.0	15.4	65.4	-0.1	-5.5	-5.6	49.9	9.9	59.8
1979		50.0	15.2	65.2	-0.2	-5.9	-6.1	49.8	9.3	59.1
1975		50.0	15.9	65.9	0.0	-2.7	-2.7	50.0	13.1	63.1
2000		50.0	13.7	63.7	0.0	-2.8	-2.8	50.0	10.9	60.9
1946		49.9	10.4	60.3	-0.1	-1.4	-1.6	49.7	9.0	58.7
1923		50.0	14.4	64.4	0.0	-3.7	-3.7	50.0	10.7	60.7
1999		50.0	11.7	61.7	0.0	-4.4	-4.4	50.0	7.4	57.4
2009		50.0	12.0	62.0	0.0	-7.8	-7.8	50.0	4.2	54.2
2003	Normal-Dry	50.0	11.6	61.6	0.0	-7.9	-7.9	50.0	3.8	53.8
1970		50.0	10.7	60.7	0.0	-6.2	-6.2	50.0	4.5	54.5
1925		50.0	7.5	57.5	0.0	-5.9	-5.9	50.0	1.6	51.6
1971		50.0	9.9	59.9	0.0	-6.9	-6.9	50.0	2.9	52.9
1957		50.0	8.2	58.2	0.0	-2.3	-2.3	50.0	5.9	55.9
1954		50.0	5.3	55.3	-0.3	-5.3	-5.5	49.7	0.0	49.7
1950		50.0	6.6	56.6	0.0	-5.6	-5.6	50.0	0.9	50.9
2016		50.0	3.7	53.7	-3.3	-3.7	-7.0	46.7	0.0	46.7
1966		50.0	5.6	55.6	0.0	-2.8	-2.8	50.0	2.8	52.8
1944		50.0	7.5	57.5	0.0	-3.3	-3.3	50.0	4.1	54.1
1953		50.0	6.2	56.2	0.0	-5.5	-5.5	50.0	0.7	50.7
1948		50.0	1.6	51.6	-10.7	-1.6	-12.3	39.3	0.0	39.3
2002		50.0	4.7	54.7	-4.8	-4.7	-9.5	45.2	0.0	45.2
1949		50.0	5.2	55.2	-3.6	-5.2	-8.8	46.4	0.0	46.4
1926		50.0	3.5	53.5	-0.8	-3.5	-4.4	49.1	0.0	49.1
1955		50.0	5.3	55.3	-1.3	-5.3	-6.6	48.7	0.0	48.7
1928		50.0	6.3	56.3	0.0	-3.2	-3.2	50.0	3.1	53.1
2004		50.0	3.1	53.1	-5.7	-3.1	-8.9	44.3	0.0	44.3
1985		50.0	4.1	54.1	0.0	-3.4	-3.3	50.0	0.7	50.7
1947		50.0	3.2	53.2	0.0	-2.5	-2.5	50.0	0.8	50.8
2008		50.0	2.0	52.0	-9.8	-2.0	-11.8	40.2	0.0	40.2
1933		50.0	6.8	56.8	0.0	-6.8	-6.8	50.0	0.0	50.0
1981		50.0	4.4	54.4	0.0	-1.2	-1.2	50.0	3.2	53.2
2001		50.0	2.6	52.6	-6.8	-2.6	-9.4	43.2	0.0	43.2
1972		50.0	3.5	53.5	-4.1	-3.5	-7.6	45.9	0.0	45.9
1991		48.9	0.0	48.9	-13.6	0.0	-13.6	35.2	0.0	35.2
1959		50.0	0.2	50.2	-0.8	-0.2	-1.0	49.2	0.0	49.2
1989		45.9	0.0	45.9	-13.3	0.0	-13.3	32.6	0.0	32.6
1964	Normal-Dry	50.0	2.7	52.7	-5.5	-2.7	-8.2	44.5	0.0	44.5
1939		47.3	0.0	47.3	-10.5	0.0	-10.5	36.8	0.0	36.8
1929		40.3	0.0	40.3	-10.3	0.0	-10.3	30.0	0.0	30.0
1988		41.8	0.0	41.8	-12.0	0.0	-12.0	29.9	0.0	29.9
1968		48.9	0.0	48.9	-8.6	0.0	-8.6	40.2	0.0	40.2
1930		41.5	0.0	41.5	-12.2	0.0	-12.2	29.3	0.0	29.3
2013		41.4	0.0	41.4	-12.2	0.0	-12.2	29.2	0.0	29.2
2012		45.4	0.0	45.4	-9.1	0.0	-9.1	36.3	0.0	36.3
1960		40.0	0.0	40.0	-11.9	0.0	-11.9	28.1	0.0	28.1
1994		41.7	0.0	41.7	-0.4	0.0	-0.4	41.2	0.0	41.2
1992		41.2	0.0	41.2	-11.5	0.0	-11.5	29.7	0.0	29.7
1987		33.8	0.0	33.8	-0.4	0.0	-0.4	33.4	0.0	33.4
1990		34.8	0.0	34.8	-11.0	0.0	-11.0	23.8	0.0	23.8
1934		35.6	0.0	35.6	-9.2	0.0	-9.2	26.3	0.0	26.3
2007		29.0	0.0	29.0	-8.7	0.0	-8.7	20.3	0.0	20.3
1961	Crit-High	28.5	0.0	28.5	-8.7	0.0	-8.7	19.7	0.0	19.7
1976		38.1	0.0	38.1	-5.9	0.0	-5.9	32.2	0.0	32.2
2014		20.7	0.0	20.7	-8.7	0.0	-8.7	12.0	0.0	12.0
1931		19.5	0.0	19.5	-8.7	0.0	-8.7	10.8	0.0	10.8
1924		27.6	0.0	27.6	-8.8	0.0	-8.8	18.8	0.0	18.8
1977	CL	11.7	0.0	11.7	-0.2	0.0	-0.2	11.5	0.0	11.5
2015		8.7	0.0	8.7	-0.2	0.0	-0.2	8.5	0.0	8.5
	Wet Ave	50.0	24.7	74.7	0.0	-2.9	-2.9	50.0	21.7	71.7
	Normal-wet Ave	50.0	16.0	66.0	0.0	-4.4	-4.4	50.0	11.6	61.6
	Normal-dry Ave	49.8	5.0	54.8	-2.8	-3.7	-6.5	47.0	1.3	48.3
	Dry Ave	40.8	0.2	41.0	-8.9	-0.2	-9.1	31.9	0.0	31.9
	Critical-H Ave	26.9	0.0	26.9	-8.2	0.0	-8.2	18.7	0.0	18.7
	Critical-L Ave	10.2	0.0	10.2	-0.2	0.0	-0.2	10.0	0.0	10.0

Note: Values reported by contract year (March-February)

Southern San Joaquin MUD Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	97.0	30.2	127.2	0.0	-5.7	-5.7	97.0	24.5	121.5
1923	97.0	18.2	115.2	0.0	-4.7	-4.6	97.0	13.5	110.5
1924	53.6	0.0	53.6	-17.1	0.0	-17.1	36.5	0.0	36.5
1925	97.0	9.5	106.5	0.0	-7.5	-7.5	97.0	2.1	99.1
1926	96.9	4.4	101.4	-1.6	-4.4	-6.1	95.3	0.0	95.3
1927	97.0	20.4	117.4	-0.1	-3.1	-3.2	96.9	17.3	114.2
1928	97.0	8.0	105.0	0.0	-4.1	-4.1	97.0	3.9	100.9
1929	78.1	0.0	78.1	-19.9	0.0	-19.9	58.2	0.0	58.2
1930	80.5	0.0	80.5	-23.6	0.0	-23.6	56.8	0.0	56.8
1931	37.9	0.0	37.9	-16.9	0.0	-16.9	20.9	0.0	20.9
1932	97.0	22.9	119.9	0.0	-4.4	-4.5	97.0	18.4	115.4
1933	97.0	8.6	105.6	0.0	-8.6	-8.6	97.0	0.0	97.0
1934	69.0	0.0	69.0	-17.9	0.0	-17.9	51.1	0.0	51.1
1935	97.0	17.9	114.9	0.0	-5.4	-5.4	97.0	12.5	109.5
1936	97.0	19.5	116.5	-0.3	-7.0	-7.2	96.7	12.5	109.3
1937	97.0	20.9	117.9	0.0	-3.9	-3.9	97.0	17.0	114.0
1938	97.0	33.3	130.3	0.0	-2.9	-2.9	97.0	30.4	127.4
1939	91.8	0.0	91.8	-20.3	0.0	-20.3	71.5	0.0	71.5
1940	97.0	13.9	110.9	-0.5	-2.8	-3.3	96.5	11.1	107.6
1941	97.0	31.6	128.6	0.0	-4.6	-4.6	97.0	26.9	123.9
1942	97.0	28.7	125.7	0.0	-7.2	-7.2	97.0	21.5	118.5
1943	97.0	19.7	116.7	-0.3	-7.8	-8.1	96.7	11.9	108.6
1944	97.0	9.4	106.4	0.0	-4.2	-4.2	97.0	5.2	102.2
1945	97.0	23.9	120.9	0.0	-3.8	-3.8	97.0	20.1	117.1
1946	96.8	13.1	109.9	-0.3	-1.8	-2.1	96.5	11.4	107.9
1947	97.0	4.1	101.1	0.0	-3.1	-3.1	97.0	1.0	98.0
1948	97.0	2.0	99.0	-20.7	-2.0	-22.7	76.3	0.0	76.3
1949	97.0	6.6	103.6	-7.0	-6.6	-13.6	90.0	0.0	90.0
1950	97.0	8.3	105.3	0.0	-7.1	-7.1	97.0	1.2	98.2
1951	96.9	11.8	108.7	0.1	-9.1	-9.0	97.0	2.7	99.7
1952	97.0	30.0	127.0	0.0	-2.6	-2.6	97.0	27.4	124.4
1953	97.0	7.8	104.8	0.0	-6.9	-6.9	97.0	0.9	97.9
1954	97.0	6.7	103.6	-0.5	-6.7	-7.1	96.5	0.0	96.5
1955	97.0	6.7	103.7	-2.5	-6.7	-9.2	94.5	0.0	94.5
1956	97.0	30.5	127.5	0.0	-5.7	-5.7	97.0	24.7	121.7
1957	97.0	10.3	107.3	0.0	-2.9	-2.9	97.0	7.4	104.4
1958	97.0	29.9	126.9	0.0	-4.8	-4.8	97.0	25.1	122.1
1959	97.0	0.2	97.2	-1.6	-0.2	-1.8	95.4	0.0	95.4
1960	77.7	0.0	77.7	-23.1	0.0	-23.1	54.6	0.0	54.6
1961	55.2	0.0	55.2	-16.9	0.0	-16.9	38.3	0.0	38.3
1962	97.0	20.8	117.8	0.0	-5.1	-5.1	97.0	15.6	112.6
1963	97.0	24.9	121.9	0.0	-5.3	-5.3	97.0	19.6	116.6
1964	97.0	3.4	100.4	-10.8	-3.4	-14.1	86.2	0.0	86.2
1965	97.0	24.9	121.9	0.0	-7.6	-7.5	97.0	17.3	114.3
1966	96.9	7.1	104.0	0.1	-3.5	-3.4	97.0	3.6	100.6
1967	97.0	34.4	131.4	0.0	-2.7	-2.7	97.0	31.7	128.7
1968	94.8	0.0	94.8	-16.7	0.0	-16.7	78.0	0.0	78.0
1969	97.0	31.8	128.8	0.0	-1.2	-1.2	97.0	30.6	127.6
1970	97.0	13.6	110.5	0.0	-7.8	-7.8	97.0	5.7	102.7
1971	97.0	12.5	109.5	0.0	-8.8	-8.8	97.0	3.7	100.7
1972	97.0	4.4	101.4	-7.9	-4.4	-12.3	89.1	0.0	89.1
1973	97.0	20.0	117.0	-0.1	-7.0	-7.0	96.9	13.0	110.0
1974	97.0	23.0	120.0	0.0	-6.8	-6.8	97.0	16.2	113.2
1975	97.0	20.0	117.0	0.0	-3.4	-3.4	97.0	16.6	113.6
1976	74.0	0.0	74.0	-11.5	0.0	-11.5	62.4	0.0	62.4
1977	22.7	0.0	22.7	-0.4	0.0	-0.4	22.3	0.0	22.3
1978	97.0	35.9	132.9	0.0	-3.9	-4.0	97.0	31.9	128.9
1979	97.0	19.1	116.1	-0.5	-7.4	-7.9	96.5	11.8	108.3
1980	97.0	31.2	128.2	-0.5	-8.9	-9.4	96.5	22.2	118.8
1981	97.0	5.6	102.6	0.0	-1.5	-1.5	97.0	4.1	101.1
1982	97.0	29.3	126.3	-0.2	-4.6	-4.8	96.8	24.7	121.6
1983	97.0	31.8	128.8	0.0	-0.3	-0.3	97.0	31.4	128.4
1984	97.0	17.9	114.9	0.0	-5.4	-5.4	97.0	12.5	109.5
1985	97.0	5.2	102.1	0.0	-4.2	-4.2	97.0	0.9	97.9
1986	97.0	29.0	126.0	0.0	-4.8	-4.8	97.0	24.1	121.1
1987	65.6	0.0	65.6	-0.9	0.0	-0.9	64.7	0.0	64.7
1988	81.2	0.0	81.2	-23.2	0.0	-23.2	57.9	0.0	57.9
1989	89.0	0.0	89.0	-25.8	0.0	-25.8	63.2	0.0	63.2
1990	67.6	0.0	67.6	-21.3	0.0	-21.3	46.2	0.0	46.2
1991	94.8	0.0	94.8	-26.5	0.0	-26.5	68.4	0.0	68.4
1992	79.9	0.0	79.9	-22.3	0.0	-22.3	57.6	0.0	57.6
1993	97.0	31.8	128.8	0.0	-5.6	-5.6	97.0	26.3	123.3
1994	80.9	0.0	80.9	-0.9	0.0	-0.9	80.0	0.0	80.0
1995	97.0	37.9	134.9	0.0	-3.1	-3.1	97.0	34.7	131.7
1996	97.0	21.9	118.9	0.0	-4.1	-4.1	97.0	17.8	114.8
1997	97.0	17.5	114.5	-0.2	-4.8	-5.0	96.8	12.7	109.5
1998	97.0	29.2	126.2	-0.1	-2.3	-2.4	96.9	26.9	123.8
1999	97.0	14.8	111.8	0.0	-5.5	-5.5	97.0	9.3	106.3
2000	97.0	17.3	114.3	0.0	-3.5	-3.5	97.0	13.8	110.8
2001	97.0	3.3	100.3	-13.2	-3.3	-16.5	83.8	0.0	83.8
2002	97.0	6.0	103.0	-9.3	-6.0	-15.3	87.7	0.0	87.7
2003	97.0	14.7	111.7	0.0	-9.9	-9.9	97.0	4.8	101.8
2004	97.0	4.0	101.0	-11.1	-4.0	-15.1	85.9	0.0	85.9
2005	97.0	31.2	128.2	0.0	-2.4	-2.4	97.0	28.8	125.8
2006	97.0	31.5	128.5	0.0	-2.1	-2.1	97.0	29.4	126.4
2007	56.2	0.0	56.2	-16.9	0.0	-16.9	39.3	0.0	39.3
2008	97.0	2.6	99.6	-18.9	-2.6	-21.5	78.1	0.0	78.1
2009	97.0	15.2	112.2	0.0	-9.9	-9.9	97.0	5.3	102.3
2010	97.0	25.0	122.0	0.0	-6.2	-6.2	97.0	18.8	115.8
2011	97.0	33.8	130.8	0.0	-2.6	-2.6	97.0	31.2	128.2
2012	88.0	0.0	88.0	-17.7	0.0	-17.7	70.3	0.0	70.3
2013	80.4	0.0	80.4	-23.6	0.0	-23.6	56.7	0.0	56.7
2014	40.2	0.0	40.2	-16.9	0.0	-16.9	23.3	0.0	23.3
2015	16.8	0.0	16.8	-0.3	0.0	-0.3	16.5	0.0	16.5
2016	97.0	4.7	101.7	-6.3	-4.7	-11.0	90.7	0.0	90.7
Ave All	90.1	13.7	103.7	-5.2	-3.7	-8.9	84.9	10.0	94.9
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	67.7	0.2	67.8	-15.4	-0.2	-15.6	52.3	0.0	52.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	97.0	31.8	128.8	0.0	-0.3	-0.3	97.0	31.4	128.4
1969		97.0	31.8	128.8	0.0	-1.2	-1.2	97.0	30.6	127.6
1995		97.0	37.9	134.9	0.0	-3.1	-3.1	97.0	34.7	131.7
1938		97.0	33.3	130.3	0.0	-2.9	-2.9	97.0	30.4	127.4
1978		97.0	35.9	132.9	0.0	-3.9	-4.0	97.0	31.9	128.9
1982		97.0	29.3	126.3	-0.2	-4.6	-4.8	96.8	24.7	121.6
2011		97.0	33.8	130.8	0.0	-2.6	-2.6	97.0	31.2	128.2
1967		97.0	34.4	131.4	0.0	-2.7	-2.7	97.0	31.7	128.7
2006		97.0	31.5	128.5	0.0	-2.1	-2.1	97.0	29.4	126.4
1998		97.0	29.2	126.2	-0.1	-2.3	-2.4	96.9	26.9	123.8
1986		97.0	29.0	126.0	0.0	-4.8	-4.8	97.0	24.1	121.1
1980		97.0	31.2	128.2	-0.5	-8.9	-9.4	96.5	22.2	118.8
1956		97.0	30.5	127.5	0.0	-5.7	-5.7	97.0	24.7	121.7
1952		97.0	30.0	127.0	0.0	-2.6	-2.6	97.0	27.4	124.4
2005		97.0	31.2	128.2	0.0	-2.4	-2.4	97.0	28.8	125.8
1997		97.0	17.5	114.5	-0.2	-4.8	-5.0	96.8	12.7	109.5
1993		97.0	31.8	128.8	0.0	-5.6	-5.6	97.0	26.3	123.3
1941		97.0	31.6	128.6	0.0	-4.6	-4.6	97.0	26.9	123.9
1958		97.0	29.9	126.9	0.0	-4.8	-4.8	97.0	25.1	122.1
1922	Normal-Wet	97.0	30.2	127.2	0.0	-5.7	-5.7	97.0	24.5	121.5
1965		97.0	24.9	121.9	0.0	-7.6	-7.5	97.0	17.3	114.3
1942		97.0	28.7	125.7	0.0	-7.2	-7.2	97.0	21.5	118.5
1937		97.0	20.9	117.9	0.0	-3.9	-3.9	97.0	17.0	114.0
1996		97.0	21.9	118.9	0.0	-4.1	-4.1	97.0	17.8	114.8
1974		97.0	23.0	120.0	0.0	-6.8	-6.8	97.0	16.2	113.2
1945		97.0	23.9	120.9	0.0	-3.8	-3.8	97.0	20.1	117.1
1943		97.0	19.7	116.7	-0.3	-7.8	-8.1	96.7	11.9	108.6
1984		97.0	17.9	114.9	0.0	-5.4	-5.4	97.0	12.5	109.5
1932		97.0	22.9	119.9	0.0	-4.4	-4.5	97.0	18.4	115.4
1973		97.0	20.0	117.0	-0.1	-7.0	-7.0	96.9	13.0	110.0
2010		97.0	25.0	122.0	0.0	-6.2	-6.2	97.0	18.8	115.8
1927		97.0	20.4	117.4	-0.1	-3.1	-3.2	96.9	17.3	114.2
1963		97.0	24.9	121.9	0.0	-5.3	-5.3	97.0	19.6	116.6
1962		97.0	20.8	117.8	0.0	-5.1	-5.1	97.0	15.6	112.6
1935		97.0	17.9	114.9	0.0	-5.4	-5.4	97.0	12.5	109.5
1940		97.0	13.9	110.9	-0.5	-2.8	-3.3	96.5	11.1	107.6
1951		96.9	11.8	108.7	0.1	-9.1	-9.0	97.0	2.7	99.7
1936		97.0	19.5	116.5	-0.3	-7.0	-7.2	96.7	12.5	109.3
1979		97.0	19.1	116.1	-0.5	-7.4	-7.9	96.5	11.8	108.3
1975		97.0	20.0	117.0	0.0	-3.4	-3.4	97.0	16.6	113.6
2000		97.0	17.3	114.3	0.0	-3.5	-3.5	97.0	13.8	110.8
1946		96.8	13.1	109.9	-0.3	-1.8	-2.1	96.5	11.4	107.9
1923		97.0	18.2	115.2	0.0	-4.7	-4.6	97.0	13.5	110.5
1999		97.0	14.8	111.8	0.0	-5.5	-5.5	97.0	9.3	106.3
2009		97.0	15.2	112.2	0.0	-9.9	-9.9	97.0	5.3	102.3
2003	Normal-Dry	97.0	14.7	111.7	0.0	-9.9	-9.9	97.0	4.8	101.8
1970		97.0	13.6	110.5	0.0	-7.8	-7.8	97.0	5.7	102.7
1925		97.0	9.5	106.5	0.0	-7.5	-7.5	97.0	2.1	99.1
1971		97.0	12.5	109.5	0.0	-8.8	-8.8	97.0	3.7	100.7
1957		97.0	10.3	107.3	0.0	-2.9	-2.9	97.0	7.4	104.4
1954		97.0	6.7	103.6	-0.5	-6.7	-7.1	96.5	0.0	96.5
1950		97.0	8.3	105.3	0.0	-7.1	-7.1	97.0	1.2	98.2
2016		97.0	4.7	101.7	-6.3	-4.7	-11.0	90.7	0.0	90.7
1966		96.9	7.1	104.0	0.1	-3.5	-3.4	97.0	3.6	100.6
1944		97.0	9.4	106.4	0.0	-4.2	-4.2	97.0	5.2	102.2
1953		97.0	7.8	104.8	0.0	-6.9	-6.9	97.0	0.9	97.9
1948		97.0	2.0	99.0	-20.7	-2.0	-22.7	76.3	0.0	76.3
2002		97.0	6.0	103.0	-9.3	-6.0	-15.3	87.7	0.0	87.7
1949		97.0	6.6	103.6	-7.0	-6.6	-13.6	90.0	0.0	90.0
1926		96.9	4.4	101.4	-1.6	-4.4	-6.1	95.3	0.0	95.3
1955		97.0	6.7	103.7	-2.5	-6.7	-9.2	94.5	0.0	94.5
1928		97.0	8.0	105.0	0.0	-4.1	-4.1	97.0	3.9	100.9
2004		97.0	4.0	101.0	-11.1	-4.0	-15.1	85.9	0.0	85.9
1985		97.0	5.2	102.1	0.0	-4.2	-4.2	97.0	0.9	97.9
1947		97.0	4.1	101.1	0.0	-3.1	-3.1	97.0	1.0	98.0
2008		97.0	2.6	99.6	-18.9	-2.6	-21.5	78.1	0.0	78.1
1933		97.0	8.6	105.6	0.0	-8.6	-8.6	97.0	0.0	97.0
1981		97.0	5.6	102.6	0.0	-1.5	-1.5	97.0	4.1	101.1
2001		97.0	3.3	100.3	-13.2	-3.3	-16.5	83.8	0.0	83.8
1972		97.0	4.4	101.4	-7.9	-4.4	-12.3	89.1	0.0	89.1
1991		94.8	0.0	94.8	-26.5	0.0	-26.5	68.4	0.0	68.4
1959		97.0	0.2	97.2	-1.6	-0.2	-1.8	95.4	0.0	95.4
1989		89.0	0.0	89.0	-25.8	0.0	-25.8	63.2	0.0	63.2
1964	Normal-Dry	97.0	3.4	100.4	-10.8	-3.4	-14.1	86.2	0.0	86.2
1939		91.8	0.0	91.8	-20.3	0.0	-20.3	71.5	0.0	71.5
1929		78.1	0.0	78.1	-19.9	0.0	-19.9	58.2	0.0	58.2
1988		81.2	0.0	81.2	-23.2	0.0	-23.2	57.9	0.0	57.9
1968		94.8	0.0	94.8	-16.7	0.0	-16.7	78.0	0.0	78.0
1930		80.5	0.0	80.5	-23.6	0.0	-23.6	56.8	0.0	56.8
2013		80.4	0.0	80.4	-23.6	0.0	-23.6	56.7	0.0	56.7
2012		88.0	0.0	88.0	-17.7	0.0	-17.7	70.3	0.0	70.3
1960		77.7	0.0	77.7	-23.1	0.0	-23.1	54.6	0.0	54.6
1994		80.9	0.0	80.9	-0.9	0.0	-0.9	80.0	0.0	80.0
1992		79.9	0.0	79.9	-22.3	0.0	-22.3	57.6	0.0	57.6
1987		65.6	0.0	65.6	-0.9	0.0	-0.9	64.7	0.0	64.7
1990		67.6	0.0	67.6	-21.3	0.0	-21.3	46.2	0.0	46.2
1934		69.0	0.0	69.0	-17.9	0.0	-17.9	51.1	0.0	51.1
2007		56.2	0.0	56.2	-16.9	0.0	-16.9	39.3	0.0	39.3
1961	Crit-High	55.2	0.0	55.2	-16.9	0.0	-16.9	38.3	0.0	38.3
1976		74.0	0.0	74.0	-11.5	0.0	-11.5	62.4	0.0	62.4
2014		40.2	0.0	40.2	-16.9	0.0	-16.9	23.3	0.0	23.3
1931		37.9	0.0	37.9	-16.9	0.0	-16.9	20.9	0.0	20.9
1924		53.6	0.0	53.6	-17.1	0.0	-17.1	36.5	0.0	36.5
1977	CL	22.7	0.0	22.7	-0.4	0.0	-0.4	22.3	0.0	22.3
2015		16.8	0.0	16.8	-0.3	0.0	-0.3	16.5	0.0	16.5
Wet Ave		97.0	31.1	128.1	0.0	-3.7	-3.7	96.9	27.4	124.4
Normal-wet Ave		97.0	20.2	117.2	-0.1	-5.5	-5.6	96.9	14.7	111.6
Normal-dry Ave		96.6	6.3	102.9	-5.5	-4.7	-10.2	91.2	1.6	92.8
Dry Ave		79.2	0.2	79.5	-17.3	-0.2	-17.5	62.0	0.0	62.0
Critical-H Ave		52.2	0.0	52.2	-15.9	0.0	-15.9	36.3	0.0	36.3
Critical-L Ave		19.7	0.0	19.7	-0.3	0.0	-0.3	19.4	0.0	19.4

Note: Values reported by contract year (March-February)

Stone Corral ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1923	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1924	5.5	0.0	5.5	-1.8	0.0	-1.8	3.8	0.0	3.8
1925	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1926	10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1927	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1928	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1929	8.1	0.0	8.1	-2.1	0.0	-2.1	6.0	0.0	6.0
1930	8.3	0.0	8.3	-2.4	0.0	-2.4	5.9	0.0	5.9
1931	3.9	0.0	3.9	-1.7	0.0	-1.7	2.2	0.0	2.2
1932	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1933	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1934	7.1	0.0	7.1	-1.8	0.0	-1.8	5.3	0.0	5.3
1935	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1936	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1937	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1938	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1939	9.5	0.0	9.5	-2.1	0.0	-2.1	7.4	0.0	7.4
1940	10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1941	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1942	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1943	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1944	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1945	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1946	10.0	0.0	10.0	0.0	0.0	0.0	9.9	0.0	9.9
1947	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1948	10.0	0.0	10.0	-2.1	0.0	-2.1	7.9	0.0	7.9
1949	10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1950	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1951	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1952	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1953	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1954	10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1955	10.0	0.0	10.0	-0.3	0.0	-0.3	9.7	0.0	9.7
1956	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1957	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1958	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1959	10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1960	8.0	0.0	8.0	-2.4	0.0	-2.4	5.6	0.0	5.6
1961	5.7	0.0	5.7	-1.7	0.0	-1.7	3.9	0.0	3.9
1962	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1963	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1964	10.0	0.0	10.0	-1.1	0.0	-1.1	8.9	0.0	8.9
1965	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1966	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1967	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1968	9.8	0.0	9.8	-1.7	0.0	-1.7	8.0	0.0	8.0
1969	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1970	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1971	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1972	10.0	0.0	10.0	-0.8	0.0	-0.8	9.2	0.0	9.2
1973	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1974	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1975	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1976	7.6	0.0	7.6	-1.2	0.0	-1.2	6.4	0.0	6.4
1977	2.3	0.0	2.3	0.0	0.0	0.0	2.3	0.0	2.3
1978	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1979	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1980	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1981	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1982	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1983	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1984	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1985	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1986	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1987	6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
1988	8.4	0.0	8.4	-2.4	0.0	-2.4	6.0	0.0	6.0
1989	9.2	0.0	9.2	-2.7	0.0	-2.7	6.5	0.0	6.5
1990	7.0	0.0	7.0	-2.2	0.0	-2.2	4.8	0.0	4.8
1991	9.8	0.0	9.8	-2.7	0.0	-2.7	7.0	0.0	7.0
1992	8.2	0.0	8.2	-2.3	0.0	-2.3	5.9	0.0	5.9
1993	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1994	8.3	0.0	8.3	-0.1	0.0	-0.1	8.2	0.0	8.2
1995	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1996	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1997	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1998	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1999	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2000	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2001	10.0	0.0	10.0	-1.4	0.0	-1.4	8.6	0.0	8.6
2002	10.0	0.0	10.0	-1.0	0.0	-1.0	9.0	0.0	9.0
2003	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2004	10.0	0.0	10.0	-1.1	0.0	-1.1	8.9	0.0	8.9
2005	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2006	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2007	5.8	0.0	5.8	-1.7	0.0	-1.7	4.1	0.0	4.1
2008	10.0	0.0	10.0	-2.0	0.0	-2.0	8.0	0.0	8.0
2009	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2010	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2011	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2012	9.1	0.0	9.1	-1.8	0.0	-1.8	7.3	0.0	7.3
2013	8.3	0.0	8.3	-2.4	0.0	-2.4	5.8	0.0	5.8
2014	4.1	0.0	4.1	-1.7	0.0	-1.7	2.4	0.0	2.4
2015	1.7	0.0	1.7	0.0	0.0	0.0	1.7	0.0	1.7
2016	10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
Ave All	9.3	0.0	9.3	-0.5	0.0	-0.5	8.8	0.0	8.8
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	7.0	0.0	7.0	-1.6	0.0	-1.6	5.4	0.0	5.4

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1969		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1995		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1938		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1978		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1982		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2011		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1967		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2006		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1998		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1986		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1980		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1956		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1952		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2005		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1997		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1993		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1941		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1958		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1922	Normal-Wet	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1965		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1942		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1937		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1996		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1974		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1945		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1943		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1984		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1932		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1973		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2010		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1927		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1963		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1962		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1935		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1940		10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1951		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1936		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1979		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1975		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2000		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1946		10.0	0.0	10.0	0.0	0.0	0.0	9.9	0.0	9.9
1923		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1999		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2009		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2003	Normal-Dry	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1970		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1925		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1971		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1957		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1954		10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1950		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2016		10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1966		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1944		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1953		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1948		10.0	0.0	10.0	-2.1	0.0	-2.1	7.9	0.0	7.9
2002		10.0	0.0	10.0	-1.0	0.0	-1.0	9.0	0.0	9.0
1949		10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1926		10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1955		10.0	0.0	10.0	-0.3	0.0	-0.3	9.7	0.0	9.7
1928		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2004		10.0	0.0	10.0	-1.1	0.0	-1.1	8.9	0.0	8.9
1985		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1947		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2008		10.0	0.0	10.0	-2.0	0.0	-2.0	8.0	0.0	8.0
1933		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1981		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2001		10.0	0.0	10.0	-1.4	0.0	-1.4	8.6	0.0	8.6
1972		10.0	0.0	10.0	-0.8	0.0	-0.8	9.2	0.0	9.2
1991		9.8	0.0	9.8	-2.7	0.0	-2.7	7.0	0.0	7.0
1959		10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1989		9.2	0.0	9.2	-2.7	0.0	-2.7	6.5	0.0	6.5
1964	Normal-Dry	10.0	0.0	10.0	-1.1	0.0	-1.1	8.9	0.0	8.9
1939		9.5	0.0	9.5	-2.1	0.0	-2.1	7.4	0.0	7.4
1929		8.1	0.0	8.1	-2.1	0.0	-2.1	6.0	0.0	6.0
1988		8.4	0.0	8.4	-2.4	0.0	-2.4	6.0	0.0	6.0
1968		9.8	0.0	9.8	-1.7	0.0	-1.7	8.0	0.0	8.0
1930		8.3	0.0	8.3	-2.4	0.0	-2.4	5.9	0.0	5.9
2013		8.3	0.0	8.3	-2.4	0.0	-2.4	5.8	0.0	5.8
2012		9.1	0.0	9.1	-1.8	0.0	-1.8	7.3	0.0	7.3
1960		8.0	0.0	8.0	-2.4	0.0	-2.4	5.6	0.0	5.6
1994		8.3	0.0	8.3	-0.1	0.0	-0.1	8.2	0.0	8.2
1992		8.2	0.0	8.2	-2.3	0.0	-2.3	5.9	0.0	5.9
1987		6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
1990		7.0	0.0	7.0	-2.2	0.0	-2.2	4.8	0.0	4.8
1934		7.1	0.0	7.1	-1.8	0.0	-1.8	5.3	0.0	5.3
2007		5.8	0.0	5.8	-1.7	0.0	-1.7	4.1	0.0	4.1
1961	Crit-High	5.7	0.0	5.7	-1.7	0.0	-1.7	3.9	0.0	3.9
1976		7.6	0.0	7.6	-1.2	0.0	-1.2	6.4	0.0	6.4
2014		4.1	0.0	4.1	-1.7	0.0	-1.7	2.4	0.0	2.4
1931		3.9	0.0	3.9	-1.7	0.0	-1.7	2.2	0.0	2.2
1924		5.5	0.0	5.5	-1.8	0.0	-1.8	3.8	0.0	3.8
1977	CL	2.3	0.0	2.3	0.0	0.0	0.0	2.3	0.0	2.3
2015		1.7	0.0	1.7	0.0	0.0	0.0	1.7	0.0	1.7
	Wet Ave	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
	Normal-wet Ave	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
	Normal-dry Ave	10.0	0.0	10.0	-0.6	0.0	-0.6	9.4	0.0	9.4
	Dry Ave	8.2	0.0	8.2	-1.8	0.0	-1.8	6.4	0.0	6.4
	Critical-H Ave	5.4	0.0	5.4	-1.6	0.0	-1.6	3.7	0.0	3.7
	Critical-L Ave	2.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0

Note: Values reported by contract year (March-February)

Tea Pot Dome WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1923	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1924	4.1	0.0	4.1	-1.3	0.0	-1.3	2.8	0.0	2.8
1925	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1926	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1927	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1928	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1929	6.0	0.0	6.0	-1.5	0.0	-1.5	4.5	0.0	4.5
1930	6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
1931	2.9	0.0	2.9	-1.3	0.0	-1.3	1.6	0.0	1.6
1932	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1933	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1934	5.3	0.0	5.3	-1.4	0.0	-1.4	4.0	0.0	4.0
1935	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1936	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1937	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1938	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1939	7.1	0.0	7.1	-1.6	0.0	-1.6	5.5	0.0	5.5
1940	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1941	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1942	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1943	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1944	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1945	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1946	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1947	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1948	7.5	0.0	7.5	-1.6	0.0	-1.6	5.9	0.0	5.9
1949	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1950	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1951	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1952	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1953	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1954	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1955	7.5	0.0	7.5	-0.2	0.0	-0.2	7.3	0.0	7.3
1956	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1957	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1958	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1959	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1960	6.0	0.0	6.0	-1.8	0.0	-1.8	4.2	0.0	4.2
1961	4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
1962	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1963	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1964	7.5	0.0	7.5	-0.8	0.0	-0.8	6.7	0.0	6.7
1965	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1966	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1967	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1968	7.3	0.0	7.3	-1.3	0.0	-1.3	6.0	0.0	6.0
1969	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1970	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1971	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1972	7.5	0.0	7.5	-0.6	0.0	-0.6	6.9	0.0	6.9
1973	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1974	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1975	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1976	5.7	0.0	5.7	-0.9	0.0	-0.9	4.8	0.0	4.8
1977	1.8	0.0	1.8	0.0	0.0	0.0	1.7	0.0	1.7
1978	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1979	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1980	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1981	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1982	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1983	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1984	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1985	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1986	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1987	5.1	0.0	5.1	-0.1	0.0	-0.1	5.0	0.0	5.0
1988	6.3	0.0	6.3	-1.8	0.0	-1.8	4.5	0.0	4.5
1989	6.9	0.0	6.9	-2.0	0.0	-2.0	4.9	0.0	4.9
1990	5.2	0.0	5.2	-1.6	0.0	-1.6	3.6	0.0	3.6
1991	7.3	0.0	7.3	-2.0	0.0	-2.0	5.3	0.0	5.3
1992	6.2	0.0	6.2	-1.7	0.0	-1.7	4.5	0.0	4.5
1993	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1994	6.3	0.0	6.3	-0.1	0.0	-0.1	6.2	0.0	6.2
1995	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1996	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1997	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1998	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1999	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2000	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2001	7.5	0.0	7.5	-1.0	0.0	-1.0	6.5	0.0	6.5
2002	7.5	0.0	7.5	-0.7	0.0	-0.7	6.8	0.0	6.8
2003	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2004	7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
2005	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2006	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2007	4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
2008	7.5	0.0	7.5	-1.5	0.0	-1.5	6.0	0.0	6.0
2009	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2010	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2011	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2012	6.8	0.0	6.8	-1.4	0.0	-1.4	5.4	0.0	5.4
2013	6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
2014	3.1	0.0	3.1	-1.3	0.0	-1.3	1.8	0.0	1.8
2015	1.3	0.0	1.3	0.0	0.0	0.0	1.3	0.0	1.3
2016	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
Ave All	7.0	0.0	7.0	-0.4	0.0	-0.4	6.6	0.0	6.6
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	5.2	0.0	5.2	-1.2	0.0	-1.2	4.0	0.0	4.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1969		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1995		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1938		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1978		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1982		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2011		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1967		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2006		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1998		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1986		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1980		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1956		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1952		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2005		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1997		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1993		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1941		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1958		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1922	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1965		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1942		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1937		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1996		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1974		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1945		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1943		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1984		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1932		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1973		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2010		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1927		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1963		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1962		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1935		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1940		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1951		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1936		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1979		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1975		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2000		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1946		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1923		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1999		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2009		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2003	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1970		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1925		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1971		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1957		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1954		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1950		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2016		7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1966		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1944		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1953		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1948		7.5	0.0	7.5	-1.6	0.0	-1.6	5.9	0.0	5.9
2002		7.5	0.0	7.5	-0.7	0.0	-0.7	6.8	0.0	6.8
1949		7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1926		7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1955		7.5	0.0	7.5	-0.2	0.0	-0.2	7.3	0.0	7.3
1928		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2004		7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
1985		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1947		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2008		7.5	0.0	7.5	-1.5	0.0	-1.5	6.0	0.0	6.0
1933		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1981		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2001		7.5	0.0	7.5	-1.0	0.0	-1.0	6.5	0.0	6.5
1972		7.5	0.0	7.5	-0.6	0.0	-0.6	6.9	0.0	6.9
1991		7.3	0.0	7.3	-2.0	0.0	-2.0	5.3	0.0	5.3
1959		7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1989		6.9	0.0	6.9	-2.0	0.0	-2.0	4.9	0.0	4.9
1964	Normal-Dry	7.5	0.0	7.5	-0.8	0.0	-0.8	6.7	0.0	6.7
1939		7.1	0.0	7.1	-1.6	0.0	-1.6	5.5	0.0	5.5
1929		6.0	0.0	6.0	-1.5	0.0	-1.5	4.5	0.0	4.5
1988		6.3	0.0	6.3	-1.8	0.0	-1.8	4.5	0.0	4.5
1968		7.3	0.0	7.3	-1.3	0.0	-1.3	6.0	0.0	6.0
1930		6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
2013		6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
2012		6.8	0.0	6.8	-1.4	0.0	-1.4	5.4	0.0	5.4
1960		6.0	0.0	6.0	-1.8	0.0	-1.8	4.2	0.0	4.2
1994		6.3	0.0	6.3	-0.1	0.0	-0.1	6.2	0.0	6.2
1992		6.2	0.0	6.2	-1.7	0.0	-1.7	4.5	0.0	4.5
1987		5.1	0.0	5.1	-0.1	0.0	-0.1	5.0	0.0	5.0
1990		5.2	0.0	5.2	-1.6	0.0	-1.6	3.6	0.0	3.6
1934		5.3	0.0	5.3	-1.4	0.0	-1.4	4.0	0.0	4.0
2007		4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
1961	Crit-High	4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
1976		5.7	0.0	5.7	-0.9	0.0	-0.9	4.8	0.0	4.8
2014		3.1	0.0	3.1	-1.3	0.0	-1.3	1.8	0.0	1.8
1931		2.9	0.0	2.9	-1.3	0.0	-1.3	1.6	0.0	1.6
1924		4.1	0.0	4.1	-1.3	0.0	-1.3	2.8	0.0	2.8
1977	CL	1.8	0.0	1.8	0.0	0.0	0.0	1.7	0.0	1.7
2015		1.3	0.0	1.3	0.0	0.0	0.0	1.3	0.0	1.3
Wet Ave		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
Normal-wet Ave		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
Normal-dry Ave		7.5	0.0	7.5	-0.4	0.0	-0.4	7.0	0.0	7.0
Dry Ave		6.1	0.0	6.1	-1.3	0.0	-1.3	4.8	0.0	4.8
Critical-H Ave		4.0	0.0	4.0	-1.2	0.0	-1.2	2.8	0.0	2.8
Critical-L Ave		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5

Note: Values reported by contract year (March-February)

Terra Bella ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1923	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1924	16.0	0.0	16.0	-5.1	0.0	-5.1	10.9	0.0	10.9
1925	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1926	29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1927	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1928	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1929	23.4	0.0	23.4	-6.0	0.0	-6.0	17.4	0.0	17.4
1930	24.1	0.0	24.1	-7.1	0.0	-7.1	17.0	0.0	17.0
1931	11.3	0.0	11.3	-5.1	0.0	-5.1	6.3	0.0	6.3
1932	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1933	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1934	20.6	0.0	20.6	-5.3	0.0	-5.3	15.3	0.0	15.3
1935	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1936	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1937	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1938	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1939	27.4	0.0	27.4	-6.1	0.0	-6.1	21.4	0.0	21.4
1940	29.0	0.0	29.0	-0.2	0.0	-0.2	28.8	0.0	28.8
1941	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1942	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1943	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1944	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1945	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1946	28.9	0.0	28.9	-0.1	0.0	-0.1	28.9	0.0	28.9
1947	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1948	29.0	0.0	29.0	-6.2	0.0	-6.2	22.8	0.0	22.8
1949	29.0	0.0	29.0	-2.1	0.0	-2.1	26.9	0.0	26.9
1950	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1951	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1952	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1953	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1954	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1955	29.0	0.0	29.0	-0.7	0.0	-0.7	28.3	0.0	28.3
1956	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1957	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1958	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1959	29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1960	23.2	0.0	23.2	-6.9	0.0	-6.9	16.3	0.0	16.3
1961	16.5	0.0	16.5	-5.1	0.0	-5.1	11.4	0.0	11.4
1962	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1963	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1964	29.0	0.0	29.0	-3.2	0.0	-3.2	25.8	0.0	25.8
1965	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1966	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1967	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1968	28.3	0.0	28.3	-5.0	0.0	-5.0	23.3	0.0	23.3
1969	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1970	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1971	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1972	29.0	0.0	29.0	-2.4	0.0	-2.4	26.6	0.0	26.6
1973	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1974	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1975	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1976	22.1	0.0	22.1	-3.4	0.0	-3.4	18.7	0.0	18.7
1977	6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
1978	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1979	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1980	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1981	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1982	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1983	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1984	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1985	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1986	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1987	19.6	0.0	19.6	-0.3	0.0	-0.3	19.3	0.0	19.3
1988	24.3	0.0	24.3	-6.9	0.0	-6.9	17.3	0.0	17.3
1989	26.6	0.0	26.6	-7.7	0.0	-7.7	18.9	0.0	18.9
1990	20.2	0.0	20.2	-6.4	0.0	-6.4	13.8	0.0	13.8
1991	28.4	0.0	28.4	-7.9	0.0	-7.9	20.4	0.0	20.4
1992	23.9	0.0	23.9	-6.7	0.0	-6.7	17.2	0.0	17.2
1993	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1994	24.2	0.0	24.2	-0.3	0.0	-0.3	23.9	0.0	23.9
1995	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1996	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1997	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1998	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1999	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2000	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2001	29.0	0.0	29.0	-3.9	0.0	-3.9	25.1	0.0	25.1
2002	29.0	0.0	29.0	-2.8	0.0	-2.8	26.2	0.0	26.2
2003	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2004	29.0	0.0	29.0	-3.3	0.0	-3.3	25.7	0.0	25.7
2005	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2006	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2007	16.8	0.0	16.8	-5.1	0.0	-5.1	11.8	0.0	11.8
2008	29.0	0.0	29.0	-5.7	0.0	-5.7	23.3	0.0	23.3
2009	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2010	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2011	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2012	26.3	0.0	26.3	-5.3	0.0	-5.3	21.0	0.0	21.0
2013	24.0	0.0	24.0	-7.1	0.0	-7.1	17.0	0.0	17.0
2014	12.0	0.0	12.0	-5.0	0.0	-5.0	7.0	0.0	7.0
2015	5.0	0.0	5.0	-0.1	0.0	-0.1	4.9	0.0	4.9
2016	29.0	0.0	29.0	-1.9	0.0	-1.9	27.1	0.0	27.1
Ave All	26.9	0.0	26.9	-1.6	0.0	-1.6	25.4	0.0	25.4
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	20.2	0.0	20.2	-4.6	0.0	-4.6	15.6	0.0	15.6

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1969	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1995	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1938	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1978	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1982	Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
2011	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1967	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2006	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1998	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1986	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1980	Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1956	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1952	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2005	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1997	Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1993	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1941	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1958	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1922	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1965	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1942	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1937	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1996	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1974	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1945	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1943	Normal-Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1984	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1932	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1973	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2010	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1927	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1963	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1962	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1935	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1940	Normal-Wet	29.0	0.0	29.0	-0.2	0.0	-0.2	28.8	0.0	28.8
1951	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1936	Normal-Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1979	Normal-Wet	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1975	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2000	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1946	Normal-Wet	28.9	0.0	28.9	-0.1	0.0	-0.1	28.9	0.0	28.9
1923	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1999	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2009	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2003	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1970	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1925	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1971	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1957	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1954	Normal-Dry	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1950	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2016	Normal-Dry	29.0	0.0	29.0	-1.9	0.0	-1.9	27.1	0.0	27.1
1966	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1944	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1953	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1948	Normal-Dry	29.0	0.0	29.0	-6.2	0.0	-6.2	22.8	0.0	22.8
2002	Normal-Dry	29.0	0.0	29.0	-2.8	0.0	-2.8	26.2	0.0	26.2
1949	Normal-Dry	29.0	0.0	29.0	-2.1	0.0	-2.1	26.9	0.0	26.9
1926	Normal-Dry	29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1955	Normal-Dry	29.0	0.0	29.0	-0.7	0.0	-0.7	28.3	0.0	28.3
1928	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2004	Normal-Dry	29.0	0.0	29.0	-3.3	0.0	-3.3	25.7	0.0	25.7
1985	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1947	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2008	Normal-Dry	29.0	0.0	29.0	-5.7	0.0	-5.7	23.3	0.0	23.3
1933	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1981	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2001	Normal-Dry	29.0	0.0	29.0	-3.9	0.0	-3.9	25.1	0.0	25.1
1972	Normal-Dry	29.0	0.0	29.0	-2.4	0.0	-2.4	26.6	0.0	26.6
1991	Normal-Dry	28.4	0.0	28.4	-7.9	0.0	-7.9	20.4	0.0	20.4
1959	Normal-Dry	29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1989	Normal-Dry	26.6	0.0	26.6	-7.7	0.0	-7.7	18.9	0.0	18.9
1964	Normal-Dry	29.0	0.0	29.0	-3.2	0.0	-3.2	25.8	0.0	25.8
1939	Normal-Dry	27.4	0.0	27.4	-6.1	0.0	-6.1	21.4	0.0	21.4
1929	Normal-Dry	23.4	0.0	23.4	-6.0	0.0	-6.0	17.4	0.0	17.4
1988	Normal-Dry	24.3	0.0	24.3	-6.9	0.0	-6.9	17.3	0.0	17.3
1968	Normal-Dry	28.3	0.0	28.3	-5.0	0.0	-5.0	23.3	0.0	23.3
1930	Normal-Dry	24.1	0.0	24.1	-7.1	0.0	-7.1	17.0	0.0	17.0
2013	Normal-Dry	24.0	0.0	24.0	-7.1	0.0	-7.1	17.0	0.0	17.0
2012	Normal-Dry	26.3	0.0	26.3	-5.3	0.0	-5.3	21.0	0.0	21.0
1960	Normal-Dry	23.2	0.0	23.2	-6.9	0.0	-6.9	16.3	0.0	16.3
1994	Normal-Dry	24.2	0.0	24.2	-0.3	0.0	-0.3	23.9	0.0	23.9
1992	Normal-Dry	23.9	0.0	23.9	-6.7	0.0	-6.7	17.2	0.0	17.2
1987	Normal-Dry	19.6	0.0	19.6	-0.3	0.0	-0.3	19.3	0.0	19.3
1990	Normal-Dry	20.2	0.0	20.2	-6.4	0.0	-6.4	13.8	0.0	13.8
1934	Normal-Dry	20.6	0.0	20.6	-5.3	0.0	-5.3	15.3	0.0	15.3
2007	Normal-Dry	16.8	0.0	16.8	-5.1	0.0	-5.1	11.8	0.0	11.8
1961	Crit-High	16.5	0.0	16.5	-5.1	0.0	-5.1	11.4	0.0	11.4
1976	Crit-High	22.1	0.0	22.1	-3.4	0.0	-3.4	18.7	0.0	18.7
2014	Crit-High	12.0	0.0	12.0	-5.0	0.0	-5.0	7.0	0.0	7.0
1931	Crit-High	11.3	0.0	11.3	-5.1	0.0	-5.1	6.3	0.0	6.3
1924	Crit-High	16.0	0.0	16.0	-5.1	0.0	-5.1	10.9	0.0	10.9
1977	CL	6.8	0.0	6.8	-0.1	0.0	-0.1	6.7	0.0	6.7
2015	CL	5.0	0.0	5.0	-0.1	0.0	-0.1	4.9	0.0	4.9
Wet Ave		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
Normal-wet Ave		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
Normal-dry Ave		28.9	0.0	28.9	-1.6	0.0	-1.6	27.3	0.0	27.3
Dry Ave		23.7	0.0	23.7	-5.2	0.0	-5.2	18.5	0.0	18.5
Critical-H Ave		15.6	0.0	15.6	-4.7	0.0	-4.7	10.9	0.0	10.9
Critical-L Ave		5.9	0.0	5.9	-0.1	0.0	-0.1	5.8	0.0	5.8

Note: Values reported by contract year (March-February)

Tulare ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	30.0	85.1	115.1	0.0	-16.0	-16.0	30.0	69.0	99.0
1923	30.0	51.2	81.2	0.0	-13.1	-13.1	30.0	38.1	68.1
1924	16.6	0.0	16.6	-5.3	0.0	-5.3	11.3	0.0	11.3
1925	30.0	26.8	56.8	0.0	-21.1	-21.1	30.0	5.8	35.8
1926	30.0	12.5	42.5	-0.5	-12.5	-13.0	29.5	0.0	29.5
1927	30.0	57.7	87.7	0.0	-8.9	-8.9	30.0	48.8	78.8
1928	30.0	22.5	52.5	0.0	-11.4	-11.4	30.0	11.1	41.1
1929	24.2	0.0	24.2	-6.2	0.0	-6.2	18.0	0.0	18.0
1930	24.9	0.0	24.9	-7.3	0.0	-7.3	17.6	0.0	17.6
1931	11.7	0.0	11.7	-5.2	0.0	-5.2	6.5	0.0	6.5
1932	30.0	64.4	94.4	0.0	-12.5	-12.5	30.0	51.9	81.9
1933	30.0	24.2	54.2	0.0	-24.1	-24.1	30.0	0.0	30.0
1934	21.3	0.0	21.3	-5.5	0.0	-5.5	15.8	0.0	15.8
1935	30.0	50.6	80.6	0.0	-15.4	-15.4	30.0	35.2	65.2
1936	30.0	54.9	84.9	-0.1	-19.6	-19.7	29.9	35.3	65.2
1937	30.0	59.0	89.0	0.0	-11.0	-11.0	30.0	48.0	78.0
1938	30.0	93.8	123.8	0.0	-8.1	-8.1	30.0	85.7	115.7
1939	28.4	0.0	28.4	-6.3	0.0	-6.3	22.1	0.0	22.1
1940	30.0	39.2	69.2	-0.2	-7.9	-8.1	29.8	31.3	61.1
1941	30.0	89.0	119.0	0.0	-13.0	-13.0	30.0	76.0	106.0
1942	30.0	81.0	111.0	0.0	-20.3	-20.3	30.0	60.7	90.7
1943	30.0	55.6	85.6	-0.1	-22.1	-22.1	29.9	33.5	63.4
1944	30.0	26.6	56.6	0.0	-11.9	-11.9	30.0	14.7	44.7
1945	30.0	67.4	97.4	0.0	-10.7	-10.7	30.0	56.7	86.7
1946	29.9	37.1	67.0	-0.1	-5.1	-5.1	29.8	32.0	61.9
1947	30.0	11.6	41.6	0.0	-8.9	-8.9	30.0	2.7	32.7
1948	30.0	5.7	35.7	-6.4	-5.7	-12.1	23.6	0.0	23.6
1949	30.0	18.6	48.6	-2.2	-18.6	-20.8	27.8	0.0	27.8
1950	30.0	23.4	53.4	0.0	-20.1	-20.1	30.0	3.4	33.4
1951	30.0	33.4	63.3	0.0	-25.7	-25.6	30.0	7.7	37.7
1952	30.0	84.6	114.6	0.0	-7.5	-7.5	30.0	77.2	107.2
1953	30.0	22.0	52.0	0.0	-19.5	-19.5	30.0	2.4	32.4
1954	30.0	18.8	48.8	-0.2	-18.8	-18.9	29.8	0.0	29.8
1955	30.0	18.9	48.9	-0.8	-18.9	-19.6	29.2	0.0	29.2
1956	30.0	85.9	115.9	0.0	-16.2	-16.2	30.0	69.7	99.7
1957	30.0	29.0	59.0	0.0	-8.0	-8.0	30.0	21.0	51.0
1958	30.0	84.4	114.4	0.0	-13.6	-13.6	30.0	70.7	100.7
1959	30.0	0.7	30.7	-0.5	-0.7	-1.2	29.5	0.0	29.5
1960	24.0	0.0	24.0	-7.1	0.0	-7.1	16.9	0.0	16.9
1961	17.1	0.0	17.1	-5.2	0.0	-5.2	11.8	0.0	11.8
1962	30.0	58.6	88.6	0.0	-14.5	-14.5	30.0	44.1	74.1
1963	30.0	70.2	100.2	0.0	-15.1	-15.1	30.0	55.2	85.2
1964	30.0	9.6	39.6	-3.3	-9.6	-12.9	26.7	0.0	26.7
1965	30.0	70.2	100.2	0.0	-21.3	-21.3	30.0	48.9	78.9
1966	30.0	20.0	50.0	0.0	-9.9	-9.9	30.0	10.1	40.1
1967	30.0	97.0	127.0	0.0	-7.6	-7.6	30.0	89.4	119.4
1968	29.3	0.0	29.3	-5.2	0.0	-5.2	24.1	0.0	24.1
1969	30.0	89.7	119.7	0.0	-3.4	-3.4	30.0	86.4	116.4
1970	30.0	38.3	68.2	0.0	-22.1	-22.1	30.0	16.2	46.2
1971	30.0	35.1	65.1	0.0	-24.7	-24.7	30.0	10.4	40.4
1972	30.0	12.5	42.5	-2.4	-12.5	-15.0	27.6	0.0	27.6
1973	30.0	56.5	86.5	0.0	-19.7	-19.7	30.0	36.8	66.8
1974	30.0	64.8	94.8	0.0	-19.2	-19.2	30.0	45.7	75.7
1975	30.0	56.5	86.5	0.0	-9.7	-9.7	30.0	46.8	76.8
1976	22.9	0.0	22.9	-3.6	0.0	-3.6	19.3	0.0	19.3
1977	7.0	0.0	7.0	-0.1	0.0	-0.1	6.9	0.0	6.9
1978	30.0	101.1	131.1	0.0	-11.1	-11.1	30.0	90.0	120.0
1979	30.0	54.0	84.0	-0.1	-20.9	-21.0	29.9	33.1	63.0
1980	30.0	87.9	117.9	-0.1	-25.2	-25.3	29.9	62.7	92.6
1981	30.0	15.7	45.7	0.0	-4.2	-4.2	30.0	11.5	41.5
1982	30.0	82.7	112.7	-0.1	-12.9	-13.0	29.9	69.8	99.7
1983	30.0	89.6	119.6	0.0	-1.0	-1.0	30.0	88.6	118.6
1984	30.0	50.6	80.6	0.0	-15.3	-15.3	30.0	35.2	65.2
1985	30.0	14.6	44.6	0.0	-11.9	-11.9	30.0	2.6	32.6
1986	30.0	81.7	111.7	0.0	-13.6	-13.6	30.0	68.1	98.1
1987	20.3	0.0	20.3	-0.3	0.0	-0.3	20.0	0.0	20.0
1988	25.1	0.0	25.1	-7.2	0.0	-7.2	17.9	0.0	17.9
1989	27.5	0.0	27.5	-8.0	0.0	-8.0	19.6	0.0	19.6
1990	20.9	0.0	20.9	-6.6	0.0	-6.6	14.3	0.0	14.3
1991	29.3	0.0	29.3	-8.2	0.0	-8.2	21.1	0.0	21.1
1992	24.7	0.0	24.7	-6.9	0.0	-6.9	17.8	0.0	17.8
1993	30.0	89.8	119.8	0.0	-15.7	-15.7	30.0	74.1	104.1
1994	25.0	0.0	25.0	-0.3	0.0	-0.3	24.7	0.0	24.7
1995	30.0	106.8	136.8	0.0	-8.8	-8.8	30.0	98.0	128.0
1996	30.0	61.8	91.8	0.0	-11.6	-11.6	30.0	50.2	80.2
1997	30.0	49.2	79.2	-0.1	-13.5	-13.5	29.9	35.8	65.7
1998	30.0	82.3	112.3	0.0	-6.5	-6.5	30.0	75.8	105.7
1999	30.0	41.8	71.8	0.0	-15.5	-15.5	30.0	26.3	56.3
2000	30.0	48.8	78.8	0.0	-9.9	-9.9	30.0	38.9	68.9
2001	30.0	9.2	39.2	-4.1	-9.2	-13.3	25.9	0.0	25.9
2002	30.0	16.8	46.8	-2.9	-16.8	-19.7	27.1	0.0	27.1
2003	30.0	41.5	71.5	0.0	-28.0	-28.0	30.0	13.4	43.4
2004	30.0	11.2	41.2	-3.4	-11.2	-14.6	26.6	0.0	26.6
2005	30.0	88.0	118.0	0.0	-6.8	-6.8	30.0	81.2	111.2
2006	30.0	88.9	118.9	0.0	-5.9	-5.9	30.0	83.0	113.0
2007	17.4	0.0	17.4	-5.2	0.0	-5.2	12.2	0.0	12.2
2008	30.0	7.3	37.3	-5.9	-7.3	-13.1	24.1	0.0	24.1
2009	30.0	42.8	72.8	0.0	-27.8	-27.8	30.0	15.0	45.0
2010	30.0	70.5	100.5	0.0	-17.4	-17.4	30.0	53.1	83.1
2011	30.0	95.4	125.4	0.0	-7.3	-7.3	30.0	88.1	118.1
2012	27.2	0.0	27.2	-5.5	0.0	-5.5	21.8	0.0	21.8
2013	24.9	0.0	24.9	-7.3	0.0	-7.3	17.5	0.0	17.5
2014	12.4	0.0	12.4	-5.2	0.0	-5.2	7.2	0.0	7.2
2015	5.2	0.0	5.2	-0.1	0.0	-0.1	5.1	0.0	5.1
2016	30.0	13.2	43.2	-2.0	-13.2	-15.2	28.0	0.0	28.0
Ave All	27.9	38.5	66.4	-1.6	-10.4	-12.0	26.3	28.1	54.4
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	20.9	0.4	21.4	-4.8	-0.4	-5.2	16.2	0.0	16.2

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	30.0	89.6	119.6	0.0	-1.0	-1.0	30.0	88.6	118.6
1969		30.0	89.7	119.7	0.0	-3.4	-3.4	30.0	86.4	116.4
1995		30.0	106.8	136.8	0.0	-8.8	-8.8	30.0	98.0	128.0
1938		30.0	93.8	123.8	0.0	-8.1	-8.1	30.0	85.7	115.7
1978		30.0	101.1	131.1	0.0	-11.1	-11.1	30.0	90.0	120.0
1982		30.0	82.7	112.7	-0.1	-12.9	-13.0	29.9	69.8	99.7
2011		30.0	95.4	125.4	0.0	-7.3	-7.3	30.0	88.1	118.1
1967		30.0	97.0	127.0	0.0	-7.6	-7.6	30.0	89.4	119.4
2006		30.0	88.9	118.9	0.0	-5.9	-5.9	30.0	83.0	113.0
1998		30.0	82.3	112.3	0.0	-6.5	-6.5	30.0	75.8	105.7
1986		30.0	81.7	111.7	0.0	-13.6	-13.6	30.0	68.1	98.1
1980		30.0	87.9	117.9	-0.1	-25.2	-25.3	29.9	62.7	92.6
1956		30.0	85.9	115.9	0.0	-16.2	-16.2	30.0	69.7	99.7
1952		30.0	84.6	114.6	0.0	-7.5	-7.5	30.0	77.2	107.2
2005		30.0	88.0	118.0	0.0	-6.8	-6.8	30.0	81.2	111.2
1997		30.0	49.2	79.2	-0.1	-13.5	-13.5	29.9	35.8	65.7
1993		30.0	89.8	119.8	0.0	-15.7	-15.7	30.0	74.1	104.1
1941		30.0	89.0	119.0	0.0	-13.0	-13.0	30.0	76.0	106.0
1958		30.0	84.4	114.4	0.0	-13.6	-13.6	30.0	70.7	100.7
1922	Normal-Wet	30.0	85.1	115.1	0.0	-16.0	-16.0	30.0	69.0	99.0
1965		30.0	70.2	100.2	0.0	-21.3	-21.3	30.0	48.9	78.9
1942		30.0	81.0	111.0	0.0	-20.3	-20.3	30.0	60.7	90.7
1937		30.0	59.0	89.0	0.0	-11.0	-11.0	30.0	48.0	78.0
1996		30.0	61.8	91.8	0.0	-11.6	-11.6	30.0	50.2	80.2
1974		30.0	64.8	94.8	0.0	-19.2	-19.2	30.0	45.7	75.7
1945		30.0	67.4	97.4	0.0	-10.7	-10.7	30.0	56.7	86.7
1943		30.0	55.6	85.6	-0.1	-22.1	-22.1	29.9	33.5	63.4
1984		30.0	50.6	80.6	0.0	-15.3	-15.3	30.0	35.2	65.2
1932		30.0	64.4	94.4	0.0	-12.5	-12.5	30.0	51.9	81.9
1973		30.0	56.5	86.5	0.0	-19.7	-19.7	30.0	36.8	66.8
2010		30.0	70.5	100.5	0.0	-17.4	-17.4	30.0	53.1	83.1
1927		30.0	57.7	87.7	0.0	-8.9	-8.9	30.0	48.8	78.8
1963		30.0	70.2	100.2	0.0	-15.1	-15.1	30.0	55.2	85.2
1962		30.0	58.6	88.6	0.0	-14.5	-14.5	30.0	44.1	74.1
1935		30.0	50.6	80.6	0.0	-15.4	-15.4	30.0	35.2	65.2
1940		30.0	39.2	69.2	-0.2	-7.9	-8.1	29.8	31.3	61.1
1951		30.0	33.4	63.3	0.0	-25.7	-25.6	30.0	7.7	37.7
1936		30.0	54.9	84.9	-0.1	-19.6	-19.7	29.9	35.3	65.2
1979		30.0	54.0	84.0	-0.1	-20.9	-21.0	29.9	33.1	63.0
1975		30.0	56.5	86.5	0.0	-9.7	-9.7	30.0	46.8	76.8
2000		30.0	48.8	78.8	0.0	-9.9	-9.9	30.0	38.9	68.9
1946		29.9	37.1	67.0	-0.1	-5.1	-5.1	29.8	32.0	61.9
1923		30.0	51.2	81.2	0.0	-13.1	-13.1	30.0	38.1	68.1
1999		30.0	41.8	71.8	0.0	-15.5	-15.5	30.0	26.3	56.3
2009		30.0	42.8	72.8	0.0	-27.8	-27.8	30.0	15.0	45.0
2003	Normal-Dry	30.0	41.5	71.5	0.0	-28.0	-28.0	30.0	13.4	43.4
1970		30.0	38.3	68.2	0.0	-22.1	-22.1	30.0	16.2	46.2
1925		30.0	26.8	56.8	0.0	-21.1	-21.1	30.0	5.8	35.8
1971		30.0	35.1	65.1	0.0	-24.7	-24.7	30.0	10.4	40.4
1957		30.0	29.0	59.0	0.0	-8.0	-8.0	30.0	21.0	51.0
1954		30.0	18.8	48.8	-0.2	-18.8	-18.9	29.8	0.0	29.8
1950		30.0	23.4	53.4	0.0	-20.1	-20.1	30.0	3.4	33.4
2016		30.0	13.2	43.2	-2.0	-13.2	-15.2	28.0	0.0	28.0
1966		30.0	20.0	50.0	0.0	-9.9	-9.9	30.0	10.1	40.1
1944		30.0	26.6	56.6	0.0	-11.9	-11.9	30.0	14.7	44.7
1953		30.0	22.0	52.0	0.0	-19.5	-19.5	30.0	2.4	32.4
1948		30.0	5.7	35.7	-6.4	-5.7	-12.1	23.6	0.0	23.6
2002		30.0	16.8	46.8	-2.9	-16.8	-19.7	27.1	0.0	27.1
1949		30.0	18.6	48.6	-2.2	-18.6	-20.8	27.8	0.0	27.8
1926		30.0	12.5	42.5	-0.5	-12.5	-13.0	29.5	0.0	29.5
1955		30.0	18.9	48.9	-0.8	-18.9	-19.6	29.2	0.0	29.2
1928		30.0	22.5	52.5	0.0	-11.4	-11.4	30.0	11.1	41.1
2004		30.0	11.2	41.2	-3.4	-11.2	-14.6	26.6	0.0	26.6
1985		30.0	14.6	44.6	0.0	-11.9	-11.9	30.0	2.6	32.6
1947		30.0	11.6	41.6	0.0	-8.9	-8.9	30.0	2.7	32.7
2008		30.0	7.3	37.3	-5.9	-7.3	-13.1	24.1	0.0	24.1
1933		30.0	24.2	54.2	0.0	-24.1	-24.1	30.0	0.0	30.0
1981		30.0	15.7	45.7	0.0	-4.2	-4.2	30.0	11.5	41.5
2001		30.0	9.2	39.2	-4.1	-9.2	-13.3	25.9	0.0	25.9
1972		30.0	12.5	42.5	-2.4	-12.5	-15.0	27.6	0.0	27.6
1991		29.3	0.0	29.3	-8.2	0.0	-8.2	21.1	0.0	21.1
1959		30.0	0.7	30.7	-0.5	-0.7	-1.2	29.5	0.0	29.5
1989		27.5	0.0	27.5	-8.0	0.0	-8.0	19.6	0.0	19.6
1964	Normal-Dry	30.0	9.6	39.6	-3.3	-9.6	-12.9	26.7	0.0	26.7
1939		28.4	0.0	28.4	-6.3	0.0	-6.3	22.1	0.0	22.1
1929		24.2	0.0	24.2	-6.2	0.0	-6.2	18.0	0.0	18.0
1988		25.1	0.0	25.1	-7.2	0.0	-7.2	17.9	0.0	17.9
1968		29.3	0.0	29.3	-5.2	0.0	-5.2	24.1	0.0	24.1
1930		24.9	0.0	24.9	-7.3	0.0	-7.3	17.6	0.0	17.6
2013		24.9	0.0	24.9	-7.3	0.0	-7.3	17.5	0.0	17.5
2012		27.2	0.0	27.2	-5.5	0.0	-5.5	21.8	0.0	21.8
1960		24.0	0.0	24.0	-7.1	0.0	-7.1	16.9	0.0	16.9
1994		25.0	0.0	25.0	-0.3	0.0	-0.3	24.7	0.0	24.7
1992		24.7	0.0	24.7	-6.9	0.0	-6.9	17.8	0.0	17.8
1987		20.3	0.0	20.3	-0.3	0.0	-0.3	20.0	0.0	20.0
1990		20.9	0.0	20.9	-6.6	0.0	-6.6	14.3	0.0	14.3
1934		21.3	0.0	21.3	-5.5	0.0	-5.5	15.8	0.0	15.8
2007		17.4	0.0	17.4	-5.2	0.0	-5.2	12.2	0.0	12.2
1961	Crit-High	17.1	0.0	17.1	-5.2	0.0	-5.2	11.8	0.0	11.8
1976		22.9	0.0	22.9	-3.6	0.0	-3.6	19.3	0.0	19.3
2014		12.4	0.0	12.4	-5.2	0.0	-5.2	7.2	0.0	7.2
1931		11.7	0.0	11.7	-5.2	0.0	-5.2	6.5	0.0	6.5
1924		16.6	0.0	16.6	-5.3	0.0	-5.3	11.3	0.0	11.3
1977	CL	7.0	0.0	7.0	-0.1	0.0	-0.1	6.9	0.0	6.9
2015		5.2	0.0	5.2	-0.1	0.0	-0.1	5.1	0.0	5.1
	Wet Ave	30.0	87.8	117.8	0.0	-10.4	-10.4	30.0	77.4	107.4
	Normal-wet Ave	30.0	57.1	87.1	0.0	-15.6	-15.6	30.0	41.5	71.4
	Normal-dry Ave	29.9	17.7	47.6	-1.7	-13.3	-15.0	28.2	4.5	32.7
	Dry Ave	24.5	0.6	25.1	-5.3	-0.6	-6.0	19.2	0.0	19.2
	Critical-H Ave	16.1	0.0	16.1	-4.9	0.0	-4.9	11.2	0.0	11.2
	Critical-L Ave	6.1	0.0	6.1	-0.1	0.0	-0.1	6.0	0.0	6.0

Note: Values reported by contract year (March-February)

Chowchilla WD

Deliveries - Chronological Listing

	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
Year	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	55.0	96.5	151.5	0.0	-18.2	-18.2	55.0	78.3	133.3
1923	55.0	58.1	113.1	0.0	-14.9	-14.9	55.0	43.3	98.3
1924	30.4	0.0	30.4	-9.7	0.0	-9.7	20.7	0.0	20.7
1925	55.0	30.5	85.5	0.0	-23.9	-23.9	55.0	6.6	61.6
1926	55.0	14.2	69.2	-0.9	-14.2	-15.1	54.0	0.0	54.0
1927	55.0	65.4	120.4	-0.1	-10.1	-10.1	54.9	55.4	110.3
1928	55.0	25.6	80.6	0.0	-13.0	-13.0	55.0	12.6	67.6
1929	44.3	0.0	44.3	-11.3	0.0	-11.3	33.0	0.0	33.0
1930	45.6	0.0	45.6	-13.4	0.0	-13.4	32.2	0.0	32.2
1931	21.5	0.0	21.5	-9.6	0.0	-9.6	11.9	0.0	11.9
1932	55.0	73.1	128.1	0.0	-14.2	-14.2	55.0	58.9	113.9
1933	55.0	27.4	82.4	0.0	-27.4	-27.4	55.0	0.0	55.0
1934	39.1	0.0	39.1	-10.1	0.0	-10.1	29.0	0.0	29.0
1935	55.0	57.4	112.4	0.0	-17.4	-17.4	55.0	40.0	95.0
1936	55.0	62.3	117.3	-0.1	-22.3	-22.4	54.9	40.0	94.9
1937	55.0	66.9	121.9	0.0	-12.5	-12.5	55.0	54.4	109.4
1938	55.0	106.4	161.4	0.0	-9.2	-9.2	55.0	97.2	152.2
1939	52.1	0.0	52.1	-11.5	0.0	-11.5	40.5	0.0	40.5
1940	55.0	44.5	99.5	-0.3	-9.0	-9.3	54.7	35.5	90.2
1941	55.0	101.0	156.0	0.0	-14.8	-14.8	55.0	86.2	141.2
1942	55.0	91.9	146.9	0.0	-23.0	-23.0	55.0	68.9	123.9
1943	55.0	63.1	118.1	-0.2	-25.0	-25.2	54.8	38.0	92.9
1944	55.0	30.2	85.2	0.0	-13.5	-13.5	55.0	16.7	71.7
1945	55.0	76.5	131.5	0.0	-12.1	-12.1	55.0	64.4	119.4
1946	54.9	42.1	97.0	-0.2	-5.7	-5.9	54.7	36.3	91.1
1947	55.0	13.1	68.1	0.0	-10.0	-10.0	55.0	3.1	58.1
1948	55.0	6.4	61.4	-11.8	-6.4	-18.2	43.2	0.0	43.2
1949	55.0	21.2	76.2	-4.0	-21.2	-25.1	51.0	0.0	51.0
1950	55.0	26.6	81.6	0.0	-22.8	-22.8	55.0	3.8	58.8
1951	54.9	37.9	92.8	0.1	-29.1	-29.0	55.0	8.7	63.7
1952	55.0	96.0	151.0	0.0	-8.5	-8.5	55.0	87.6	142.6
1953	55.0	24.9	79.9	0.0	-22.2	-22.2	55.0	2.8	57.8
1954	55.0	21.3	76.3	-0.3	-21.3	-21.6	54.7	0.0	54.7
1955	55.0	21.4	76.4	-1.4	-21.4	-22.8	53.6	0.0	53.6
1956	55.0	97.5	152.5	0.0	-18.4	-18.4	55.0	79.1	134.1
1957	55.0	32.9	87.9	0.0	-9.1	-9.1	55.0	23.8	78.8
1958	55.0	95.7	150.7	0.0	-15.4	-15.4	55.0	80.3	135.3
1959	55.0	0.8	55.8	-0.9	-0.8	-1.7	54.1	0.0	54.1
1960	44.0	0.0	44.0	-13.1	0.0	-13.1	31.0	0.0	31.0
1961	31.3	0.0	31.3	-9.6	0.0	-9.6	21.7	0.0	21.7
1962	55.0	66.5	121.5	0.0	-16.4	-16.4	55.0	50.0	105.0
1963	55.0	79.7	134.7	0.0	-17.1	-17.1	55.0	62.6	117.6
1964	55.0	10.8	65.8	-6.1	-10.8	-16.9	48.9	0.0	48.9
1965	55.0	79.7	134.7	0.0	-24.2	-24.2	55.0	55.5	110.5
1966	55.0	22.7	77.6	0.0	-11.3	-11.2	55.0	11.4	66.4
1967	55.0	110.1	165.1	0.0	-8.6	-8.7	55.0	101.5	156.5
1968	53.7	0.0	53.7	-9.5	0.0	-9.5	44.3	0.0	44.3
1969	55.0	101.8	156.8	0.0	-3.8	-3.8	55.0	98.0	153.0
1970	55.0	43.4	98.4	0.0	-25.1	-25.0	55.0	18.3	73.3
1971	55.0	39.9	94.9	0.0	-28.0	-28.0	55.0	11.9	66.8
1972	55.0	14.2	69.2	-4.5	-14.2	-18.7	50.5	0.0	50.5
1973	55.0	64.1	119.1	0.0	-22.4	-22.4	55.0	41.8	96.7
1974	55.0	73.6	128.6	0.0	-21.7	-21.7	55.0	51.8	106.8
1975	55.0	64.1	119.1	0.0	-11.0	-11.0	55.0	53.1	108.1
1976	41.9	0.0	41.9	-6.5	0.0	-6.5	35.4	0.0	35.4
1977	12.9	0.0	12.9	-0.2	0.0	-0.2	12.6	0.0	12.6
1978	55.0	114.8	169.8	0.0	-12.6	-12.6	55.0	102.2	157.2
1979	55.0	61.3	116.3	-0.3	-23.7	-23.9	54.7	37.6	92.3
1980	55.0	99.7	154.7	-0.3	-28.6	-28.8	54.7	71.2	125.9
1981	55.0	17.8	72.8	0.0	-4.8	-4.8	55.0	13.1	68.1
1982	55.0	93.8	148.8	-0.1	-14.7	-14.8	54.9	79.2	134.1
1983	55.0	101.6	156.6	0.0	-1.1	-1.1	55.0	100.5	155.5
1984	55.0	57.4	112.4	0.0	-17.4	-17.4	55.0	40.0	95.0
1985	55.0	16.5	71.5	0.0	-13.6	-13.5	55.0	3.0	58.0
1986	55.0	92.7	147.7	0.0	-15.4	-15.4	55.0	77.3	132.3
1987	37.2	0.0	37.2	-0.5	0.0	-0.5	36.7	0.0	36.7
1988	46.0	0.0	46.0	-13.2	0.0	-13.2	32.9	0.0	32.9
1989	50.5	0.0	50.5	-14.6	0.0	-14.6	35.9	0.0	35.9
1990	38.3	0.0	38.3	-12.1	0.0	-12.1	26.2	0.0	26.2
1991	53.8	0.0	53.8	-15.0	0.0	-15.0	38.8	0.0	38.8
1992	45.3	0.0	45.3	-12.6	0.0	-12.6	32.7	0.0	32.7
1993	55.0	101.9	156.9	0.0	-17.8	-17.8	55.0	84.1	139.1
1994	45.9	0.0	45.9	-0.5	0.0	-0.5	45.4	0.0	45.4
1995	55.0	121.2	176.2	0.0	-10.0	-10.0	55.0	111.2	166.2
1996	55.0	70.1	125.1	0.0	-13.2	-13.2	55.0	57.0	112.0
1997	55.0	55.9	110.9	-0.1	-15.3	-15.4	54.9	40.6	95.5
1998	55.0	93.4	148.4	0.0	-7.4	-7.4	55.0	86.0	140.9
1999	55.0	47.5	102.5	0.0	-17.6	-17.6	55.0	29.9	84.9
2000	55.0	55.4	110.4	0.0	-11.2	-11.2	55.0	44.1	99.1
2001	55.0	10.4	65.4	-7.5	-10.4	-17.9	47.5	0.0	47.5
2002	55.0	19.1	74.1	-5.3	-19.1	-24.3	49.7	0.0	49.7
2003	55.0	47.1	102.1	0.0	-31.8	-31.8	55.0	15.2	70.2
2004	55.0	12.7	67.7	-6.3	-12.7	-19.0	48.7	0.0	48.7
2005	55.0	99.9	154.9	0.0	-7.7	-7.7	55.0	92.2	147.2
2006	55.0	100.9	155.9	0.0	-6.7	-6.7	55.0	94.2	149.2
2007	31.9	0.0	31.9	-9.6	0.0	-9.6	22.3	0.0	22.3
2008	55.0	8.3	63.3	-10.7	-8.3	-19.0	44.3	0.0	44.3
2009	55.0	48.5	103.5	0.0	-31.5	-31.5	55.0	17.0	72.0
2010	55.0	80.0	135.0	0.0	-19.7	-19.7	55.0	60.3	115.3
2011	55.0	108.2	163.2	0.0	-8.3	-8.3	55.0	99.9	154.9
2012	49.9	0.0	49.9	-10.0	0.0	-10.0	39.9	0.0	39.9
2013	45.6	0.0	45.6	-13.4	0.0	-13.4	32.2	0.0	32.2
2014	22.8	0.0	22.8	-9.6	0.0	-9.6	13.2	0.0	13.2
2015	9.5	0.0	9.5	-0.2	0.0	-0.2	9.3	0.0	9.3
2016	55.0	15.0	70.0	-3.6	-15.0	-18.6	51.4	0.0	51.4
Ave All	51.1	43.7	94.8	-3.0	-11.8	-14.7	48.1	31.9	80.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	38.4	0.5	38.9	-8.7	-0.5	-9.2	29.6	0.0	29.6

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

		Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
Year		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	55.0	101.6	156.6	0.0	-1.1	-1.1	55.0	100.5	155.5
1969		55.0	101.8	156.8	0.0	-3.8	-3.8	55.0	98.0	153.0
1995		55.0	121.2	176.2	0.0	-10.0	-10.0	55.0	111.2	166.2
1938		55.0	106.4	161.4	0.0	-9.2	-9.2	55.0	97.2	152.2
1978		55.0	114.8	169.8	0.0	-12.6	-12.6	55.0	102.2	157.2
1982		55.0	93.8	148.8	-0.1	-14.7	-14.8	54.9	79.2	134.1
2011		55.0	108.2	163.2	0.0	-8.3	-8.3	55.0	99.9	154.9
1967		55.0	110.1	165.1	0.0	-8.6	-8.7	55.0	101.5	156.5
2006		55.0	100.9	155.9	0.0	-6.7	-6.7	55.0	94.2	149.2
1998		55.0	93.4	148.4	0.0	-7.4	-7.4	55.0	86.0	140.9
1986		55.0	92.7	147.7	0.0	-15.4	-15.4	55.0	77.3	132.3
1980		55.0	99.7	154.7	-0.3	-28.6	-28.8	54.7	71.2	125.9
1956		55.0	97.5	152.5	0.0	-18.4	-18.4	55.0	79.1	134.1
1952		55.0	96.0	151.0	0.0	-8.5	-8.5	55.0	87.6	142.6
2005		55.0	99.9	154.9	0.0	-7.7	-7.7	55.0	92.2	147.2
1997		55.0	55.9	110.9	-0.1	-15.3	-15.4	54.9	40.6	95.5
1993		55.0	101.9	156.9	0.0	-17.8	-17.8	55.0	84.1	139.1
1941		55.0	101.0	156.0	0.0	-14.8	-14.8	55.0	86.2	141.2
1958		55.0	95.7	150.7	0.0	-15.4	-15.4	55.0	80.3	135.3
1922	Normal-Wet	55.0	96.5	151.5	0.0	-18.2	-18.2	55.0	78.3	133.3
1965		55.0	79.7	134.7	0.0	-24.2	-24.2	55.0	55.5	110.5
1942		55.0	91.9	146.9	0.0	-23.0	-23.0	55.0	68.9	123.9
1937		55.0	66.9	121.9	0.0	-12.5	-12.5	55.0	54.4	109.4
1996		55.0	70.1	125.1	0.0	-13.2	-13.2	55.0	57.0	112.0
1974		55.0	73.6	128.6	0.0	-21.7	-21.7	55.0	51.8	106.8
1945		55.0	76.5	131.5	0.0	-12.1	-12.1	55.0	64.4	119.4
1943		55.0	63.1	118.1	-0.2	-25.0	-25.2	54.8	38.0	92.9
1984		55.0	57.4	112.4	0.0	-17.4	-17.4	55.0	40.0	95.0
1932		55.0	73.1	128.1	0.0	-14.2	-14.2	55.0	58.9	113.9
1973		55.0	64.1	119.1	0.0	-22.4	-22.4	55.0	41.8	96.7
2010		55.0	80.0	135.0	0.0	-19.7	-19.7	55.0	60.3	115.3
1927		55.0	65.4	120.4	-0.1	-10.1	-10.1	54.9	55.4	110.3
1963		55.0	79.7	134.7	0.0	-17.1	-17.1	55.0	62.6	117.6
1962		55.0	66.5	121.5	0.0	-16.4	-16.4	55.0	50.0	105.0
1935		55.0	57.4	112.4	0.0	-17.4	-17.4	55.0	40.0	95.0
1940		55.0	44.5	99.5	-0.3	-9.0	-9.3	54.7	35.5	90.2
1951		54.9	37.9	92.8	0.1	-29.1	-29.0	55.0	8.7	63.7
1936		55.0	62.3	117.3	-0.1	-22.3	-22.4	54.9	40.0	94.9
1979		55.0	61.3	116.3	-0.3	-23.7	-23.9	54.7	37.6	92.3
1975		55.0	64.1	119.1	0.0	-11.0	-11.0	55.0	53.1	108.1
2000		55.0	55.4	110.4	0.0	-11.2	-11.2	55.0	44.1	99.1
1946		54.9	42.1	97.0	-0.2	-5.7	-5.9	54.7	36.3	91.1
1923		55.0	58.1	113.1	0.0	-14.9	-14.9	55.0	43.3	98.3
1999		55.0	47.5	102.5	0.0	-17.6	-17.6	55.0	29.9	84.9
2009		55.0	48.5	103.5	0.0	-31.5	-31.5	55.0	17.0	72.0
2003	Normal-Dry	55.0	47.1	102.1	0.0	-31.8	-31.8	55.0	15.2	70.2
1970		55.0	43.4	98.4	0.0	-25.1	-25.0	55.0	18.3	73.3
1925		55.0	30.5	85.5	0.0	-23.9	-23.9	55.0	6.6	61.6
1971		55.0	39.9	94.9	0.0	-28.0	-28.0	55.0	11.9	66.8
1957		55.0	32.9	87.9	0.0	-9.1	-9.1	55.0	23.8	78.8
1954		55.0	21.3	76.3	-0.3	-21.3	-21.6	54.7	0.0	54.7
1950		55.0	26.6	81.6	0.0	-22.8	-22.8	55.0	3.8	58.8
2016		55.0	15.0	70.0	-3.6	-15.0	-18.6	51.4	0.0	51.4
1966		55.0	22.7	77.6	0.0	-11.3	-11.2	55.0	11.4	66.4
1944		55.0	30.2	85.2	0.0	-13.5	-13.5	55.0	16.7	71.7
1953		55.0	24.9	79.9	0.0	-22.2	-22.2	55.0	2.8	57.8
1948		55.0	6.4	61.4	-11.8	-6.4	-18.2	43.2	0.0	43.2
2002		55.0	19.1	74.1	-5.3	-19.1	-24.3	49.7	0.0	49.7
1949		55.0	21.2	76.2	-4.0	-21.2	-25.1	51.0	0.0	51.0
1926		55.0	14.2	69.2	-0.9	-14.2	-15.1	54.0	0.0	54.0
1955		55.0	21.4	76.4	-1.4	-21.4	-22.8	53.6	0.0	53.6
1928		55.0	25.6	80.6	0.0	-13.0	-13.0	55.0	12.6	67.6
2004		55.0	12.7	67.7	-6.3	-12.7	-19.0	48.7	0.0	48.7
1985		55.0	16.5	71.5	0.0	-13.6	-13.5	55.0	3.0	58.0
1947		55.0	13.1	68.1	0.0	-10.0	-10.0	55.0	3.1	58.1
2008		55.0	8.3	63.3	-10.7	-8.3	-19.0	44.3	0.0	44.3
1933		55.0	27.4	82.4	0.0	-27.4	-27.4	55.0	0.0	55.0
1981		55.0	17.8	72.8	0.0	-4.8	-4.8	55.0	13.1	68.1
2001		55.0	10.4	65.4	-7.5	-10.4	-17.9	47.5	0.0	47.5
1972		55.0	14.2	69.2	-4.5	-14.2	-18.7	50.5	0.0	50.5
1991		53.8	0.0	53.8	-15.0	0.0	-15.0	38.8	0.0	38.8
1959		55.0	0.8	55.8	-0.9	-0.8	-1.7	54.1	0.0	54.1
1989		50.5	0.0	50.5	-14.6	0.0	-14.6	35.9	0.0	35.9
1964	Normal-Dry	55.0	10.8	65.8	-6.1	-10.8	-16.9	48.9	0.0	48.9
1939		52.1	0.0	52.1	-11.5	0.0	-11.5	40.5	0.0	40.5
1929		44.3	0.0	44.3	-11.3	0.0	-11.3	33.0	0.0	33.0
1988		46.0	0.0	46.0	-13.2	0.0	-13.2	32.9	0.0	32.9
1968		53.7	0.0	53.7	-9.5	0.0	-9.5	44.3	0.0	44.3
1930		45.6	0.0	45.6	-13.4	0.0	-13.4	32.2	0.0	32.2
2013		45.6	0.0	45.6	-13.4	0.0	-13.4	32.2	0.0	32.2
2012		49.9	0.0	49.9	-10.0	0.0	-10.0	39.9	0.0	39.9
1960		44.0	0.0	44.0	-13.1	0.0	-13.1	31.0	0.0	31.0
1994		45.9	0.0	45.9	-0.5	0.0	-0.5	45.4	0.0	45.4
1992		45.3	0.0	45.3	-12.6	0.0	-12.6	32.7	0.0	32.7
1987		37.2	0.0	37.2	-0.5	0.0	-0.5	36.7	0.0	36.7
1990		38.3	0.0	38.3	-12.1	0.0	-12.1	26.2	0.0	26.2
1934		39.1	0.0	39.1	-10.1	0.0	-10.1	29.0	0.0	29.0
2007		31.9	0.0	31.9	-9.6	0.0	-9.6	22.3	0.0	22.3
1961	Crit-High	31.3	0.0	31.3	-9.6	0.0	-9.6	21.7	0.0	21.7
1976		41.9	0.0	41.9	-6.5	0.0	-6.5	35.4	0.0	35.4
2014		22.8	0.0	22.8	-9.6	0.0	-9.6	13.2	0.0	13.2
1931		21.5	0.0	21.5	-9.6	0.0	-9.6	11.9	0.0	11.9
1924		30.4	0.0	30.4	-9.7	0.0	-9.7	20.7	0.0	20.7
1977	CL	12.9	0.0	12.9	-0.2	0.0	-0.2	12.6	0.0	12.6
2015		9.5	0.0	9.5	-0.2	0.0	-0.2	9.3	0.0	9.3
	Wet Ave	55.0	99.6	154.6	0.0	-11.8	-11.8	55.0	87.8	142.8
	Normal-wet Ave	55.0	64.8	119.7	0.0	-17.7	-17.8	55.0	47.0	102.0
	Normal-dry Ave	54.8	20.1	74.9	-3.1	-15.1	-18.1	51.7	5.1	56.8
	Dry Ave	44.9	0.7	45.6	-9.8	-0.7	-10.5	35.1	0.0	35.1
	Critical-H Ave	29.6	0.0	29.6	-9.0	0.0	-9.0	20.6	0.0	20.6
	Critical-L Ave	11.2	0.0	11.2	-0.2	0.0	-0.2	11.0	0.0	11.0

Note: Values reported by contract year (March-February)

Madera ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	85.0	112.2	197.2	0.0	-21.2	-21.2	85.0	91.0	176.0
1923	85.0	67.6	152.6	0.0	-17.3	-17.3	85.0	50.3	135.3
1924	47.0	0.0	47.0	-15.0	0.0	-15.0	32.0	0.0	32.0
1925	85.0	35.4	120.4	0.0	-27.8	-27.8	85.0	7.6	92.6
1926	84.9	16.5	101.4	-1.4	-16.5	-17.9	83.5	0.0	83.5
1927	85.0	76.1	161.1	-0.1	-11.7	-11.8	84.9	64.4	149.3
1928	85.0	29.7	114.7	0.0	-15.1	-15.1	85.0	14.6	99.6
1929	68.4	0.0	68.4	-17.5	0.0	-17.5	51.0	0.0	51.0
1930	70.5	0.0	70.5	-20.7	0.0	-20.7	49.8	0.0	49.8
1931	33.2	0.0	33.2	-14.8	0.0	-14.8	18.3	0.0	18.3
1932	85.0	85.0	170.0	0.0	-16.5	-16.5	85.0	68.5	153.5
1933	85.0	31.9	116.9	0.0	-31.9	-31.9	85.0	0.0	85.0
1934	60.5	0.0	60.5	-15.7	0.0	-15.7	44.8	0.0	44.8
1935	85.0	66.8	151.8	0.0	-20.3	-20.3	85.0	46.5	131.5
1936	85.0	72.4	157.4	-0.2	-25.9	-26.1	84.8	46.6	131.3
1937	85.0	77.8	162.8	0.0	-14.5	-14.5	85.0	63.3	148.3
1938	85.0	123.7	208.7	0.0	-10.7	-10.7	85.0	113.0	198.0
1939	80.4	0.0	80.4	-17.8	0.0	-17.8	62.6	0.0	62.6
1940	85.0	51.7	136.7	-0.5	-10.4	-10.9	84.5	41.3	125.8
1941	85.0	117.4	202.4	0.0	-17.2	-17.2	85.0	100.2	185.2
1942	85.0	106.9	191.9	0.0	-26.8	-26.8	85.0	80.1	165.1
1943	85.0	73.3	158.3	-0.3	-29.1	-29.4	84.7	44.2	128.9
1944	85.0	35.1	120.1	0.0	-15.7	-15.7	85.0	19.4	104.4
1945	85.0	88.9	173.9	0.0	-14.1	-14.1	85.0	74.8	159.8
1946	84.8	48.9	133.7	-0.3	-6.7	-6.9	84.6	42.3	126.8
1947	85.0	15.3	100.3	0.0	-11.7	-11.7	85.0	3.6	88.6
1948	85.0	7.5	92.5	-18.2	-7.5	-25.6	66.8	0.0	66.8
1949	85.0	24.6	109.6	-6.1	-24.6	-30.7	78.9	0.0	78.9
1950	85.0	30.9	115.9	0.0	-26.5	-26.5	85.0	4.4	89.4
1951	84.9	44.0	128.9	0.1	-33.9	-33.7	85.0	10.1	95.1
1952	85.0	111.6	196.6	0.0	-9.8	-9.8	85.0	101.8	186.8
1953	85.0	29.0	114.0	0.0	-25.8	-25.8	85.0	3.2	88.2
1954	85.0	24.8	109.8	-0.4	-24.8	-25.2	84.6	0.0	84.6
1955	85.0	24.9	109.9	-2.2	-24.9	-27.0	82.8	0.0	82.8
1956	85.0	113.3	198.3	0.0	-21.4	-21.4	85.0	91.9	176.9
1957	85.0	38.3	123.3	0.0	-10.6	-10.6	85.0	27.7	112.7
1958	85.0	111.3	196.3	0.0	-18.0	-18.0	85.0	93.3	178.3
1959	85.0	0.9	85.9	-1.4	-0.9	-2.3	83.6	0.0	83.6
1960	68.1	0.0	68.1	-20.2	0.0	-20.2	47.8	0.0	47.8
1961	48.4	0.0	48.4	-14.8	0.0	-14.8	33.5	0.0	33.5
1962	85.0	77.3	162.3	0.0	-19.1	-19.1	85.0	58.2	143.2
1963	85.0	92.7	177.7	0.0	-19.9	-19.9	85.0	72.8	157.8
1964	85.0	12.6	97.6	-9.4	-12.6	-22.0	75.6	0.0	75.6
1965	85.0	92.6	177.6	0.0	-28.1	-28.1	85.0	64.5	149.5
1966	84.9	26.4	111.3	0.1	-13.1	-13.0	85.0	13.3	98.3
1967	85.0	128.0	213.0	0.0	-10.0	-10.1	85.0	118.0	202.9
1968	83.1	0.0	83.1	-14.7	0.0	-14.7	68.4	0.0	68.4
1969	85.0	118.4	203.4	0.0	-4.4	-4.4	85.0	113.9	198.9
1970	85.0	50.5	135.4	0.0	-29.1	-29.1	85.0	21.3	106.3
1971	85.0	46.4	131.3	0.0	-32.6	-32.6	85.0	13.8	98.8
1972	85.0	16.5	101.5	-6.9	-16.5	-23.4	78.1	0.0	78.1
1973	85.0	74.5	159.5	-0.1	-26.0	-26.0	84.9	48.5	133.5
1974	85.0	85.5	170.5	0.0	-25.3	-25.3	85.0	60.3	145.3
1975	85.0	74.5	159.5	0.0	-12.8	-12.8	85.0	61.7	146.7
1976	64.8	0.0	64.8	-10.1	0.0	-10.1	54.7	0.0	54.7
1977	19.9	0.0	19.9	-0.3	0.0	-0.3	19.5	0.0	19.5
1978	85.0	133.4	218.4	0.0	-14.6	-14.7	85.0	118.8	203.8
1979	85.0	71.2	156.2	-0.4	-27.5	-27.9	84.6	43.7	128.3
1980	85.0	115.9	200.9	-0.4	-33.2	-33.6	84.6	82.7	167.3
1981	85.0	20.7	105.7	0.0	-5.5	-5.5	85.0	15.2	100.2
1982	85.0	109.1	194.1	-0.2	-17.1	-17.2	84.8	92.0	176.9
1983	85.0	118.1	203.1	0.0	-1.3	-1.3	85.0	116.9	201.9
1984	85.0	66.7	151.7	0.0	-20.2	-20.2	85.0	46.5	131.5
1985	85.0	19.2	104.2	0.0	-15.8	-15.7	85.0	3.5	88.5
1986	85.0	107.7	192.7	0.0	-17.9	-17.9	85.0	89.8	174.8
1987	57.5	0.0	57.5	-0.8	0.0	-0.8	56.7	0.0	56.7
1988	71.1	0.0	71.1	-20.3	0.0	-20.3	50.8	0.0	50.8
1989	78.0	0.0	78.0	-22.6	0.0	-22.6	55.4	0.0	55.4
1990	59.2	0.0	59.2	-18.7	0.0	-18.7	40.5	0.0	40.5
1991	83.1	0.0	83.1	-23.2	0.0	-23.2	59.9	0.0	59.9
1992	70.0	0.0	70.0	-19.5	0.0	-19.5	50.5	0.0	50.5
1993	85.0	118.5	203.5	0.0	-20.7	-20.7	85.0	97.8	182.8
1994	70.9	0.0	70.9	-0.8	0.0	-0.8	70.1	0.0	70.1
1995	85.0	140.9	225.9	0.0	-11.6	-11.6	85.0	129.3	214.3
1996	85.0	81.5	166.5	0.0	-15.3	-15.3	85.0	66.2	151.2
1997	85.0	65.0	150.0	-0.2	-17.8	-17.9	84.8	47.2	132.0
1998	85.0	108.5	193.5	-0.1	-8.6	-8.7	84.9	99.9	184.9
1999	85.0	55.2	140.2	0.0	-20.4	-20.4	85.0	34.7	119.7
2000	85.0	64.4	149.4	0.0	-13.0	-13.0	85.0	51.3	136.3
2001	85.0	12.1	97.1	-11.6	-12.1	-23.7	73.4	0.0	73.4
2002	85.0	22.1	107.1	-8.2	-22.1	-30.3	76.8	0.0	76.8
2003	85.0	54.7	139.7	0.0	-37.0	-37.0	85.0	17.7	102.7
2004	85.0	14.8	99.8	-9.7	-14.8	-24.5	75.3	0.0	75.3
2005	85.0	116.1	201.1	0.0	-9.0	-9.0	85.0	107.1	192.1
2006	85.0	117.3	202.3	0.0	-7.8	-7.8	85.0	109.5	194.5
2007	49.3	0.0	49.3	-14.8	0.0	-14.8	34.5	0.0	34.5
2008	85.0	9.6	94.6	-16.6	-9.6	-26.2	68.4	0.0	68.4
2009	85.0	56.4	141.4	0.0	-36.7	-36.7	85.0	19.8	104.8
2010	85.0	93.0	178.0	0.0	-22.9	-22.9	85.0	70.1	155.1
2011	85.0	125.8	210.8	0.0	-9.6	-9.6	85.0	116.2	201.2
2012	77.1	0.0	77.1	-15.5	0.0	-15.5	61.6	0.0	61.6
2013	70.4	0.0	70.4	-20.7	0.0	-20.7	49.7	0.0	49.7
2014	35.2	0.0	35.2	-14.8	0.0	-14.8	20.4	0.0	20.4
2015	14.7	0.0	14.7	-0.3	0.0	-0.3	14.4	0.0	14.4
2016	85.0	17.5	102.5	-5.5	-17.5	-23.0	79.5	0.0	79.5
Ave All	78.9	50.8	129.7	-4.6	-13.7	-18.2	74.4	37.1	111.5
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	59.3	0.6	59.9	-13.5	-0.6	-14.1	45.8	0.0	45.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	85.0	118.1	203.1	0.0	-1.3	-1.3	85.0	116.9	201.9
1969		85.0	118.4	203.4	0.0	-4.4	-4.4	85.0	113.9	198.9
1995		85.0	140.9	225.9	0.0	-11.6	-11.6	85.0	129.3	214.3
1938		85.0	123.7	208.7	0.0	-10.7	-10.7	85.0	113.0	198.0
1978		85.0	133.4	218.4	0.0	-14.6	-14.7	85.0	118.8	203.8
1982		85.0	109.1	194.1	-0.2	-17.1	-17.2	84.8	92.0	176.9
2011		85.0	125.8	210.8	0.0	-9.6	-9.6	85.0	116.2	201.2
1967		85.0	128.0	213.0	0.0	-10.0	-10.1	85.0	118.0	202.9
2006		85.0	117.3	202.3	0.0	-7.8	-7.8	85.0	109.5	194.5
1998		85.0	108.5	193.5	-0.1	-8.6	-8.7	84.9	99.9	184.9
1986		85.0	107.7	192.7	0.0	-17.9	-17.9	85.0	89.8	174.8
1980		85.0	115.9	200.9	-0.4	-33.2	-33.6	84.6	82.7	167.3
1956		85.0	113.3	198.3	0.0	-21.4	-21.4	85.0	91.9	176.9
1952		85.0	111.6	196.6	0.0	-9.8	-9.8	85.0	101.8	186.8
2005		85.0	116.1	201.1	0.0	-9.0	-9.0	85.0	107.1	192.1
1997		85.0	65.0	150.0	-0.2	-17.8	-17.9	84.8	47.2	132.0
1993		85.0	118.5	203.5	0.0	-20.7	-20.7	85.0	97.8	182.8
1941		85.0	117.4	202.4	0.0	-17.2	-17.2	85.0	100.2	185.2
1958		85.0	111.3	196.3	0.0	-18.0	-18.0	85.0	93.3	178.3
1922	Normal-Wet	85.0	112.2	197.2	0.0	-21.2	-21.2	85.0	91.0	176.0
1965		85.0	92.6	177.6	0.0	-28.1	-28.1	85.0	64.5	149.5
1942		85.0	106.9	191.9	0.0	-26.8	-26.8	85.0	80.1	165.1
1937		85.0	77.8	162.8	0.0	-14.5	-14.5	85.0	63.3	148.3
1996		85.0	81.5	166.5	0.0	-15.3	-15.3	85.0	66.2	151.2
1974		85.0	85.5	170.5	0.0	-25.3	-25.3	85.0	60.3	145.3
1945		85.0	88.9	173.9	0.0	-14.1	-14.1	85.0	74.8	159.8
1943		85.0	73.3	158.3	-0.3	-29.1	-29.4	84.7	44.2	128.9
1984		85.0	66.7	151.7	0.0	-20.2	-20.2	85.0	46.5	131.5
1932		85.0	85.0	170.0	0.0	-16.5	-16.5	85.0	68.5	153.5
1973		85.0	74.5	159.5	-0.1	-26.0	-26.0	84.9	48.5	133.5
2010		85.0	93.0	178.0	0.0	-22.9	-22.9	85.0	70.1	155.1
1927		85.0	76.1	161.1	-0.1	-11.7	-11.8	84.9	64.4	149.3
1963		85.0	92.7	177.7	0.0	-19.9	-19.9	85.0	72.8	157.8
1962		85.0	77.3	162.3	0.0	-19.1	-19.1	85.0	58.2	143.2
1935		85.0	66.8	151.8	0.0	-20.3	-20.3	85.0	46.5	131.5
1940		85.0	51.7	136.7	-0.5	-10.4	-10.9	84.5	41.3	125.8
1951		84.9	44.0	128.9	0.1	-33.9	-33.7	85.0	10.1	95.1
1936		85.0	72.4	157.4	-0.2	-25.9	-26.1	84.8	46.6	131.3
1979		85.0	71.2	156.2	-0.4	-27.5	-27.9	84.6	43.7	128.3
1975		85.0	74.5	159.5	0.0	-12.8	-12.8	85.0	61.7	146.7
2000		85.0	64.4	149.4	0.0	-13.0	-13.0	85.0	51.3	136.3
1946		84.8	48.9	133.7	-0.3	-6.7	-6.9	84.6	42.3	126.8
1923		85.0	67.6	152.6	0.0	-17.3	-17.3	85.0	50.3	135.3
1999		85.0	55.2	140.2	0.0	-20.4	-20.4	85.0	34.7	119.7
2009		85.0	56.4	141.4	0.0	-36.7	-36.7	85.0	19.8	104.8
2003	Normal-Dry	85.0	54.7	139.7	0.0	-37.0	-37.0	85.0	17.7	102.7
1970		85.0	50.5	135.4	0.0	-29.1	-29.1	85.0	21.3	106.3
1925		85.0	35.4	120.4	0.0	-27.8	-27.8	85.0	7.6	92.6
1971		85.0	46.4	131.3	0.0	-32.6	-32.6	85.0	13.8	98.8
1957		85.0	38.3	123.3	0.0	-10.6	-10.6	85.0	27.7	112.7
1954		85.0	24.8	109.8	-0.4	-24.8	-25.2	84.6	0.0	84.6
1950		85.0	30.9	115.9	0.0	-26.5	-26.5	85.0	4.4	89.4
2016		85.0	17.5	102.5	-5.5	-17.5	-23.0	79.5	0.0	79.5
1966		84.9	26.4	111.3	0.1	-13.1	-13.0	85.0	13.3	98.3
1944		85.0	35.1	120.1	0.0	-15.7	-15.7	85.0	19.4	104.4
1953		85.0	29.0	114.0	0.0	-25.8	-25.8	85.0	3.2	88.2
1948		85.0	7.5	92.5	-18.2	-7.5	-25.6	66.8	0.0	66.8
2002		85.0	22.1	107.1	-8.2	-22.1	-30.3	76.8	0.0	76.8
1949		85.0	24.6	109.6	-6.1	-24.6	-30.7	78.9	0.0	78.9
1926		84.9	16.5	101.4	-1.4	-16.5	-17.9	83.5	0.0	83.5
1955		85.0	24.9	109.9	-2.2	-24.9	-27.0	82.8	0.0	82.8
1928		85.0	29.7	114.7	0.0	-15.1	-15.1	85.0	14.6	99.6
2004		85.0	14.8	99.8	-9.7	-14.8	-24.5	75.3	0.0	75.3
1985		85.0	19.2	104.2	0.0	-15.8	-15.7	85.0	3.5	88.5
1947		85.0	15.3	100.3	0.0	-11.7	-11.7	85.0	3.6	88.6
2008		85.0	9.6	94.6	-16.6	-9.6	-26.2	68.4	0.0	68.4
1933		85.0	31.9	116.9	0.0	-31.9	-31.9	85.0	0.0	85.0
1981		85.0	20.7	105.7	0.0	-5.5	-5.5	85.0	15.2	100.2
2001		85.0	12.1	97.1	-11.6	-12.1	-23.7	73.4	0.0	73.4
1972		85.0	16.5	101.5	-6.9	-16.5	-23.4	78.1	0.0	78.1
1991		83.1	0.0	83.1	-23.2	0.0	-23.2	59.9	0.0	59.9
1959		85.0	0.9	85.9	-1.4	-0.9	-2.3	83.6	0.0	83.6
1989		78.0	0.0	78.0	-22.6	0.0	-22.6	55.4	0.0	55.4
1964	Normal-Dry	85.0	12.6	97.6	-9.4	-12.6	-22.0	75.6	0.0	75.6
1939		80.4	0.0	80.4	-17.8	0.0	-17.8	62.6	0.0	62.6
1929		68.4	0.0	68.4	-17.5	0.0	-17.5	51.0	0.0	51.0
1988		71.1	0.0	71.1	-20.3	0.0	-20.3	50.8	0.0	50.8
1968		83.1	0.0	83.1	-14.7	0.0	-14.7	68.4	0.0	68.4
1930		70.5	0.0	70.5	-20.7	0.0	-20.7	49.8	0.0	49.8
2013		70.4	0.0	70.4	-20.7	0.0	-20.7	49.7	0.0	49.7
2012		77.1	0.0	77.1	-15.5	0.0	-15.5	61.6	0.0	61.6
1960		68.1	0.0	68.1	-20.2	0.0	-20.2	47.8	0.0	47.8
1994		70.9	0.0	70.9	-0.8	0.0	-0.8	70.1	0.0	70.1
1992		70.0	0.0	70.0	-19.5	0.0	-19.5	50.5	0.0	50.5
1987		57.5	0.0	57.5	-0.8	0.0	-0.8	56.7	0.0	56.7
1990		59.2	0.0	59.2	-18.7	0.0	-18.7	40.5	0.0	40.5
1934		60.5	0.0	60.5	-15.7	0.0	-15.7	44.8	0.0	44.8
2007		49.3	0.0	49.3	-14.8	0.0	-14.8	34.5	0.0	34.5
1961	Crit-High	48.4	0.0	48.4	-14.8	0.0	-14.8	33.5	0.0	33.5
1976		64.8	0.0	64.8	-10.1	0.0	-10.1	54.7	0.0	54.7
2014		35.2	0.0	35.2	-14.8	0.0	-14.8	20.4	0.0	20.4
1931		33.2	0.0	33.2	-14.8	0.0	-14.8	18.3	0.0	18.3
1924		47.0	0.0	47.0	-15.0	0.0	-15.0	32.0	0.0	32.0
1977	CL	19.9	0.0	19.9	-0.3	0.0	-0.3	19.5	0.0	19.5
2015		14.7	0.0	14.7	-0.3	0.0	-0.3	14.4	0.0	14.4
	Wet Ave	85.0	115.8	200.8	0.0	-13.7	-13.8	85.0	102.1	187.0
	Normal-wet Ave	85.0	75.3	160.3	-0.1	-20.6	-20.7	84.9	54.7	139.6
	Normal-dry Ave	84.7	23.4	108.1	-4.8	-17.5	-22.3	79.9	5.9	85.8
	Dry Ave	69.4	0.8	70.3	-15.1	-0.8	-16.0	54.3	0.0	54.3
	Critical-H Ave	45.7	0.0	45.7	-13.9	0.0	-13.9	31.8	0.0	31.8
	Critical-L Ave	17.3	0.0	17.3	-0.3	0.0	-0.3	17.0	0.0	17.0

Note: Values reported by contract year (March-February)

Gravelly Ford WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	0.0	8.4	8.4	0.0	-1.6	-1.6	0.0	6.9	6.9
1923	0.0	5.1	5.1	0.0	-1.3	-1.3	0.0	3.8	3.8
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1925	0.0	2.7	2.7	0.0	-2.1	-2.1	0.0	0.6	0.6
1926	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1927	0.0	5.7	5.7	0.0	-0.9	-0.9	0.0	4.8	4.8
1928	0.0	2.2	2.2	0.0	-1.1	-1.1	0.0	1.1	1.1
1929	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.0	6.4	6.4	0.0	-1.2	-1.2	0.0	5.2	5.2
1933	0.0	2.4	2.4	0.0	-2.4	-2.4	0.0	0.0	0.0
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1935	0.0	5.0	5.0	0.0	-1.5	-1.5	0.0	3.5	3.5
1936	0.0	5.5	5.5	0.0	-1.9	-1.9	0.0	3.5	3.5
1937	0.0	5.9	5.9	0.0	-1.1	-1.1	0.0	4.8	4.8
1938	0.0	9.3	9.3	0.0	-0.8	-0.8	0.0	8.5	8.5
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1940	0.0	3.9	3.9	0.0	-0.8	-0.8	0.0	3.1	3.1
1941	0.0	8.8	8.8	0.0	-1.3	-1.3	0.0	7.5	7.5
1942	0.0	8.0	8.0	0.0	-2.0	-2.0	0.0	6.0	6.0
1943	0.0	5.5	5.5	0.0	-2.2	-2.2	0.0	3.3	3.3
1944	0.0	2.6	2.6	0.0	-1.2	-1.2	0.0	1.5	1.5
1945	0.0	6.7	6.7	0.0	-1.1	-1.1	0.0	5.6	5.6
1946	0.0	3.7	3.7	0.0	-0.5	-0.5	0.0	3.2	3.2
1947	0.0	1.1	1.1	0.0	-0.9	-0.9	0.0	0.3	0.3
1948	0.0	0.6	0.6	0.0	-0.6	-0.6	0.0	0.0	0.0
1949	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1950	0.0	2.3	2.3	0.0	-2.0	-2.0	0.0	0.3	0.3
1951	0.0	3.3	3.3	0.0	-2.5	-2.5	0.0	0.8	0.8
1952	0.0	8.4	8.4	0.0	-0.7	-0.7	0.0	7.7	7.7
1953	0.0	2.2	2.2	0.0	-1.9	-1.9	0.0	0.2	0.2
1954	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1955	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1956	0.0	8.5	8.5	0.0	-1.6	-1.6	0.0	6.9	6.9
1957	0.0	2.9	2.9	0.0	-0.8	-0.8	0.0	2.1	2.1
1958	0.0	8.4	8.4	0.0	-1.4	-1.4	0.0	7.0	7.0
1959	0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962	0.0	5.8	5.8	0.0	-1.4	-1.4	0.0	4.4	4.4
1963	0.0	7.0	7.0	0.0	-1.5	-1.5	0.0	5.5	5.5
1964	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1965	0.0	7.0	7.0	0.0	-2.1	-2.1	0.0	4.9	4.9
1966	0.0	2.0	2.0	0.0	-1.0	-1.0	0.0	1.0	1.0
1967	0.0	9.6	9.6	0.0	-0.8	-0.8	0.0	8.9	8.9
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	0.0	8.9	8.9	0.0	-0.3	-0.3	0.0	8.6	8.6
1970	0.0	3.8	3.8	0.0	-2.2	-2.2	0.0	1.6	1.6
1971	0.0	3.5	3.5	0.0	-2.5	-2.5	0.0	1.0	1.0
1972	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1973	0.0	5.6	5.6	0.0	-2.0	-2.0	0.0	3.7	3.7
1974	0.0	6.4	6.4	0.0	-1.9	-1.9	0.0	4.5	4.5
1975	0.0	5.6	5.6	0.0	-1.0	-1.0	0.0	4.6	4.6
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.0	10.0	10.0	0.0	-1.1	-1.1	0.0	8.9	8.9
1979	0.0	5.4	5.4	0.0	-2.1	-2.1	0.0	3.3	3.3
1980	0.0	8.7	8.7	0.0	-2.5	-2.5	0.0	6.2	6.2
1981	0.0	1.6	1.6	0.0	-0.4	-0.4	0.0	1.1	1.1
1982	0.0	8.2	8.2	0.0	-1.3	-1.3	0.0	6.9	6.9
1983	0.0	8.9	8.9	0.0	-0.1	-0.1	0.0	8.8	8.8
1984	0.0	5.0	5.0	0.0	-1.5	-1.5	0.0	3.5	3.5
1985	0.0	1.4	1.4	0.0	-1.2	-1.2	0.0	0.3	0.3
1986	0.0	8.1	8.1	0.0	-1.3	-1.3	0.0	6.8	6.8
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	0.0	8.9	8.9	0.0	-1.6	-1.6	0.0	7.4	7.4
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	10.6	10.6	0.0	-0.9	-0.9	0.0	9.7	9.7
1996	0.0	6.1	6.1	0.0	-1.2	-1.2	0.0	5.0	5.0
1997	0.0	4.9	4.9	0.0	-1.3	-1.3	0.0	3.6	3.6
1998	0.0	8.2	8.2	0.0	-0.6	-0.6	0.0	7.5	7.5
1999	0.0	4.2	4.2	0.0	-1.5	-1.5	0.0	2.6	2.6
2000	0.0	4.8	4.8	0.0	-1.0	-1.0	0.0	3.9	3.9
2001	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
2002	0.0	1.7	1.7	0.0	-1.7	-1.7	0.0	0.0	0.0
2003	0.0	4.1	4.1	0.0	-2.8	-2.8	0.0	1.3	1.3
2004	0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
2005	0.0	8.7	8.7	0.0	-0.7	-0.7	0.0	8.1	8.1
2006	0.0	8.8	8.8	0.0	-0.6	-0.6	0.0	8.2	8.2
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.0	0.7	0.7	0.0	-0.7	-0.7	0.0	0.0	0.0
2009	0.0	4.2	4.2	0.0	-2.8	-2.8	0.0	1.5	1.5
2010	0.0	7.0	7.0	0.0	-1.7	-1.7	0.0	5.3	5.3
2011	0.0	9.5	9.5	0.0	-0.7	-0.7	0.0	8.7	8.7
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	1.3	1.3	0.0	-1.3	-1.3	0.0	0.0	0.0
Ave All	0.0	3.8	3.8	0.0	-1.0	-1.0	0.0	2.8	2.8

Original Dry Year Classification (Driest 20% Years)

Dry Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	0.0	8.9	8.9	0.0	-0.1	-0.1	0.0	8.8	8.8
1969		0.0	8.9	8.9	0.0	-0.3	-0.3	0.0	8.6	8.6
1995		0.0	10.6	10.6	0.0	-0.9	-0.9	0.0	9.7	9.7
1938		0.0	9.3	9.3	0.0	-0.8	-0.8	0.0	8.5	8.5
1978		0.0	10.0	10.0	0.0	-1.1	-1.1	0.0	8.9	8.9
1982		0.0	8.2	8.2	0.0	-1.3	-1.3	0.0	6.9	6.9
2011		0.0	9.5	9.5	0.0	-0.7	-0.7	0.0	8.7	8.7
1967		0.0	9.6	9.6	0.0	-0.8	-0.8	0.0	8.9	8.9
2006		0.0	8.8	8.8	0.0	-0.6	-0.6	0.0	8.2	8.2
1998		0.0	8.2	8.2	0.0	-0.6	-0.6	0.0	7.5	7.5
1986		0.0	8.1	8.1	0.0	-1.3	-1.3	0.0	6.8	6.8
1980		0.0	8.7	8.7	0.0	-2.5	-2.5	0.0	6.2	6.2
1956		0.0	8.5	8.5	0.0	-1.6	-1.6	0.0	6.9	6.9
1952		0.0	8.4	8.4	0.0	-0.7	-0.7	0.0	7.7	7.7
2005		0.0	8.7	8.7	0.0	-0.7	-0.7	0.0	8.1	8.1
1997		0.0	4.9	4.9	0.0	-1.3	-1.3	0.0	3.6	3.6
1993		0.0	8.9	8.9	0.0	-1.6	-1.6	0.0	7.4	7.4
1941		0.0	8.8	8.8	0.0	-1.3	-1.3	0.0	7.5	7.5
1958		0.0	8.4	8.4	0.0	-1.4	-1.4	0.0	7.0	7.0
1922	Normal-Wet	0.0	8.4	8.4	0.0	-1.6	-1.6	0.0	6.9	6.9
1965		0.0	7.0	7.0	0.0	-2.1	-2.1	0.0	4.9	4.9
1942		0.0	8.0	8.0	0.0	-2.0	-2.0	0.0	6.0	6.0
1937		0.0	5.9	5.9	0.0	-1.1	-1.1	0.0	4.8	4.8
1996		0.0	6.1	6.1	0.0	-1.2	-1.2	0.0	5.0	5.0
1974		0.0	6.4	6.4	0.0	-1.9	-1.9	0.0	4.5	4.5
1945		0.0	6.7	6.7	0.0	-1.1	-1.1	0.0	5.6	5.6
1943		0.0	5.5	5.5	0.0	-2.2	-2.2	0.0	3.3	3.3
1984		0.0	5.0	5.0	0.0	-1.5	-1.5	0.0	3.5	3.5
1932		0.0	6.4	6.4	0.0	-1.2	-1.2	0.0	5.2	5.2
1973		0.0	5.6	5.6	0.0	-2.0	-2.0	0.0	3.7	3.7
2010		0.0	7.0	7.0	0.0	-1.7	-1.7	0.0	5.3	5.3
1927		0.0	5.7	5.7	0.0	-0.9	-0.9	0.0	4.8	4.8
1963		0.0	7.0	7.0	0.0	-1.5	-1.5	0.0	5.5	5.5
1962		0.0	5.8	5.8	0.0	-1.4	-1.4	0.0	4.4	4.4
1935		0.0	5.0	5.0	0.0	-1.5	-1.5	0.0	3.5	3.5
1940		0.0	3.9	3.9	0.0	-0.8	-0.8	0.0	3.1	3.1
1951		0.0	3.3	3.3	0.0	-2.5	-2.5	0.0	0.8	0.8
1936		0.0	5.5	5.5	0.0	-1.9	-1.9	0.0	3.5	3.5
1979		0.0	5.4	5.4	0.0	-2.1	-2.1	0.0	3.3	3.3
1975		0.0	5.6	5.6	0.0	-1.0	-1.0	0.0	4.6	4.6
2000		0.0	4.8	4.8	0.0	-1.0	-1.0	0.0	3.9	3.9
1946		0.0	3.7	3.7	0.0	-0.5	-0.5	0.0	3.2	3.2
1923		0.0	5.1	5.1	0.0	-1.3	-1.3	0.0	3.8	3.8
1999		0.0	4.2	4.2	0.0	-1.5	-1.5	0.0	2.6	2.6
2009		0.0	4.2	4.2	0.0	-2.8	-2.8	0.0	1.5	1.5
2003	Normal-Dry	0.0	4.1	4.1	0.0	-2.8	-2.8	0.0	1.3	1.3
1970		0.0	3.8	3.8	0.0	-2.2	-2.2	0.0	1.6	1.6
1925		0.0	2.7	2.7	0.0	-2.1	-2.1	0.0	0.6	0.6
1971		0.0	3.5	3.5	0.0	-2.5	-2.5	0.0	1.0	1.0
1957		0.0	2.9	2.9	0.0	-0.8	-0.8	0.0	2.1	2.1
1954		0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1950		0.0	2.3	2.3	0.0	-2.0	-2.0	0.0	0.3	0.3
2016		0.0	1.3	1.3	0.0	-1.3	-1.3	0.0	0.0	0.0
1966		0.0	2.0	2.0	0.0	-1.0	-1.0	0.0	1.0	1.0
1944		0.0	2.6	2.6	0.0	-1.2	-1.2	0.0	1.5	1.5
1953		0.0	2.2	2.2	0.0	-1.9	-1.9	0.0	0.2	0.2
1948		0.0	0.6	0.6	0.0	-0.6	-0.6	0.0	0.0	0.0
2002		0.0	1.7	1.7	0.0	-1.7	-1.7	0.0	0.0	0.0
1949		0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1926		0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1955		0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1928		0.0	2.2	2.2	0.0	-1.1	-1.1	0.0	1.1	1.1
2004		0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
1985		0.0	1.4	1.4	0.0	-1.2	-1.2	0.0	0.3	0.3
1947		0.0	1.1	1.1	0.0	-0.9	-0.9	0.0	0.3	0.3
2008		0.0	0.7	0.7	0.0	-0.7	-0.7	0.0	0.0	0.0
1933		0.0	2.4	2.4	0.0	-2.4	-2.4	0.0	0.0	0.0
1981		0.0	1.6	1.6	0.0	-0.4	-0.4	0.0	1.1	1.1
2001		0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1972		0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1991		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959		0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
1989		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964	Normal-Dry	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1939		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1929		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1934		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.0	8.7	8.7	0.0	-1.0	-1.0	0.0	7.7	7.7
Normal-wet Ave		0.0	5.7	5.7	0.0	-1.6	-1.6	0.0	4.1	4.1
Normal-dry Ave		0.0	1.8	1.8	0.0	-1.3	-1.3	0.0	0.4	0.4
Dry Ave		0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
Critical-H Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

City of Fresno

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1923	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1924	33.2	0.0	33.2	-10.6	0.0	-10.6	22.6	0.0	22.6
1925	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1926	60.0	0.0	60.0	-1.0	0.0	-1.0	58.9	0.0	58.9
1927	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1928	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1929	48.3	0.0	48.3	-12.3	0.0	-12.3	36.0	0.0	36.0
1930	49.8	0.0	49.8	-14.6	0.0	-14.6	35.1	0.0	35.1
1931	23.4	0.0	23.4	-10.5	0.0	-10.5	12.9	0.0	12.9
1932	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1933	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1934	42.7	0.0	42.7	-11.1	0.0	-11.1	31.6	0.0	31.6
1935	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1936	60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1937	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1938	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1939	56.8	0.0	56.8	-12.6	0.0	-12.6	44.2	0.0	44.2
1940	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1941	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1942	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1943	60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1944	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1945	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1946	59.9	0.0	59.9	-0.2	0.0	-0.2	59.7	0.0	59.7
1947	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1948	60.0	0.0	60.0	-12.8	0.0	-12.8	47.2	0.0	47.2
1949	60.0	0.0	60.0	-4.3	0.0	-4.3	55.7	0.0	55.7
1950	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1951	59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1952	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1953	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1954	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1955	60.0	0.0	60.0	-1.5	0.0	-1.5	58.5	0.0	58.5
1956	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1957	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1958	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1959	60.0	0.0	60.0	-1.0	0.0	-1.0	59.0	0.0	59.0
1960	48.0	0.0	48.0	-14.3	0.0	-14.3	33.8	0.0	33.8
1961	34.1	0.0	34.1	-10.5	0.0	-10.5	23.7	0.0	23.7
1962	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1963	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1964	60.0	0.0	60.0	-6.7	0.0	-6.7	53.3	0.0	53.3
1965	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1966	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1967	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1968	58.6	0.0	58.6	-10.3	0.0	-10.3	48.3	0.0	48.3
1969	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1970	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1971	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1972	60.0	0.0	60.0	-4.9	0.0	-4.9	55.1	0.0	55.1
1973	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1974	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1975	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1976	45.8	0.0	45.8	-7.1	0.0	-7.1	38.6	0.0	38.6
1977	14.0	0.0	14.0	-0.2	0.0	-0.2	13.8	0.0	13.8
1978	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1979	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1980	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1981	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1982	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1983	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1984	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1985	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1986	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1987	40.6	0.0	40.6	-0.5	0.0	-0.5	40.0	0.0	40.0
1988	50.2	0.0	50.2	-14.4	0.0	-14.4	35.8	0.0	35.8
1989	55.1	0.0	55.1	-15.9	0.0	-15.9	39.1	0.0	39.1
1990	41.8	0.0	41.8	-13.2	0.0	-13.2	28.6	0.0	28.6
1991	58.7	0.0	58.7	-16.4	0.0	-16.4	42.3	0.0	42.3
1992	49.4	0.0	49.4	-13.8	0.0	-13.8	35.6	0.0	35.6
1993	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1994	50.0	0.0	50.0	-0.5	0.0	-0.5	49.5	0.0	49.5
1995	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1996	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1997	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1998	60.0	0.0	60.0	0.0	0.0	0.0	59.9	0.0	59.9
1999	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2000	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2001	60.0	0.0	60.0	-8.2	0.0	-8.2	51.8	0.0	51.8
2002	60.0	0.0	60.0	-5.8	0.0	-5.8	54.2	0.0	54.2
2003	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2004	60.0	0.0	60.0	-6.9	0.0	-6.9	53.1	0.0	53.1
2005	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2006	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2007	34.8	0.0	34.8	-10.4	0.0	-10.4	24.3	0.0	24.3
2008	60.0	0.0	60.0	-11.7	0.0	-11.7	48.3	0.0	48.3
2009	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2010	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2011	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2012	54.4	0.0	54.4	-10.9	0.0	-10.9	43.5	0.0	43.5
2013	49.7	0.0	49.7	-14.6	0.0	-14.6	35.1	0.0	35.1
2014	24.9	0.0	24.9	-10.4	0.0	-10.4	14.4	0.0	14.4
2015	10.4	0.0	10.4	-0.2	0.0	-0.2	10.2	0.0	10.2
2016	60.0	0.0	60.0	-3.9	0.0	-3.9	56.1	0.0	56.1
Ave All	55.7	0.0	55.7	-3.2	0.0	-3.2	52.5	0.0	52.5
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	41.9	0.0	41.9	-9.5	0.0	-9.5	32.3	0.0	32.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1969		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1995		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1938		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1978		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1982		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
2011		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1967		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2006		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1998		60.0	0.0	60.0	0.0	0.0	0.0	59.9	0.0	59.9
1986		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1980		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1956		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1952		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2005		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1997		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1993		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1941		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1958		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1922	Normal-Wet	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1965		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1942		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1937		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1996		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1974		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1945		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1943		60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1984		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1932		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1973		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2010		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1927		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1963		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1962		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1935		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1940		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1951		59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1936		60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1979		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1975		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2000		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1946		59.9	0.0	59.9	-0.2	0.0	-0.2	59.7	0.0	59.7
1923		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1999		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2009		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2003	Normal-Dry	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1970		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1925		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1971		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1957		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1954		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1950		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2016		60.0	0.0	60.0	-3.9	0.0	-3.9	56.1	0.0	56.1
1966		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1944		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1953		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1948		60.0	0.0	60.0	-12.8	0.0	-12.8	47.2	0.0	47.2
2002		60.0	0.0	60.0	-5.8	0.0	-5.8	54.2	0.0	54.2
1949		60.0	0.0	60.0	-4.3	0.0	-4.3	55.7	0.0	55.7
1926		60.0	0.0	60.0	-1.0	0.0	-1.0	58.9	0.0	58.9
1955		60.0	0.0	60.0	-1.5	0.0	-1.5	58.5	0.0	58.5
1928		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2004		60.0	0.0	60.0	-6.9	0.0	-6.9	53.1	0.0	53.1
1985		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1947		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2008		60.0	0.0	60.0	-11.7	0.0	-11.7	48.3	0.0	48.3
1933		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1981		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2001		60.0	0.0	60.0	-8.2	0.0	-8.2	51.8	0.0	51.8
1972		60.0	0.0	60.0	-4.9	0.0	-4.9	55.1	0.0	55.1
1991		58.7	0.0	58.7	-16.4	0.0	-16.4	42.3	0.0	42.3
1959		60.0	0.0	60.0	-1.0	0.0	-1.0	59.0	0.0	59.0
1989		55.1	0.0	55.1	-15.9	0.0	-15.9	39.1	0.0	39.1
1964	Normal-Dry	60.0	0.0	60.0	-6.7	0.0	-6.7	53.3	0.0	53.3
1939		56.8	0.0	56.8	-12.6	0.0	-12.6	44.2	0.0	44.2
1929		48.3	0.0	48.3	-12.3	0.0	-12.3	36.0	0.0	36.0
1988		50.2	0.0	50.2	-14.4	0.0	-14.4	35.8	0.0	35.8
1968		58.6	0.0	58.6	-10.3	0.0	-10.3	48.3	0.0	48.3
1930		49.8	0.0	49.8	-14.6	0.0	-14.6	35.1	0.0	35.1
2013		49.7	0.0	49.7	-14.6	0.0	-14.6	35.1	0.0	35.1
2012		54.4	0.0	54.4	-10.9	0.0	-10.9	43.5	0.0	43.5
1960		48.0	0.0	48.0	-14.3	0.0	-14.3	33.8	0.0	33.8
1994		50.0	0.0	50.0	-0.5	0.0	-0.5	49.5	0.0	49.5
1992		49.4	0.0	49.4	-13.8	0.0	-13.8	35.6	0.0	35.6
1987		40.6	0.0	40.6	-0.5	0.0	-0.5	40.0	0.0	40.0
1990		41.8	0.0	41.8	-13.2	0.0	-13.2	28.6	0.0	28.6
1934		42.7	0.0	42.7	-11.1	0.0	-11.1	31.6	0.0	31.6
2007		34.8	0.0	34.8	-10.4	0.0	-10.4	24.3	0.0	24.3
1961	Crit-High	34.1	0.0	34.1	-10.5	0.0	-10.5	23.7	0.0	23.7
1976		45.8	0.0	45.8	-7.1	0.0	-7.1	38.6	0.0	38.6
2014		24.9	0.0	24.9	-10.4	0.0	-10.4	14.4	0.0	14.4
1931		23.4	0.0	23.4	-10.5	0.0	-10.5	12.9	0.0	12.9
1924		33.2	0.0	33.2	-10.6	0.0	-10.6	22.6	0.0	22.6
1977	CL	14.0	0.0	14.0	-0.2	0.0	-0.2	13.8	0.0	13.8
2015		10.4	0.0	10.4	-0.2	0.0	-0.2	10.2	0.0	10.2
	Wet Ave	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
	Normal-wet Ave	60.0	0.0	60.0	0.0	0.0	0.0	59.9	0.0	59.9
	Normal-dry Ave	59.8	0.0	59.8	-3.4	0.0	-3.4	56.4	0.0	56.4
	Dry Ave	49.0	0.0	49.0	-10.7	0.0	-10.7	38.3	0.0	38.3
	Critical-H Ave	32.3	0.0	32.3	-9.8	0.0	-9.8	22.5	0.0	22.5
	Critical-L Ave	12.2	0.0	12.2	-0.2	0.0	-0.2	12.0	0.0	12.0

Note: Values reported by contract year (March-February)

City of Orange Cove

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1923	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1924	0.8	0.0	0.8	-0.2	0.0	-0.2	0.5	0.0	0.5
1925	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1926	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1927	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1928	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1929	1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1930	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1931	0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1932	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1933	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1934	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1935	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1936	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1937	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1938	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1939	1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1940	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1941	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1942	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1943	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1944	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1945	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1946	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1948	1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1949	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1950	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1951	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1952	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1953	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1954	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1955	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1956	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1957	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1958	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1959	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1960	1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1961	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
1962	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1963	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1964	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1965	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1966	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1967	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1968	1.4	0.0	1.4	-0.2	0.0	-0.2	1.1	0.0	1.1
1969	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1970	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1971	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1972	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1973	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1974	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1975	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1976	1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1979	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1980	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1981	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1982	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1983	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1984	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1985	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1987	0.9	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.9
1988	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1989	1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1990	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1991	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1992	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1993	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1994	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1995	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1996	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1997	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1998	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2000	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2001	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
2002	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
2003	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2004	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
2005	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2006	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2007	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
2008	1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
2009	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2010	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2011	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2012	1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
2013	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
2014	0.6	0.0	0.6	-0.2	0.0	-0.2	0.3	0.0	0.3
2015	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
Ave All	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	1.0	0.0	1.0	-0.2	0.0	-0.2	0.8	0.0	0.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year		Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1969		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1995		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1938		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1978		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1982		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2011		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1967		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2006		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1998		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1980		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1956		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1952		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2005		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1997		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1993		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1941		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1958		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1922	Normal-Wet	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1965		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1942		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1937		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1996		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1974		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1945		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1943		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1984		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1932		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1973		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2010		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1927		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1963		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1962		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1935		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1940		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1951		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1936		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1979		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1975		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2000		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1946		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1923		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2009		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2003	Normal-Dry	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1970		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1925		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1971		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1957		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1954		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1950		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2016		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1966		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1944		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1953		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1948		1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
2002		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1949		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1926		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1955		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1928		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2004		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1985		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2008		1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1933		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1981		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2001		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1972		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1991		1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1959		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1989		1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1964	Normal-Dry	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1939		1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1929		1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1988		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1968		1.4	0.0	1.4	-0.2	0.0	-0.2	1.1	0.0	1.1
1930		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
2013		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
2012		1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1960		1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1994		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1992		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1987		0.9	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.9
1990		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1934		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2007		0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
1961	Crit-High	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
1976		1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
2014		0.6	0.0	0.6	-0.2	0.0	-0.2	0.3	0.0	0.3
1931		0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1924		0.8	0.0	0.8	-0.2	0.0	-0.2	0.5	0.0	0.5
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-dry Ave		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
Dry Ave		1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
Critical-H Ave		0.8	0.0	0.8	-0.2	0.0	-0.2	0.5	0.0	0.5
Critical-L Ave		0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3

Note: Values reported by contract year (March-February)

City of Lindsay

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1923	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1924	1.4	0.0	1.4	-0.4	0.0	-0.4	0.9	0.0	0.9
1925	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1926	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1927	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1928	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1929	2.0	0.0	2.0	-0.5	0.0	-0.5	1.5	0.0	1.5
1930	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
1931	1.0	0.0	1.0	-0.4	0.0	-0.4	0.5	0.0	0.5
1932	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1933	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1934	1.8	0.0	1.8	-0.5	0.0	-0.5	1.3	0.0	1.3
1935	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1936	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1937	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1938	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1939	2.4	0.0	2.4	-0.5	0.0	-0.5	1.8	0.0	1.8
1940	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1941	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1942	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1943	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1944	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1945	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1946	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1947	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1948	2.5	0.0	2.5	-0.5	0.0	-0.5	2.0	0.0	2.0
1949	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1950	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1951	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1952	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1953	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1954	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1955	2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1956	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1957	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1958	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1959	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1960	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1961	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1962	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1963	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1964	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1965	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1966	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1967	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1968	2.4	0.0	2.4	-0.4	0.0	-0.4	2.0	0.0	2.0
1969	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1970	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1971	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1972	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1973	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1974	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1975	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1976	1.9	0.0	1.9	-0.3	0.0	-0.3	1.6	0.0	1.6
1977	0.6	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.6
1978	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1979	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1980	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1981	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1982	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1983	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1984	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1985	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1986	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1987	1.7	0.0	1.7	0.0	0.0	0.0	1.7	0.0	1.7
1988	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
1989	2.3	0.0	2.3	-0.7	0.0	-0.7	1.6	0.0	1.6
1990	1.7	0.0	1.7	-0.5	0.0	-0.5	1.2	0.0	1.2
1991	2.4	0.0	2.4	-0.7	0.0	-0.7	1.8	0.0	1.8
1992	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
1993	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1994	2.1	0.0	2.1	0.0	0.0	0.0	2.1	0.0	2.1
1995	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1996	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1997	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1998	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1999	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2000	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2001	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
2002	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
2003	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2004	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
2005	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2006	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2007	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
2008	2.5	0.0	2.5	-0.5	0.0	-0.5	2.0	0.0	2.0
2009	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2010	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2011	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2012	2.3	0.0	2.3	-0.5	0.0	-0.5	1.8	0.0	1.8
2013	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
2014	1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
2015	0.4	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.4
2016	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
Ave All	2.3	0.0	2.3	-0.1	0.0	-0.1	2.2	0.0	2.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	1.7	0.0	1.7	-0.4	0.0	-0.4	1.3	0.0	1.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1969	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1995	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1938	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1978	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1982	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2011	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1967	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2006	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1998	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1986	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1980	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1956	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1952	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2005	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1997	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1993	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1941	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1958	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1922	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1965	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1942	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1937	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1996	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1974	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1945	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1943	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1984	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1932	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1973	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2010	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1927	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1963	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1962	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1935	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1940	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1951	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1936	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1979	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1975	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2000	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1946	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1923	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1999	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2009	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2003	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1970	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1925	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1971	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1957	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1954	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1950	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2016	Normal-Dry	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1966	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1944	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1953	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1948	Normal-Dry	2.5	0.0	2.5	-0.5	0.0	-0.5	2.0	0.0	2.0
2002	Normal-Dry	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1949	Normal-Dry	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1926	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1955	Normal-Dry	2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1928	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2004	Normal-Dry	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1985	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1947	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2008	Normal-Dry	2.5	0.0	2.5	-0.5	0.0	-0.5	2.0	0.0	2.0
1933	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1981	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2001	Normal-Dry	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1972	Normal-Dry	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1991	Normal-Dry	2.4	0.0	2.4	-0.7	0.0	-0.7	1.8	0.0	1.8
1959	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1989	Normal-Dry	2.3	0.0	2.3	-0.7	0.0	-0.7	1.6	0.0	1.6
1964	Normal-Dry	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1939	Normal-Dry	2.4	0.0	2.4	-0.5	0.0	-0.5	1.8	0.0	1.8
1929	Normal-Dry	2.0	0.0	2.0	-0.5	0.0	-0.5	1.5	0.0	1.5
1988	Normal-Dry	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
1968	Normal-Dry	2.4	0.0	2.4	-0.4	0.0	-0.4	2.0	0.0	2.0
1930	Normal-Dry	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
2013	Normal-Dry	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
2012	Normal-Dry	2.3	0.0	2.3	-0.5	0.0	-0.5	1.8	0.0	1.8
1960	Normal-Dry	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1994	Normal-Dry	2.1	0.0	2.1	0.0	0.0	0.0	2.1	0.0	2.1
1992	Normal-Dry	2.1	0.0	2.1	-0.6	0.0	-0.6	1.5	0.0	1.5
1987	Normal-Dry	1.7	0.0	1.7	0.0	0.0	0.0	1.7	0.0	1.7
1990	Normal-Dry	1.7	0.0	1.7	-0.5	0.0	-0.5	1.2	0.0	1.2
1934	Normal-Dry	1.8	0.0	1.8	-0.5	0.0	-0.5	1.3	0.0	1.3
2007	Normal-Dry	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1961	Crit-High	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1976	Crit-High	1.9	0.0	1.9	-0.3	0.0	-0.3	1.6	0.0	1.6
2014	Crit-High	1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
1931	Crit-High	1.0	0.0	1.0	-0.4	0.0	-0.4	0.5	0.0	0.5
1924	Crit-High	1.4	0.0	1.4	-0.4	0.0	-0.4	0.9	0.0	0.9
1977	CL	0.6	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.6
2015	CL	0.4	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.4
Wet Ave		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
Normal-wet Ave		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
Normal-dry Ave		2.5	0.0	2.5	-0.1	0.0	-0.1	2.3	0.0	2.3
Dry Ave		2.0	0.0	2.0	-0.4	0.0	-0.4	1.6	0.0	1.6
Critical-H Ave		1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
Critical-L Ave		0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.5

Note: Values reported by contract year (March-February)

Fresno County Water Works

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1924	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1925	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1927	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1928	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1929	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1930	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1931	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1933	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1934	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1935	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1936	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1937	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1940	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1941	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1943	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1944	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1947	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1949	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1950	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1952	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1955	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1956	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1959	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1960	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1962	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1964	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1965	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1966	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1967	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1968	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1969	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1971	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1972	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1973	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1974	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1976	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1979	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1980	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1981	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1983	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1985	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1986	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1987	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1989	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1991	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1992	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1993	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1994	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1995	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1998	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1999	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2002	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2003	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2005	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2007	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2008	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2009	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2011	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2012	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2013	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2014	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
Ave All	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries			SJRRP Flow Method 3.1 Reductions to Deliveries			SJRRP Flow Method 3.1 Deliveries		
		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1978		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1982		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2011		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2006		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1986		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1956		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1993		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1922	Normal-Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1942		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1937		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1974		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1943		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1984		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1932		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1973		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2010		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1927		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1963		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1962		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1935		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1940		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1951		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1936		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1979		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1975		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1923		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1999		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1925		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1957		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1950		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1966		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1944		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2002		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1949		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1926		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1955		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1928		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1985		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1947		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2008		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1933		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1981		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1972		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1991		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1959		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1989		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1964	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1939		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1929		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1968		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1930		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2013		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2012		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1960		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1994		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1992		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1987		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1934		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2007		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	Crit-High	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1976		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2014		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Normal-wet Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Normal-dry Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Dry Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-H Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Madera County

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1924	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1925	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1927	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1928	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1929	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1930	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1931	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1933	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1934	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1935	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1936	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1937	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1940	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1943	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1944	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1947	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1949	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1950	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1955	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1956	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1959	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1960	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1961	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1962	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1964	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1966	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1968	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1972	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1973	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1974	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1976	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1979	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1981	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1983	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1985	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1986	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1987	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1989	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1990	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1991	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1992	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1993	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1994	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1999	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2002	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2007	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2008	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2011	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2012	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2013	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2014	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Ave All	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year		Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1978		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2011		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1986		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1956		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1993		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1922	Normal-Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1937		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1974		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1943		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1932		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1973		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1927		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1962		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1935		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1940		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1936		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1979		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1999		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1925		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1950		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1966		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1944		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2002		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1949		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1955		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1928		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1985		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1947		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2008		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1933		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1981		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1972		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1991		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1959		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1989		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1964	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1929		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1988		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1968		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1930		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2013		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2012		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1960		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1994		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1992		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1987		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1934		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2007		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	Crit-High	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1976		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2014		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Normal-wet Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Normal-dry Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Dry Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
Critical-H Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

System

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1922	800.0	845.4	1645.4	0.0	-159.4	-159.4	800.0	686.0	1486.0
1923	799.9	509.3	1309.2	0.1	-130.3	-130.2	800.0	379.0	1179.0
1924	442.1	0.0	442.1	-140.8	0.0	-140.8	301.3	0.0	301.3
1925	800.0	266.8	1066.8	0.0	-209.2	-209.2	800.0	57.5	857.5
1926	799.3	124.4	923.7	-13.4	-124.4	-137.8	785.9	0.0	785.9
1927	800.0	573.2	1373.2	-0.9	-88.0	-88.9	799.1	485.1	1284.2
1928	800.0	223.8	1023.8	0.0	-113.8	-113.8	800.0	110.0	910.0
1929	644.2	0.0	644.2	-164.5	0.0	-164.5	479.7	0.0	479.7
1930	663.6	0.0	663.6	-195.0	0.0	-195.0	468.5	0.0	468.5
1931	312.3	0.0	312.3	-139.7	0.0	-139.7	172.5	0.0	172.5
1932	800.0	640.6	1440.6	-0.1	-124.6	-124.7	799.9	516.0	1315.9
1933	800.0	240.4	1040.4	0.0	-240.0	-240.0	800.0	0.4	800.4
1934	569.1	0.0	569.1	-147.5	0.0	-147.5	421.5	0.0	421.5
1935	800.0	503.1	1303.1	0.0	-152.7	-152.7	800.0	350.4	1150.4
1936	800.0	545.7	1345.7	-2.1	-195.0	-197.1	797.9	350.8	1148.6
1937	800.0	586.2	1386.2	0.0	-109.4	-109.4	800.0	476.9	1276.9
1938	800.0	932.3	1732.3	0.0	-80.7	-80.7	800.0	851.6	1651.6
1939	757.2	0.0	757.2	-167.6	0.0	-167.6	589.6	0.0	589.6
1940	800.0	389.7	1189.7	-4.5	-78.5	-83.0	795.5	311.2	1106.7
1941	800.0	884.6	1684.6	0.0	-129.3	-129.3	800.0	755.3	1555.3
1942	800.0	805.2	1605.2	-0.1	-201.7	-201.8	799.9	603.6	1403.5
1943	800.0	552.3	1352.3	-2.5	-219.2	-221.7	797.5	333.1	1130.6
1944	800.0	264.7	1064.7	0.0	-118.2	-118.2	800.0	146.5	946.5
1945	800.0	669.9	1469.9	0.0	-106.1	-106.1	800.0	563.8	1363.8
1946	798.3	368.6	1166.8	-2.4	-50.2	-52.6	795.9	318.4	1114.3
1947	800.0	115.0	915.0	0.0	-88.0	-88.0	800.0	27.0	827.0
1948	800.0	56.4	856.4	-170.9	-56.4	-227.3	629.1	0.0	629.1
1949	800.0	185.4	985.4	-57.8	-185.4	-243.1	742.2	0.0	742.2
1950	800.0	232.8	1032.8	0.0	-199.5	-199.5	800.0	33.3	833.3
1951	798.8	331.6	1130.4	1.2	-255.2	-253.9	800.0	76.4	876.4
1952	800.0	840.9	1640.9	0.0	-74.1	-74.1	800.0	766.9	1566.9
1953	800.0	218.3	1018.3	0.0	-194.2	-194.2	800.0	24.1	824.1
1954	799.9	186.6	986.6	-4.0	-186.6	-190.7	795.9	0.0	795.9
1955	800.0	187.5	987.5	-20.3	-187.5	-207.8	779.7	0.0	779.7
1956	800.0	853.7	1653.7	0.0	-161.0	-161.0	800.0	692.7	1492.7
1957	800.0	288.5	1088.5	0.0	-80.0	-80.0	800.0	208.5	1008.5
1958	800.0	838.5	1638.5	0.0	-135.3	-135.3	800.0	703.2	1503.2
1959	800.0	6.9	806.9	-13.0	-6.9	-20.0	787.0	0.0	787.0
1960	640.5	0.0	640.5	-190.2	0.0	-190.2	450.3	0.0	450.3
1961	455.2	0.0	455.2	-139.5	0.0	-139.5	315.7	0.0	315.7
1962	800.0	582.1	1382.1	0.0	-143.9	-143.9	800.0	438.2	1238.2
1963	800.0	698.1	1498.1	0.0	-149.8	-149.8	800.0	548.4	1348.3
1964	800.0	94.9	894.9	-88.8	-94.9	-183.7	711.2	0.0	711.2
1965	799.7	697.9	1497.6	0.3	-211.8	-211.4	800.0	486.2	1286.2
1966	799.4	198.7	998.1	0.6	-98.7	-98.1	800.0	100.0	900.0
1967	800.0	964.5	1764.5	-0.4	-75.6	-76.0	799.6	888.9	1688.5
1968	781.7	0.0	781.7	-138.0	0.0	-138.0	643.7	0.0	643.7
1969	800.0	891.8	1691.8	0.0	-33.5	-33.5	800.0	858.3	1658.3
1970	799.7	380.2	1179.9	0.3	-219.5	-219.2	800.0	160.7	960.7
1971	799.9	349.2	1149.2	0.0	-245.4	-245.4	799.9	103.8	903.8
1972	800.0	124.3	924.3	-65.2	-124.3	-189.5	734.8	0.0	734.8
1973	800.0	561.5	1361.5	-0.5	-195.8	-196.3	799.5	365.7	1165.2
1974	800.0	644.5	1444.5	0.0	-190.4	-190.4	800.0	454.1	1254.1
1975	800.0	561.2	1361.2	0.0	-96.2	-96.2	800.0	465.0	1265.0
1976	610.0	0.0	610.0	-95.1	0.0	-95.1	515.0	0.0	515.0
1977	187.1	0.0	187.1	-3.1	0.0	-3.1	184.0	0.0	184.0
1978	800.0	1005.2	1805.2	-0.2	-110.3	-110.5	799.8	895.0	1694.7
1979	800.0	536.8	1336.8	-3.8	-207.3	-211.2	796.2	329.4	1125.6
1980	800.0	873.4	1673.4	-3.8	-250.1	-253.9	796.2	623.3	1419.5
1981	800.0	156.2	956.2	0.0	-41.8	-41.8	800.0	114.4	914.4
1982	800.0	822.0	1622.0	-1.4	-128.6	-130.0	798.6	693.4	1492.0
1983	800.0	890.2	1690.2	0.0	-9.6	-9.6	800.0	880.6	1680.6
1984	799.7	502.6	1302.2	0.3	-152.4	-152.2	799.9	350.1	1150.1
1985	799.6	144.8	944.5	0.4	-118.7	-118.4	800.0	26.1	826.1
1986	800.0	811.8	1611.8	0.0	-135.1	-135.1	800.0	676.7	1476.7
1987	540.9	0.0	540.9	-7.2	0.0	-7.2	533.7	0.0	533.7
1988	669.3	0.0	669.3	-191.5	0.0	-191.5	477.8	0.0	477.8
1989	734.1	0.0	734.1	-212.5	0.0	-212.5	521.6	0.0	521.6
1990	557.1	0.0	557.1	-175.7	0.0	-175.7	381.4	0.0	381.4
1991	782.2	0.0	782.2	-218.3	0.0	-218.3	563.9	0.0	563.9
1992	659.2	0.0	659.2	-184.0	0.0	-184.0	475.2	0.0	475.2
1993	800.0	892.7	1692.7	0.0	-155.9	-155.9	800.0	736.9	1536.9
1994	667.0	0.0	667.0	-7.1	0.0	-7.1	659.8	0.0	659.8
1995	800.0	1061.7	1861.7	0.0	-87.7	-87.7	800.0	974.0	1774.0
1996	800.0	614.2	1414.2	0.0	-115.3	-115.3	800.0	499.0	1299.0
1997	800.0	489.4	1289.4	-1.4	-134.0	-135.5	798.6	355.4	1154.0
1998	799.8	817.9	1617.7	-0.5	-64.9	-65.4	799.3	753.0	1552.3
1999	800.0	415.8	1215.8	0.0	-154.0	-154.0	800.0	261.8	1061.8
2000	800.0	484.9	1284.9	0.0	-98.3	-98.3	800.0	386.7	1186.7
2001	800.0	91.5	891.5	-108.8	-91.5	-200.4	691.2	0.0	691.2
2002	800.0	166.9	966.9	-76.9	-166.9	-243.8	723.1	0.0	723.1
2003	800.0	412.2	1212.2	0.0	-278.8	-278.8	800.0	133.5	933.5
2004	800.0	111.4	911.4	-91.5	-111.4	-202.9	708.5	0.0	708.5
2005	800.0	875.1	1675.1	0.0	-67.8	-67.8	800.0	807.3	1607.3
2006	800.0	884.0	1684.0	0.0	-59.0	-59.0	800.0	825.0	1625.0
2007	463.8	0.0	463.8	-139.3	0.0	-139.3	324.4	0.0	324.4
2008	800.0	72.5	872.5	-156.1	-72.5	-228.6	643.9	0.0	643.9
2009	800.0	425.2	1225.2	0.0	-276.3	-276.3	800.0	148.9	948.9
2010	800.0	700.8	1500.8	0.0	-172.6	-172.7	800.0	528.2	1328.2
2011	800.0	948.0	1748.0	0.0	-72.6	-72.6	800.0	875.4	1675.4
2012	725.9	0.0	725.9	-145.8	0.0	-145.8	580.1	0.0	580.1
2013	663.0	0.0	663.0	-195.0	0.0	-195.0	468.0	0.0	468.0
2014	331.3	0.0	331.3	-139.1	0.0	-139.1	192.2	0.0	192.2
2015	138.5	0.0	138.5	-2.6	0.0	-2.6	135.8	0.0	135.8
2016	800.0	131.7	931.7	-52.0	-131.7	-183.7	748.0	0.0	748.0
Ave All	743.0	382.7	1125.7	-42.9	-103.0	-146.0	700.1	279.7	979.8
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	558.1	4.3	562.4	-127.1	-4.3	-131.5	431.0	0.0	431.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Reductions to Deliveries Class 1	Class 2	Total	SJRRP Flow Method 3.1 Deliveries Class 1	Class 2	Total
1983	Wet	800.0	890.2	1,690.2	0.0	-9.6	-9.6	800.0	880.6	1,680.6
1969		800.0	891.8	1,691.8	0.0	-33.5	-33.5	800.0	858.3	1,658.3
1995		800.0	1,061.7	1,861.7	0.0	-87.7	-87.7	800.0	974.0	1,774.0
1938		800.0	932.3	1,732.3	0.0	-80.7	-80.7	800.0	851.6	1,651.6
1978		800.0	1,005.2	1,805.2	-0.2	-110.3	-110.5	799.8	895.0	1,694.7
1982		800.0	822.0	1,622.0	-1.4	-128.6	-130.0	798.6	693.4	1,492.0
2011		800.0	948.0	1,748.0	0.0	-72.6	-72.6	800.0	875.4	1,675.4
1967		800.0	964.5	1,764.5	-0.4	-75.6	-76.0	799.6	888.9	1,688.5
2006		800.0	884.0	1,684.0	0.0	-59.0	-59.0	800.0	825.0	1,625.0
1998		799.8	817.9	1,617.7	-0.5	-64.9	-65.4	799.3	753.0	1,552.3
1986		800.0	811.8	1,611.8	0.0	-135.1	-135.1	800.0	676.7	1,476.7
1980		800.0	873.4	1,673.4	-3.8	-250.1	-253.9	796.2	623.3	1,419.5
1956		800.0	853.7	1,653.7	0.0	-161.0	-161.0	800.0	692.7	1,492.7
1952		800.0	840.9	1,640.9	0.0	-74.1	-74.1	800.0	766.9	1,566.9
2005		800.0	875.1	1,675.1	0.0	-67.8	-67.8	800.0	807.3	1,607.3
1997		800.0	489.4	1,289.4	-1.4	-134.0	-135.5	798.6	355.4	1,154.0
1993		800.0	892.7	1,692.7	0.0	-155.9	-155.9	800.0	736.9	1,536.9
1941		800.0	884.6	1,684.6	0.0	-129.3	-129.3	800.0	755.3	1,555.3
1958		800.0	838.5	1,638.5	0.0	-135.3	-135.3	800.0	703.2	1,503.2
1922	Normal-Wet	800.0	845.4	1,645.4	0.0	-159.4	-159.4	800.0	686.0	1,486.0
1965		799.7	697.9	1,497.6	0.3	-211.8	-211.4	800.0	486.2	1,286.2
1942		800.0	805.2	1,605.2	-0.1	-201.7	-201.8	799.9	603.6	1,403.5
1937		800.0	586.2	1,386.2	0.0	-109.4	-109.4	800.0	476.9	1,276.9
1996		800.0	614.2	1,414.2	0.0	-115.3	-115.3	800.0	499.0	1,299.0
1974		800.0	644.5	1,444.5	0.0	-190.4	-190.4	800.0	454.1	1,254.1
1945		800.0	669.9	1,469.9	0.0	-106.1	-106.1	800.0	563.8	1,363.8
1943		800.0	552.3	1,352.3	-2.5	-219.2	-221.7	797.5	333.1	1,130.6
1984		799.7	502.6	1,302.2	0.3	-152.4	-152.2	799.9	350.1	1,150.1
1932		800.0	640.6	1,440.6	-0.1	-124.6	-124.7	799.9	516.0	1,315.9
1973		800.0	561.5	1,361.5	-0.5	-195.8	-196.3	799.5	365.7	1,165.2
2010		800.0	700.8	1,500.8	0.0	-172.6	-172.7	800.0	528.2	1,328.2
1927		800.0	573.2	1,373.2	-0.9	-88.0	-88.9	799.1	485.1	1,284.2
1963		800.0	698.1	1,498.1	0.0	-149.8	-149.8	800.0	548.4	1,348.3
1962		800.0	582.1	1,382.1	0.0	-143.9	-143.9	800.0	438.2	1,238.2
1935		800.0	503.1	1,303.1	0.0	-152.7	-152.7	800.0	350.4	1,150.4
1940		800.0	389.7	1,189.7	-4.5	-78.5	-83.0	795.5	311.2	1,106.7
1951		798.8	331.6	1,130.4	1.2	-255.2	-253.9	800.0	76.4	876.4
1936		800.0	545.7	1,345.7	-2.1	-195.0	-197.1	797.9	350.8	1,148.6
1979		800.0	536.8	1,336.8	-3.8	-207.3	-211.2	796.2	329.4	1,125.6
1975		800.0	561.2	1,361.2	0.0	-96.2	-96.2	800.0	465.0	1,265.0
2000		800.0	484.9	1,284.9	0.0	-98.3	-98.3	800.0	386.7	1,186.7
1946		798.3	368.6	1,166.8	-2.4	-50.2	-52.6	795.9	318.4	1,114.3
1923		799.9	509.3	1,309.2	0.1	-130.3	-130.2	800.0	379.0	1,179.0
1999		800.0	415.8	1,215.8	0.0	-154.0	-154.0	800.0	261.8	1,061.8
2009		800.0	425.2	1,225.2	0.0	-276.3	-276.3	800.0	148.9	948.9
2003	Normal-Dry	800.0	412.2	1,212.2	0.0	-278.8	-278.8	800.0	133.5	933.5
1970		799.7	380.2	1,179.9	0.3	-219.5	-219.2	800.0	160.7	960.7
1925		800.0	266.8	1,066.8	0.0	-209.2	-209.2	800.0	57.5	857.5
1971		799.9	349.2	1,149.2	0.0	-245.4	-245.4	799.9	103.8	903.8
1957		800.0	288.5	1,088.5	0.0	-80.0	-80.0	800.0	208.5	1,008.5
1954		799.9	186.6	986.6	-4.0	-186.6	-190.7	795.9	0.0	795.9
1950		800.0	232.8	1,032.8	0.0	-199.5	-199.5	800.0	33.3	833.3
2016		800.0	131.7	931.7	-52.0	-131.7	-183.7	748.0	0.0	748.0
1966		799.4	198.7	998.1	0.6	-98.7	-98.1	800.0	100.0	900.0
1944		800.0	264.7	1,064.7	0.0	-118.2	-118.2	800.0	146.5	946.5
1953		800.0	218.3	1,018.3	0.0	-194.2	-194.2	800.0	24.1	824.1
1948		800.0	56.4	856.4	-170.9	-56.4	-227.3	629.1	0.0	629.1
2002		800.0	166.9	966.9	-76.9	-166.9	-243.8	723.1	0.0	723.1
1949		800.0	185.4	985.4	-57.8	-185.4	-243.1	742.2	0.0	742.2
1926		799.3	124.4	923.7	-13.4	-124.4	-137.8	785.9	0.0	785.9
1955		800.0	187.5	987.5	-20.3	-187.5	-207.8	779.7	0.0	779.7
1928		800.0	223.8	1,023.8	0.0	-113.8	-113.8	800.0	110.0	910.0
2004		800.0	111.4	911.4	-91.5	-111.4	-202.9	708.5	0.0	708.5
1985		799.6	144.8	944.5	0.4	-118.7	-118.4	800.0	26.1	826.1
1947		800.0	115.0	915.0	0.0	-88.0	-88.0	800.0	27.0	827.0
2008		800.0	72.5	872.5	-156.1	-72.5	-228.6	643.9	0.0	643.9
1933		800.0	240.4	1,040.4	0.0	-240.0	-240.0	800.0	0.4	800.4
1981		800.0	156.2	956.2	0.0	-41.8	-41.8	800.0	114.4	914.4
2001		800.0	91.5	891.5	-108.8	-91.5	-200.4	691.2	0.0	691.2
1972		800.0	124.3	924.3	-65.2	-124.3	-189.5	734.8	0.0	734.8
1991		782.2	0.0	782.2	-218.3	0.0	-218.3	563.9	0.0	563.9
1959		800.0	6.9	806.9	-13.0	-6.9	-20.0	787.0	0.0	787.0
1989		734.1	0.0	734.1	-212.5	0.0	-212.5	521.6	0.0	521.6
1964	Normal-Dry	800.0	94.9	894.9	-88.8	-94.9	-183.7	711.2	0.0	711.2
1939		757.2	0.0	757.2	-167.6	0.0	-167.6	589.6	0.0	589.6
1929		644.2	0.0	644.2	-164.5	0.0	-164.5	479.7	0.0	479.7
1988		669.3	0.0	669.3	-191.5	0.0	-191.5	477.8	0.0	477.8
1968		781.7	0.0	781.7	-138.0	0.0	-138.0	643.7	0.0	643.7
1930		663.6	0.0	663.6	-195.0	0.0	-195.0	468.5	0.0	468.5
2013		663.0	0.0	663.0	-195.0	0.0	-195.0	468.0	0.0	468.0
2012		725.9	0.0	725.9	-145.8	0.0	-145.8	580.1	0.0	580.1
1960		640.5	0.0	640.5	-190.2	0.0	-190.2	450.3	0.0	450.3
1994		667.0	0.0	667.0	-7.1	0.0	-7.1	659.8	0.0	659.8
1992		659.2	0.0	659.2	-184.0	0.0	-184.0	475.2	0.0	475.2
1987		540.9	0.0	540.9	-7.2	0.0	-7.2	533.7	0.0	533.7
1990		557.1	0.0	557.1	-175.7	0.0	-175.7	381.4	0.0	381.4
1934		569.1	0.0	569.1	-147.5	0.0	-147.5	421.5	0.0	421.5
2007		463.8	0.0	463.8	-139.3	0.0	-139.3	324.4	0.0	324.4
1961	Crit-High	455.2	0.0	455.2	-139.5	0.0	-139.5	315.7	0.0	315.7
1976		610.0	0.0	610.0	-95.1	0.0	-95.1	515.0	0.0	515.0
2014		331.3	0.0	331.3	-139.1	0.0	-139.1	192.2	0.0	192.2
1931		312.3	0.0	312.3	-139.7	0.0	-139.7	172.5	0.0	172.5
1924		442.1	0.0	442.1	-140.8	0.0	-140.8	301.3	0.0	301.3
1977	CL	187.1	0.0	187.1	-3.1	0.0	-3.1	184.0	0.0	184.0
2015		138.5	0.0	138.5	-2.6	0.0	-2.6	135.8	0.0	135.8
Wet Ave		800.0	872.5	1672.5	-0.4	-103.4	-103.8	799.6	769.1	1568.7
Normal-wet Ave		799.9	567.2	1367.0	-0.6	-155.2	-155.7	799.3	412.0	1211.3
Normal-dry Ave		796.9	176.3	973.3	-45.0	-131.8	-176.8	752.0	44.5	796.4
Dry Ave		653.5	6.3	659.8	-142.5	-6.3	-148.8	511.0	0.0	511.0
Critical-H Ave		430.2	0.0	430.2	-130.9	0.0	-130.9	299.4	0.0	299.4
Critical-L Ave		162.8	0.0	162.8	-2.9	0.0	-2.9	159.9	0.0	159.9

Note: Values reported by contract year (March-February)

Appendix B
Class 1 and Class 2 Deliveries by Contractor
Pre-SJRRP and SJRRP+10 Conditions

Arvin-Edison WSD
Delano-Earlimart ID
Exeter ID
Fresno ID
Garfield WD
International WD
Ivanhoe ID
Lewis Creek WD
Lindmore ID
Lindsay-Strathmore ID
Lower Tule River ID
Orange Cove ID
Porterville ID
Saucelito ID
Shafter-Wasco ID
Southern San Joaquin MUD
Stone Corral ID
Tea Pot Dome WD
Terra Bella ID
Tulare ID
Chowchilla WD
Madera ID
Gravelly Ford WD
City of Fresno
City of Orange Cove
City of Lindsay
Fresno County Water Works District No. 18
Madera County
System

Arvin-Edison WSD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	40.0	188.0	228.0	0.0	-36.9	-36.9	40.0	151.1	191.1
1923	40.0	113.3	153.3	0.0	-36.0	-36.0	40.0	77.3	117.3
1924	22.1	0.0	22.1	-8.3	0.0	-8.3	13.8	0.0	13.8
1925	40.0	59.3	99.3	0.0	-53.8	-53.8	40.0	5.6	45.6
1926	40.0	27.7	67.6	-2.5	-27.7	-30.1	37.5	0.0	37.5
1927	40.0	127.5	167.5	0.0	-21.9	-21.9	40.0	105.6	145.6
1928	40.0	49.8	89.8	0.0	-34.9	-34.9	40.0	14.9	54.9
1929	32.2	0.0	32.2	-9.6	0.0	-9.6	22.6	0.0	22.6
1930	33.2	0.0	33.2	-11.3	0.0	-11.3	21.9	0.0	21.9
1931	15.6	0.0	15.6	-8.3	0.0	-8.3	7.4	0.0	7.4
1932	40.0	142.5	182.5	0.0	-36.0	-36.0	40.0	106.5	146.5
1933	40.0	53.5	93.5	-1.7	-53.5	-55.1	38.3	0.0	38.3
1934	28.5	0.0	28.5	-8.8	0.0	-8.8	19.6	0.0	19.6
1935	40.0	111.9	151.9	-0.2	-43.4	-43.6	39.8	68.5	108.3
1936	40.0	121.4	161.4	-0.1	-42.4	-42.5	39.9	79.0	118.9
1937	40.0	130.4	170.4	0.0	-44.9	-44.9	40.0	85.5	125.5
1938	40.0	207.3	247.3	0.0	-26.8	-26.8	40.0	180.5	220.5
1939	37.9	0.0	37.9	-9.0	0.0	-9.0	28.9	0.0	28.9
1940	40.0	86.7	126.7	0.0	-14.5	-14.5	40.0	72.1	112.1
1941	40.0	196.7	236.7	0.0	-45.0	-45.0	40.0	151.7	191.7
1942	40.0	179.1	219.1	0.0	-46.4	-46.4	40.0	132.7	172.7
1943	40.0	122.8	162.8	-0.1	-47.3	-47.4	39.9	75.5	115.4
1944	40.0	58.9	98.9	0.0	-37.3	-37.3	40.0	21.6	61.6
1945	40.0	149.0	189.0	0.0	-31.7	-31.8	40.0	117.2	157.2
1946	39.9	82.0	121.9	0.1	-25.9	-25.8	40.0	56.1	96.1
1947	40.0	25.6	65.6	0.0	-24.5	-24.5	40.0	1.1	41.1
1948	40.0	12.5	52.5	-10.3	-12.5	-22.9	29.7	0.0	29.7
1949	40.0	41.2	81.2	-4.7	-41.2	-45.9	35.3	0.0	35.3
1950	40.0	51.8	91.8	-0.1	-51.8	-51.9	39.9	0.0	39.9
1951	39.9	73.7	113.7	0.1	-64.4	-64.4	40.0	9.3	49.3
1952	40.0	187.0	227.0	0.0	-18.0	-18.0	40.0	169.0	209.0
1953	40.0	48.5	88.5	-0.7	-48.5	-49.2	39.3	0.0	39.3
1954	40.0	41.5	81.5	-2.1	-41.5	-43.6	37.9	0.0	37.9
1955	40.0	41.7	81.7	-2.8	-41.7	-44.5	37.2	0.0	37.2
1956	40.0	189.9	229.9	0.0	-37.4	-37.4	40.0	152.4	192.4
1957	40.0	64.2	104.2	0.0	-35.7	-35.7	40.0	28.5	68.5
1958	40.0	186.5	226.5	0.0	-30.4	-30.4	40.0	156.1	196.1
1959	40.0	1.5	41.5	-2.6	-1.5	-4.2	37.4	0.0	37.4
1960	32.0	0.0	32.0	-11.0	0.0	-11.0	21.0	0.0	21.0
1961	22.8	0.0	22.8	-8.3	0.0	-8.3	14.5	0.0	14.5
1962	40.0	129.5	169.5	0.0	-40.7	-40.7	40.0	88.7	128.7
1963	40.0	155.3	195.3	0.0	-41.2	-41.3	40.0	114.0	154.0
1964	40.0	21.1	61.1	-6.1	-21.1	-27.2	33.9	0.0	33.9
1965	40.0	155.2	195.2	0.0	-56.0	-56.0	40.0	99.2	139.2
1966	40.0	44.2	84.2	0.0	-25.8	-25.7	40.0	18.4	58.4
1967	40.0	214.5	254.5	0.0	-26.9	-26.9	40.0	187.6	227.6
1968	39.1	0.0	39.1	-7.1	0.0	-7.1	32.0	0.0	32.0
1969	40.0	198.3	238.3	0.0	-13.4	-13.4	40.0	184.9	224.9
1970	40.0	84.6	124.5	0.0	-55.4	-55.3	40.0	29.2	69.2
1971	40.0	77.7	117.7	0.0	-63.3	-63.3	40.0	14.3	54.3
1972	40.0	27.6	67.6	-5.0	-27.6	-32.6	35.0	0.0	35.0
1973	40.0	124.9	164.9	0.0	-45.3	-45.4	40.0	79.6	119.5
1974	40.0	143.3	183.3	0.0	-44.0	-44.0	40.0	99.4	139.4
1975	40.0	124.8	164.8	0.0	-26.2	-26.2	40.0	98.6	138.6
1976	30.5	0.0	30.5	-6.8	0.0	-6.8	23.7	0.0	23.7
1977	9.4	0.0	9.4	-0.7	0.0	-0.7	8.6	0.0	8.6
1978	40.0	223.6	263.6	0.0	-22.5	-22.5	40.0	201.1	241.1
1979	40.0	119.4	159.4	-0.1	-45.3	-45.4	39.9	74.1	114.0
1980	40.0	194.2	234.2	-0.2	-36.9	-37.1	39.8	157.4	197.2
1981	40.0	34.7	74.7	0.0	-14.6	-14.6	40.0	20.2	60.2
1982	40.0	182.8	222.8	-0.1	-21.5	-21.6	39.9	161.3	201.2
1983	40.0	198.0	238.0	0.0	-7.6	-7.6	40.0	190.4	230.4
1984	40.0	111.8	151.8	-0.2	-40.5	-40.7	39.8	71.2	111.0
1985	40.0	32.2	72.2	-0.4	-32.2	-32.6	39.6	0.0	39.6
1986	40.0	180.5	220.5	0.0	-31.3	-31.3	40.0	149.2	189.2
1987	27.0	0.0	27.0	-2.0	0.0	-2.0	25.0	0.0	25.0
1988	33.5	0.0	33.5	-11.1	0.0	-11.1	22.4	0.0	22.4
1989	36.7	0.0	36.7	-12.3	0.0	-12.3	24.4	0.0	24.4
1990	27.9	0.0	27.9	-10.2	0.0	-10.2	17.6	0.0	17.6
1991	39.1	0.0	39.1	-12.6	0.0	-12.6	26.5	0.0	26.5
1992	33.0	0.0	33.0	-10.7	0.0	-10.7	22.3	0.0	22.3
1993	40.0	198.5	238.5	0.0	-51.1	-51.1	40.0	147.4	187.4
1994	33.3	0.0	33.3	2.1	0.0	2.1	35.5	0.0	35.5
1995	40.0	236.1	276.1	0.0	-22.4	-22.4	40.0	213.7	253.7
1996	40.0	136.6	176.6	0.0	-40.1	-40.1	40.0	96.5	136.5
1997	40.0	108.8	148.8	0.0	-52.3	-52.3	40.0	56.5	96.5
1998	40.0	181.9	221.9	0.0	-28.9	-29.0	39.9	153.0	192.9
1999	40.0	92.5	132.5	0.0	-40.9	-40.9	40.0	51.6	91.6
2000	40.0	107.8	147.8	0.0	-31.5	-31.5	40.0	76.4	116.3
2001	40.0	20.4	60.4	-7.2	-20.4	-27.5	32.8	0.0	32.8
2002	40.0	37.1	77.1	-5.6	-37.1	-42.8	34.4	0.0	34.4
2003	40.0	91.7	131.7	0.0	-70.8	-70.8	40.0	20.8	60.8
2004	40.0	24.8	64.8	-6.3	-24.8	-31.1	33.7	0.0	33.7
2005	40.0	194.6	234.6	0.0	-17.0	-17.0	40.0	177.6	217.6
2006	40.0	196.6	236.6	0.0	-22.0	-22.0	40.0	174.6	214.6
2007	23.2	0.0	23.2	-7.0	0.0	-7.0	16.1	0.0	16.1
2008	40.0	16.1	56.1	-9.5	-16.1	-25.7	30.5	0.0	30.5
2009	40.0	94.6	134.6	0.0	-70.3	-70.3	40.0	24.3	64.3
2010	40.0	155.9	195.9	0.0	-40.2	-40.2	40.0	115.7	155.7
2011	40.0	210.8	250.8	0.0	-14.0	-14.0	40.0	196.8	236.8
2012	36.3	0.0	36.3	-9.3	0.0	-9.3	27.0	0.0	27.0
2013	33.1	0.0	33.1	-11.3	0.0	-11.3	21.9	0.0	21.9
2014	16.6	0.0	16.6	-8.2	0.0	-8.2	8.3	0.0	8.3
2015	6.9	0.0	6.9	-0.7	0.0	-0.7	6.2	0.0	6.2
2016	40.0	29.3	69.3	-4.1	-29.3	-33.4	35.9	0.0	35.9
Ave All	37.2	85.1	122.3	-2.7	-26.6	-29.3	34.5	58.5	93.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	27.9	1.0	28.9	-7.4	-1.0	-8.4	20.5	0.0	20.5

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	40.0	198.0	238.0	0.0	-7.6	-7.6	40.0	190.4	230.4
1969		40.0	198.3	238.3	0.0	-13.4	-13.4	40.0	184.9	224.9
1995		40.0	236.1	276.1	0.0	-22.4	-22.4	40.0	213.7	253.7
1938		40.0	207.3	247.3	0.0	-26.8	-26.8	40.0	180.5	220.5
1978		40.0	223.6	263.6	0.0	-22.5	-22.5	40.0	201.1	241.1
1982		40.0	182.8	222.8	-0.1	-21.5	-21.6	39.9	161.3	201.2
2011		40.0	210.8	250.8	0.0	-14.0	-14.0	40.0	196.8	236.8
1967		40.0	214.5	254.5	0.0	-26.9	-26.9	40.0	187.6	227.6
2006		40.0	196.6	236.6	0.0	-22.0	-22.0	40.0	174.6	214.6
1998		40.0	181.9	221.9	0.0	-28.9	-29.0	39.9	153.0	192.9
1986		40.0	180.5	220.5	0.0	-31.3	-31.3	40.0	149.2	189.2
1980		40.0	194.2	234.2	-0.2	-36.9	-37.1	39.8	157.4	197.2
1956		40.0	189.9	229.9	0.0	-37.4	-37.4	40.0	152.4	192.4
1952		40.0	187.0	227.0	0.0	-18.0	-18.0	40.0	169.0	209.0
2005		40.0	194.6	234.6	0.0	-17.0	-17.0	40.0	177.6	217.6
1997		40.0	108.8	148.8	0.0	-52.3	-52.3	40.0	56.5	96.5
1993		40.0	198.5	238.5	0.0	-51.1	-51.1	40.0	147.4	187.4
1941		40.0	196.7	236.7	0.0	-45.0	-45.0	40.0	151.7	191.7
1958		40.0	186.5	226.5	0.0	-30.4	-30.4	40.0	156.1	196.1
1922	Normal-Wet	40.0	188.0	228.0	0.0	-36.9	-36.9	40.0	151.1	191.1
1965		40.0	155.2	195.2	0.0	-56.0	-56.0	40.0	99.2	139.2
1942		40.0	179.1	219.1	0.0	-46.4	-46.4	40.0	132.7	172.7
1937		40.0	130.4	170.4	0.0	-44.9	-44.9	40.0	85.5	125.5
1996		40.0	136.6	176.6	0.0	-40.1	-40.1	40.0	96.5	136.5
1974		40.0	143.3	183.3	0.0	-44.0	-44.0	40.0	99.4	139.4
1945		40.0	149.0	189.0	0.0	-31.7	-31.8	40.0	117.2	157.2
1943		40.0	122.8	162.8	-0.1	-47.3	-47.4	39.9	75.5	115.4
1984		40.0	111.8	151.8	-0.2	-40.5	-40.7	39.8	71.2	111.0
1932		40.0	142.5	182.5	0.0	-36.0	-36.0	40.0	106.5	146.5
1973		40.0	124.9	164.9	0.0	-45.3	-45.4	40.0	79.6	119.5
2010		40.0	155.9	195.9	0.0	-40.2	-40.2	40.0	115.7	155.7
1927		40.0	127.5	167.5	0.0	-21.9	-21.9	40.0	105.6	145.6
1963		40.0	155.3	195.3	0.0	-41.2	-41.3	40.0	114.0	154.0
1962		40.0	129.5	169.5	0.0	-40.7	-40.7	40.0	88.7	128.7
1935		40.0	111.9	151.9	-0.2	-43.4	-43.6	39.8	68.5	108.3
1940		40.0	86.7	126.7	0.0	-14.5	-14.5	40.0	72.1	112.1
1951		39.9	73.7	113.7	0.1	-64.4	-64.4	40.0	9.3	49.3
1936		40.0	121.4	161.4	-0.1	-42.4	-42.5	39.9	79.0	118.9
1979		40.0	119.4	159.4	-0.1	-45.3	-45.4	39.9	74.1	114.0
1975		40.0	124.8	164.8	0.0	-26.2	-26.2	40.0	98.6	138.6
2000		40.0	107.8	147.8	0.0	-31.5	-31.5	40.0	76.4	116.3
1946		39.9	82.0	121.9	0.1	-25.9	-25.8	40.0	56.1	96.1
1923		40.0	113.3	153.3	0.0	-36.0	-36.0	40.0	77.3	117.3
1999		40.0	92.5	132.5	0.0	-40.9	-40.9	40.0	51.6	91.6
2009		40.0	94.6	134.6	0.0	-70.3	-70.3	40.0	24.3	64.3
2003	Normal-Dry	40.0	91.7	131.7	0.0	-70.8	-70.8	40.0	20.8	60.8
1970		40.0	84.6	124.5	0.0	-55.4	-55.3	40.0	29.2	69.2
1925		40.0	59.3	99.3	0.0	-53.8	-53.8	40.0	5.6	45.6
1971		40.0	77.7	117.7	0.0	-63.3	-63.3	40.0	14.3	54.3
1957		40.0	64.2	104.2	0.0	-35.7	-35.7	40.0	28.5	68.5
1954		40.0	41.5	81.5	-2.1	-41.5	-43.6	37.9	0.0	37.9
1950		40.0	51.8	91.8	-0.1	-51.8	-51.9	39.9	0.0	39.9
2016		40.0	29.3	69.3	-4.1	-29.3	-33.4	35.9	0.0	35.9
1966		40.0	44.2	84.2	0.0	-25.8	-25.7	40.0	18.4	58.4
1944		40.0	58.9	98.9	0.0	-37.3	-37.3	40.0	21.6	61.6
1953		40.0	48.5	88.5	-0.7	-48.5	-49.2	39.3	0.0	39.3
1948		40.0	12.5	52.5	-10.3	-12.5	-22.9	29.7	0.0	29.7
2002		40.0	37.1	77.1	-5.6	-37.1	-42.8	34.4	0.0	34.4
1949		40.0	41.2	81.2	-4.7	-41.2	-45.9	35.3	0.0	35.3
1926		40.0	27.7	67.6	-2.5	-27.7	-30.1	37.5	0.0	37.5
1955		40.0	41.7	81.7	-2.8	-41.7	-44.5	37.2	0.0	37.2
1928		40.0	49.8	89.8	0.0	-34.9	-34.9	40.0	14.9	54.9
2004		40.0	24.8	64.8	-6.3	-24.8	-31.1	33.7	0.0	33.7
1985		40.0	32.2	72.2	-0.4	-32.2	-32.6	39.6	0.0	39.6
1947		40.0	25.6	65.6	0.0	-24.5	-24.5	40.0	1.1	41.1
2008		40.0	16.1	56.1	-9.5	-16.1	-25.7	30.5	0.0	30.5
1933		40.0	53.5	93.5	-1.7	-53.5	-55.1	38.3	0.0	38.3
1981		40.0	34.7	74.7	0.0	-14.6	-14.6	40.0	20.2	60.2
2001		40.0	20.4	60.4	-7.2	-20.4	-27.5	32.8	0.0	32.8
1972		40.0	27.6	67.6	-5.0	-27.6	-32.6	35.0	0.0	35.0
1991		39.1	0.0	39.1	-12.6	0.0	-12.6	26.5	0.0	26.5
1959		40.0	1.5	41.5	-2.6	-1.5	-4.2	37.4	0.0	37.4
1989		36.7	0.0	36.7	-12.3	0.0	-12.3	24.4	0.0	24.4
1964	Normal-Dry	40.0	21.1	61.1	-6.1	-21.1	-27.2	33.9	0.0	33.9
1939		37.9	0.0	37.9	-9.0	0.0	-9.0	28.9	0.0	28.9
1929		32.2	0.0	32.2	-9.6	0.0	-9.6	22.6	0.0	22.6
1988		33.5	0.0	33.5	-11.1	0.0	-11.1	22.4	0.0	22.4
1968		39.1	0.0	39.1	-7.1	0.0	-7.1	32.0	0.0	32.0
1930		33.2	0.0	33.2	-11.3	0.0	-11.3	21.9	0.0	21.9
2013		33.1	0.0	33.1	-11.3	0.0	-11.3	21.9	0.0	21.9
2012		36.3	0.0	36.3	-9.3	0.0	-9.3	27.0	0.0	27.0
1960		32.0	0.0	32.0	-11.0	0.0	-11.0	21.0	0.0	21.0
1994		33.3	0.0	33.3	2.1	0.0	2.1	35.5	0.0	35.5
1992		33.0	0.0	33.0	-10.7	0.0	-10.7	22.3	0.0	22.3
1987		27.0	0.0	27.0	-2.0	0.0	-2.0	25.0	0.0	25.0
1990		27.9	0.0	27.9	-10.2	0.0	-10.2	17.6	0.0	17.6
1934		28.5	0.0	28.5	-8.8	0.0	-8.8	19.6	0.0	19.6
2007		23.2	0.0	23.2	-7.0	0.0	-7.0	16.1	0.0	16.1
1961	Crit-High	22.8	0.0	22.8	-8.3	0.0	-8.3	14.5	0.0	14.5
1976		30.5	0.0	30.5	-6.8	0.0	-6.8	23.7	0.0	23.7
2014		16.6	0.0	16.6	-8.2	0.0	-8.2	8.3	0.0	8.3
1931		15.6	0.0	15.6	-8.3	0.0	-8.3	7.4	0.0	7.4
1924		22.1	0.0	22.1	-8.3	0.0	-8.3	13.8	0.0	13.8
1977	CL	9.4	0.0	9.4	-0.7	0.0	-0.7	8.6	0.0	8.6
2015		6.9	0.0	6.9	-0.7	0.0	-0.7	6.2	0.0	6.2
Wet Ave		40.0	194.0	234.0	0.0	-27.7	-27.7	40.0	166.4	206.4
Normal-wet Ave		40.0	126.1	166.1	0.0	-40.5	-40.6	40.0	85.6	125.6
Normal-dry Ave		39.8	39.2	79.1	-3.2	-33.0	-36.2	36.6	6.2	42.8
Dry Ave		32.7	1.4	34.1	-8.2	-1.4	-9.6	24.5	0.0	24.5
Critical-H Ave		21.5	0.0	21.5	-8.0	0.0	-8.0	13.5	0.0	13.5
Critical-L Ave		8.1	0.0	8.1	-0.7	0.0	-0.7	7.4	0.0	7.4

Delano-Earlimart ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	108.8	44.9	153.7	0.0	-8.8	-8.8	108.8	36.1	144.9
1923	108.8	27.1	135.9	0.0	-8.6	-8.6	108.8	18.5	127.2
1924	60.1	0.0	60.1	-22.6	0.0	-22.6	37.5	0.0	37.5
1925	108.8	14.2	123.0	0.0	-12.9	-12.9	108.8	1.3	110.1
1926	108.7	6.6	115.3	-6.7	-6.6	-13.3	102.0	0.0	102.0
1927	108.8	30.5	139.3	0.0	-5.2	-5.2	108.8	25.2	134.0
1928	108.8	11.9	120.7	0.0	-8.3	-8.3	108.8	3.6	112.4
1929	87.6	0.0	87.6	-26.1	0.0	-26.1	61.5	0.0	61.5
1930	90.2	0.0	90.2	-30.7	0.0	-30.7	59.5	0.0	59.5
1931	42.5	0.0	42.5	-22.5	0.0	-22.5	20.0	0.0	20.0
1932	108.8	34.1	142.9	0.0	-8.6	-8.6	108.8	25.4	134.2
1933	108.8	12.8	121.6	-4.6	-12.8	-17.4	104.2	0.0	104.2
1934	77.4	0.0	77.4	-24.0	0.0	-24.0	53.4	0.0	53.4
1935	108.8	26.7	135.5	-0.5	-10.4	-10.8	108.3	16.4	124.7
1936	108.8	29.0	137.8	-0.2	-10.1	-10.3	108.6	18.9	127.5
1937	108.8	31.2	140.0	0.0	-10.7	-10.7	108.8	20.4	129.2
1938	108.8	49.6	158.4	0.0	-6.4	-6.4	108.8	43.2	152.0
1939	103.0	0.0	103.0	-24.3	0.0	-24.3	78.6	0.0	78.6
1940	108.8	20.7	129.5	0.0	-3.5	-3.5	108.8	17.2	126.0
1941	108.8	47.0	155.8	0.0	-10.8	-10.8	108.8	36.3	145.1
1942	108.8	42.8	151.6	0.0	-11.1	-11.1	108.8	31.7	140.5
1943	108.8	29.4	138.2	-0.2	-11.3	-11.5	108.6	18.0	126.7
1944	108.8	14.1	122.9	0.0	-8.9	-8.9	108.8	5.2	114.0
1945	108.8	35.6	144.4	0.0	-7.6	-7.6	108.8	28.0	136.8
1946	108.6	19.6	128.2	0.2	-6.2	-6.0	108.8	13.4	122.2
1947	108.8	6.1	114.9	0.0	-5.9	-5.9	108.8	0.3	109.1
1948	108.8	3.0	111.8	-28.1	-3.0	-31.1	80.7	0.0	80.7
1949	108.8	9.9	118.7	-12.7	-9.9	-22.6	96.1	0.0	96.1
1950	108.8	12.4	121.2	-0.4	-12.4	-12.8	108.4	0.0	108.4
1951	108.6	17.6	126.3	0.2	-15.4	-15.2	108.8	2.2	111.0
1952	108.8	44.7	153.5	0.0	-4.3	-4.3	108.8	40.4	149.2
1953	108.8	11.6	120.4	-1.9	-11.6	-13.5	106.9	0.0	106.9
1954	108.8	9.9	118.7	-5.8	-9.9	-15.7	103.0	0.0	103.0
1955	108.8	10.0	118.8	-7.6	-10.0	-17.6	101.2	0.0	101.2
1956	108.8	45.4	154.2	0.0	-8.9	-8.9	108.8	36.4	145.2
1957	108.8	15.3	124.1	0.0	-8.5	-8.5	108.8	6.8	115.6
1958	108.8	44.6	153.4	0.0	-7.3	-7.3	108.8	37.3	146.1
1959	108.8	0.4	109.2	-7.1	-0.4	-7.5	101.7	0.0	101.7
1960	87.1	0.0	87.1	-30.0	0.0	-30.0	57.1	0.0	57.1
1961	61.9	0.0	61.9	-22.4	0.0	-22.4	39.5	0.0	39.5
1962	108.8	30.9	139.7	0.0	-9.7	-9.7	108.8	21.2	130.0
1963	108.8	37.1	145.9	0.0	-9.9	-9.9	108.8	27.3	136.0
1964	108.8	5.0	113.8	-16.5	-5.0	-21.5	92.3	0.0	92.3
1965	108.8	37.1	145.9	0.0	-13.4	-13.3	108.8	23.7	132.5
1966	108.7	10.6	119.3	0.1	-6.2	-6.1	108.8	4.4	113.2
1967	108.8	51.3	160.1	-0.1	-6.4	-6.5	108.7	44.9	153.6
1968	106.3	0.0	106.3	-19.2	0.0	-19.2	87.1	0.0	87.1
1969	108.8	47.4	156.2	0.0	-3.2	-3.2	108.8	44.2	153.0
1970	108.8	20.2	129.0	0.0	-13.2	-13.2	108.8	7.0	115.8
1971	108.8	18.6	127.4	0.0	-15.1	-15.1	108.8	3.4	112.2
1972	108.8	6.6	115.4	-13.5	-6.6	-20.1	95.3	0.0	95.3
1973	108.8	29.8	138.6	-0.1	-10.8	-11.0	108.7	19.0	127.7
1974	108.8	34.3	143.1	0.0	-10.5	-10.5	108.8	23.8	132.6
1975	108.8	29.8	138.6	0.0	-6.3	-6.3	108.8	23.6	132.4
1976	83.0	0.0	83.0	-18.4	0.0	-18.4	64.5	0.0	64.5
1977	25.4	0.0	25.4	-2.0	0.0	-2.0	23.4	0.0	23.4
1978	108.8	53.4	162.2	0.0	-5.4	-5.4	108.8	48.1	156.8
1979	108.8	28.5	137.3	-0.4	-10.8	-11.2	108.4	17.7	126.1
1980	108.8	46.4	155.2	-0.5	-8.8	-9.3	108.3	37.6	145.9
1981	108.8	8.3	117.1	0.0	-3.5	-3.5	108.8	4.8	113.6
1982	108.8	43.7	152.5	-0.2	-5.1	-5.3	108.6	38.5	147.2
1983	108.8	47.3	156.1	0.0	-1.8	-1.8	108.8	45.5	154.3
1984	108.8	26.7	135.5	-0.5	-9.7	-10.1	108.3	17.0	125.3
1985	108.8	7.7	116.4	-1.2	-7.7	-8.9	107.6	0.0	107.6
1986	108.8	43.2	152.0	0.0	-7.5	-7.5	108.8	35.7	144.5
1987	73.6	0.0	73.6	-5.5	0.0	-5.5	68.0	0.0	68.0
1988	91.0	0.0	91.0	-30.2	0.0	-30.2	60.8	0.0	60.8
1989	99.8	0.0	99.8	-33.4	0.0	-33.4	66.5	0.0	66.5
1990	75.8	0.0	75.8	-27.9	0.0	-27.9	47.9	0.0	47.9
1991	106.4	0.0	106.4	-34.2	0.0	-34.2	72.2	0.0	72.2
1992	89.6	0.0	89.6	-29.1	0.0	-29.1	60.6	0.0	60.6
1993	108.8	47.5	156.3	0.0	-12.2	-12.2	108.8	35.2	144.0
1994	90.7	0.0	90.7	5.8	0.0	5.8	96.5	0.0	96.5
1995	108.8	56.4	165.2	0.0	-5.4	-5.4	108.8	51.1	159.9
1996	108.8	32.7	141.5	0.0	-9.6	-9.6	108.8	23.1	131.9
1997	108.8	26.0	134.8	0.0	-12.5	-12.5	108.8	13.5	122.3
1998	108.8	43.5	152.2	-0.1	-6.9	-7.0	108.6	36.6	145.2
1999	108.8	22.1	130.9	0.0	-9.8	-9.8	108.8	12.3	121.1
2000	108.8	25.8	134.6	-0.1	-7.5	-7.6	108.7	18.3	127.0
2001	108.8	4.9	113.7	-19.5	-4.9	-24.3	89.3	0.0	89.3
2002	108.8	8.9	117.7	-15.3	-8.9	-24.2	93.5	0.0	93.5
2003	108.8	21.9	130.7	0.0	-16.9	-16.9	108.8	5.0	113.8
2004	108.8	5.9	114.7	-17.2	-5.9	-23.2	91.6	0.0	91.6
2005	108.8	46.5	155.3	0.0	-4.1	-4.1	108.8	42.5	151.3
2006	108.8	47.0	155.8	0.0	-5.3	-5.3	108.8	41.7	150.5
2007	63.1	0.0	63.1	-19.2	0.0	-19.2	43.9	0.0	43.9
2008	108.8	3.9	112.7	-26.0	-3.9	-29.8	82.8	0.0	82.8
2009	108.8	22.6	131.4	0.0	-16.8	-16.8	108.8	5.8	114.6
2010	108.8	37.3	146.1	0.0	-9.6	-9.6	108.8	27.7	136.4
2011	108.8	50.4	159.2	0.0	-3.4	-3.4	108.8	47.0	155.8
2012	98.7	0.0	98.7	-25.4	0.0	-25.4	73.4	0.0	73.4
2013	90.2	0.0	90.2	-30.7	0.0	-30.7	59.5	0.0	59.5
2014	45.1	0.0	45.1	-22.4	0.0	-22.4	22.7	0.0	22.7
2015	18.8	0.0	18.8	-2.0	0.0	-2.0	16.9	0.0	16.9
2016	108.8	7.0	115.8	-11.2	-7.0	-18.2	97.6	0.0	97.6
Ave All	101.1	20.3	121.4	-7.3	-6.4	-13.7	93.7	14.0	107.7
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	75.9	0.2	76.1	-20.2	-0.2	-20.5	55.7	0.0	55.7

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	108.8	47.3	156.1	0.0	-1.8	-1.8	108.8	45.5	154.3
1969		108.8	47.4	156.2	0.0	-3.2	-3.2	108.8	44.2	153.0
1995		108.8	56.4	165.2	0.0	-5.4	-5.4	108.8	51.1	159.9
1938		108.8	49.6	158.4	0.0	-6.4	-6.4	108.8	43.2	152.0
1978		108.8	53.4	162.2	0.0	-5.4	-5.4	108.8	48.1	156.8
1982		108.8	43.7	152.5	-0.2	-5.1	-5.3	108.6	38.5	147.2
2011		108.8	50.4	159.2	0.0	-3.4	-3.4	108.8	47.0	155.8
1967		108.8	51.3	160.1	-0.1	-6.4	-6.5	108.7	44.9	153.6
2006		108.8	47.0	155.8	0.0	-5.3	-5.3	108.8	41.7	150.5
1998		108.8	43.5	152.2	-0.1	-6.9	-7.0	108.6	36.6	145.2
1986		108.8	43.2	152.0	0.0	-7.5	-7.5	108.8	35.7	144.5
1980		108.8	46.4	155.2	-0.5	-8.8	-9.3	108.3	37.6	145.9
1956		108.8	45.4	154.2	0.0	-8.9	-8.9	108.8	36.4	145.2
1952		108.8	44.7	153.5	0.0	-4.3	-4.3	108.8	40.4	149.2
2005		108.8	46.5	155.3	0.0	-4.1	-4.1	108.8	42.5	151.3
1997		108.8	26.0	134.8	0.0	-12.5	-12.5	108.8	13.5	122.3
1993		108.8	47.5	156.3	0.0	-12.2	-12.2	108.8	35.2	144.0
1941		108.8	47.0	155.8	0.0	-10.8	-10.8	108.8	36.3	145.1
1958		108.8	44.6	153.4	0.0	-7.3	-7.3	108.8	37.3	146.1
1922	Normal-Wet	108.8	44.9	153.7	0.0	-8.8	-8.8	108.8	36.1	144.9
1965		108.8	37.1	145.9	0.0	-13.4	-13.3	108.8	23.7	132.5
1942		108.8	42.8	151.6	0.0	-11.1	-11.1	108.8	31.7	140.5
1937		108.8	31.2	140.0	0.0	-10.7	-10.7	108.8	20.4	129.2
1996		108.8	32.7	141.5	0.0	-9.6	-9.6	108.8	23.1	131.9
1974		108.8	34.3	143.1	0.0	-10.5	-10.5	108.8	23.8	132.6
1945		108.8	35.6	144.4	0.0	-7.6	-7.6	108.8	28.0	136.8
1943		108.8	29.4	138.2	-0.2	-11.3	-11.5	108.6	18.0	126.7
1984		108.8	26.7	135.5	-0.5	-9.7	-10.1	108.3	17.0	125.3
1932		108.8	34.1	142.9	0.0	-8.6	-8.6	108.8	25.4	134.2
1973		108.8	29.8	138.6	-0.1	-10.8	-11.0	108.7	19.0	127.7
2010		108.8	37.3	146.1	0.0	-9.6	-9.6	108.8	27.7	136.4
1927		108.8	30.5	139.3	0.0	-5.2	-5.2	108.8	25.2	134.0
1963		108.8	37.1	145.9	0.0	-9.9	-9.9	108.8	27.3	136.0
1962		108.8	30.9	139.7	0.0	-9.7	-9.7	108.8	21.2	130.0
1935		108.8	26.7	135.5	-0.5	-10.4	-10.8	108.3	16.4	124.7
1940		108.8	20.7	129.5	0.0	-3.5	-3.5	108.8	17.2	126.0
1951		108.6	17.6	126.3	0.2	-15.4	-15.2	108.8	2.2	111.0
1936		108.8	29.0	137.8	-0.2	-10.1	-10.3	108.6	18.9	127.5
1979		108.8	28.5	137.3	-0.4	-10.8	-11.2	108.4	17.7	126.1
1975		108.8	29.8	138.6	0.0	-6.3	-6.3	108.8	23.6	132.4
2000		108.8	25.8	134.6	-0.1	-7.5	-7.6	108.7	18.3	127.0
1946		108.6	19.6	128.2	0.2	-6.2	-6.0	108.8	13.4	122.2
1923		108.8	27.1	135.9	0.0	-8.6	-8.6	108.8	18.5	127.2
1999		108.8	22.1	130.9	0.0	-9.8	-9.8	108.8	12.3	121.1
2009		108.8	22.6	131.4	0.0	-16.8	-16.8	108.8	5.8	114.6
2003	Normal-Dry	108.8	21.9	130.7	0.0	-16.9	-16.9	108.8	5.0	113.8
1970		108.8	20.2	129.0	0.0	-13.2	-13.2	108.8	7.0	115.8
1925		108.8	14.2	123.0	0.0	-12.9	-12.9	108.8	1.3	110.1
1971		108.8	18.6	127.4	0.0	-15.1	-15.1	108.8	3.4	112.2
1957		108.8	15.3	124.1	0.0	-8.5	-8.5	108.8	6.8	115.6
1954		108.8	9.9	118.7	-5.8	-9.9	-15.7	103.0	0.0	103.0
1950		108.8	12.4	121.2	-0.4	-12.4	-12.8	108.4	0.0	108.4
2016		108.8	7.0	115.8	-11.2	-7.0	-18.2	97.6	0.0	97.6
1966		108.7	10.6	119.3	0.1	-6.2	-6.1	108.8	4.4	113.2
1944		108.8	14.1	122.9	0.0	-8.9	-8.9	108.8	5.2	114.0
1953		108.8	11.6	120.4	-1.9	-11.6	-13.5	106.9	0.0	106.9
1948		108.8	3.0	111.8	-28.1	-3.0	-31.1	80.7	0.0	80.7
2002		108.8	8.9	117.7	-15.3	-8.9	-24.2	93.5	0.0	93.5
1949		108.8	9.9	118.7	-12.7	-9.9	-22.6	96.1	0.0	96.1
1926		108.7	6.6	115.3	-6.7	-6.6	-13.3	102.0	0.0	102.0
1955		108.8	10.0	118.8	-7.6	-10.0	-17.6	101.2	0.0	101.2
1928		108.8	11.9	120.7	0.0	-8.3	-8.3	108.8	3.6	112.4
2004		108.8	5.9	114.7	-17.2	-5.9	-23.2	91.6	0.0	91.6
1985		108.8	7.7	116.4	-1.2	-7.7	-8.9	107.6	0.0	107.6
1947		108.8	6.1	114.9	0.0	-5.9	-5.9	108.8	0.3	109.1
2008		108.8	3.9	112.7	-26.0	-3.9	-29.8	82.8	0.0	82.8
1933		108.8	12.8	121.6	-4.6	-12.8	-17.4	104.2	0.0	104.2
1981		108.8	8.3	117.1	0.0	-3.5	-3.5	108.8	4.8	113.6
2001		108.8	4.9	113.7	-19.5	-4.9	-24.3	89.3	0.0	89.3
1972		108.8	6.6	115.4	-13.5	-6.6	-20.1	95.3	0.0	95.3
1991		106.4	0.0	106.4	-34.2	0.0	-34.2	72.2	0.0	72.2
1959		108.8	0.4	109.2	-7.1	-0.4	-7.5	101.7	0.0	101.7
1989		99.8	0.0	99.8	-33.4	0.0	-33.4	66.5	0.0	66.5
1964	Normal-Dry	108.8	5.0	113.8	-16.5	-5.0	-21.5	92.3	0.0	92.3
1939		103.0	0.0	103.0	-24.3	0.0	-24.3	78.6	0.0	78.6
1929		87.6	0.0	87.6	-26.1	0.0	-26.1	61.5	0.0	61.5
1988		91.0	0.0	91.0	-30.2	0.0	-30.2	60.8	0.0	60.8
1968		106.3	0.0	106.3	-19.2	0.0	-19.2	87.1	0.0	87.1
1930		90.2	0.0	90.2	-30.7	0.0	-30.7	59.5	0.0	59.5
2013		90.2	0.0	90.2	-30.7	0.0	-30.7	59.5	0.0	59.5
2012		98.7	0.0	98.7	-25.4	0.0	-25.4	73.4	0.0	73.4
1960		87.1	0.0	87.1	-30.0	0.0	-30.0	57.1	0.0	57.1
1994		90.7	0.0	90.7	5.8	0.0	5.8	96.5	0.0	96.5
1992		89.6	0.0	89.6	-29.1	0.0	-29.1	60.6	0.0	60.6
1987		73.6	0.0	73.6	-5.5	0.0	-5.5	68.0	0.0	68.0
1990		75.8	0.0	75.8	-27.9	0.0	-27.9	47.9	0.0	47.9
1934		77.4	0.0	77.4	-24.0	0.0	-24.0	53.4	0.0	53.4
2007		63.1	0.0	63.1	-19.2	0.0	-19.2	43.9	0.0	43.9
1961	Crit-High	61.9	0.0	61.9	-22.4	0.0	-22.4	39.5	0.0	39.5
1976		83.0	0.0	83.0	-18.4	0.0	-18.4	64.5	0.0	64.5
2014		45.1	0.0	45.1	-22.4	0.0	-22.4	22.7	0.0	22.7
1931		42.5	0.0	42.5	-22.5	0.0	-22.5	20.0	0.0	20.0
1924		60.1	0.0	60.1	-22.6	0.0	-22.6	37.5	0.0	37.5
1977	CL	25.4	0.0	25.4	-2.0	0.0	-2.0	23.4	0.0	23.4
2015		18.8	0.0	18.8	-2.0	0.0	-2.0	16.9	0.0	16.9
	Wet Ave	108.8	46.4	155.2	0.0	-6.6	-6.7	108.8	39.8	148.5
	Normal-wet Ave	108.8	30.2	138.9	-0.1	-9.7	-9.7	108.7	20.5	129.2
	Normal-dry Ave	108.4	9.4	117.8	-8.8	-7.9	-16.7	99.6	1.5	101.1
	Dry Ave	88.9	0.3	89.2	-22.2	-0.3	-22.5	66.7	0.0	66.7
	Critical-H Ave	58.5	0.0	58.5	-21.7	0.0	-21.7	36.8	0.0	36.8
	Critical-L Ave	22.1	0.0	22.1	-2.0	0.0	-2.0	20.2	0.0	20.2

Note: Values reported by contract year (March-February)

Exeter ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	11.5	11.5	23.0	0.0	-2.3	-2.3	11.5	9.2	20.7
1923	11.5	6.9	18.4	0.0	-2.2	-2.2	11.5	4.7	16.2
1924	6.4	0.0	6.4	-2.4	0.0	-2.4	4.0	0.0	4.0
1925	11.5	3.6	15.1	0.0	-3.3	-3.3	11.5	0.3	11.8
1926	11.5	1.7	13.2	-0.7	-1.7	-2.4	10.8	0.0	10.8
1927	11.5	7.8	19.3	0.0	-1.3	-1.3	11.5	6.4	17.9
1928	11.5	3.0	14.5	0.0	-2.1	-2.1	11.5	0.9	12.4
1929	9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
1930	9.5	0.0	9.5	-3.3	0.0	-3.3	6.3	0.0	6.3
1931	4.5	0.0	4.5	-2.4	0.0	-2.4	2.1	0.0	2.1
1932	11.5	8.7	20.2	0.0	-2.2	-2.2	11.5	6.5	18.0
1933	11.5	3.3	14.8	-0.5	-3.3	-3.7	11.0	0.0	11.0
1934	8.2	0.0	8.2	-2.5	0.0	-2.5	5.6	0.0	5.6
1935	11.5	6.8	18.3	0.0	-2.6	-2.7	11.5	4.2	15.6
1936	11.5	7.4	18.9	0.0	-2.6	-2.6	11.5	4.8	16.3
1937	11.5	7.9	19.4	0.0	-2.7	-2.7	11.5	5.2	16.7
1938	11.5	12.6	24.1	0.0	-1.6	-1.6	11.5	11.0	22.5
1939	10.9	0.0	10.9	-2.6	0.0	-2.6	8.3	0.0	8.3
1940	11.5	5.3	16.8	0.0	-0.9	-0.9	11.5	4.4	15.9
1941	11.5	12.0	23.5	0.0	-2.7	-2.7	11.5	9.2	20.7
1942	11.5	10.9	22.4	0.0	-2.8	-2.8	11.5	8.1	19.6
1943	11.5	7.5	19.0	0.0	-2.9	-2.9	11.5	4.6	16.1
1944	11.5	3.6	15.1	0.0	-2.3	-2.3	11.5	1.3	12.8
1945	11.5	9.1	20.6	0.0	-1.9	-1.9	11.5	7.1	18.6
1946	11.5	5.0	16.5	0.0	-1.6	-1.6	11.5	3.4	14.9
1947	11.5	1.6	13.1	0.0	-1.5	-1.5	11.5	0.1	11.6
1948	11.5	0.8	12.3	-3.0	-0.8	-3.7	8.5	0.0	8.5
1949	11.5	2.5	14.0	-1.3	-2.5	-3.9	10.2	0.0	10.2
1950	11.5	3.2	14.7	0.0	-3.2	-3.2	11.5	0.0	11.5
1951	11.5	4.5	16.0	0.0	-3.9	-3.9	11.5	0.6	12.1
1952	11.5	11.4	22.9	0.0	-1.1	-1.1	11.5	10.3	21.8
1953	11.5	3.0	14.5	-0.2	-3.0	-3.2	11.3	0.0	11.3
1954	11.5	2.5	14.0	-0.6	-2.5	-3.1	10.9	0.0	10.9
1955	11.5	2.5	14.0	-0.8	-2.5	-3.3	10.7	0.0	10.7
1956	11.5	11.6	23.1	0.0	-2.3	-2.3	11.5	9.3	20.8
1957	11.5	3.9	15.4	0.0	-2.2	-2.2	11.5	1.7	13.2
1958	11.5	11.4	22.9	0.0	-1.9	-1.9	11.5	9.5	21.0
1959	11.5	0.1	11.6	-0.8	-0.1	-0.8	10.7	0.0	10.7
1960	9.2	0.0	9.2	-3.2	0.0	-3.2	6.0	0.0	6.0
1961	6.5	0.0	6.5	-2.4	0.0	-2.4	4.2	0.0	4.2
1962	11.5	7.9	19.4	0.0	-2.5	-2.5	11.5	5.4	16.9
1963	11.5	9.5	21.0	0.0	-2.5	-2.5	11.5	7.0	18.4
1964	11.5	1.3	12.8	-1.7	-1.3	-3.0	9.8	0.0	9.8
1965	11.5	9.5	21.0	0.0	-3.4	-3.4	11.5	6.0	17.5
1966	11.5	2.7	14.2	0.0	-1.6	-1.6	11.5	1.1	12.6
1967	11.5	13.1	24.6	0.0	-1.6	-1.6	11.5	11.4	22.9
1968	11.2	0.0	11.2	-2.0	0.0	-2.0	9.2	0.0	9.2
1969	11.5	12.1	23.6	0.0	-0.8	-0.8	11.5	11.3	22.8
1970	11.5	5.2	16.6	0.0	-3.4	-3.4	11.5	1.8	13.3
1971	11.5	4.7	16.2	0.0	-3.9	-3.9	11.5	0.9	12.4
1972	11.5	1.7	13.2	-1.4	-1.7	-3.1	10.1	0.0	10.1
1973	11.5	7.6	19.1	0.0	-2.8	-2.8	11.5	4.8	16.3
1974	11.5	8.7	20.2	0.0	-2.7	-2.7	11.5	6.1	17.6
1975	11.5	7.6	19.1	0.0	-1.6	-1.6	11.5	6.0	17.5
1976	8.8	0.0	8.8	-1.9	0.0	-1.9	6.8	0.0	6.8
1977	2.7	0.0	2.7	-0.2	0.0	-0.2	2.5	0.0	2.5
1978	11.5	13.6	25.1	0.0	-1.4	-1.4	11.5	12.3	23.8
1979	11.5	7.3	18.8	0.0	-2.8	-2.8	11.5	4.5	16.0
1980	11.5	11.8	23.3	-0.1	-2.2	-2.3	11.4	9.6	21.0
1981	11.5	2.1	13.6	0.0	-0.9	-0.9	11.5	1.2	12.7
1982	11.5	11.1	22.6	0.0	-1.3	-1.3	11.5	9.8	21.3
1983	11.5	12.1	23.6	0.0	-0.5	-0.5	11.5	11.6	23.1
1984	11.5	6.8	18.3	0.0	-2.5	-2.5	11.4	4.3	15.8
1985	11.5	2.0	13.5	-0.1	-2.0	-2.1	11.4	0.0	11.4
1986	11.5	11.0	22.5	0.0	-1.9	-1.9	11.5	9.1	20.6
1987	7.8	0.0	7.8	-0.6	0.0	-0.6	7.2	0.0	7.2
1988	9.6	0.0	9.6	-3.2	0.0	-3.2	6.4	0.0	6.4
1989	10.6	0.0	10.6	-3.5	0.0	-3.5	7.0	0.0	7.0
1990	8.0	0.0	8.0	-2.9	0.0	-2.9	5.1	0.0	5.1
1991	11.2	0.0	11.2	-3.6	0.0	-3.6	7.6	0.0	7.6
1992	9.5	0.0	9.5	-3.1	0.0	-3.1	6.4	0.0	6.4
1993	11.5	12.1	23.6	0.0	-3.1	-3.1	11.5	9.0	20.5
1994	9.6	0.0	9.6	0.6	0.0	0.6	10.2	0.0	10.2
1995	11.5	14.4	25.9	0.0	-1.4	-1.4	11.5	13.0	24.5
1996	11.5	8.3	19.8	0.0	-2.4	-2.4	11.5	5.9	17.4
1997	11.5	6.6	18.1	0.0	-3.2	-3.2	11.5	3.4	14.9
1998	11.5	11.1	22.6	0.0	-1.8	-1.8	11.5	9.3	20.8
1999	11.5	5.6	17.1	0.0	-2.5	-2.5	11.5	3.1	14.6
2000	11.5	6.6	18.1	0.0	-1.9	-1.9	11.5	4.7	16.1
2001	11.5	1.2	12.7	-2.1	-1.2	-3.3	9.4	0.0	9.4
2002	11.5	2.3	13.8	-1.6	-2.3	-3.9	9.9	0.0	9.9
2003	11.5	5.6	17.1	0.0	-4.3	-4.3	11.5	1.3	12.8
2004	11.5	1.5	13.0	-1.8	-1.5	-3.3	9.7	0.0	9.7
2005	11.5	11.9	23.4	0.0	-1.0	-1.0	11.5	10.8	22.3
2006	11.5	12.0	23.5	0.0	-1.3	-1.3	11.5	10.6	22.1
2007	6.7	0.0	6.7	-2.0	0.0	-2.0	4.6	0.0	4.6
2008	11.5	1.0	12.5	-2.7	-1.0	-3.7	8.8	0.0	8.8
2009	11.5	5.8	17.3	0.0	-4.3	-4.3	11.5	1.5	13.0
2010	11.5	9.5	21.0	0.0	-2.4	-2.5	11.5	7.1	18.6
2011	11.5	12.9	24.4	0.0	-0.9	-0.9	11.5	12.0	23.5
2012	10.4	0.0	10.4	-2.7	0.0	-2.7	7.8	0.0	7.8
2013	9.5	0.0	9.5	-3.2	0.0	-3.2	6.3	0.0	6.3
2014	4.8	0.0	4.8	-2.4	0.0	-2.4	2.4	0.0	2.4
2015	2.0	0.0	2.0	-0.2	0.0	-0.2	1.8	0.0	1.8
2016	11.5	1.8	13.3	-1.2	-1.8	-3.0	10.3	0.0	10.3
Ave All	10.7	5.2	15.9	-0.8	-1.6	-2.4	9.9	3.6	13.5
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	8.0	0.1	8.1	-2.1	-0.1	-2.2	5.9	0.0	5.9

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	11.5	12.1	23.6	0.0	-0.5	-0.5	11.5	11.6	23.1
1969	Wet	11.5	12.1	23.6	0.0	-0.8	-0.8	11.5	11.3	22.8
1995	Wet	11.5	14.4	25.9	0.0	-1.4	-1.4	11.5	13.0	24.5
1938	Wet	11.5	12.6	24.1	0.0	-1.6	-1.6	11.5	11.0	22.5
1978	Wet	11.5	13.6	25.1	0.0	-1.4	-1.4	11.5	12.3	23.8
1982	Wet	11.5	11.1	22.6	0.0	-1.3	-1.3	11.5	9.8	21.3
2011	Wet	11.5	12.9	24.4	0.0	-0.9	-0.9	11.5	12.0	23.5
1967	Wet	11.5	13.1	24.6	0.0	-1.6	-1.6	11.5	11.4	22.9
2006	Wet	11.5	12.0	23.5	0.0	-1.3	-1.3	11.5	10.6	22.1
1998	Wet	11.5	11.1	22.6	0.0	-1.8	-1.8	11.5	9.3	20.8
1986	Wet	11.5	11.0	22.5	0.0	-1.9	-1.9	11.5	9.1	20.6
1980	Wet	11.5	11.8	23.3	-0.1	-2.2	-2.3	11.4	9.6	21.0
1956	Wet	11.5	11.6	23.1	0.0	-2.3	-2.3	11.5	9.3	20.8
1952	Wet	11.5	11.4	22.9	0.0	-1.1	-1.1	11.5	10.3	21.8
2005	Wet	11.5	11.9	23.4	0.0	-1.0	-1.0	11.5	10.8	22.3
1997	Wet	11.5	6.6	18.1	0.0	-3.2	-3.2	11.5	3.4	14.9
1993	Wet	11.5	12.1	23.6	0.0	-3.1	-3.1	11.5	9.0	20.5
1941	Wet	11.5	12.0	23.5	0.0	-2.7	-2.7	11.5	9.2	20.7
1958	Wet	11.5	11.4	22.9	0.0	-1.9	-1.9	11.5	9.5	21.0
1922	Normal-Wet	11.5	11.5	23.0	0.0	-2.3	-2.3	11.5	9.2	20.7
1965	Normal-Wet	11.5	9.5	21.0	0.0	-3.4	-3.4	11.5	6.0	17.5
1942	Normal-Wet	11.5	10.9	22.4	0.0	-2.8	-2.8	11.5	8.1	19.6
1937	Normal-Wet	11.5	7.9	19.4	0.0	-2.7	-2.7	11.5	5.2	16.7
1996	Normal-Wet	11.5	8.3	19.8	0.0	-2.4	-2.4	11.5	5.9	17.4
1974	Normal-Wet	11.5	8.7	20.2	0.0	-2.7	-2.7	11.5	6.1	17.6
1945	Normal-Wet	11.5	9.1	20.6	0.0	-1.9	-1.9	11.5	7.1	18.6
1943	Normal-Wet	11.5	7.5	19.0	0.0	-2.9	-2.9	11.5	4.6	16.1
1984	Normal-Wet	11.5	6.8	18.3	0.0	-2.5	-2.5	11.4	4.3	15.8
1932	Normal-Wet	11.5	8.7	20.2	0.0	-2.2	-2.2	11.5	6.5	18.0
1973	Normal-Wet	11.5	7.6	19.1	0.0	-2.8	-2.8	11.5	4.8	16.3
2010	Normal-Wet	11.5	9.5	21.0	0.0	-2.4	-2.5	11.5	7.1	18.6
1927	Normal-Wet	11.5	7.8	19.3	0.0	-1.3	-1.3	11.5	6.4	17.9
1963	Normal-Wet	11.5	9.5	21.0	0.0	-2.5	-2.5	11.5	7.0	18.4
1962	Normal-Wet	11.5	7.9	19.4	0.0	-2.5	-2.5	11.5	5.4	16.9
1935	Normal-Wet	11.5	6.8	18.3	0.0	-2.6	-2.7	11.5	4.2	15.6
1940	Normal-Wet	11.5	5.3	16.8	0.0	-0.9	-0.9	11.5	4.4	15.9
1951	Normal-Wet	11.5	4.5	16.0	0.0	-3.9	-3.9	11.5	0.6	12.1
1936	Normal-Wet	11.5	7.4	18.9	0.0	-2.6	-2.6	11.5	4.8	16.3
1979	Normal-Wet	11.5	7.3	18.8	0.0	-2.8	-2.8	11.5	4.5	16.0
1975	Normal-Wet	11.5	7.6	19.1	0.0	-1.6	-1.6	11.5	6.0	17.5
2000	Normal-Wet	11.5	6.6	18.1	0.0	-1.9	-1.9	11.5	4.7	16.1
1946	Normal-Wet	11.5	5.0	16.5	0.0	-1.6	-1.6	11.5	3.4	14.9
1923	Normal-Wet	11.5	6.9	18.4	0.0	-2.2	-2.2	11.5	4.7	16.2
1999	Normal-Wet	11.5	5.6	17.1	0.0	-2.5	-2.5	11.5	3.1	14.6
2009	Normal-Wet	11.5	5.8	17.3	0.0	-4.3	-4.3	11.5	1.5	13.0
2003	Normal-Dry	11.5	5.6	17.1	0.0	-4.3	-4.3	11.5	1.3	12.8
1970	Normal-Dry	11.5	5.2	16.6	0.0	-3.4	-3.4	11.5	1.8	13.3
1925	Normal-Dry	11.5	3.6	15.1	0.0	-3.3	-3.3	11.5	0.3	11.8
1971	Normal-Dry	11.5	4.7	16.2	0.0	-3.9	-3.9	11.5	0.9	12.4
1957	Normal-Dry	11.5	3.9	15.4	0.0	-2.2	-2.2	11.5	1.7	13.2
1954	Normal-Dry	11.5	2.5	14.0	-0.6	-2.5	-3.1	10.9	0.0	10.9
1950	Normal-Dry	11.5	3.2	14.7	0.0	-3.2	-3.2	11.5	0.0	11.5
2016	Normal-Dry	11.5	1.8	13.3	-1.2	-1.8	-3.0	10.3	0.0	10.3
1966	Normal-Dry	11.5	2.7	14.2	0.0	-1.6	-1.6	11.5	1.1	12.6
1944	Normal-Dry	11.5	3.6	15.1	0.0	-2.3	-2.3	11.5	1.3	12.8
1953	Normal-Dry	11.5	3.0	14.5	-0.2	-3.0	-3.2	11.3	0.0	11.3
1948	Normal-Dry	11.5	0.8	12.3	-3.0	-0.8	-3.7	8.5	0.0	8.5
2002	Normal-Dry	11.5	2.3	13.8	-1.6	-2.3	-3.9	9.9	0.0	9.9
1949	Normal-Dry	11.5	2.5	14.0	-1.3	-2.5	-3.9	10.2	0.0	10.2
1926	Normal-Dry	11.5	1.7	13.2	-0.7	-1.7	-2.4	10.8	0.0	10.8
1955	Normal-Dry	11.5	2.5	14.0	-0.8	-2.5	-3.3	10.7	0.0	10.7
1928	Normal-Dry	11.5	3.0	14.5	0.0	-2.1	-2.1	11.5	0.9	12.4
2004	Normal-Dry	11.5	1.5	13.0	-1.8	-1.5	-3.3	9.7	0.0	9.7
1985	Normal-Dry	11.5	2.0	13.5	-0.1	-2.0	-2.1	11.4	0.0	11.4
1947	Normal-Dry	11.5	1.6	13.1	0.0	-1.5	-1.5	11.5	0.1	11.6
2008	Normal-Dry	11.5	1.0	12.5	-2.7	-1.0	-3.7	8.8	0.0	8.8
1933	Normal-Dry	11.5	3.3	14.8	-0.5	-3.3	-3.7	11.0	0.0	11.0
1981	Normal-Dry	11.5	2.1	13.6	0.0	-0.9	-0.9	11.5	1.2	12.7
2001	Normal-Dry	11.5	1.2	12.7	-2.1	-1.2	-3.3	9.4	0.0	9.4
1972	Normal-Dry	11.5	1.7	13.2	-1.4	-1.7	-3.1	10.1	0.0	10.1
1991	Normal-Dry	11.2	0.0	11.2	-3.6	0.0	-3.6	7.6	0.0	7.6
1959	Normal-Dry	11.5	0.1	11.6	-0.8	-0.1	-0.8	10.7	0.0	10.7
1989	Normal-Dry	10.6	0.0	10.6	-3.5	0.0	-3.5	7.0	0.0	7.0
1964	Normal-Dry	11.5	1.3	12.8	-1.7	-1.3	-3.0	9.8	0.0	9.8
1939	Normal-Dry	10.9	0.0	10.9	-2.6	0.0	-2.6	8.3	0.0	8.3
1929	Normal-Dry	9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
1988	Normal-Dry	9.6	0.0	9.6	-3.2	0.0	-3.2	6.4	0.0	6.4
1968	Normal-Dry	11.2	0.0	11.2	-2.0	0.0	-2.0	9.2	0.0	9.2
1930	Normal-Dry	9.5	0.0	9.5	-3.3	0.0	-3.3	6.3	0.0	6.3
2013	Normal-Dry	9.5	0.0	9.5	-3.2	0.0	-3.2	6.3	0.0	6.3
2012	Normal-Dry	10.4	0.0	10.4	-2.7	0.0	-2.7	7.8	0.0	7.8
1960	Normal-Dry	9.2	0.0	9.2	-3.2	0.0	-3.2	6.0	0.0	6.0
1994	Normal-Dry	9.6	0.0	9.6	0.6	0.0	0.6	10.2	0.0	10.2
1992	Normal-Dry	9.5	0.0	9.5	-3.1	0.0	-3.1	6.4	0.0	6.4
1987	Normal-Dry	7.8	0.0	7.8	-0.6	0.0	-0.6	7.2	0.0	7.2
1990	Normal-Dry	8.0	0.0	8.0	-2.9	0.0	-2.9	5.1	0.0	5.1
1934	Normal-Dry	8.2	0.0	8.2	-2.5	0.0	-2.5	5.6	0.0	5.6
2007	Normal-Dry	6.7	0.0	6.7	-2.0	0.0	-2.0	4.6	0.0	4.6
1961	Crit-High	6.5	0.0	6.5	-2.4	0.0	-2.4	4.2	0.0	4.2
1976	Crit-High	8.8	0.0	8.8	-1.9	0.0	-1.9	6.8	0.0	6.8
2014	Crit-High	4.8	0.0	4.8	-2.4	0.0	-2.4	2.4	0.0	2.4
1931	Crit-High	4.5	0.0	4.5	-2.4	0.0	-2.4	2.1	0.0	2.1
1924	Crit-High	6.4	0.0	6.4	-2.4	0.0	-2.4	4.0	0.0	4.0
1977	CL	2.7	0.0	2.7	-0.2	0.0	-0.2	2.5	0.0	2.5
2015	CL	2.0	0.0	2.0	-0.2	0.0	-0.2	1.8	0.0	1.8
	Wet Ave	11.5	11.8	23.3	0.0	-1.7	-1.7	11.5	10.1	21.6
	Normal-wet Ave	11.5	7.7	19.2	0.0	-2.5	-2.5	11.5	5.2	16.7
	Normal-dry Ave	11.5	2.4	13.8	-0.9	-2.0	-2.9	10.5	0.4	10.9
	Dry Ave	9.4	0.1	9.5	-2.3	-0.1	-2.4	7.0	0.0	7.0
	Critical-H Ave	6.2	0.0	6.2	-2.3	0.0	-2.3	3.9	0.0	3.9
	Critical-L Ave	2.3	0.0	2.3	-0.2	0.0	-0.2	2.1	0.0	2.1

Note: Values reported by contract year (March-February)

Fresno ID

Deliveries - Chronological Listing										Deliveries - Rank Ordered by Year Type - 1,000 acre-feet										
	Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries					Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
Year	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total	Year		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	0.0	45.2	45.2	0.0	-8.9	-8.9	0.0	36.4	36.4	1983		0.0	47.6	47.6	0.0	-1.8	-1.8	0.0	45.8	45.8
1923	0.0	27.3	27.3	0.0	-8.7	-8.7	0.0	18.6	18.6	1969		0.0	47.7	47.7	0.0	-3.2	-3.2	0.0	44.5	44.5
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1995		0.0	56.8	56.8	0.0	-5.4	-5.4	0.0	51.4	51.4
1925	0.0	14.3	14.3	0.0	-12.9	-12.9	0.0	1.3	1.3	1938		0.0	49.9	49.9	0.0	-6.4	-6.4	0.0	43.4	43.4
1926	0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0	1978		0.0	53.8	53.8	0.0	-5.4	-5.4	0.0	48.4	48.4
1927	0.0	30.7	30.7	0.0	-5.3	-5.3	0.0	25.4	25.4	1982		0.0	44.0	44.0	0.0	-5.2	-5.2	0.0	38.8	38.8
1928	0.0	12.0	12.0	0.0	-8.4	-8.4	0.0	3.6	3.6	2011		0.0	50.7	50.7	0.0	-3.4	-3.4	0.0	47.4	47.4
1929	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1967		0.0	51.6	51.6	0.0	-6.5	-6.5	0.0	45.2	45.2
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2006		0.0	47.3	47.3	0.0	-5.3	-5.3	0.0	42.0	42.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1998	Wet	0.0	43.8	43.8	0.0	-7.0	-7.0	0.0	36.8	36.8
1932	0.0	34.3	34.3	0.0	-8.7	-8.7	0.0	25.6	25.6	1986		0.0	43.4	43.4	0.0	-7.5	-7.5	0.0	35.9	35.9
1933	0.0	12.9	12.9	0.0	-12.9	-12.9	0.0	0.0	0.0	1980		0.0	46.7	46.7	0.0	-8.9	-8.9	0.0	37.9	37.9
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1956		0.0	45.7	45.7	0.0	-9.0	-9.0	0.0	36.7	36.7
1935	0.0	26.9	26.9	0.0	-10.4	-10.4	0.0	16.5	16.5	1952		0.0	45.0	45.0	0.0	-4.3	-4.3	0.0	40.7	40.7
1936	0.0	29.2	29.2	0.0	-10.2	-10.2	0.0	19.0	19.0	2005		0.0	46.8	46.8	0.0	-4.1	-4.1	0.0	42.7	42.7
1937	0.0	31.4	31.4	0.0	-10.8	-10.8	0.0	20.6	20.6	1997		0.0	26.2	26.2	0.0	-12.6	-12.6	0.0	13.6	13.6
1938	0.0	49.9	49.9	0.0	-6.4	-6.4	0.0	43.4	43.4	1993		0.0	47.8	47.8	0.0	-12.3	-12.3	0.0	35.5	35.5
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1941		0.0	47.3	47.3	0.0	-10.8	-10.8	0.0	36.5	36.5
1940	0.0	20.9	20.9	0.0	-3.5	-3.5	0.0	17.4	17.4	1958		0.0	44.9	44.9	0.0	-7.3	-7.3	0.0	37.6	37.6
1941	0.0	47.3	47.3	0.0	-10.8	-10.8	0.0	36.5	36.5	1922		0.0	45.2	45.2	0.0	-8.9	-8.9	0.0	36.4	36.4
1942	0.0	43.1	43.1	0.0	-11.2	-11.2	0.0	31.9	31.9	1965		0.0	37.3	37.3	0.0	-13.5	-13.5	0.0	23.9	23.9
1943	0.0	29.6	29.6	0.0	-11.4	-11.4	0.0	18.2	18.2	1942		0.0	43.1	43.1	0.0	-11.2	-11.2	0.0	31.9	31.9
1944	0.0	14.2	14.2	0.0	-9.0	-9.0	0.0	5.2	5.2	1937		0.0	31.4	31.4	0.0	-10.8	-10.8	0.0	20.6	20.6
1945	0.0	35.9	35.9	0.0	-7.6	-7.6	0.0	28.2	28.2	1996		0.0	32.9	32.9	0.0	-9.7	-9.7	0.0	23.2	23.2
1946	0.0	19.7	19.7	0.0	-6.2	-6.2	0.0	13.5	13.5	1974		0.0	34.5	34.5	0.0	-10.6	-10.6	0.0	23.9	23.9
1947	0.0	6.2	6.2	0.0	-5.9	-5.9	0.0	0.3	0.3	1945		0.0	35.9	35.9	0.0	-7.6	-7.6	0.0	28.2	28.2
1948	0.0	3.0	3.0	0.0	-3.0	-3.0	0.0	0.0	0.0	1943		0.0	29.6	29.6	0.0	-11.4	-11.4	0.0	18.2	18.2
1949	0.0	9.9	9.9	0.0	-9.9	-9.9	0.0	0.0	0.0	1984		0.0	26.9	26.9	0.0	-9.8	-9.8	0.0	17.1	17.1
1950	0.0	12.5	12.5	0.0	-12.5	-12.5	0.0	0.0	0.0	1932		0.0	34.3	34.3	0.0	-8.7	-8.7	0.0	25.6	25.6
1951	0.0	17.7	17.7	0.0	-15.5	-15.5	0.0	2.2	2.2	1973		0.0	30.0	30.0	0.0	-10.9	-10.9	0.0	19.1	19.1
1952	0.0	45.0	45.0	0.0	-4.3	-4.3	0.0	40.7	40.7	2010		0.0	37.5	37.5	0.0	-9.7	-9.7	0.0	27.8	27.8
1953	0.0	11.7	11.7	0.0	-11.7	-11.7	0.0	0.0	0.0	1927		0.0	30.7	30.7	0.0	-5.3	-5.3	0.0	25.4	25.4
1954	0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0	1963	Normal-Wet	0.0	37.4	37.4	0.0	-9.9	-9.9	0.0	27.4	27.4
1955	0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0	1962		0.0	31.2	31.2	0.0	-9.8	-9.8	0.0	21.3	21.3
1956	0.0	45.7	45.7	0.0	-9.0	-9.0	0.0	36.7	36.7	1935		0.0	26.9	26.9	0.0	-10.4	-10.4	0.0	16.5	16.5
1957	0.0	15.4	15.4	0.0	-8.6	-8.6	0.0	6.9	6.9	1940		0.0	20.9	20.9	0.0	-3.5	-3.5	0.0	17.4	17.4
1958	0.0	44.9	44.9	0.0	-7.3	-7.3	0.0	37.6	37.6	1951		0.0	17.7	17.7	0.0	-15.5	-15.5	0.0	2.2	2.2
1959	0.0	0.4	0.4	0.0	-0.4	-0.4	0.0	0.0	0.0	1936		0.0	29.2	29.2	0.0	-10.2	-10.2	0.0	19.0	19.0
1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1979		0.0	28.7	28.7	0.0	-10.9	-10.9	0.0	17.8	17.8
1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1975		0.0	30.0	30.0	0.0	-6.3	-6.3	0.0	23.7	23.7
1962	0.0	31.2	31.2	0.0	-9.8	-9.8	0.0	21.3	21.3	2000		0.0	26.0	26.0	0.0	-7.6	-7.6	0.0	18.4	18.4
1963	0.0	37.4	37.4	0.0	-9.9	-9.9	0.0	27.4	27.4	1946		0.0	19.7	19.7	0.0	-6.2	-6.2	0.0	13.5	13.5
1964	0.0	5.1	5.1	0.0	-5.1	-5.1	0.0	0.0	0.0	1923		0.0	27.3	27.3	0.0	-8.7	-8.7	0.0	18.6	18.6
1965	0.0	37.3	37.3	0.0	-13.5	-13.5	0.0	23.9	23.9	1999		0.0	22.3	22.3	0.0	-9.8	-9.8	0.0	12.4	12.4
1966	0.0	10.6	10.6	0.0	-6.2	-6.2	0.0	4.4	4.4	2009		0.0	22.8	22.8	0.0	-16.9	-16.9	0.0	5.8	5.8
1967	0.0	51.6	51.6	0.0	-6.5	-6.5	0.0	45.2	45.2	2003		0.0	22.1	22.1	0.0	-17.0	-17.0	0.0	5.0	5.0
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1970		0.0	20.3	20.3	0.0	-13.3	-13.3	0.0	7.0	7.0
1969	0.0	47.7	47.7	0.0	-3.2	-3.2	0.0	44.5	44.5	1925		0.0	14.3	14.3	0.0	-12.9	-12.9	0.0	1.3	1.3
1970	0.0	20.3	20.3	0.0	-13.3	-13.3	0.0	7.0	7.0	1971		0.0	18.7	18.7	0.0	-15.2	-15.2	0.0	3.4	3.4
1971	0.0	18.7	18.7	0.0	-15.2	-15.2	0.0	3.4	3.4	1957		0.0	15.4	15.4	0.0	-8.6	-8.6	0.0	6.9	6.9
1972	0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0	1954		0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1973	0.0	30.0	30.0	0.0	-10.9	-10.9	0.0	19.1	19.1	1950		0.0	12.5	12.5	0.0	-12.5	-12.5	0.0	0.0	0.0
1974	0.0	34.5	34.5	0.0	-10.6	-10.6	0.0	23.9	23.9	2016		0.0	7.0	7.0	0.0	-7.0	-7.0	0.0	0.0	0.0
1975	0.0	30.0	30.0	0.0	-6.3	-6.3	0.0	23.7	23.7	1966		0.0	10.6	10.6	0.0	-6.2	-6.2	0.0	4.4	4.4
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1944		0.0	14.2	14.2	0.0	-9.0	-9.0	0.0	5.2	5.2
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1953		0.0	11.7	11.7	0.0	-11.7	-11.7	0.0	0.0	0.0
1978	0.0	53.8	53.8	0.0	-5.4	-5.4	0.0	48.4	48.4	1948		0.0	3.0	3.0	0.0	-3.0	-3.0	0.0	0.0	0.0
1979	0.0	28.7	28.7	0.0	-10.9	-10.9	0.0	17.8	17.8	2002	Normal-Dry	0.0	8.9	8.9	0.0	-8.9	-8.9	0.0	0.0	0.0
1980	0.0	46.7	46.7	0.0	-8.9	-8.9	0.0	37.9	37.9	1949		0.0	9.9	9.9	0.0	-9.9	-9.9	0.0	0.0	0.0
1981	0.0	8.4	8.4	0.0	-3.5	-3.5	0.0	4.9	4.9	1926		0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1982	0.0	44.0	44.0	0.0	-5.2	-5.2	0.0	38.8	38.8	1955		0.0	10.0	10.0	0.0	-10.0	-10.0	0.0	0.0	0.0
1983	0.0	47.6	47.6	0.0	-1.8	-1.8	0.0	45.8	45.8	1928		0.0	12.0	12.0	0.0	-8.4	-8.4	0.0	3.6	3.6
1984	0.0	26.9	26.9	0.0	-9.8	-9.8	0.0	17.1	17.1	2004		0.0	6.0	6.0	0.0	-6.0	-6.0	0.0	0.0	0.0
1985	0.0	7.8	7.8	0.0	-7.8	-7.8	0.0	0.0	0.0	1985		0.0	7.8	7.8	0.0	-7.8	-7.8	0.0	0.0	0.0
1986	0.0	43.4	43.4	0.0	-7.5	-7.5	0.0	35.9	35.9	1947		0.0	6.2	6.2	0.0	-5.9	-5.9	0.0	0.3	0.3
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2008		0.0	3.9	3.9	0.0	-3.9	-3.9	0.0	0.0	0.0
1988	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1933		0.0	12.9	12.9	0.0	-12.9	-12.9	0.0	0.0	0.0
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1981		0.0	8.4	8.4	0.0	-3.5	-3.5	0.0	4.9	4.9
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2001		0.0	4.9	4.9	0.0	-4.9	-4.9	0.0	0.0	0.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1972		0.0	6.7	6.7	0.0	-6.7	-6.7	0.0	0.0	0.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1991		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	0.0	47.8	47.8	0.0	-12.3	-12.3	0.0	35.5	35.5	1959		0.0	0.4	0.4	0.0	-0.4	-0.4	0.0	0.0	0.0
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1989		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	56.8	56.8	0.0	-5.4	-5.4	0.0	51.4	51.4	1964		0.0	5.1	5.1	0.0	-5.1	-5.1	0.0	0.0	0.0
1996	0.0	32.9	32.9	0.0	-9.7	-9.7	0.0	23.2	23.2	1939		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	0.0	26.2	26.2	0.0	-12.6	-12.6	0.0	13.6	13.6	1929		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	0.0	43.8	43.8	0.0	-7.0	-7.0	0.0	36.8	36.8	1988		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	0.0	22.3	22.3	0.0	-9.8	-9.8	0.0	12.4	12.4	1968		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	0.0	26.0	26.0	0.0	-7.6	-7.6	0.0	18.4	18.4	1930		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	0.0	4.9	4.9	0.0	-4.9	-4.9	0.0	0.0	0.0	2013	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	0.0	8.9	8.9	0.0	-8.9	-8.9	0.0	0.0	0.0	2012		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	0.0	22.1	22.1	0.0	-17.0	-17.0	0.0	5.0	5.0	1960		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	0.0	6.0	6.0	0.0	-6.0	-6.0	0.0	0.0	0.0	1994		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	0.0	46.8	46.8	0.0	-4.1	-4.1	0.0	42.7	42.7	1992		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	0.0	47.3	47.3	0.0	-5.3	-5.3	0.0	42.0	42.0	1987		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1990		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.0	3.9	3.9	0.0	-3.9	-3.9	0.0	0.0	0.0	1934		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	0.0	22.8	22.8	0.0	-16.9	-16.9	0.0	5.8	5.8	2007		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	0.0	37.5	37.5	0.0	-9.7	-9.7	0.0	27.8	27.8	1961		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	50.7	50.7	0.0	-3.4	-3.4	0.0	47.4	47.4	1976		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2014	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1931		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1924		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1977		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	7.0	7.0	0.0	-7.0	-7.0	0.0	0.0	0.0	2015	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
										Wet Ave		0.0	46.7	46.7	0.0	-6.7	-6.7	0.0	40.0	40.0
Ave All	0.0	20.5	20.5	0.0	-6.4	-6.4	0.0	14.1	14.1	Normal-wet Ave		0.0	30.4	30.4	0.0	-9.8	-9.8	0.0	20.6	20.6
										Normal-dry Ave		0.0	9.4	9.4	0.0	-7.9	-7.9	0.0	1.5	1.5
										Dry Ave		0.0	0.3	0.3	0.0	-0.3	-0.3	0.0	0.0	0.0
Original Dry Year Classification (Driest 20% Years)										Critical-H Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dry Ave	0.0	0.2	0.2	0.0	-0.2	-0.2	0.0	0.0	0.0	Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

Garfield WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1923	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1924	1.9	0.0	1.9	-0.7	0.0	-0.7	1.2	0.0	1.2
1925	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1926	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
1927	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1928	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1929	2.8	0.0	2.8	-0.8	0.0	-0.8	2.0	0.0	2.0
1930	2.9	0.0	2.9	-1.0	0.0	-1.0	1.9	0.0	1.9
1931	1.4	0.0	1.4	-0.7	0.0	-0.7	0.6	0.0	0.6
1932	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1933	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1934	2.5	0.0	2.5	-0.8	0.0	-0.8	1.7	0.0	1.7
1935	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1936	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1937	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1938	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1939	3.3	0.0	3.3	-0.8	0.0	-0.8	2.5	0.0	2.5
1940	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1941	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1942	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1943	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1944	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1945	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1946	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1947	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1948	3.5	0.0	3.5	-0.9	0.0	-0.9	2.6	0.0	2.6
1949	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
1950	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1951	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1952	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1953	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
1954	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
1955	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
1956	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1957	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1958	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1959	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
1960	2.8	0.0	2.8	-1.0	0.0	-1.0	1.8	0.0	1.8
1961	2.0	0.0	2.0	-0.7	0.0	-0.7	1.3	0.0	1.3
1962	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1963	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1964	3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
1965	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1966	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1967	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1968	3.4	0.0	3.4	-0.6	0.0	-0.6	2.8	0.0	2.8
1969	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1970	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1971	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1972	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
1973	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1974	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1975	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1976	2.7	0.0	2.7	-0.6	0.0	-0.6	2.1	0.0	2.1
1977	0.8	0.0	0.8	-0.1	0.0	-0.1	0.8	0.0	0.8
1978	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1979	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1980	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1981	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1982	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1983	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1984	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1985	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1986	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1987	2.4	0.0	2.4	-0.2	0.0	-0.2	2.2	0.0	2.2
1988	2.9	0.0	2.9	-1.0	0.0	-1.0	2.0	0.0	2.0
1989	3.2	0.0	3.2	-1.1	0.0	-1.1	2.1	0.0	2.1
1990	2.4	0.0	2.4	-0.9	0.0	-0.9	1.5	0.0	1.5
1991	3.4	0.0	3.4	-1.1	0.0	-1.1	2.3	0.0	2.3
1992	2.9	0.0	2.9	-0.9	0.0	-0.9	1.9	0.0	1.9
1993	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1994	2.9	0.0	2.9	0.2	0.0	0.2	3.1	0.0	3.1
1995	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1996	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1997	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1998	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
1999	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2000	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2001	3.5	0.0	3.5	-0.6	0.0	-0.6	2.9	0.0	2.9
2002	3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
2003	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2004	3.5	0.0	3.5	-0.6	0.0	-0.6	2.9	0.0	2.9
2005	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2006	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2007	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
2008	3.5	0.0	3.5	-0.8	0.0	-0.8	2.7	0.0	2.7
2009	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2010	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2011	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
2012	3.2	0.0	3.2	-0.8	0.0	-0.8	2.4	0.0	2.4
2013	2.9	0.0	2.9	-1.0	0.0	-1.0	1.9	0.0	1.9
2014	1.4	0.0	1.4	-0.7	0.0	-0.7	0.7	0.0	0.7
2015	0.6	0.0	0.6	-0.1	0.0	-0.1	0.5	0.0	0.5
2016	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
Ave All	3.3	0.0	3.3	-0.2	0.0	-0.2	3.0	0.0	3.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	2.4	0.0	2.4	-0.7	0.0	-0.7	1.8	0.0	1.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year Type	Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
Wet	1983	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1969	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1995	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1938	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1978	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1982	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2011	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1967	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2006	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1998	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1986	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1980	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1956	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1952	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2005	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1997	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1993	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1941	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1958	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
Normal-Wet	1922	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1965	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1942	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1937	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1996	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1974	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1945	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1943	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1984	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1932	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1973	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2010	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1927	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1963	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1962	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1935	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1940	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1951	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1936	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1979	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1975	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2000	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1946	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1923	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1999	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2009	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
Normal-Dry	2003	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1970	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1925	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1971	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1957	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1954	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
	1950	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2016	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
	1966	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1944	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1953	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
	1948	3.5	0.0	3.5	-0.9	0.0	-0.9	2.6	0.0	2.6
	2002	3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
	1949	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
	1926	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
	1955	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
	1928	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2004	3.5	0.0	3.5	-0.6	0.0	-0.6	2.9	0.0	2.9
	1985	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	1947	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2008	3.5	0.0	3.5	-0.8	0.0	-0.8	2.7	0.0	2.7
	1933	3.5	0.0	3.5	-0.1	0.0	-0.1	3.4	0.0	3.4
	1981	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	2001	3.5	0.0	3.5	-0.6	0.0	-0.6	2.9	0.0	2.9
	1972	3.5	0.0	3.5	-0.4	0.0	-0.4	3.1	0.0	3.1
	1991	3.4	0.0	3.4	-1.1	0.0	-1.1	2.3	0.0	2.3
	1959	3.5	0.0	3.5	-0.2	0.0	-0.2	3.3	0.0	3.3
	1989	3.2	0.0	3.2	-1.1	0.0	-1.1	2.1	0.0	2.1
Normal-Dry	1964	3.5	0.0	3.5	-0.5	0.0	-0.5	3.0	0.0	3.0
	1939	3.3	0.0	3.3	-0.8	0.0	-0.8	2.5	0.0	2.5
	1929	2.8	0.0	2.8	-0.8	0.0	-0.8	2.0	0.0	2.0
	1988	2.9	0.0	2.9	-1.0	0.0	-1.0	2.0	0.0	2.0
	1968	3.4	0.0	3.4	-0.6	0.0	-0.6	2.8	0.0	2.8
	1930	2.9	0.0	2.9	-1.0	0.0	-1.0	1.9	0.0	1.9
	2013	2.9	0.0	2.9	-1.0	0.0	-1.0	1.9	0.0	1.9
	2012	3.2	0.0	3.2	-0.8	0.0	-0.8	2.4	0.0	2.4
	1960	2.8	0.0	2.8	-1.0	0.0	-1.0	1.8	0.0	1.8
	1994	2.9	0.0	2.9	0.2	0.0	0.2	3.1	0.0	3.1
	1992	2.9	0.0	2.9	-0.9	0.0	-0.9	1.9	0.0	1.9
	1987	2.4	0.0	2.4	-0.2	0.0	-0.2	2.2	0.0	2.2
	1990	2.4	0.0	2.4	-0.9	0.0	-0.9	1.5	0.0	1.5
	1934	2.5	0.0	2.5	-0.8	0.0	-0.8	1.7	0.0	1.7
	2007	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
Crit-High	1961	2.0	0.0	2.0	-0.7	0.0	-0.7	1.3	0.0	1.3
	1976	2.7	0.0	2.7	-0.6	0.0	-0.6	2.1	0.0	2.1
	2014	1.4	0.0	1.4	-0.7	0.0	-0.7	0.7	0.0	0.7
	1931	1.4	0.0	1.4	-0.7	0.0	-0.7	0.6	0.0	0.6
	1924	1.9	0.0	1.9	-0.7	0.0	-0.7	1.2	0.0	1.2
CL	1977	0.8	0.0	0.8	-0.1	0.0	-0.1	0.8	0.0	0.8
	2015	0.6	0.0	0.6	-0.1	0.0	-0.1	0.5	0.0	0.5
	Wet Ave	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	Normal-wet Ave	3.5	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
	Normal-dry Ave	3.5	0.0	3.5	-0.3	0.0	-0.3	3.2	0.0	3.2
	Dry Ave	2.9	0.0	2.9	-0.7	0.0	-0.7	2.1	0.0	2.1
	Critical-H Ave	1.9	0.0	1.9	-0.7	0.0	-0.7	1.2	0.0	1.2
	Critical-L Ave	0.7	0.0	0.7	-0.1	0.0	-0.1	0.6	0.0	0.6

Note: Values reported by contract year (March-February)

International WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1923	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1924	0.7	0.0	0.7	-0.2	0.0	-0.2	0.4	0.0	0.4
1925	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1926	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1927	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1928	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1929	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1930	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1931	0.5	0.0	0.5	-0.2	0.0	-0.2	0.2	0.0	0.2
1932	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1933	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1934	0.9	0.0	0.9	-0.3	0.0	-0.3	0.6	0.0	0.6
1935	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1936	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1937	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1938	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1939	1.1	0.0	1.1	-0.3	0.0	-0.3	0.9	0.0	0.9
1940	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1941	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1942	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1943	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1944	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1945	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1946	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1947	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1948	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1949	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1950	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1951	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1952	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1953	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1954	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1955	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1956	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1957	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1958	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1959	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1960	1.0	0.0	1.0	-0.3	0.0	-0.3	0.6	0.0	0.6
1961	0.7	0.0	0.7	-0.2	0.0	-0.2	0.4	0.0	0.4
1962	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1963	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1964	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1965	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1966	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1967	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1968	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1969	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1970	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1971	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1972	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1973	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1974	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1975	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1976	0.9	0.0	0.9	-0.2	0.0	-0.2	0.7	0.0	0.7
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1979	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1980	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1981	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1982	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1983	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1984	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1985	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1986	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1987	0.8	0.0	0.8	-0.1	0.0	-0.1	0.8	0.0	0.8
1988	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1989	1.1	0.0	1.1	-0.4	0.0	-0.4	0.7	0.0	0.7
1990	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1991	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1992	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1993	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1994	1.0	0.0	1.0	0.1	0.0	0.1	1.1	0.0	1.1
1995	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1996	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1997	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1998	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1999	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2000	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2001	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
2002	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
2003	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2004	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
2005	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2006	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2007	0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
2008	1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
2009	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2010	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2011	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2012	1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
2013	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2014	0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
2015	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
Ave All	1.1	0.0	1.1	-0.1	0.0	-0.1	1.0	0.0	1.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1969		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1995		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1938		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1978		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1982		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2011		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1967		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2006		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1998		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1986		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1980		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1956		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1952		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2005		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1997		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1993		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1941		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1958		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1922	Normal-Wet	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1965		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1942		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1937		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1996		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1974		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1945		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1943		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1984		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1932		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1973		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2010		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1927		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1963		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1962		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1935		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1940		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1951		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1936		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1979		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1975		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2000		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1946		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1923		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1999		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2009		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2003	Normal-Dry	1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1970		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1925		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1971		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1957		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1954		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1950		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2016		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1966		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1944		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1953		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1948		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
2002		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1949		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1926		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1955		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1928		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2004		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1985		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
1947		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2008		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
1933		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1981		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
2001		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1972		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1991		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1959		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
1989		1.1	0.0	1.1	-0.4	0.0	-0.4	0.7	0.0	0.7
1964	Normal-Dry	1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1939		1.1	0.0	1.1	-0.3	0.0	-0.3	0.9	0.0	0.9
1929		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1988		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1968		1.2	0.0	1.2	-0.2	0.0	-0.2	1.0	0.0	1.0
1930		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2013		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2012		1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1960		1.0	0.0	1.0	-0.3	0.0	-0.3	0.6	0.0	0.6
1994		1.0	0.0	1.0	0.1	0.0	0.1	1.1	0.0	1.1
1992		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1987		0.8	0.0	0.8	-0.1	0.0	-0.1	0.8	0.0	0.8
1990		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1934		0.9	0.0	0.9	-0.3	0.0	-0.3	0.6	0.0	0.6
2007		0.7	0.0	0.7	-0.2	0.0	-0.2	0.5	0.0	0.5
1961	Crit-High	0.7	0.0	0.7	-0.2	0.0	-0.2	0.4	0.0	0.4
1976		0.9	0.0	0.9	-0.2	0.0	-0.2	0.7	0.0	0.7
2014		0.5	0.0	0.5	-0.2	0.0	-0.2	0.3	0.0	0.3
1931		0.5	0.0	0.5	-0.2	0.0	-0.2	0.2	0.0	0.2
1924		0.7	0.0	0.7	-0.2	0.0	-0.2	0.4	0.0	0.4
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
Normal-wet Ave		1.2	0.0	1.2	0.0	0.0	0.0	1.2	0.0	1.2
Normal-dry Ave		1.2	0.0	1.2	-0.1	0.0	-0.1	1.1	0.0	1.1
Dry Ave		1.0	0.0	1.0	-0.2	0.0	-0.2	0.7	0.0	0.7
Critical-H Ave		0.6	0.0	0.6	-0.2	0.0	-0.2	0.4	0.0	0.4
Critical-L Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2

Ivanhoe ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.8	11.5
1923	7.7	2.9	10.6	0.0	-0.9	-0.9	7.7	2.0	9.7
1924	4.3	0.0	4.3	-1.6	0.0	-1.6	2.7	0.0	2.7
1925	7.7	1.5	9.2	0.0	-1.4	-1.4	7.7	0.1	7.8
1926	7.7	0.7	8.4	-0.5	-0.7	-1.2	7.2	0.0	7.2
1927	7.7	3.2	10.9	0.0	-0.6	-0.6	7.7	2.7	10.4
1928	7.7	1.3	9.0	0.0	-0.9	-0.9	7.7	0.4	8.1
1929	6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
1930	6.4	0.0	6.4	-2.2	0.0	-2.2	4.2	0.0	4.2
1931	3.0	0.0	3.0	-1.6	0.0	-1.6	1.4	0.0	1.4
1932	7.7	3.6	11.3	0.0	-0.9	-0.9	7.7	2.7	10.4
1933	7.7	1.4	9.1	-0.3	-1.4	-1.7	7.4	0.0	7.4
1934	5.5	0.0	5.5	-1.7	0.0	-1.7	3.8	0.0	3.8
1935	7.7	2.8	10.5	0.0	-1.1	-1.1	7.7	1.7	9.4
1936	7.7	3.1	10.8	0.0	-1.1	-1.1	7.7	2.0	9.7
1937	7.7	3.3	11.0	0.0	-1.1	-1.1	7.7	2.2	9.9
1938	7.7	5.3	13.0	0.0	-0.7	-0.7	7.7	4.6	12.3
1939	7.3	0.0	7.3	-1.7	0.0	-1.7	5.6	0.0	5.6
1940	7.7	2.2	9.9	0.0	-0.4	-0.4	7.7	1.8	9.5
1941	7.7	5.0	12.7	0.0	-1.1	-1.1	7.7	3.8	11.5
1942	7.7	4.5	12.2	0.0	-1.2	-1.2	7.7	3.4	11.1
1943	7.7	3.1	10.8	0.0	-1.2	-1.2	7.7	1.9	9.6
1944	7.7	1.5	9.2	0.0	-0.9	-0.9	7.7	0.5	8.2
1945	7.7	3.8	11.5	0.0	-0.8	-0.8	7.7	3.0	10.7
1946	7.7	2.1	9.8	0.0	-0.7	-0.6	7.7	1.4	9.1
1947	7.7	0.6	8.3	0.0	-0.6	-0.6	7.7	0.0	7.7
1948	7.7	0.3	8.0	-2.0	-0.3	-2.3	5.7	0.0	5.7
1949	7.7	1.0	8.7	-0.9	-1.0	-1.9	6.8	0.0	6.8
1950	7.7	1.3	9.0	0.0	-1.3	-1.3	7.7	0.0	7.7
1951	7.7	1.9	9.6	0.0	-1.6	-1.6	7.7	0.2	7.9
1952	7.7	4.7	12.4	0.0	-0.5	-0.5	7.7	4.3	12.0
1953	7.7	1.2	8.9	-0.1	-1.2	-1.4	7.6	0.0	7.6
1954	7.7	1.1	8.8	-0.4	-1.1	-1.5	7.3	0.0	7.3
1955	7.7	1.1	8.8	-0.5	-1.1	-1.6	7.2	0.0	7.2
1956	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1957	7.7	1.6	9.3	0.0	-0.9	-0.9	7.7	0.7	8.4
1958	7.7	4.7	12.4	0.0	-0.8	-0.8	7.7	4.0	11.7
1959	7.7	0.0	7.7	-0.5	0.0	-0.5	7.2	0.0	7.2
1960	6.2	0.0	6.2	-2.1	0.0	-2.1	4.0	0.0	4.0
1961	4.4	0.0	4.4	-1.6	0.0	-1.6	2.8	0.0	2.8
1962	7.7	3.3	11.0	0.0	-1.0	-1.0	7.7	2.2	9.9
1963	7.7	3.9	11.6	0.0	-1.0	-1.0	7.7	2.9	10.6
1964	7.7	0.5	8.2	-1.2	-0.5	-1.7	6.5	0.0	6.5
1965	7.7	3.9	11.6	0.0	-1.4	-1.4	7.7	2.5	10.2
1966	7.7	1.1	8.8	0.0	-0.7	-0.6	7.7	0.5	8.2
1967	7.7	5.4	13.1	0.0	-0.7	-0.7	7.7	4.8	12.5
1968	7.5	0.0	7.5	-1.4	0.0	-1.4	6.2	0.0	6.2
1969	7.7	5.0	12.7	0.0	-0.3	-0.3	7.7	4.7	12.4
1970	7.7	2.1	9.8	0.0	-1.4	-1.4	7.7	0.7	8.4
1971	7.7	2.0	9.7	0.0	-1.6	-1.6	7.7	0.4	8.1
1972	7.7	0.7	8.4	-1.0	-0.7	-1.7	6.7	0.0	6.7
1973	7.7	3.2	10.9	0.0	-1.1	-1.2	7.7	2.0	9.7
1974	7.7	3.6	11.3	0.0	-1.1	-1.1	7.7	2.5	10.2
1975	7.7	3.2	10.9	0.0	-0.7	-0.7	7.7	2.5	10.2
1976	5.9	0.0	5.9	-1.3	0.0	-1.3	4.6	0.0	4.6
1977	1.8	0.0	1.8	-0.1	0.0	-0.1	1.7	0.0	1.7
1978	7.7	5.7	13.4	0.0	-0.6	-0.6	7.7	5.1	12.8
1979	7.7	3.0	10.7	0.0	-1.1	-1.2	7.7	1.9	9.6
1980	7.7	4.9	12.6	0.0	-0.9	-1.0	7.7	4.0	11.7
1981	7.7	0.9	8.6	0.0	-0.4	-0.4	7.7	0.5	8.2
1982	7.7	4.6	12.3	0.0	-0.5	-0.6	7.7	4.1	11.8
1983	7.7	5.0	12.7	0.0	-0.2	-0.2	7.7	4.8	12.5
1984	7.7	2.8	10.5	0.0	-1.0	-1.1	7.7	1.8	9.5
1985	7.7	0.8	8.5	-0.1	-0.8	-0.9	7.6	0.0	7.6
1986	7.7	4.6	12.3	0.0	-0.8	-0.8	7.7	3.8	11.5
1987	5.2	0.0	5.2	-0.4	0.0	-0.4	4.8	0.0	4.8
1988	6.4	0.0	6.4	-2.1	0.0	-2.1	4.3	0.0	4.3
1989	7.1	0.0	7.1	-2.4	0.0	-2.4	4.7	0.0	4.7
1990	5.4	0.0	5.4	-2.0	0.0	-2.0	3.4	0.0	3.4
1991	7.5	0.0	7.5	-2.4	0.0	-2.4	5.1	0.0	5.1
1992	6.3	0.0	6.3	-2.1	0.0	-2.1	4.3	0.0	4.3
1993	7.7	5.0	12.7	0.0	-1.3	-1.3	7.7	3.7	11.4
1994	6.4	0.0	6.4	0.4	0.0	0.4	6.8	0.0	6.8
1995	7.7	6.0	13.7	0.0	-0.6	-0.6	7.7	5.4	13.1
1996	7.7	3.5	11.2	0.0	-1.0	-1.0	7.7	2.4	10.1
1997	7.7	2.8	10.5	0.0	-1.3	-1.3	7.7	1.4	9.1
1998	7.7	4.6	12.3	0.0	-0.7	-0.7	7.7	3.9	11.6
1999	7.7	2.3	10.0	0.0	-1.0	-1.0	7.7	1.3	9.0
2000	7.7	2.7	10.4	0.0	-0.8	-0.8	7.7	1.9	9.6
2001	7.7	0.5	8.2	-1.4	-0.5	-1.9	6.3	0.0	6.3
2002	7.7	0.9	8.6	-1.1	-0.9	-2.0	6.6	0.0	6.6
2003	7.7	2.3	10.0	0.0	-1.8	-1.8	7.7	0.5	8.2
2004	7.7	0.6	8.3	-1.2	-0.6	-1.8	6.5	0.0	6.5
2005	7.7	4.9	12.6	0.0	-0.4	-0.4	7.7	4.5	12.2
2006	7.7	5.0	12.7	0.0	-0.6	-0.6	7.7	4.4	12.1
2007	4.5	0.0	4.5	-1.4	0.0	-1.4	3.1	0.0	3.1
2008	7.7	0.4	8.1	-1.8	-0.4	-2.2	5.9	0.0	5.9
2009	7.7	2.4	10.1	0.0	-1.8	-1.8	7.7	0.6	8.3
2010	7.7	4.0	11.7	0.0	-1.0	-1.0	7.7	2.9	10.6
2011	7.7	5.3	13.0	0.0	-0.4	-0.4	7.7	5.0	12.7
2012	7.0	0.0	7.0	-1.8	0.0	-1.8	5.2	0.0	5.2
2013	6.4	0.0	6.4	-2.2	0.0	-2.2	4.2	0.0	4.2
2014	3.2	0.0	3.2	-1.6	0.0	-1.6	1.6	0.0	1.6
2015	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
2016	7.7	0.7	8.4	-0.8	-0.7	-1.5	6.9	0.0	6.9
Ave All	7.2	2.2	9.3	-0.5	-0.7	-1.2	6.6	1.5	8.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	5.4	0.0	5.4	-1.4	0.0	-1.5	3.9	0.0	3.9

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	7.7	5.0	12.7	0.0	-0.2	-0.2	7.7	4.8	12.5
1969		7.7	5.0	12.7	0.0	-0.3	-0.3	7.7	4.7	12.4
1995		7.7	6.0	13.7	0.0	-0.6	-0.6	7.7	5.4	13.1
1938		7.7	5.3	13.0	0.0	-0.7	-0.7	7.7	4.6	12.3
1978		7.7	5.7	13.4	0.0	-0.6	-0.6	7.7	5.1	12.8
1982		7.7	4.6	12.3	0.0	-0.5	-0.6	7.7	4.1	11.8
2011		7.7	5.3	13.0	0.0	-0.4	-0.4	7.7	5.0	12.7
1967		7.7	5.4	13.1	0.0	-0.7	-0.7	7.7	4.8	12.5
2006		7.7	5.0	12.7	0.0	-0.6	-0.6	7.7	4.4	12.1
1998		7.7	4.6	12.3	0.0	-0.7	-0.7	7.7	3.9	11.6
1986		7.7	4.6	12.3	0.0	-0.8	-0.8	7.7	3.8	11.5
1980		7.7	4.9	12.6	0.0	-0.9	-1.0	7.7	4.0	11.7
1956		7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.9	11.6
1952		7.7	4.7	12.4	0.0	-0.5	-0.5	7.7	4.3	12.0
2005		7.7	4.9	12.6	0.0	-0.4	-0.4	7.7	4.5	12.2
1997		7.7	2.8	10.5	0.0	-1.3	-1.3	7.7	1.4	9.1
1993		7.7	5.0	12.7	0.0	-1.3	-1.3	7.7	3.7	11.4
1941		7.7	5.0	12.7	0.0	-1.1	-1.1	7.7	3.8	11.5
1958		7.7	4.7	12.4	0.0	-0.8	-0.8	7.7	4.0	11.7
1922	Normal-Wet	7.7	4.8	12.5	0.0	-0.9	-0.9	7.7	3.8	11.5
1965		7.7	3.9	11.6	0.0	-1.4	-1.4	7.7	2.5	10.2
1942		7.7	4.5	12.2	0.0	-1.2	-1.2	7.7	3.4	11.1
1937		7.7	3.3	11.0	0.0	-1.1	-1.1	7.7	2.2	9.9
1996		7.7	3.5	11.2	0.0	-1.0	-1.0	7.7	2.4	10.1
1974		7.7	3.6	11.3	0.0	-1.1	-1.1	7.7	2.5	10.2
1945		7.7	3.8	11.5	0.0	-0.8	-0.8	7.7	3.0	10.7
1943		7.7	3.1	10.8	0.0	-1.2	-1.2	7.7	1.9	9.6
1984		7.7	2.8	10.5	0.0	-1.0	-1.1	7.7	1.8	9.5
1932		7.7	3.6	11.3	0.0	-0.9	-0.9	7.7	2.7	10.4
1973		7.7	3.2	10.9	0.0	-1.1	-1.2	7.7	2.0	9.7
2010		7.7	4.0	11.7	0.0	-1.0	-1.0	7.7	2.9	10.6
1927		7.7	3.2	10.9	0.0	-0.6	-0.6	7.7	2.7	10.4
1963		7.7	3.9	11.6	0.0	-1.0	-1.0	7.7	2.9	10.6
1962		7.7	3.3	11.0	0.0	-1.0	-1.0	7.7	2.2	9.9
1935		7.7	2.8	10.5	0.0	-1.1	-1.1	7.7	1.7	9.4
1940		7.7	2.2	9.9	0.0	-0.4	-0.4	7.7	1.8	9.5
1951		7.7	1.9	9.6	0.0	-1.6	-1.6	7.7	0.2	7.9
1936		7.7	3.1	10.8	0.0	-1.1	-1.1	7.7	2.0	9.7
1979		7.7	3.0	10.7	0.0	-1.1	-1.2	7.7	1.9	9.6
1975		7.7	3.2	10.9	0.0	-0.7	-0.7	7.7	2.5	10.2
2000		7.7	2.7	10.4	0.0	-0.8	-0.8	7.7	1.9	9.6
1946		7.7	2.1	9.8	0.0	-0.7	-0.6	7.7	1.4	9.1
1923		7.7	2.9	10.6	0.0	-0.9	-0.9	7.7	2.0	9.7
1999		7.7	2.3	10.0	0.0	-1.0	-1.0	7.7	1.3	9.0
2009		7.7	2.4	10.1	0.0	-1.8	-1.8	7.7	0.6	8.3
2003	Normal-Dry	7.7	2.3	10.0	0.0	-1.8	-1.8	7.7	0.5	8.2
1970		7.7	2.1	9.8	0.0	-1.4	-1.4	7.7	0.7	8.4
1925		7.7	1.5	9.2	0.0	-1.4	-1.4	7.7	0.1	7.8
1971		7.7	2.0	9.7	0.0	-1.6	-1.6	7.7	0.4	8.1
1957		7.7	1.6	9.3	0.0	-0.9	-0.9	7.7	0.7	8.4
1954		7.7	1.1	8.8	-0.4	-1.1	-1.5	7.3	0.0	7.3
1950		7.7	1.3	9.0	0.0	-1.3	-1.3	7.7	0.0	7.7
2016		7.7	0.7	8.4	-0.8	-0.7	-1.5	6.9	0.0	6.9
1966		7.7	1.1	8.8	0.0	-0.7	-0.6	7.7	0.5	8.2
1944		7.7	1.5	9.2	0.0	-0.9	-0.9	7.7	0.5	8.2
1953		7.7	1.2	8.9	-0.1	-1.2	-1.4	7.6	0.0	7.6
1948		7.7	0.3	8.0	-2.0	-0.3	-2.3	5.7	0.0	5.7
2002		7.7	0.9	8.6	-1.1	-0.9	-2.0	6.6	0.0	6.6
1949		7.7	1.0	8.7	-0.9	-1.0	-1.9	6.8	0.0	6.8
1926		7.7	0.7	8.4	-0.5	-0.7	-1.2	7.2	0.0	7.2
1955		7.7	1.1	8.8	-0.5	-1.1	-1.6	7.2	0.0	7.2
1928		7.7	1.3	9.0	0.0	-0.9	-0.9	7.7	0.4	8.1
2004		7.7	0.6	8.3	-1.2	-0.6	-1.8	6.5	0.0	6.5
1985		7.7	0.8	8.5	-0.1	-0.8	-0.9	7.6	0.0	7.6
1947		7.7	0.6	8.3	0.0	-0.6	-0.6	7.7	0.0	7.7
2008		7.7	0.4	8.1	-1.8	-0.4	-2.2	5.9	0.0	5.9
1933		7.7	1.4	9.1	-0.3	-1.4	-1.7	7.4	0.0	7.4
1981		7.7	0.9	8.6	0.0	-0.4	-0.4	7.7	0.5	8.2
2001		7.7	0.5	8.2	-1.4	-0.5	-1.9	6.3	0.0	6.3
1972		7.7	0.7	8.4	-1.0	-0.7	-1.7	6.7	0.0	6.7
1991		7.5	0.0	7.5	-2.4	0.0	-2.4	5.1	0.0	5.1
1959		7.7	0.0	7.7	-0.5	0.0	-0.5	7.2	0.0	7.2
1989		7.1	0.0	7.1	-2.4	0.0	-2.4	4.7	0.0	4.7
1964	Normal-Dry	7.7	0.5	8.2	-1.2	-0.5	-1.7	6.5	0.0	6.5
1939		7.3	0.0	7.3	-1.7	0.0	-1.7	5.6	0.0	5.6
1929		6.2	0.0	6.2	-1.8	0.0	-1.8	4.4	0.0	4.4
1988		6.4	0.0	6.4	-2.1	0.0	-2.1	4.3	0.0	4.3
1968		7.5	0.0	7.5	-1.4	0.0	-1.4	6.2	0.0	6.2
1930		6.4	0.0	6.4	-2.2	0.0	-2.2	4.2	0.0	4.2
2013		6.4	0.0	6.4	-2.2	0.0	-2.2	4.2	0.0	4.2
2012		7.0	0.0	7.0	-1.8	0.0	-1.8	5.2	0.0	5.2
1960		6.2	0.0	6.2	-2.1	0.0	-2.1	4.0	0.0	4.0
1994		6.4	0.0	6.4	0.4	0.0	0.4	6.8	0.0	6.8
1992		6.3	0.0	6.3	-2.1	0.0	-2.1	4.3	0.0	4.3
1987		5.2	0.0	5.2	-0.4	0.0	-0.4	4.8	0.0	4.8
1990		5.4	0.0	5.4	-2.0	0.0	-2.0	3.4	0.0	3.4
1934		5.5	0.0	5.5	-1.7	0.0	-1.7	3.8	0.0	3.8
2007		4.5	0.0	4.5	-1.4	0.0	-1.4	3.1	0.0	3.1
1961	Crit-High	4.4	0.0	4.4	-1.6	0.0	-1.6	2.8	0.0	2.8
1976		5.9	0.0	5.9	-1.3	0.0	-1.3	4.6	0.0	4.6
2014		3.2	0.0	3.2	-1.6	0.0	-1.6	1.6	0.0	1.6
1931		3.0	0.0	3.0	-1.6	0.0	-1.6	1.4	0.0	1.4
1924		4.3	0.0	4.3	-1.6	0.0	-1.6	2.7	0.0	2.7
1977	CL	1.8	0.0	1.8	-0.1	0.0	-0.1	1.7	0.0	1.7
2015		1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
	Wet Ave	7.7	4.9	12.6	0.0	-0.7	-0.7	7.7	4.2	11.9
	Normal-wet Ave	7.7	3.2	10.9	0.0	-1.0	-1.0	7.7	2.2	9.9
	Normal-dry Ave	7.7	1.0	8.7	-0.6	-0.8	-1.5	7.0	0.2	7.2
	Dry Ave	6.3	0.0	6.3	-1.6	0.0	-1.6	4.7	0.0	4.7
	Critical-H Ave	4.1	0.0	4.1	-1.5	0.0	-1.5	2.6	0.0	2.6
	Critical-L Ave	1.6	0.0	1.6	-0.1	0.0	-0.1	1.4	0.0	1.4

Note: Values reported by contract year (March-February)

Lewis Creek WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1923	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1924	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1925	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1926	1.4	0.0	1.4	-0.1	0.0	-0.1	1.4	0.0	1.4
1927	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1928	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1929	1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1930	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1931	0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1932	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1933	1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
1934	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1935	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1936	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1937	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1938	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1939	1.4	0.0	1.4	-0.3	0.0	-0.3	1.0	0.0	1.0
1940	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1941	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1942	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1943	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1944	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1945	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1946	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1947	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1948	1.5	0.0	1.5	-0.4	0.0	-0.4	1.1	0.0	1.1
1949	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1950	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1951	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1952	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1953	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1954	1.4	0.0	1.4	-0.1	0.0	-0.1	1.4	0.0	1.4
1955	1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1956	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1957	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1958	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1959	1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
1960	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1961	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1962	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1963	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1964	1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
1965	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1966	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1967	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1968	1.4	0.0	1.4	-0.3	0.0	-0.3	1.2	0.0	1.2
1969	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1970	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1971	1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1972	1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1973	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1974	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1975	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1976	1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1979	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1980	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1981	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1982	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1983	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1984	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1985	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1987	1.0	0.0	1.0	-0.1	0.0	-0.1	0.9	0.0	0.9
1988	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1989	1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1990	1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
1991	1.4	0.0	1.4	-0.5	0.0	-0.5	1.0	0.0	1.0
1992	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1993	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1994	1.2	0.0	1.2	0.1	0.0	0.1	1.3	0.0	1.3
1995	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1996	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1997	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1998	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2000	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2001	1.5	0.0	1.5	-0.3	0.0	-0.3	1.2	0.0	1.2
2002	1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
2003	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2004	1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
2005	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2006	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2007	0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
2008	1.5	0.0	1.5	-0.3	0.0	-0.3	1.1	0.0	1.1
2009	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2010	1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2011	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2012	1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
2013	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2014	0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
2015	0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
Ave All	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2

Original Dry Year Classification (Driest 20% Years)

Dry Ave	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1969		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1995		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1938		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1978		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1982		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2011		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1967		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2006		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1998		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1980		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1956		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1952		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2005		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1997		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1993		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1941		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1958		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1922	Normal-Wet	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1965		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1942		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1937		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1996		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1974		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1945		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1943		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1984		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1932		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1973		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2010		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1927		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1963		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1962		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1935		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1940		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1951		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1936		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1979		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1975		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2000		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1946		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1923		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2009		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2003	Normal-Dry	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1970		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1925		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1971		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1957		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1954		1.4	0.0	1.4	-0.1	0.0	-0.1	1.4	0.0	1.4
1950		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
2016		1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1966		1.4	0.0	1.4	0.0	0.0	0.0	1.5	0.0	1.5
1944		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
1953		1.5	0.0	1.5	0.0	0.0	0.0	1.4	0.0	1.4
1948		1.5	0.0	1.5	-0.4	0.0	-0.4	1.1	0.0	1.1
2002		1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
1949		1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1926		1.4	0.0	1.4	-0.1	0.0	-0.1	1.4	0.0	1.4
1955		1.5	0.0	1.5	-0.1	0.0	-0.1	1.3	0.0	1.3
1928		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2004		1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
1985		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2008		1.5	0.0	1.5	-0.3	0.0	-0.3	1.1	0.0	1.1
1933		1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
1981		1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	1.5
2001		1.5	0.0	1.5	-0.3	0.0	-0.3	1.2	0.0	1.2
1972		1.5	0.0	1.5	-0.2	0.0	-0.2	1.3	0.0	1.3
1991		1.4	0.0	1.4	-0.5	0.0	-0.5	1.0	0.0	1.0
1959		1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4
1989		1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1964	Normal-Dry	1.5	0.0	1.5	-0.2	0.0	-0.2	1.2	0.0	1.2
1939		1.4	0.0	1.4	-0.3	0.0	-0.3	1.0	0.0	1.0
1929		1.2	0.0	1.2	-0.3	0.0	-0.3	0.8	0.0	0.8
1988		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1968		1.4	0.0	1.4	-0.3	0.0	-0.3	1.2	0.0	1.2
1930		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2013		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2012		1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1960		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1994		1.2	0.0	1.2	0.1	0.0	0.1	1.3	0.0	1.3
1992		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1987		1.0	0.0	1.0	-0.1	0.0	-0.1	0.9	0.0	0.9
1990		1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
1934		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2007		0.8	0.0	0.8	-0.3	0.0	-0.3	0.6	0.0	0.6
1961	Crit-High	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1976		1.1	0.0	1.1	-0.2	0.0	-0.2	0.9	0.0	0.9
2014		0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1931		0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1924		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-dry Ave		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
Dry Ave		1.2	0.0	1.2	-0.3	0.0	-0.3	0.9	0.0	0.9
Critical-H Ave		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
Critical-L Ave		0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3

Note: Values reported by contract year (March-February)

Lindmore ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	33.0	13.3	46.3	0.0	-2.6	-2.6	33.0	10.7	43.7
1923	33.0	8.0	41.0	0.0	-2.5	-2.5	33.0	5.5	38.4
1924	18.2	0.0	18.2	-6.9	0.0	-6.9	11.4	0.0	11.4
1925	33.0	4.2	37.2	0.0	-3.8	-3.8	33.0	0.4	33.4
1926	33.0	2.0	34.9	-2.0	-2.0	-4.0	30.9	0.0	30.9
1927	33.0	9.0	42.0	0.0	-1.5	-1.5	33.0	7.5	40.5
1928	33.0	3.5	36.5	0.0	-2.5	-2.5	33.0	1.1	34.1
1929	26.6	0.0	26.6	-7.9	0.0	-7.9	18.6	0.0	18.6
1930	27.4	0.0	27.4	-9.3	0.0	-9.3	18.0	0.0	18.0
1931	12.9	0.0	12.9	-6.8	0.0	-6.8	6.1	0.0	6.1
1932	33.0	10.1	43.1	0.0	-2.5	-2.5	33.0	7.5	40.5
1933	33.0	3.8	36.8	-1.4	-3.8	-5.2	31.6	0.0	31.6
1934	23.5	0.0	23.5	-7.3	0.0	-7.3	16.2	0.0	16.2
1935	33.0	7.9	40.9	-0.1	-3.1	-3.2	32.9	4.8	37.7
1936	33.0	8.6	41.6	-0.1	-3.0	-3.0	32.9	5.6	38.5
1937	33.0	9.2	42.2	0.0	-3.2	-3.2	33.0	6.0	39.0
1938	33.0	14.6	47.6	0.0	-1.9	-1.9	33.0	12.7	45.7
1939	31.2	0.0	31.2	-7.4	0.0	-7.4	23.8	0.0	23.8
1940	33.0	6.1	39.1	0.0	-1.0	-1.0	33.0	5.1	38.1
1941	33.0	13.9	46.9	0.0	-3.2	-3.2	33.0	10.7	43.7
1942	33.0	12.6	45.6	0.0	-3.3	-3.3	33.0	9.4	42.4
1943	33.0	8.7	41.7	-0.1	-3.3	-3.4	32.9	5.3	38.3
1944	33.0	4.2	37.2	0.0	-2.6	-2.6	33.0	1.5	34.5
1945	33.0	10.5	43.5	0.0	-2.2	-2.2	33.0	8.3	41.3
1946	32.9	5.8	38.7	0.1	-1.8	-1.8	33.0	4.0	37.0
1947	33.0	1.8	34.8	0.0	-1.7	-1.7	33.0	0.1	33.1
1948	33.0	0.9	33.9	-8.5	-0.9	-9.4	24.5	0.0	24.5
1949	33.0	2.9	35.9	-3.9	-2.9	-6.8	29.1	0.0	29.1
1950	33.0	3.7	36.7	-0.1	-3.7	-3.8	32.9	0.0	32.9
1951	32.9	5.2	38.2	0.1	-4.5	-4.5	33.0	0.7	33.7
1952	33.0	13.2	46.2	0.0	-1.3	-1.3	33.0	11.9	44.9
1953	33.0	3.4	36.4	-0.6	-3.4	-4.0	32.4	0.0	32.4
1954	33.0	2.9	35.9	-1.8	-2.9	-4.7	31.2	0.0	31.2
1955	33.0	2.9	35.9	-2.3	-2.9	-5.3	30.7	0.0	30.7
1956	33.0	13.4	46.4	0.0	-2.6	-2.6	33.0	10.8	43.8
1957	33.0	4.5	37.5	0.0	-2.5	-2.5	33.0	2.0	35.0
1958	33.0	13.2	46.2	0.0	-2.1	-2.1	33.0	11.0	44.0
1959	33.0	0.1	33.1	-2.2	-0.1	-2.3	30.8	0.0	30.8
1960	26.4	0.0	26.4	-9.1	0.0	-9.1	17.3	0.0	17.3
1961	18.8	0.0	18.8	-6.8	0.0	-6.8	12.0	0.0	12.0
1962	33.0	9.1	42.1	0.0	-2.9	-2.9	33.0	6.3	39.3
1963	33.0	11.0	44.0	0.0	-2.9	-2.9	33.0	8.0	41.0
1964	33.0	1.5	34.5	-5.0	-1.5	-6.5	28.0	0.0	28.0
1965	33.0	11.0	43.9	0.0	-4.0	-3.9	33.0	7.0	40.0
1966	33.0	3.1	36.1	0.0	-1.8	-1.8	33.0	1.3	34.3
1967	33.0	15.1	48.1	0.0	-1.9	-1.9	33.0	13.2	46.2
1968	32.2	0.0	32.2	-5.8	0.0	-5.8	26.4	0.0	26.4
1969	33.0	14.0	47.0	0.0	-0.9	-0.9	33.0	13.1	46.1
1970	33.0	6.0	39.0	0.0	-3.9	-3.9	33.0	2.1	35.1
1971	33.0	5.5	38.5	0.0	-4.5	-4.5	33.0	1.0	34.0
1972	33.0	2.0	35.0	-4.1	-2.0	-6.0	28.9	0.0	28.9
1973	33.0	8.8	41.8	0.0	-3.2	-3.2	33.0	5.6	38.6
1974	33.0	10.1	43.1	0.0	-3.1	-3.1	33.0	7.0	40.0
1975	33.0	8.8	41.8	0.0	-1.8	-1.8	33.0	7.0	40.0
1976	25.2	0.0	25.2	-5.6	0.0	-5.6	19.6	0.0	19.6
1977	7.7	0.0	7.7	-0.6	0.0	-0.6	7.1	0.0	7.1
1978	33.0	15.8	48.8	0.0	-1.6	-1.6	33.0	14.2	47.2
1979	33.0	8.4	41.4	-0.1	-3.2	-3.3	32.9	5.2	38.1
1980	33.0	13.7	46.7	-0.2	-2.6	-2.8	32.8	11.1	44.0
1981	33.0	2.5	35.5	0.0	-1.0	-1.0	33.0	1.4	34.4
1982	33.0	12.9	45.9	0.0	-1.5	-1.6	33.0	11.4	44.3
1983	33.0	14.0	47.0	0.0	-0.5	-0.5	33.0	13.4	46.4
1984	33.0	7.9	40.9	-0.1	-2.9	-3.0	32.8	5.0	37.9
1985	33.0	2.3	35.3	-0.4	-2.3	-2.6	32.6	0.0	32.6
1986	33.0	12.7	45.7	0.0	-2.2	-2.2	33.0	10.5	43.5
1987	22.3	0.0	22.3	-1.7	0.0	-1.7	20.6	0.0	20.6
1988	27.6	0.0	27.6	-9.2	0.0	-9.2	18.5	0.0	18.5
1989	30.3	0.0	30.3	-10.1	0.0	-10.1	20.2	0.0	20.2
1990	23.0	0.0	23.0	-8.4	0.0	-8.4	14.5	0.0	14.5
1991	32.3	0.0	32.3	-10.4	0.0	-10.4	21.9	0.0	21.9
1992	27.2	0.0	27.2	-8.8	0.0	-8.8	18.4	0.0	18.4
1993	33.0	14.0	47.0	0.0	-3.6	-3.6	33.0	10.4	43.4
1994	27.5	0.0	27.5	1.8	0.0	1.8	29.3	0.0	29.3
1995	33.0	16.7	49.7	0.0	-1.6	-1.6	33.0	15.1	48.1
1996	33.0	9.6	42.6	0.0	-2.8	-2.8	33.0	6.8	39.8
1997	33.0	7.7	40.7	0.0	-3.7	-3.7	33.0	4.0	37.0
1998	33.0	12.8	45.8	0.0	-2.0	-2.1	33.0	10.8	43.7
1999	33.0	6.5	39.5	0.0	-2.9	-2.9	33.0	3.6	36.6
2000	33.0	7.6	40.6	0.0	-2.2	-2.2	33.0	5.4	38.4
2001	33.0	1.4	34.4	-5.9	-1.4	-7.3	27.1	0.0	27.1
2002	33.0	2.6	35.6	-4.7	-2.6	-7.3	28.3	0.0	28.3
2003	33.0	6.5	39.5	0.0	-5.0	-5.0	33.0	1.5	34.5
2004	33.0	1.7	34.7	-5.2	-1.7	-7.0	27.8	0.0	27.8
2005	33.0	13.7	46.7	0.0	-1.2	-1.2	33.0	12.5	45.5
2006	33.0	13.9	46.9	0.0	-1.6	-1.6	33.0	12.3	45.3
2007	19.1	0.0	19.1	-5.8	0.0	-5.8	13.3	0.0	13.3
2008	33.0	1.1	34.1	-7.9	-1.1	-9.0	25.1	0.0	25.1
2009	33.0	6.7	39.7	0.0	-5.0	-5.0	33.0	1.7	34.7
2010	33.0	11.0	44.0	0.0	-2.8	-2.8	33.0	8.2	41.2
2011	33.0	14.9	47.9	0.0	-1.0	-1.0	33.0	13.9	46.9
2012	29.9	0.0	29.9	-7.7	0.0	-7.7	22.2	0.0	22.2
2013	27.3	0.0	27.3	-9.3	0.0	-9.3	18.0	0.0	18.0
2014	13.7	0.0	13.7	-6.8	0.0	-6.8	6.9	0.0	6.9
2015	5.7	0.0	5.7	-0.6	0.0	-0.6	5.1	0.0	5.1
2016	33.0	2.1	35.1	-3.4	-2.1	-5.5	29.6	0.0	29.6
Ave All	30.7	6.0	36.7	-2.2	-1.9	-4.1	28.4	4.1	32.6
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	23.0	0.1	23.1	-6.1	-0.1	-6.2	16.9	0.0	16.9

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	33.0	14.0	47.0	0.0	-0.5	-0.5	33.0	13.4	46.4
1969		33.0	14.0	47.0	0.0	-0.9	-0.9	33.0	13.1	46.1
1995		33.0	16.7	49.7	0.0	-1.6	-1.6	33.0	15.1	48.1
1938		33.0	14.6	47.6	0.0	-1.9	-1.9	33.0	12.7	45.7
1978		33.0	15.8	48.8	0.0	-1.6	-1.6	33.0	14.2	47.2
1982		33.0	12.9	45.9	0.0	-1.5	-1.6	33.0	11.4	44.3
2011		33.0	14.9	47.9	0.0	-1.0	-1.0	33.0	13.9	46.9
1967		33.0	15.1	48.1	0.0	-1.9	-1.9	33.0	13.2	46.2
2006		33.0	13.9	46.9	0.0	-1.6	-1.6	33.0	12.3	45.3
1998		33.0	12.8	45.8	0.0	-2.0	-2.1	33.0	10.8	43.7
1986		33.0	12.7	45.7	0.0	-2.2	-2.2	33.0	10.5	43.5
1980		33.0	13.7	46.7	-0.2	-2.6	-2.8	32.8	11.1	44.0
1956		33.0	13.4	46.4	0.0	-2.6	-2.6	33.0	10.8	43.8
1952		33.0	13.2	46.2	0.0	-1.3	-1.3	33.0	11.9	44.9
2005		33.0	13.7	46.7	0.0	-1.2	-1.2	33.0	12.5	45.5
1997		33.0	7.7	40.7	0.0	-3.7	-3.7	33.0	4.0	37.0
1993		33.0	14.0	47.0	0.0	-3.6	-3.6	33.0	10.4	43.4
1941		33.0	13.9	46.9	0.0	-3.2	-3.2	33.0	10.7	43.7
1958		33.0	13.2	46.2	0.0	-2.1	-2.1	33.0	11.0	44.0
1922	Normal-Wet	33.0	13.3	46.3	0.0	-2.6	-2.6	33.0	10.7	43.7
1965		33.0	11.0	43.9	0.0	-4.0	-3.9	33.0	7.0	40.0
1942		33.0	12.6	45.6	0.0	-3.3	-3.3	33.0	9.4	42.4
1937		33.0	9.2	42.2	0.0	-3.2	-3.2	33.0	6.0	39.0
1996		33.0	9.6	42.6	0.0	-2.8	-2.8	33.0	6.8	39.8
1974		33.0	10.1	43.1	0.0	-3.1	-3.1	33.0	7.0	40.0
1945		33.0	10.5	43.5	0.0	-2.2	-2.2	33.0	8.3	41.3
1943		33.0	8.7	41.7	-0.1	-3.3	-3.4	32.9	5.3	38.3
1984		33.0	7.9	40.9	-0.1	-2.9	-3.0	32.8	5.0	37.9
1932		33.0	10.1	43.1	0.0	-2.5	-2.5	33.0	7.5	40.5
1973		33.0	8.8	41.8	0.0	-3.2	-3.2	33.0	5.6	38.6
2010		33.0	11.0	44.0	0.0	-2.8	-2.8	33.0	8.2	41.2
1927		33.0	9.0	42.0	0.0	-1.5	-1.5	33.0	7.5	40.5
1963		33.0	11.0	44.0	0.0	-2.9	-2.9	33.0	8.0	41.0
1962		33.0	9.1	42.1	0.0	-2.9	-2.9	33.0	6.3	39.3
1935		33.0	7.9	40.9	-0.1	-3.1	-3.2	32.9	4.8	37.7
1940		33.0	6.1	39.1	0.0	-1.0	-1.0	33.0	5.1	38.1
1951		32.9	5.2	38.2	0.1	-4.5	-4.5	33.0	0.7	33.7
1936		33.0	8.6	41.6	-0.1	-3.0	-3.0	32.9	5.6	38.5
1979		33.0	8.4	41.4	-0.1	-3.2	-3.3	32.9	5.2	38.1
1975		33.0	8.8	41.8	0.0	-1.8	-1.8	33.0	7.0	40.0
2000		33.0	7.6	40.6	0.0	-2.2	-2.2	33.0	5.4	38.4
1946		32.9	5.8	38.7	0.1	-1.8	-1.8	33.0	4.0	37.0
1923		33.0	8.0	41.0	0.0	-2.5	-2.5	33.0	5.5	38.4
1999		33.0	6.5	39.5	0.0	-2.9	-2.9	33.0	3.6	36.6
2009		33.0	6.7	39.7	0.0	-5.0	-5.0	33.0	1.7	34.7
2003	Normal-Dry	33.0	6.5	39.5	0.0	-5.0	-5.0	33.0	1.5	34.5
1970		33.0	6.0	39.0	0.0	-3.9	-3.9	33.0	2.1	35.1
1925		33.0	4.2	37.2	0.0	-3.8	-3.8	33.0	0.4	33.4
1971		33.0	5.5	38.5	0.0	-4.5	-4.5	33.0	1.0	34.0
1957		33.0	4.5	37.5	0.0	-2.5	-2.5	33.0	2.0	35.0
1954		33.0	2.9	35.9	-1.8	-2.9	-4.7	31.2	0.0	31.2
1950		33.0	3.7	36.7	-0.1	-3.7	-3.8	32.9	0.0	32.9
2016		33.0	2.1	35.1	-3.4	-2.1	-5.5	29.6	0.0	29.6
1966		33.0	3.1	36.1	0.0	-1.8	-1.8	33.0	1.3	34.3
1944		33.0	4.2	37.2	0.0	-2.6	-2.6	33.0	1.5	34.5
1953		33.0	3.4	36.4	-0.6	-3.4	-4.0	32.4	0.0	32.4
1948		33.0	0.9	33.9	-8.5	-0.9	-9.4	24.5	0.0	24.5
2002		33.0	2.6	35.6	-4.7	-2.6	-7.3	28.3	0.0	28.3
1949		33.0	2.9	35.9	-3.9	-2.9	-6.8	29.1	0.0	29.1
1926		33.0	2.0	34.9	-2.0	-2.0	-4.0	30.9	0.0	30.9
1955		33.0	2.9	35.9	-2.3	-2.9	-5.3	30.7	0.0	30.7
1928		33.0	3.5	36.5	0.0	-2.5	-2.5	33.0	1.1	34.1
2004		33.0	1.7	34.7	-5.2	-1.7	-7.0	27.8	0.0	27.8
1985		33.0	2.3	35.3	-0.4	-2.3	-2.6	32.6	0.0	32.6
1947		33.0	1.8	34.8	0.0	-1.7	-1.7	33.0	0.1	33.1
2008		33.0	1.1	34.1	-7.9	-1.1	-9.0	25.1	0.0	25.1
1933		33.0	3.8	36.8	-1.4	-3.8	-5.2	31.6	0.0	31.6
1981		33.0	2.5	35.5	0.0	-1.0	-1.0	33.0	1.4	34.4
2001		33.0	1.4	34.4	-5.9	-1.4	-7.3	27.1	0.0	27.1
1972		33.0	2.0	35.0	-4.1	-2.0	-6.0	28.9	0.0	28.9
1991		32.3	0.0	32.3	-10.4	0.0	-10.4	21.9	0.0	21.9
1959		33.0	0.1	33.1	-2.2	-0.1	-2.3	30.8	0.0	30.8
1989		30.3	0.0	30.3	-10.1	0.0	-10.1	20.2	0.0	20.2
1964	Normal-Dry	33.0	1.5	34.5	-5.0	-1.5	-6.5	28.0	0.0	28.0
1939		31.2	0.0	31.2	-7.4	0.0	-7.4	23.8	0.0	23.8
1929		26.6	0.0	26.6	-7.9	0.0	-7.9	18.6	0.0	18.6
1988		27.6	0.0	27.6	-9.2	0.0	-9.2	18.5	0.0	18.5
1968		32.2	0.0	32.2	-5.8	0.0	-5.8	26.4	0.0	26.4
1930		27.4	0.0	27.4	-9.3	0.0	-9.3	18.0	0.0	18.0
2013		27.3	0.0	27.3	-9.3	0.0	-9.3	18.0	0.0	18.0
2012		29.9	0.0	29.9	-7.7	0.0	-7.7	22.2	0.0	22.2
1960		26.4	0.0	26.4	-9.1	0.0	-9.1	17.3	0.0	17.3
1994		27.5	0.0	27.5	1.8	0.0	1.8	29.3	0.0	29.3
1992		27.2	0.0	27.2	-8.8	0.0	-8.8	18.4	0.0	18.4
1987		22.3	0.0	22.3	-1.7	0.0	-1.7	20.6	0.0	20.6
1990		23.0	0.0	23.0	-8.4	0.0	-8.4	14.5	0.0	14.5
1934		23.5	0.0	23.5	-7.3	0.0	-7.3	16.2	0.0	16.2
2007		19.1	0.0	19.1	-5.8	0.0	-5.8	13.3	0.0	13.3
1961	Crit-High	18.8	0.0	18.8	-6.8	0.0	-6.8	12.0	0.0	12.0
1976		25.2	0.0	25.2	-5.6	0.0	-5.6	19.6	0.0	19.6
2014		13.7	0.0	13.7	-6.8	0.0	-6.8	6.9	0.0	6.9
1931		12.9	0.0	12.9	-6.8	0.0	-6.8	6.1	0.0	6.1
1924		18.2	0.0	18.2	-6.9	0.0	-6.9	11.4	0.0	11.4
1977	CL	7.7	0.0	7.7	-0.6	0.0	-0.6	7.1	0.0	7.1
2015		5.7	0.0	5.7	-0.6	0.0	-0.6	5.1	0.0	5.1
Wet Ave		33.0	13.7	46.7	0.0	-2.0	-2.0	33.0	11.7	44.7
Normal-wet Ave		33.0	8.9	41.9	0.0	-2.9	-2.9	33.0	6.0	39.0
Normal-dry Ave		32.9	2.8	35.6	-2.7	-2.3	-5.0	30.2	0.4	30.6
Dry Ave		27.0	0.1	27.1	-6.7	-0.1	-6.8	20.2	0.0	20.2
Critical-H Ave		17.7	0.0	17.7	-6.6	0.0	-6.6	11.2	0.0	11.2
Critical-L Ave		6.7	0.0	6.7	-0.6	0.0	-0.6	6.1	0.0	6.1

Note: Values reported by contract year (March-February)

Lindsay-Strathmore ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1923	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1924	15.2	0.0	15.2	-5.7	0.0	-5.7	9.5	0.0	9.5
1925	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1926	27.5	0.0	27.5	-1.7	0.0	-1.7	25.8	0.0	25.8
1927	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1928	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1929	22.1	0.0	22.1	-6.6	0.0	-6.6	15.5	0.0	15.5
1930	22.8	0.0	22.8	-7.8	0.0	-7.8	15.0	0.0	15.0
1931	10.7	0.0	10.7	-5.7	0.0	-5.7	5.1	0.0	5.1
1932	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1933	27.5	0.0	27.5	-1.2	0.0	-1.2	26.3	0.0	26.3
1934	19.6	0.0	19.6	-6.1	0.0	-6.1	13.5	0.0	13.5
1935	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1936	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1937	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1938	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1939	26.0	0.0	26.0	-6.2	0.0	-6.2	19.9	0.0	19.9
1940	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1941	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1942	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1943	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1944	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1945	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1946	27.4	0.0	27.4	0.1	0.0	0.1	27.5	0.0	27.5
1947	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1948	27.5	0.0	27.5	-7.1	0.0	-7.1	20.4	0.0	20.4
1949	27.5	0.0	27.5	-3.2	0.0	-3.2	24.3	0.0	24.3
1950	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1951	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1952	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1953	27.5	0.0	27.5	-0.5	0.0	-0.5	27.0	0.0	27.0
1954	27.5	0.0	27.5	-1.5	0.0	-1.5	26.0	0.0	26.0
1955	27.5	0.0	27.5	-1.9	0.0	-1.9	25.6	0.0	25.6
1956	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1957	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1958	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1959	27.5	0.0	27.5	-1.8	0.0	-1.8	25.7	0.0	25.7
1960	22.0	0.0	22.0	-7.6	0.0	-7.6	14.4	0.0	14.4
1961	15.6	0.0	15.6	-5.7	0.0	-5.7	10.0	0.0	10.0
1962	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1963	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1964	27.5	0.0	27.5	-4.2	0.0	-4.2	23.3	0.0	23.3
1965	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1966	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1967	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1968	26.9	0.0	26.9	-4.8	0.0	-4.8	22.0	0.0	22.0
1969	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1970	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1971	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1972	27.5	0.0	27.5	-3.4	0.0	-3.4	24.1	0.0	24.1
1973	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1974	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1975	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1976	21.0	0.0	21.0	-4.7	0.0	-4.7	16.3	0.0	16.3
1977	6.4	0.0	6.4	-0.5	0.0	-0.5	5.9	0.0	5.9
1978	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1979	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1980	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1981	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1982	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1983	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1984	27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1985	27.5	0.0	27.5	-0.3	0.0	-0.3	27.2	0.0	27.2
1986	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1987	18.6	0.0	18.6	-1.4	0.0	-1.4	17.2	0.0	17.2
1988	23.0	0.0	23.0	-7.6	0.0	-7.6	15.4	0.0	15.4
1989	25.2	0.0	25.2	-8.4	0.0	-8.4	16.8	0.0	16.8
1990	19.2	0.0	19.2	-7.0	0.0	-7.0	12.1	0.0	12.1
1991	26.9	0.0	26.9	-8.7	0.0	-8.7	18.2	0.0	18.2
1992	22.7	0.0	22.7	-7.4	0.0	-7.4	15.3	0.0	15.3
1993	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1994	22.9	0.0	22.9	1.5	0.0	1.5	24.4	0.0	24.4
1995	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1996	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1997	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1998	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1999	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2000	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2001	27.5	0.0	27.5	-4.9	0.0	-4.9	22.6	0.0	22.6
2002	27.5	0.0	27.5	-3.9	0.0	-3.9	23.6	0.0	23.6
2003	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2004	27.5	0.0	27.5	-4.4	0.0	-4.4	23.1	0.0	23.1
2005	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2006	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2007	15.9	0.0	15.9	-4.8	0.0	-4.8	11.1	0.0	11.1
2008	27.5	0.0	27.5	-6.6	0.0	-6.6	20.9	0.0	20.9
2009	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2010	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2011	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2012	25.0	0.0	25.0	-6.4	0.0	-6.4	18.5	0.0	18.5
2013	22.8	0.0	22.8	-7.8	0.0	-7.8	15.0	0.0	15.0
2014	11.4	0.0	11.4	-5.7	0.0	-5.7	5.7	0.0	5.7
2015	4.8	0.0	4.8	-0.5	0.0	-0.5	4.3	0.0	4.3
2016	27.5	0.0	27.5	-2.8	0.0	-2.8	24.7	0.0	24.7
Ave All	25.5	0.0	25.5	-1.8	0.0	-1.8	23.7	0.0	23.7
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	19.2	0.0	19.2	-5.1	0.0	-5.1	14.1	0.0	14.1

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1969		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1995		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1938		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1978		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1982		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2011		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1967		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2006		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1998		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1986		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1980		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1956		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1952		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2005		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1997		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1993		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1941		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1958		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1922	Normal-Wet	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1965		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1942		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1937		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1996		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1974		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1945		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1943		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1984		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1932		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1973		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2010		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1927		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1963		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1962		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1935		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1940		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1951		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1936		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1979		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
1975		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2000		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1946		27.4	0.0	27.4	0.1	0.0	0.1	27.5	0.0	27.5
1923		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1999		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2009		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2003	Normal-Dry	27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1970		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1925		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1971		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1957		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1954		27.5	0.0	27.5	-1.5	0.0	-1.5	26.0	0.0	26.0
1950		27.5	0.0	27.5	-0.1	0.0	-0.1	27.4	0.0	27.4
2016		27.5	0.0	27.5	-2.8	0.0	-2.8	24.7	0.0	24.7
1966		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1944		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
1953		27.5	0.0	27.5	-0.5	0.0	-0.5	27.0	0.0	27.0
1948		27.5	0.0	27.5	-7.1	0.0	-7.1	20.4	0.0	20.4
2002		27.5	0.0	27.5	-3.9	0.0	-3.9	23.6	0.0	23.6
1949		27.5	0.0	27.5	-3.2	0.0	-3.2	24.3	0.0	24.3
1926		27.5	0.0	27.5	-1.7	0.0	-1.7	25.8	0.0	25.8
1955		27.5	0.0	27.5	-1.9	0.0	-1.9	25.6	0.0	25.6
1928		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2004		27.5	0.0	27.5	-4.4	0.0	-4.4	23.1	0.0	23.1
1985		27.5	0.0	27.5	-0.3	0.0	-0.3	27.2	0.0	27.2
1947		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2008		27.5	0.0	27.5	-6.6	0.0	-6.6	20.9	0.0	20.9
1933		27.5	0.0	27.5	-1.2	0.0	-1.2	26.3	0.0	26.3
1981		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
2001		27.5	0.0	27.5	-4.9	0.0	-4.9	22.6	0.0	22.6
1972		27.5	0.0	27.5	-3.4	0.0	-3.4	24.1	0.0	24.1
1991		26.9	0.0	26.9	-8.7	0.0	-8.7	18.2	0.0	18.2
1959		27.5	0.0	27.5	-1.8	0.0	-1.8	25.7	0.0	25.7
1989		25.2	0.0	25.2	-8.4	0.0	-8.4	16.8	0.0	16.8
1964	Normal-Dry	27.5	0.0	27.5	-4.2	0.0	-4.2	23.3	0.0	23.3
1939		26.0	0.0	26.0	-6.2	0.0	-6.2	19.9	0.0	19.9
1929		22.1	0.0	22.1	-6.6	0.0	-6.6	15.5	0.0	15.5
1988		23.0	0.0	23.0	-7.6	0.0	-7.6	15.4	0.0	15.4
1968		26.9	0.0	26.9	-4.8	0.0	-4.8	22.0	0.0	22.0
1930		22.8	0.0	22.8	-7.8	0.0	-7.8	15.0	0.0	15.0
2013		22.8	0.0	22.8	-7.8	0.0	-7.8	15.0	0.0	15.0
2012		25.0	0.0	25.0	-6.4	0.0	-6.4	18.5	0.0	18.5
1960		22.0	0.0	22.0	-7.6	0.0	-7.6	14.4	0.0	14.4
1994		22.9	0.0	22.9	1.5	0.0	1.5	24.4	0.0	24.4
1992		22.7	0.0	22.7	-7.4	0.0	-7.4	15.3	0.0	15.3
1987		18.6	0.0	18.6	-1.4	0.0	-1.4	17.2	0.0	17.2
1990		19.2	0.0	19.2	-7.0	0.0	-7.0	12.1	0.0	12.1
1934		19.6	0.0	19.6	-6.1	0.0	-6.1	13.5	0.0	13.5
2007		15.9	0.0	15.9	-4.8	0.0	-4.8	11.1	0.0	11.1
1961	Crit-High	15.6	0.0	15.6	-5.7	0.0	-5.7	10.0	0.0	10.0
1976		21.0	0.0	21.0	-4.7	0.0	-4.7	16.3	0.0	16.3
2014		11.4	0.0	11.4	-5.7	0.0	-5.7	5.7	0.0	5.7
1931		10.7	0.0	10.7	-5.7	0.0	-5.7	5.1	0.0	5.1
1924		15.2	0.0	15.2	-5.7	0.0	-5.7	9.5	0.0	9.5
1977	CL	6.4	0.0	6.4	-0.5	0.0	-0.5	5.9	0.0	5.9
2015		4.8	0.0	4.8	-0.5	0.0	-0.5	4.3	0.0	4.3
Wet Ave		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
Normal-wet Ave		27.5	0.0	27.5	0.0	0.0	0.0	27.5	0.0	27.5
Normal-dry Ave		27.4	0.0	27.4	-2.2	0.0	-2.2	25.2	0.0	25.2
Dry Ave		22.5	0.0	22.5	-5.6	0.0	-5.6	16.9	0.0	16.9
Critical-H Ave		14.8	0.0	14.8	-5.5	0.0	-5.5	9.3	0.0	9.3
Critical-L Ave		5.6	0.0	5.6	-0.5	0.0	-0.5	5.1	0.0	5.1

Lower Tule River ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	61.2	143.6	204.8	0.0	-28.2	-28.2	61.2	115.4	176.6
1923	61.2	86.5	147.7	0.0	-27.5	-27.5	61.2	59.0	120.2
1924	33.8	0.0	33.8	-12.7	0.0	-12.7	21.1	0.0	21.1
1925	61.2	45.3	106.5	0.0	-41.1	-41.1	61.2	4.2	65.4
1926	61.2	21.1	82.3	-3.8	-21.1	-24.9	57.4	0.0	57.4
1927	61.2	97.3	158.5	0.0	-16.7	-16.7	61.2	80.6	141.8
1928	61.2	38.0	99.2	0.0	-26.6	-26.6	61.2	11.4	72.6
1929	49.3	0.0	49.3	-14.7	0.0	-14.7	34.6	0.0	34.6
1930	50.8	0.0	50.8	-17.3	0.0	-17.3	33.5	0.0	33.5
1931	23.9	0.0	23.9	-12.6	0.0	-12.6	11.3	0.0	11.3
1932	61.2	108.8	170.0	0.0	-27.5	-27.5	61.2	81.3	142.5
1933	61.2	40.8	102.0	-2.6	-40.8	-43.4	58.6	0.0	58.6
1934	43.5	0.0	43.5	-13.5	0.0	-13.5	30.0	0.0	30.0
1935	61.2	85.4	146.6	-0.3	-33.1	-33.4	60.9	52.3	113.2
1936	61.2	92.7	153.9	-0.1	-32.4	-32.5	61.1	60.3	121.4
1937	61.2	99.6	160.8	0.0	-34.3	-34.3	61.2	65.3	126.5
1938	61.2	158.3	219.5	0.0	-20.5	-20.5	61.2	137.9	199.1
1939	57.9	0.0	57.9	-13.7	0.0	-13.7	44.2	0.0	44.2
1940	61.2	66.2	127.4	0.0	-11.1	-11.1	61.2	55.1	116.3
1941	61.2	150.2	211.4	0.0	-34.4	-34.4	61.2	115.8	177.0
1942	61.2	136.7	197.9	0.0	-35.4	-35.4	61.2	101.4	162.5
1943	61.2	93.8	155.0	-0.1	-36.1	-36.2	61.1	57.6	118.7
1944	61.2	45.0	106.2	0.0	-28.5	-28.5	61.2	16.5	77.7
1945	61.2	113.8	175.0	0.0	-24.2	-24.2	61.2	89.5	150.7
1946	61.1	62.6	123.7	0.1	-19.8	-19.6	61.2	42.8	104.0
1947	61.2	19.5	80.7	0.0	-18.7	-18.7	61.2	0.8	62.0
1948	61.2	9.6	70.8	-15.8	-9.6	-25.4	45.4	0.0	45.4
1949	61.2	31.5	92.7	-7.2	-31.5	-38.6	54.0	0.0	54.0
1950	61.2	39.5	100.7	-0.2	-39.5	-39.8	61.0	0.0	61.0
1951	61.1	56.3	117.4	0.1	-49.2	-49.1	61.2	7.1	68.3
1952	61.2	142.8	204.0	0.0	-13.8	-13.8	61.2	129.1	190.3
1953	61.2	37.1	98.3	-1.0	-37.1	-38.1	60.2	0.0	60.2
1954	61.2	31.7	92.9	-3.3	-31.7	-34.9	57.9	0.0	57.9
1955	61.2	31.8	93.0	-4.3	-31.8	-36.1	56.9	0.0	56.9
1956	61.2	145.0	206.2	0.0	-28.6	-28.6	61.2	116.4	177.6
1957	61.2	49.0	110.2	0.0	-27.2	-27.2	61.2	21.8	83.0
1958	61.2	142.4	203.6	0.0	-23.2	-23.2	61.2	119.2	180.4
1959	61.2	1.2	62.4	-4.0	-1.2	-5.2	57.2	0.0	57.2
1960	49.0	0.0	49.0	-16.9	0.0	-16.9	32.1	0.0	32.1
1961	34.8	0.0	34.8	-12.6	0.0	-12.6	22.2	0.0	22.2
1962	61.2	98.9	160.1	0.0	-31.1	-31.1	61.2	67.7	128.9
1963	61.2	118.6	179.8	0.0	-31.5	-31.5	61.2	87.1	148.3
1964	61.2	16.1	77.3	-9.3	-16.1	-25.4	51.9	0.0	51.9
1965	61.2	118.5	179.7	0.0	-42.8	-42.7	61.2	75.8	137.0
1966	61.2	33.8	94.9	0.0	-19.7	-19.6	61.2	14.1	75.3
1967	61.2	163.8	225.0	0.0	-20.5	-20.6	61.2	143.3	204.4
1968	59.8	0.0	59.8	-10.8	0.0	-10.8	49.0	0.0	49.0
1969	61.2	151.4	212.6	0.0	-10.2	-10.2	61.2	141.2	202.4
1970	61.2	64.6	125.7	0.0	-42.3	-42.3	61.2	22.3	83.5
1971	61.2	59.3	120.5	0.0	-48.4	-48.4	61.2	10.9	72.1
1972	61.2	21.1	82.3	-7.6	-21.1	-28.7	53.6	0.0	53.6
1973	61.2	95.4	156.6	-0.1	-34.6	-34.7	61.1	60.7	121.9
1974	61.2	109.5	170.7	0.0	-33.6	-33.6	61.2	75.9	137.1
1975	61.2	95.3	156.5	0.0	-20.0	-20.0	61.2	75.3	136.5
1976	46.7	0.0	46.7	-10.4	0.0	-10.4	36.3	0.0	36.3
1977	14.3	0.0	14.3	-1.1	0.0	-1.1	13.2	0.0	13.2
1978	61.2	170.7	231.9	0.0	-17.1	-17.2	61.2	153.6	214.7
1979	61.2	91.2	152.4	-0.2	-34.6	-34.8	61.0	56.6	117.6
1980	61.2	148.3	209.5	-0.3	-28.2	-28.5	60.9	120.2	181.1
1981	61.2	26.5	87.7	0.0	-11.1	-11.1	61.2	15.4	76.6
1982	61.2	139.6	200.8	-0.1	-16.4	-16.5	61.1	123.1	184.3
1983	61.2	151.2	212.4	0.0	-5.8	-5.8	61.2	145.4	206.6
1984	61.2	85.3	146.5	-0.3	-31.0	-31.2	60.9	54.4	115.3
1985	61.2	24.6	85.8	-0.7	-24.6	-25.2	60.5	0.0	60.5
1986	61.2	137.9	199.1	0.0	-23.9	-23.9	61.2	114.0	175.2
1987	41.4	0.0	41.4	-3.1	0.0	-3.1	38.3	0.0	38.3
1988	51.2	0.0	51.2	-17.0	0.0	-17.0	34.2	0.0	34.2
1989	56.2	0.0	56.2	-18.8	0.0	-18.8	37.4	0.0	37.4
1990	42.6	0.0	42.6	-15.7	0.0	-15.7	27.0	0.0	27.0
1991	59.8	0.0	59.8	-19.3	0.0	-19.3	40.6	0.0	40.6
1992	50.4	0.0	50.4	-16.4	0.0	-16.4	34.1	0.0	34.1
1993	61.2	151.6	212.8	0.0	-39.0	-39.0	61.2	112.6	173.8
1994	51.0	0.0	51.0	3.3	0.0	3.3	54.3	0.0	54.3
1995	61.2	180.3	241.5	0.0	-17.1	-17.1	61.2	163.2	224.4
1996	61.2	104.3	165.5	0.0	-30.6	-30.6	61.2	73.7	134.9
1997	61.2	83.1	144.3	0.0	-40.0	-40.0	61.2	43.2	104.4
1998	61.2	138.9	200.1	-0.1	-22.1	-22.2	61.1	116.8	177.9
1999	61.2	70.6	131.8	0.0	-31.2	-31.2	61.2	39.4	100.6
2000	61.2	82.4	143.6	0.0	-24.0	-24.1	61.2	58.3	119.5
2001	61.2	15.5	76.7	-11.0	-15.5	-26.5	50.2	0.0	50.2
2002	61.2	28.3	89.5	-8.6	-28.3	-37.0	52.6	0.0	52.6
2003	61.2	70.0	131.2	0.0	-54.1	-54.1	61.2	15.9	77.1
2004	61.2	18.9	80.1	-9.7	-18.9	-28.6	51.5	0.0	51.5
2005	61.2	148.6	209.8	0.0	-13.0	-13.0	61.2	135.6	196.8
2006	61.2	150.1	211.3	0.0	-16.8	-16.8	61.2	133.3	194.5
2007	35.5	0.0	35.5	-10.8	0.0	-10.8	24.7	0.0	24.7
2008	61.2	12.3	73.5	-14.6	-12.3	-26.9	46.6	0.0	46.6
2009	61.2	72.2	133.4	0.0	-53.7	-53.7	61.2	18.5	79.7
2010	61.2	119.0	180.2	0.0	-30.7	-30.7	61.2	88.3	149.5
2011	61.2	161.0	222.2	0.0	-10.7	-10.7	61.2	150.3	211.5
2012	55.5	0.0	55.5	-14.3	0.0	-14.3	41.3	0.0	41.3
2013	50.7	0.0	50.7	-17.3	0.0	-17.3	33.4	0.0	33.4
2014	25.3	0.0	25.3	-12.6	0.0	-12.6	12.8	0.0	12.8
2015	10.6	0.0	10.6	-1.1	0.0	-1.1	9.5	0.0	9.5
2016	61.2	22.4	83.6	-6.3	-22.4	-28.7	54.9	0.0	54.9
Ave All	56.8	65.0	121.8	-4.1	-20.3	-24.4	52.7	44.7	97.4
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	42.7	0.7	43.4	-11.4	-0.7	-12.1	31.3	0.0	31.3

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	61.2	151.2	212.4	0.0	-5.8	-5.8	61.2	145.4	206.6
1969		61.2	151.4	212.6	0.0	-10.2	-10.2	61.2	141.2	202.4
1995		61.2	180.3	241.5	0.0	-17.1	-17.1	61.2	163.2	224.4
1938		61.2	158.3	219.5	0.0	-20.5	-20.5	61.2	137.9	199.1
1978		61.2	170.7	231.9	0.0	-17.1	-17.2	61.2	153.6	214.7
1982		61.2	139.6	200.8	-0.1	-16.4	-16.5	61.1	123.1	184.3
2011		61.2	161.0	222.2	0.0	-10.7	-10.7	61.2	150.3	211.5
1967		61.2	163.8	225.0	0.0	-20.5	-20.6	61.2	143.3	204.4
2006		61.2	150.1	211.3	0.0	-16.8	-16.8	61.2	133.3	194.5
1998		61.2	138.9	200.1	-0.1	-22.1	-22.2	61.1	116.8	177.9
1986		61.2	137.9	199.1	0.0	-23.9	-23.9	61.2	114.0	175.2
1980		61.2	148.3	209.5	-0.3	-28.2	-28.5	60.9	120.2	181.1
1956		61.2	145.0	206.2	0.0	-28.6	-28.6	61.2	116.4	177.6
1952		61.2	142.8	204.0	0.0	-13.8	-13.8	61.2	129.1	190.3
2005		61.2	148.6	209.8	0.0	-13.0	-13.0	61.2	135.6	196.8
1997		61.2	83.1	144.3	0.0	-40.0	-40.0	61.2	43.2	104.4
1993		61.2	151.6	212.8	0.0	-39.0	-39.0	61.2	112.6	173.8
1941		61.2	150.2	211.4	0.0	-34.4	-34.4	61.2	115.8	177.0
1958		61.2	142.4	203.6	0.0	-23.2	-23.2	61.2	119.2	180.4
1922	Normal-Wet	61.2	143.6	204.8	0.0	-28.2	-28.2	61.2	115.4	176.6
1965		61.2	118.5	179.7	0.0	-42.8	-42.7	61.2	75.8	137.0
1942		61.2	136.7	197.9	0.0	-35.4	-35.4	61.2	101.4	162.5
1937		61.2	99.6	160.8	0.0	-34.3	-34.3	61.2	65.3	126.5
1996		61.2	104.3	165.5	0.0	-30.6	-30.6	61.2	73.7	134.9
1974		61.2	109.5	170.7	0.0	-33.6	-33.6	61.2	75.9	137.1
1945		61.2	113.8	175.0	0.0	-24.2	-24.2	61.2	89.5	150.7
1943		61.2	93.8	155.0	-0.1	-36.1	-36.2	61.1	57.6	118.7
1984		61.2	85.3	146.5	-0.3	-31.0	-31.2	60.9	54.4	115.3
1932		61.2	108.8	170.0	0.0	-27.5	-27.5	61.2	81.3	142.5
1973		61.2	95.4	156.6	-0.1	-34.6	-34.7	61.1	60.7	121.9
2010		61.2	119.0	180.2	0.0	-30.7	-30.7	61.2	88.3	149.5
1927		61.2	97.3	158.5	0.0	-16.7	-16.7	61.2	80.6	141.8
1963		61.2	118.6	179.8	0.0	-31.5	-31.5	61.2	87.1	148.3
1962		61.2	98.9	160.1	0.0	-31.1	-31.1	61.2	67.7	128.9
1935		61.2	85.4	146.6	-0.3	-33.1	-33.4	60.9	52.3	113.2
1940		61.2	66.2	127.4	0.0	-11.1	-11.1	61.2	55.1	116.3
1951		61.1	56.3	117.4	0.1	-49.2	-49.1	61.2	7.1	68.3
1936		61.2	92.7	153.9	-0.1	-32.4	-32.5	61.1	60.3	121.4
1979		61.2	91.2	152.4	-0.2	-34.6	-34.8	61.0	56.6	117.6
1975		61.2	95.3	156.5	0.0	-20.0	-20.0	61.2	75.3	136.5
2000		61.2	82.4	143.6	0.0	-24.0	-24.1	61.2	58.3	119.5
1946		61.1	62.6	123.7	0.1	-19.8	-19.6	61.2	42.8	104.0
1923		61.2	86.5	147.7	0.0	-27.5	-27.5	61.2	59.0	120.2
1999		61.2	70.6	131.8	0.0	-31.2	-31.2	61.2	39.4	100.6
2009		61.2	72.2	133.4	0.0	-53.7	-53.7	61.2	18.5	79.7
2003	Normal-Dry	61.2	70.0	131.2	0.0	-54.1	-54.1	61.2	15.9	77.1
1970		61.2	64.6	125.7	0.0	-42.3	-42.3	61.2	22.3	83.5
1925		61.2	45.3	106.5	0.0	-41.1	-41.1	61.2	4.2	65.4
1971		61.2	59.3	120.5	0.0	-48.4	-48.4	61.2	10.9	72.1
1957		61.2	49.0	110.2	0.0	-27.2	-27.2	61.2	21.8	83.0
1954		61.2	31.7	92.9	-3.3	-31.7	-34.9	57.9	0.0	57.9
1950		61.2	39.5	100.7	-0.2	-39.5	-39.8	61.0	0.0	61.0
2016		61.2	22.4	83.6	-6.3	-22.4	-28.7	54.9	0.0	54.9
1966		61.2	33.8	94.9	0.0	-19.7	-19.6	61.2	14.1	75.3
1944		61.2	45.0	106.2	0.0	-28.5	-28.5	61.2	16.5	77.7
1953		61.2	37.1	98.3	-1.0	-37.1	-38.1	60.2	0.0	60.2
1948		61.2	9.6	70.8	-15.8	-9.6	-25.4	45.4	0.0	45.4
2002		61.2	28.3	89.5	-8.6	-28.3	-37.0	52.6	0.0	52.6
1949		61.2	31.5	92.7	-7.2	-31.5	-38.6	54.0	0.0	54.0
1926		61.2	21.1	82.3	-3.8	-21.1	-24.9	57.4	0.0	57.4
1955		61.2	31.8	93.0	-4.3	-31.8	-36.1	56.9	0.0	56.9
1928		61.2	38.0	99.2	0.0	-26.6	-26.6	61.2	11.4	72.6
2004		61.2	18.9	80.1	-9.7	-18.9	-28.6	51.5	0.0	51.5
1985		61.2	24.6	85.8	-0.7	-24.6	-25.2	60.5	0.0	60.5
1947		61.2	19.5	80.7	0.0	-18.7	-18.7	61.2	0.8	62.0
2008		61.2	12.3	73.5	-14.6	-12.3	-26.9	46.6	0.0	46.6
1933		61.2	40.8	102.0	-2.6	-40.8	-43.4	58.6	0.0	58.6
1981		61.2	26.5	87.7	0.0	-11.1	-11.1	61.2	15.4	76.6
2001		61.2	15.5	76.7	-11.0	-15.5	-26.5	50.2	0.0	50.2
1972		61.2	21.1	82.3	-7.6	-21.1	-28.7	53.6	0.0	53.6
1991		59.8	0.0	59.8	-19.3	0.0	-19.3	40.6	0.0	40.6
1959		61.2	1.2	62.4	-4.0	-1.2	-5.2	57.2	0.0	57.2
1989		56.2	0.0	56.2	-18.8	0.0	-18.8	37.4	0.0	37.4
1964	Normal-Dry	61.2	16.1	77.3	-9.3	-16.1	-25.4	51.9	0.0	51.9
1939		57.9	0.0	57.9	-13.7	0.0	-13.7	44.2	0.0	44.2
1929		49.3	0.0	49.3	-14.7	0.0	-14.7	34.6	0.0	34.6
1988		51.2	0.0	51.2	-17.0	0.0	-17.0	34.2	0.0	34.2
1968		59.8	0.0	59.8	-10.8	0.0	-10.8	49.0	0.0	49.0
1930		50.8	0.0	50.8	-17.3	0.0	-17.3	33.5	0.0	33.5
2013		50.7	0.0	50.7	-17.3	0.0	-17.3	33.4	0.0	33.4
2012		55.5	0.0	55.5	-14.3	0.0	-14.3	41.3	0.0	41.3
1960		49.0	0.0	49.0	-16.9	0.0	-16.9	32.1	0.0	32.1
1994		51.0	0.0	51.0	3.3	0.0	3.3	54.3	0.0	54.3
1992		50.4	0.0	50.4	-16.4	0.0	-16.4	34.1	0.0	34.1
1987		41.4	0.0	41.4	-3.1	0.0	-3.1	38.3	0.0	38.3
1990		42.6	0.0	42.6	-15.7	0.0	-15.7	27.0	0.0	27.0
1934		43.5	0.0	43.5	-13.5	0.0	-13.5	30.0	0.0	30.0
2007		35.5	0.0	35.5	-10.8	0.0	-10.8	24.7	0.0	24.7
1961	Crit-High	34.8	0.0	34.8	-12.6	0.0	-12.6	22.2	0.0	22.2
1976		46.7	0.0	46.7	-10.4	0.0	-10.4	36.3	0.0	36.3
2014		25.3	0.0	25.3	-12.6	0.0	-12.6	12.8	0.0	12.8
1931		23.9	0.0	23.9	-12.6	0.0	-12.6	11.3	0.0	11.3
1924		33.8	0.0	33.8	-12.7	0.0	-12.7	21.1	0.0	21.1
1977	CL	14.3	0.0	14.3	-1.1	0.0	-1.1	13.2	0.0	13.2
2015		10.6	0.0	10.6	-1.1	0.0	-1.1	9.5	0.0	9.5
Wet Ave		61.2	148.2	209.4	0.0	-21.1	-21.1	61.2	127.1	188.2
Normal-wet Ave		61.2	96.3	157.5	0.0	-31.0	-31.0	61.2	65.4	126.5
Normal-dry Ave		61.0	29.9	90.9	-4.9	-25.2	-30.1	56.0	4.8	60.8
Dry Ave		50.0	1.1	51.1	-12.5	-1.1	-13.6	37.5	0.0	37.5
Critical-H Ave		32.9	0.0	32.9	-12.2	0.0	-12.2	20.7	0.0	20.7
Critical-L Ave		12.5	0.0	12.5	-1.1	0.0	-1.1	11.3	0.0	11.3

Orange Cove ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1923	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1924	21.7	0.0	21.7	-8.2	0.0	-8.2	13.5	0.0	13.5
1925	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1926	39.2	0.0	39.2	-2.4	0.0	-2.4	36.8	0.0	36.8
1927	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1928	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1929	31.6	0.0	31.6	-9.4	0.0	-9.4	22.1	0.0	22.1
1930	32.5	0.0	32.5	-11.1	0.0	-11.1	21.4	0.0	21.4
1931	15.3	0.0	15.3	-8.1	0.0	-8.1	7.2	0.0	7.2
1932	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1933	39.2	0.0	39.2	-1.7	0.0	-1.7	37.5	0.0	37.5
1934	27.9	0.0	27.9	-8.6	0.0	-8.6	19.2	0.0	19.2
1935	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1936	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1937	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1938	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1939	37.1	0.0	37.1	-8.8	0.0	-8.8	28.3	0.0	28.3
1940	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1941	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1942	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1943	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1944	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1945	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1946	39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1947	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1948	39.2	0.0	39.2	-10.1	0.0	-10.1	29.1	0.0	29.1
1949	39.2	0.0	39.2	-4.6	0.0	-4.6	34.6	0.0	34.6
1950	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1951	39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1952	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1953	39.2	0.0	39.2	-0.7	0.0	-0.7	38.5	0.0	38.5
1954	39.2	0.0	39.2	-2.1	0.0	-2.1	37.1	0.0	37.1
1955	39.2	0.0	39.2	-2.7	0.0	-2.7	36.5	0.0	36.5
1956	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1957	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1958	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1959	39.2	0.0	39.2	-2.6	0.0	-2.6	36.6	0.0	36.6
1960	31.4	0.0	31.4	-10.8	0.0	-10.8	20.6	0.0	20.6
1961	22.3	0.0	22.3	-8.1	0.0	-8.1	14.2	0.0	14.2
1962	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1963	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1964	39.2	0.0	39.2	-5.9	0.0	-5.9	33.3	0.0	33.3
1965	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1966	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1967	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1968	38.3	0.0	38.3	-6.9	0.0	-6.9	31.4	0.0	31.4
1969	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1970	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1971	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1972	39.2	0.0	39.2	-4.9	0.0	-4.9	34.3	0.0	34.3
1973	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1974	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1975	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1976	29.9	0.0	29.9	-6.6	0.0	-6.6	23.2	0.0	23.2
1977	9.2	0.0	9.2	-0.7	0.0	-0.7	8.4	0.0	8.4
1978	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1979	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1980	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1981	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1982	39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1983	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1984	39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1985	39.2	0.0	39.2	-0.4	0.0	-0.4	38.8	0.0	38.8
1986	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1987	26.5	0.0	26.5	-2.0	0.0	-2.0	24.5	0.0	24.5
1988	32.8	0.0	32.8	-10.9	0.0	-10.9	21.9	0.0	21.9
1989	36.0	0.0	36.0	-12.0	0.0	-12.0	24.0	0.0	24.0
1990	27.3	0.0	27.3	-10.0	0.0	-10.0	17.3	0.0	17.3
1991	38.3	0.0	38.3	-12.3	0.0	-12.3	26.0	0.0	26.0
1992	32.3	0.0	32.3	-10.5	0.0	-10.5	21.8	0.0	21.8
1993	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1994	32.7	0.0	32.7	2.1	0.0	2.1	34.8	0.0	34.8
1995	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1996	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1997	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1998	39.2	0.0	39.2	0.0	0.0	0.0	39.1	0.0	39.1
1999	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2000	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2001	39.2	0.0	39.2	-7.0	0.0	-7.0	32.2	0.0	32.2
2002	39.2	0.0	39.2	-5.5	0.0	-5.5	33.7	0.0	33.7
2003	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2004	39.2	0.0	39.2	-6.2	0.0	-6.2	33.0	0.0	33.0
2005	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2006	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2007	22.7	0.0	22.7	-6.9	0.0	-6.9	15.8	0.0	15.8
2008	39.2	0.0	39.2	-9.4	0.0	-9.4	29.8	0.0	29.8
2009	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2010	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2011	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2012	35.6	0.0	35.6	-9.1	0.0	-9.1	26.4	0.0	26.4
2013	32.5	0.0	32.5	-11.1	0.0	-11.1	21.4	0.0	21.4
2014	16.2	0.0	16.2	-8.1	0.0	-8.1	8.2	0.0	8.2
2015	6.8	0.0	6.8	-0.7	0.0	-0.7	6.1	0.0	6.1
2016	39.2	0.0	39.2	-4.0	0.0	-4.0	35.2	0.0	35.2
Ave All	36.4	0.0	36.4	-2.6	0.0	-2.6	33.8	0.0	33.8
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	27.3	0.0	27.3	-7.3	0.0	-7.3	20.1	0.0	20.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1969		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1995		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1938		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1978		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1982		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
2011		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1967		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2006		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1998		39.2	0.0	39.2	0.0	0.0	0.0	39.1	0.0	39.1
1986		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1980		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1956		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1952		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2005		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1997		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1993		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1941		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1958		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1922	Normal-Wet	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1965		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1942		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1937		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1996		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1974		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1945		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1943		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1984		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1932		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1973		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2010		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1927		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1963		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1962		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1935		39.2	0.0	39.2	-0.2	0.0	-0.2	39.0	0.0	39.0
1940		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1951		39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1936		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1979		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
1975		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2000		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1946		39.1	0.0	39.1	0.1	0.0	0.1	39.2	0.0	39.2
1923		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1999		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2009		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2003	Normal-Dry	39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1970		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1925		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1971		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1957		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1954		39.2	0.0	39.2	-2.1	0.0	-2.1	37.1	0.0	37.1
1950		39.2	0.0	39.2	-0.1	0.0	-0.1	39.1	0.0	39.1
2016		39.2	0.0	39.2	-4.0	0.0	-4.0	35.2	0.0	35.2
1966		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1944		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
1953		39.2	0.0	39.2	-0.7	0.0	-0.7	38.5	0.0	38.5
1948		39.2	0.0	39.2	-10.1	0.0	-10.1	29.1	0.0	29.1
2002		39.2	0.0	39.2	-5.5	0.0	-5.5	33.7	0.0	33.7
1949		39.2	0.0	39.2	-4.6	0.0	-4.6	34.6	0.0	34.6
1926		39.2	0.0	39.2	-2.4	0.0	-2.4	36.8	0.0	36.8
1955		39.2	0.0	39.2	-2.7	0.0	-2.7	36.5	0.0	36.5
1928		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2004		39.2	0.0	39.2	-6.2	0.0	-6.2	33.0	0.0	33.0
1985		39.2	0.0	39.2	-0.4	0.0	-0.4	38.8	0.0	38.8
1947		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2008		39.2	0.0	39.2	-9.4	0.0	-9.4	29.8	0.0	29.8
1933		39.2	0.0	39.2	-1.7	0.0	-1.7	37.5	0.0	37.5
1981		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
2001		39.2	0.0	39.2	-7.0	0.0	-7.0	32.2	0.0	32.2
1972		39.2	0.0	39.2	-4.9	0.0	-4.9	34.3	0.0	34.3
1991		38.3	0.0	38.3	-12.3	0.0	-12.3	26.0	0.0	26.0
1959		39.2	0.0	39.2	-2.6	0.0	-2.6	36.6	0.0	36.6
1989		36.0	0.0	36.0	-12.0	0.0	-12.0	24.0	0.0	24.0
1964	Normal-Dry	39.2	0.0	39.2	-5.9	0.0	-5.9	33.3	0.0	33.3
1939		37.1	0.0	37.1	-8.8	0.0	-8.8	28.3	0.0	28.3
1929		31.6	0.0	31.6	-9.4	0.0	-9.4	22.1	0.0	22.1
1988		32.8	0.0	32.8	-10.9	0.0	-10.9	21.9	0.0	21.9
1968		38.3	0.0	38.3	-6.9	0.0	-6.9	31.4	0.0	31.4
1930		32.5	0.0	32.5	-11.1	0.0	-11.1	21.4	0.0	21.4
2013		32.5	0.0	32.5	-11.1	0.0	-11.1	21.4	0.0	21.4
2012		35.6	0.0	35.6	-9.1	0.0	-9.1	26.4	0.0	26.4
1960		31.4	0.0	31.4	-10.8	0.0	-10.8	20.6	0.0	20.6
1994		32.7	0.0	32.7	2.1	0.0	2.1	34.8	0.0	34.8
1992		32.3	0.0	32.3	-10.5	0.0	-10.5	21.8	0.0	21.8
1987		26.5	0.0	26.5	-2.0	0.0	-2.0	24.5	0.0	24.5
1990		27.3	0.0	27.3	-10.0	0.0	-10.0	17.3	0.0	17.3
1934		27.9	0.0	27.9	-8.6	0.0	-8.6	19.2	0.0	19.2
2007		22.7	0.0	22.7	-6.9	0.0	-6.9	15.8	0.0	15.8
1961	Crit-High	22.3	0.0	22.3	-8.1	0.0	-8.1	14.2	0.0	14.2
1976		29.9	0.0	29.9	-6.6	0.0	-6.6	23.2	0.0	23.2
2014		16.2	0.0	16.2	-8.1	0.0	-8.1	8.2	0.0	8.2
1931		15.3	0.0	15.3	-8.1	0.0	-8.1	7.2	0.0	7.2
1924		21.7	0.0	21.7	-8.2	0.0	-8.2	13.5	0.0	13.5
1977	CL	9.2	0.0	9.2	-0.7	0.0	-0.7	8.4	0.0	8.4
2015		6.8	0.0	6.8	-0.7	0.0	-0.7	6.1	0.0	6.1
Wet Ave		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
Normal-wet Ave		39.2	0.0	39.2	0.0	0.0	0.0	39.2	0.0	39.2
Normal-dry Ave		39.0	0.0	39.0	-3.2	0.0	-3.2	35.9	0.0	35.9
Dry Ave		32.0	0.0	32.0	-8.0	0.0	-8.0	24.0	0.0	24.0
Critical-H Ave		21.1	0.0	21.1	-7.8	0.0	-7.8	13.3	0.0	13.3
Critical-L Ave		8.0	0.0	8.0	-0.7	0.0	-0.7	7.3	0.0	7.3

Note: Values reported by contract year (March-February)

Porterville ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	16.0	18.1	34.1	0.0	-3.6	-3.6	16.0	14.5	30.5
1923	16.0	10.9	26.9	0.0	-3.5	-3.5	16.0	7.4	23.4
1924	8.8	0.0	8.8	-3.3	0.0	-3.3	5.5	0.0	5.5
1925	16.0	5.7	21.7	0.0	-5.2	-5.2	16.0	0.5	16.5
1926	16.0	2.7	18.6	-1.0	-2.7	-3.6	15.0	0.0	15.0
1927	16.0	12.3	28.3	0.0	-2.1	-2.1	16.0	10.2	26.2
1928	16.0	4.8	20.8	0.0	-3.4	-3.4	16.0	1.4	17.4
1929	12.9	0.0	12.9	-3.8	0.0	-3.8	9.0	0.0	9.0
1930	13.3	0.0	13.3	-4.5	0.0	-4.5	8.7	0.0	8.7
1931	6.2	0.0	6.2	-3.3	0.0	-3.3	2.9	0.0	2.9
1932	16.0	13.7	29.7	0.0	-3.5	-3.5	16.0	10.2	26.2
1933	16.0	5.1	21.1	-0.7	-5.1	-5.8	15.3	0.0	15.3
1934	11.4	0.0	11.4	-3.5	0.0	-3.5	7.9	0.0	7.9
1935	16.0	10.8	26.8	-0.1	-4.2	-4.2	15.9	6.6	22.5
1936	16.0	11.7	27.7	0.0	-4.1	-4.1	16.0	7.6	23.6
1937	16.0	12.5	28.5	0.0	-4.3	-4.3	16.0	8.2	24.2
1938	16.0	20.0	36.0	0.0	-2.6	-2.6	16.0	17.4	33.4
1939	15.1	0.0	15.1	-3.6	0.0	-3.6	11.6	0.0	11.6
1940	16.0	8.3	24.3	0.0	-1.4	-1.4	16.0	6.9	22.9
1941	16.0	18.9	34.9	0.0	-4.3	-4.3	16.0	14.6	30.6
1942	16.0	17.2	33.2	0.0	-4.5	-4.5	16.0	12.8	28.8
1943	16.0	11.8	27.8	0.0	-4.6	-4.6	16.0	7.3	23.2
1944	16.0	5.7	21.7	0.0	-3.6	-3.6	16.0	2.1	18.1
1945	16.0	14.3	30.3	0.0	-3.1	-3.1	16.0	11.3	27.3
1946	16.0	7.9	23.9	0.0	-2.5	-2.5	16.0	5.4	21.4
1947	16.0	2.5	18.5	0.0	-2.4	-2.4	16.0	0.1	16.1
1948	16.0	1.2	17.2	-4.1	-1.2	-5.3	11.9	0.0	11.9
1949	16.0	4.0	20.0	-1.9	-4.0	-5.8	14.1	0.0	14.1
1950	16.0	5.0	21.0	-0.1	-5.0	-5.0	15.9	0.0	15.9
1951	16.0	7.1	23.1	0.0	-6.2	-6.2	16.0	0.9	16.9
1952	16.0	18.0	34.0	0.0	-1.7	-1.7	16.0	16.3	32.3
1953	16.0	4.7	20.7	-0.3	-4.7	-4.9	15.7	0.0	15.7
1954	16.0	4.0	20.0	-0.8	-4.0	-4.8	15.1	0.0	15.1
1955	16.0	4.0	20.0	-1.1	-4.0	-5.1	14.9	0.0	14.9
1956	16.0	18.3	34.3	0.0	-3.6	-3.6	16.0	14.7	30.7
1957	16.0	6.2	22.2	0.0	-3.4	-3.4	16.0	2.7	18.7
1958	16.0	17.9	33.9	0.0	-2.9	-2.9	16.0	15.0	31.0
1959	16.0	0.1	16.1	-1.0	-0.1	-1.2	15.0	0.0	15.0
1960	12.8	0.0	12.8	-4.4	0.0	-4.4	8.4	0.0	8.4
1961	9.1	0.0	9.1	-3.3	0.0	-3.3	5.8	0.0	5.8
1962	16.0	12.5	28.5	0.0	-3.9	-3.9	16.0	8.5	24.5
1963	16.0	14.9	30.9	0.0	-4.0	-4.0	16.0	11.0	27.0
1964	16.0	2.0	18.0	-2.4	-2.0	-4.5	13.6	0.0	13.6
1965	16.0	14.9	30.9	0.0	-5.4	-5.4	16.0	9.5	25.5
1966	16.0	4.3	20.2	0.0	-2.5	-2.5	16.0	1.8	17.8
1967	16.0	20.6	36.6	0.0	-2.6	-2.6	16.0	18.1	34.0
1968	15.6	0.0	15.6	-2.8	0.0	-2.8	12.8	0.0	12.8
1969	16.0	19.1	35.1	0.0	-1.3	-1.3	16.0	17.8	33.8
1970	16.0	8.1	24.1	0.0	-5.3	-5.3	16.0	2.8	18.8
1971	16.0	7.5	23.5	0.0	-6.1	-6.1	16.0	1.4	17.4
1972	16.0	2.7	18.7	-2.0	-2.7	-4.6	14.0	0.0	14.0
1973	16.0	12.0	28.0	0.0	-4.4	-4.4	16.0	7.7	23.6
1974	16.0	13.8	29.8	0.0	-4.2	-4.2	16.0	9.6	25.6
1975	16.0	12.0	28.0	0.0	-2.5	-2.5	16.0	9.5	25.5
1976	12.2	0.0	12.2	-2.7	0.0	-2.7	9.5	0.0	9.5
1977	3.7	0.0	3.7	-0.3	0.0	-0.3	3.4	0.0	3.4
1978	16.0	21.5	37.5	0.0	-2.2	-2.2	16.0	19.4	35.4
1979	16.0	11.5	27.5	-0.1	-4.4	-4.4	15.9	7.1	23.1
1980	16.0	18.7	34.7	-0.1	-3.6	-3.6	15.9	15.1	31.1
1981	16.0	3.3	19.3	0.0	-1.4	-1.4	16.0	1.9	17.9
1982	16.0	17.6	33.6	0.0	-2.1	-2.1	16.0	15.5	31.5
1983	16.0	19.1	35.1	0.0	-0.7	-0.7	16.0	18.3	34.3
1984	16.0	10.8	26.8	-0.1	-3.9	-4.0	15.9	6.9	22.8
1985	16.0	3.1	19.1	-0.2	-3.1	-3.3	15.8	0.0	15.8
1986	16.0	17.4	33.4	0.0	-3.0	-3.0	16.0	14.4	30.4
1987	10.8	0.0	10.8	-0.8	0.0	-0.8	10.0	0.0	10.0
1988	13.4	0.0	13.4	-4.4	0.0	-4.4	8.9	0.0	8.9
1989	14.7	0.0	14.7	-4.9	0.0	-4.9	9.8	0.0	9.8
1990	11.1	0.0	11.1	-4.1	0.0	-4.1	7.0	0.0	7.0
1991	15.6	0.0	15.6	-5.0	0.0	-5.0	10.6	0.0	10.6
1992	13.2	0.0	13.2	-4.3	0.0	-4.3	8.9	0.0	8.9
1993	16.0	19.1	35.1	0.0	-4.9	-4.9	16.0	14.2	30.2
1994	13.3	0.0	13.3	0.9	0.0	0.9	14.2	0.0	14.2
1995	16.0	22.7	38.7	0.0	-2.2	-2.2	16.0	20.6	36.6
1996	16.0	13.1	29.1	0.0	-3.9	-3.9	16.0	9.3	25.3
1997	16.0	10.5	26.5	0.0	-5.0	-5.0	16.0	5.4	21.4
1998	16.0	17.5	33.5	0.0	-2.8	-2.8	16.0	14.7	30.7
1999	16.0	8.9	24.9	0.0	-3.9	-3.9	16.0	5.0	21.0
2000	16.0	10.4	26.4	0.0	-3.0	-3.0	16.0	7.4	23.3
2001	16.0	2.0	18.0	-2.9	-2.0	-4.8	13.1	0.0	13.1
2002	16.0	3.6	19.6	-2.3	-3.6	-5.8	13.7	0.0	13.7
2003	16.0	8.8	24.8	0.0	-6.8	-6.8	16.0	2.0	18.0
2004	16.0	2.4	18.4	-2.5	-2.4	-4.9	13.5	0.0	13.5
2005	16.0	18.7	34.7	0.0	-1.6	-1.6	16.0	17.1	33.1
2006	16.0	18.9	34.9	0.0	-2.1	-2.1	16.0	16.8	32.8
2007	9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
2008	16.0	1.6	17.6	-3.8	-1.6	-5.4	12.2	0.0	12.2
2009	16.0	9.1	25.1	0.0	-6.8	-6.8	16.0	2.3	18.3
2010	16.0	15.0	31.0	0.0	-3.9	-3.9	16.0	11.1	27.1
2011	16.0	20.3	36.3	0.0	-1.3	-1.3	16.0	18.9	34.9
2012	14.5	0.0	14.5	-3.7	0.0	-3.7	10.8	0.0	10.8
2013	13.3	0.0	13.3	-4.5	0.0	-4.5	8.7	0.0	8.7
2014	6.6	0.0	6.6	-3.3	0.0	-3.3	3.3	0.0	3.3
2015	2.8	0.0	2.8	-0.3	0.0	-0.3	2.5	0.0	2.5
2016	16.0	2.8	18.8	-1.6	-2.8	-4.5	14.4	0.0	14.4
Ave All	14.9	8.2	23.1	-1.1	-2.6	-3.6	13.8	5.6	19.4

Original Dry Year Classification (Driest 20% Years)

Dry Ave	11.2	0.1	11.3	-3.0	-0.1	-3.1	8.2	0.0	8.2

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	16.0	19.1	35.1	0.0	-0.7	-0.7	16.0	18.3	34.3
1969		16.0	19.1	35.1	0.0	-1.3	-1.3	16.0	17.8	33.8
1995		16.0	22.7	38.7	0.0	-2.2	-2.2	16.0	20.6	36.6
1938		16.0	20.0	36.0	0.0	-2.6	-2.6	16.0	17.4	33.4
1978		16.0	21.5	37.5	0.0	-2.2	-2.2	16.0	19.4	35.4
1982		16.0	17.6	33.6	0.0	-2.1	-2.1	16.0	15.5	31.5
2011		16.0	20.3	36.3	0.0	-1.3	-1.3	16.0	18.9	34.9
1967		16.0	20.6	36.6	0.0	-2.6	-2.6	16.0	18.1	34.0
2006		16.0	18.9	34.9	0.0	-2.1	-2.1	16.0	16.8	32.8
1998		16.0	17.5	33.5	0.0	-2.8	-2.8	16.0	14.7	30.7
1986		16.0	17.4	33.4	0.0	-3.0	-3.0	16.0	14.4	30.4
1980		16.0	18.7	34.7	-0.1	-3.6	-3.6	15.9	15.1	31.1
1956		16.0	18.3	34.3	0.0	-3.6	-3.6	16.0	14.7	30.7
1952		16.0	18.0	34.0	0.0	-1.7	-1.7	16.0	16.3	32.3
2005		16.0	18.7	34.7	0.0	-1.6	-1.6	16.0	17.1	33.1
1997		16.0	10.5	26.5	0.0	-5.0	-5.0	16.0	5.4	21.4
1993		16.0	19.1	35.1	0.0	-4.9	-4.9	16.0	14.2	30.2
1941		16.0	18.9	34.9	0.0	-4.3	-4.3	16.0	14.6	30.6
1958		16.0	17.9	33.9	0.0	-2.9	-2.9	16.0	15.0	31.0
1922	Normal-Wet	16.0	18.1	34.1	0.0	-3.6	-3.6	16.0	14.5	30.5
1965		16.0	14.9	30.9	0.0	-5.4	-5.4	16.0	9.5	25.5
1942		16.0	17.2	33.2	0.0	-4.5	-4.5	16.0	12.8	28.8
1937		16.0	12.5	28.5	0.0	-4.3	-4.3	16.0	8.2	24.2
1996		16.0	13.1	29.1	0.0	-3.9	-3.9	16.0	9.3	25.3
1974		16.0	13.8	29.8	0.0	-4.2	-4.2	16.0	9.6	25.6
1945		16.0	14.3	30.3	0.0	-3.1	-3.1	16.0	11.3	27.3
1943		16.0	11.8	27.8	0.0	-4.6	-4.6	16.0	7.3	23.2
1984		16.0	10.8	26.8	-0.1	-3.9	-4.0	15.9	6.9	22.8
1932		16.0	13.7	29.7	0.0	-3.5	-3.5	16.0	10.2	26.2
1973		16.0	12.0	28.0	0.0	-4.4	-4.4	16.0	7.7	23.6
2010		16.0	15.0	31.0	0.0	-3.9	-3.9	16.0	11.1	27.1
1927		16.0	12.3	28.3	0.0	-2.1	-2.1	16.0	10.2	26.2
1963		16.0	14.9	30.9	0.0	-4.0	-4.0	16.0	11.0	27.0
1962		16.0	12.5	28.5	0.0	-3.9	-3.9	16.0	8.5	24.5
1935		16.0	10.8	26.8	-0.1	-4.2	-4.2	15.9	6.6	22.5
1940		16.0	8.3	24.3	0.0	-1.4	-1.4	16.0	6.9	22.9
1951		16.0	7.1	23.1	0.0	-6.2	-6.2	16.0	0.9	16.9
1936		16.0	11.7	27.7	0.0	-4.1	-4.1	16.0	7.6	23.6
1979		16.0	11.5	27.5	-0.1	-4.4	-4.4	15.9	7.1	23.1
1975		16.0	12.0	28.0	0.0	-2.5	-2.5	16.0	9.5	25.5
2000		16.0	10.4	26.4	0.0	-3.0	-3.0	16.0	7.4	23.3
1946		16.0	7.9	23.9	0.0	-2.5	-2.5	16.0	5.4	21.4
1923		16.0	10.9	26.9	0.0	-3.5	-3.5	16.0	7.4	23.4
1999		16.0	8.9	24.9	0.0	-3.9	-3.9	16.0	5.0	21.0
2009		16.0	9.1	25.1	0.0	-6.8	-6.8	16.0	2.3	18.3
2003	Normal-Dry	16.0	8.8	24.8	0.0	-6.8	-6.8	16.0	2.0	18.0
1970		16.0	8.1	24.1	0.0	-5.3	-5.3	16.0	2.8	18.8
1925		16.0	5.7	21.7	0.0	-5.2	-5.2	16.0	0.5	16.5
1971		16.0	7.5	23.5	0.0	-6.1	-6.1	16.0	1.4	17.4
1957		16.0	6.2	22.2	0.0	-3.4	-3.4	16.0	2.7	18.7
1954		16.0	4.0	20.0	-0.8	-4.0	-4.8	15.1	0.0	15.1
1950		16.0	5.0	21.0	-0.1	-5.0	-5.0	15.9	0.0	15.9
2016		16.0	2.8	18.8	-1.6	-2.8	-4.5	14.4	0.0	14.4
1966		16.0	4.3	20.2	0.0	-2.5	-2.5	16.0	1.8	17.8
1944		16.0	5.7	21.7	0.0	-3.6	-3.6	16.0	2.1	18.1
1953		16.0	4.7	20.7	-0.3	-4.7	-4.9	15.7	0.0	15.7
1948		16.0	1.2	17.2	-4.1	-1.2	-5.3	11.9	0.0	11.9
2002		16.0	3.6	19.6	-2.3	-3.6	-5.8	13.7	0.0	13.7
1949		16.0	4.0	20.0	-1.9	-4.0	-5.8	14.1	0.0	14.1
1926		16.0	2.7	18.6	-1.0	-2.7	-3.6	15.0	0.0	15.0
1955		16.0	4.0	20.0	-1.1	-4.0	-5.1	14.9	0.0	14.9
1928		16.0	4.8	20.8	0.0	-3.4	-3.4	16.0	1.4	17.4
2004		16.0	2.4	18.4	-2.5	-2.4	-4.9	13.5	0.0	13.5
1985		16.0	3.1	19.1	-0.2	-3.1	-3.3	15.8	0.0	15.8
1947		16.0	2.5	18.5	0.0	-2.4	-2.4	16.0	0.1	16.1
2008		16.0	1.6	17.6	-3.8	-1.6	-5.4	12.2	0.0	12.2
1933		16.0	5.1	21.1	-0.7	-5.1	-5.8	15.3	0.0	15.3
1981		16.0	3.3	19.3	0.0	-1.4	-1.4	16.0	1.9	17.9
2001		16.0	2.0	18.0	-2.9	-2.0	-4.8	13.1	0.0	13.1
1972		16.0	2.7	18.7	-2.0	-2.7	-4.6	14.0	0.0	14.0
1991		15.6	0.0	15.6	-5.0	0.0	-5.0	10.6	0.0	10.6
1959		16.0	0.1	16.1	-1.0	-0.1	-1.2	15.0	0.0	15.0
1989		14.7	0.0	14.7	-4.9	0.0	-4.9	9.8	0.0	9.8
1964	Normal-Dry	16.0	2.0	18.0	-2.4	-2.0	-4.5	13.6	0.0	13.6
1939		15.1	0.0	15.1	-3.6	0.0	-3.6	11.6	0.0	11.6
1929		12.9	0.0	12.9	-3.8	0.0	-3.8	9.0	0.0	9.0
1988		13.4	0.0	13.4	-4.4	0.0	-4.4	8.9	0.0	8.9
1968		15.6	0.0	15.6	-2.8	0.0	-2.8	12.8	0.0	12.8
1930		13.3	0.0	13.3	-4.5	0.0	-4.5	8.7	0.0	8.7
2013		13.3	0.0	13.3	-4.5	0.0	-4.5	8.7	0.0	8.7
2012		14.5	0.0	14.5	-3.7	0.0	-3.7	10.8	0.0	10.8
1960		12.8	0.0	12.8	-4.4	0.0	-4.4	8.4	0.0	8.4
1994		13.3	0.0	13.3	0.9	0.0	0.9	14.2	0.0	14.2
1992		13.2	0.0	13.2	-4.3	0.0	-4.3	8.9	0.0	8.9
1987		10.8	0.0	10.8	-0.8	0.0	-0.8	10.0	0.0	10.0
1990		11.1	0.0	11.1	-4.1	0.0	-4.1	7.0	0.0	7.0
1934		11.4	0.0	11.4	-3.5	0.0	-3.5	7.9	0.0	7.9
2007		9.3	0.0	9.3	-2.8	0.0	-2.8	6.5	0.0	6.5
1961	Crit-High	9.1	0.0	9.1	-3.3	0.0	-3.3	5.8	0.0	5.8
1976		12.2	0.0	12.2	-2.7	0.0	-2.7	9.5	0.0	9.5
2014		6.6	0.0	6.6	-3.3	0.0	-3.3	3.3	0.0	3.3
1931		6.2	0.0	6.2	-3.3	0.0	-3.3	2.9	0.0	2.9
1924		8.8	0.0	8.8	-3.3	0.0	-3.3	5.5	0.0	5.5
1977	CL	3.7	0.0	3.7	-0.3	0.0	-0.3	3.4	0.0	3.4
2015		2.8	0.0	2.8	-0.3	0.0	-0.3	2.5	0.0	2.5
Wet Ave		16.0	18.7	34.7	0.0	-2.7	-2.7	16.0	16.0	32.0
Normal-wet Ave		16.0	12.1	28.1	0.0	-3.9	-3.9	16.0	8.2	24.2
Normal-dry Ave		15.9	3.8	19.7	-1.3	-3.2	-4.5	14.6	0.6	15.2
Dry Ave		13.1	0.1	13.2	-3.3	-0.1	-3.4	9.8	0.0	9.8
Critical-H Ave		8.6	0.0	8.6	-3.2	0.0	-3.2	5.4	0.0	5.4
Critical-L Ave		3.3	0.0	3.3	-0.3	0.0	-0.3	3.0	0.0	3.0

Note: Values reported by contract year (March-February)

Saucelito ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	21.2	19.8	41.0	0.0	-3.9	-3.9	21.2	15.9	37.1
1923	21.2	11.9	33.1	0.0	-3.8	-3.8	21.2	8.1	29.3
1924	11.7	0.0	11.7	-4.4	0.0	-4.4	7.3	0.0	7.3
1925	21.2	6.2	27.4	0.0	-5.7	-5.7	21.2	0.6	21.8
1926	21.2	2.9	24.1	-1.3	-2.9	-4.2	19.9	0.0	19.9
1927	21.2	13.4	34.6	0.0	-2.3	-2.3	21.2	11.1	32.3
1928	21.2	5.2	26.4	0.0	-3.7	-3.7	21.2	1.6	22.8
1929	17.1	0.0	17.1	-5.1	0.0	-5.1	12.0	0.0	12.0
1930	17.6	0.0	17.6	-6.0	0.0	-6.0	11.6	0.0	11.6
1931	8.3	0.0	8.3	-4.4	0.0	-4.4	3.9	0.0	3.9
1932	21.2	15.0	36.2	0.0	-3.8	-3.8	21.2	11.2	32.4
1933	21.2	5.6	26.8	-0.9	-5.6	-6.5	20.3	0.0	20.3
1934	15.1	0.0	15.1	-4.7	0.0	-4.7	10.4	0.0	10.4
1935	21.2	11.8	33.0	-0.1	-4.6	-4.7	21.1	7.2	28.3
1936	21.2	12.8	34.0	0.0	-4.5	-4.5	21.2	8.3	29.5
1937	21.2	13.7	34.9	0.0	-4.7	-4.7	21.2	9.0	30.2
1938	21.2	21.8	43.0	0.0	-2.8	-2.8	21.2	19.0	40.2
1939	20.1	0.0	20.1	-4.7	0.0	-4.7	15.3	0.0	15.3
1940	21.2	9.1	30.3	0.0	-1.5	-1.5	21.2	7.6	28.8
1941	21.2	20.7	41.9	0.0	-4.7	-4.7	21.2	16.0	37.2
1942	21.2	18.8	40.0	0.0	-4.9	-4.9	21.2	14.0	35.2
1943	21.2	12.9	34.1	0.0	-5.0	-5.0	21.2	7.9	29.1
1944	21.2	6.2	27.4	0.0	-3.9	-3.9	21.2	2.3	23.5
1945	21.2	15.7	36.9	0.0	-3.3	-3.3	21.2	12.3	33.5
1946	21.2	8.6	29.8	0.0	-2.7	-2.7	21.2	5.9	27.1
1947	21.2	2.7	23.9	0.0	-2.6	-2.6	21.2	0.1	21.3
1948	21.2	1.3	22.5	-5.5	-1.3	-6.8	15.7	0.0	15.7
1949	21.2	4.3	25.5	-2.5	-4.3	-6.8	18.7	0.0	18.7
1950	21.2	5.4	26.6	-0.1	-5.4	-5.5	21.1	0.0	21.1
1951	21.2	7.8	28.9	0.0	-6.8	-6.7	21.2	1.0	22.2
1952	21.2	19.7	40.9	0.0	-1.9	-1.9	21.2	17.8	39.0
1953	21.2	5.1	26.3	-0.4	-5.1	-5.5	20.8	0.0	20.8
1954	21.2	4.4	25.6	-1.1	-4.4	-5.5	20.1	0.0	20.1
1955	21.2	4.4	25.6	-1.5	-4.4	-5.9	19.7	0.0	19.7
1956	21.2	20.0	41.2	0.0	-3.9	-3.9	21.2	16.0	37.2
1957	21.2	6.8	28.0	0.0	-3.8	-3.8	21.2	3.0	24.2
1958	21.2	19.6	40.8	0.0	-3.2	-3.2	21.2	16.4	37.6
1959	21.2	0.2	21.4	-1.4	-0.2	-1.5	19.8	0.0	19.8
1960	17.0	0.0	17.0	-5.8	0.0	-5.8	11.1	0.0	11.1
1961	12.1	0.0	12.1	-4.4	0.0	-4.4	7.7	0.0	7.7
1962	21.2	13.6	34.8	0.0	-4.3	-4.3	21.2	9.3	30.5
1963	21.2	16.3	37.5	0.0	-4.3	-4.3	21.2	12.0	33.2
1964	21.2	2.2	23.4	-3.2	-2.2	-5.4	18.0	0.0	18.0
1965	21.2	16.3	37.5	0.0	-5.9	-5.9	21.2	10.4	31.6
1966	21.2	4.7	25.8	0.0	-2.7	-2.7	21.2	1.9	23.1
1967	21.2	22.6	43.8	0.0	-2.8	-2.8	21.2	19.7	40.9
1968	20.7	0.0	20.7	-3.7	0.0	-3.7	17.0	0.0	17.0
1969	21.2	20.9	42.1	0.0	-1.4	-1.4	21.2	19.5	40.7
1970	21.2	8.9	30.1	0.0	-5.8	-5.8	21.2	3.1	24.3
1971	21.2	8.2	29.4	0.0	-6.7	-6.7	21.2	1.5	22.7
1972	21.2	2.9	24.1	-2.6	-2.9	-5.5	18.6	0.0	18.6
1973	21.2	13.1	34.3	0.0	-4.8	-4.8	21.2	8.4	29.5
1974	21.2	15.1	36.3	0.0	-4.6	-4.6	21.2	10.5	31.7
1975	21.2	13.1	34.3	0.0	-2.8	-2.8	21.2	10.4	31.6
1976	16.2	0.0	16.2	-3.6	0.0	-3.6	12.6	0.0	12.6
1977	5.0	0.0	5.0	-0.4	0.0	-0.4	4.6	0.0	4.6
1978	21.2	23.5	44.7	0.0	-2.4	-2.4	21.2	21.2	42.4
1979	21.2	12.6	33.8	-0.1	-4.8	-4.8	21.1	7.8	28.9
1980	21.2	20.4	41.6	-0.1	-3.9	-4.0	21.1	16.6	37.7
1981	21.2	3.7	24.9	0.0	-1.5	-1.5	21.2	2.1	23.3
1982	21.2	19.2	40.4	0.0	-2.3	-2.3	21.2	17.0	38.1
1983	21.2	20.8	42.0	0.0	-0.8	-0.8	21.2	20.0	41.2
1984	21.2	11.8	33.0	-0.1	-4.3	-4.4	21.1	7.5	28.6
1985	21.2	3.4	24.6	-0.2	-3.4	-3.6	21.0	0.0	21.0
1986	21.2	19.0	40.2	0.0	-3.3	-3.3	21.2	15.7	36.9
1987	14.3	0.0	14.3	-1.1	0.0	-1.1	13.3	0.0	13.3
1988	17.7	0.0	17.7	-5.9	0.0	-5.9	11.9	0.0	11.9
1989	19.5	0.0	19.5	-6.5	0.0	-6.5	13.0	0.0	13.0
1990	14.8	0.0	14.8	-5.4	0.0	-5.4	9.3	0.0	9.3
1991	20.7	0.0	20.7	-6.7	0.0	-6.7	14.1	0.0	14.1
1992	17.5	0.0	17.5	-5.7	0.0	-5.7	11.8	0.0	11.8
1993	21.2	20.9	42.1	0.0	-5.4	-5.4	21.2	15.5	36.7
1994	17.7	0.0	17.7	1.1	0.0	1.1	18.8	0.0	18.8
1995	21.2	24.8	46.0	0.0	-2.4	-2.4	21.2	22.5	43.7
1996	21.2	14.4	35.6	0.0	-4.2	-4.2	21.2	10.2	31.4
1997	21.2	11.5	32.7	0.0	-5.5	-5.5	21.2	5.9	27.1
1998	21.2	19.1	40.3	0.0	-3.0	-3.1	21.2	16.1	37.3
1999	21.2	9.7	30.9	0.0	-4.3	-4.3	21.2	5.4	26.6
2000	21.2	11.3	32.5	0.0	-3.3	-3.3	21.2	8.0	29.2
2001	21.2	2.1	23.3	-3.8	-2.1	-5.9	17.4	0.0	17.4
2002	21.2	3.9	25.1	-3.0	-3.9	-6.9	18.2	0.0	18.2
2003	21.2	9.6	30.8	0.0	-7.5	-7.5	21.2	2.2	23.4
2004	21.2	2.6	23.8	-3.4	-2.6	-6.0	17.8	0.0	17.8
2005	21.2	20.5	41.7	0.0	-1.8	-1.8	21.2	18.7	39.9
2006	21.2	20.7	41.9	0.0	-2.3	-2.3	21.2	18.4	39.6
2007	12.3	0.0	12.3	-3.7	0.0	-3.7	8.6	0.0	8.6
2008	21.2	1.7	22.9	-5.1	-1.7	-6.8	16.1	0.0	16.1
2009	21.2	10.0	31.2	0.0	-7.4	-7.4	21.2	2.6	23.8
2010	21.2	16.4	37.6	0.0	-4.2	-4.2	21.2	12.2	33.4
2011	21.2	22.2	43.4	0.0	-1.5	-1.5	21.2	20.7	41.9
2012	19.2	0.0	19.2	-4.9	0.0	-4.9	14.3	0.0	14.3
2013	17.6	0.0	17.6	-6.0	0.0	-6.0	11.6	0.0	11.6
2014	8.8	0.0	8.8	-4.4	0.0	-4.4	4.4	0.0	4.4
2015	3.7	0.0	3.7	-0.4	0.0	-0.4	3.3	0.0	3.3
2016	21.2	3.1	24.3	-2.2	-3.1	-5.3	19.0	0.0	19.0
Ave All	19.7	9.0	28.6	-1.4	-2.8	-4.2	18.3	6.2	24.4
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	14.8	0.1	14.9	-3.9	-0.1	-4.0	10.8	0.0	10.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	21.2	20.8	42.0	0.0	-0.8	-0.8	21.2	20.0	41.2
1969		21.2	20.9	42.1	0.0	-1.4	-1.4	21.2	19.5	40.7
1995		21.2	24.8	46.0	0.0	-2.4	-2.4	21.2	22.5	43.7
1938		21.2	21.8	43.0	0.0	-2.8	-2.8	21.2	19.0	40.2
1978		21.2	23.5	44.7	0.0	-2.4	-2.4	21.2	21.2	42.4
1982		21.2	19.2	40.4	0.0	-2.3	-2.3	21.2	17.0	38.1
2011		21.2	22.2	43.4	0.0	-1.5	-1.5	21.2	20.7	41.9
1967		21.2	22.6	43.8	0.0	-2.8	-2.8	21.2	19.7	40.9
2006		21.2	20.7	41.9	0.0	-2.3	-2.3	21.2	18.4	39.6
1998		21.2	19.1	40.3	0.0	-3.0	-3.1	21.2	16.1	37.3
1986		21.2	19.0	40.2	0.0	-3.3	-3.3	21.2	15.7	36.9
1980		21.2	20.4	41.6	-0.1	-3.9	-4.0	21.1	16.6	37.7
1956		21.2	20.0	41.2	0.0	-3.9	-3.9	21.2	16.0	37.2
1952		21.2	19.7	40.9	0.0	-1.9	-1.9	21.2	17.8	39.0
2005		21.2	20.5	41.7	0.0	-1.8	-1.8	21.2	18.7	39.9
1997		21.2	11.5	32.7	0.0	-5.5	-5.5	21.2	5.9	27.1
1993		21.2	20.9	42.1	0.0	-5.4	-5.4	21.2	15.5	36.7
1941		21.2	20.7	41.9	0.0	-4.7	-4.7	21.2	16.0	37.2
1958		21.2	19.6	40.8	0.0	-3.2	-3.2	21.2	16.4	37.6
1922	Normal-Wet	21.2	19.8	41.0	0.0	-3.9	-3.9	21.2	15.9	37.1
1965		21.2	16.3	37.5	0.0	-5.9	-5.9	21.2	10.4	31.6
1942		21.2	18.8	40.0	0.0	-4.9	-4.9	21.2	14.0	35.2
1937		21.2	13.7	34.9	0.0	-4.7	-4.7	21.2	9.0	30.2
1996		21.2	14.4	35.6	0.0	-4.2	-4.2	21.2	10.2	31.4
1974		21.2	15.1	36.3	0.0	-4.6	-4.6	21.2	10.5	31.7
1945		21.2	15.7	36.9	0.0	-3.3	-3.3	21.2	12.3	33.5
1943		21.2	12.9	34.1	0.0	-5.0	-5.0	21.2	7.9	29.1
1984		21.2	11.8	33.0	-0.1	-4.3	-4.4	21.1	7.5	28.6
1932		21.2	15.0	36.2	0.0	-3.8	-3.8	21.2	11.2	32.4
1973		21.2	13.1	34.3	0.0	-4.8	-4.8	21.2	8.4	29.5
2010		21.2	16.4	37.6	0.0	-4.2	-4.2	21.2	12.2	33.4
1927		21.2	13.4	34.6	0.0	-2.3	-2.3	21.2	11.1	32.3
1963		21.2	16.3	37.5	0.0	-4.3	-4.3	21.2	12.0	33.2
1962		21.2	13.6	34.8	0.0	-4.3	-4.3	21.2	9.3	30.5
1935		21.2	11.8	33.0	-0.1	-4.6	-4.7	21.1	7.2	28.3
1940		21.2	9.1	30.3	0.0	-1.5	-1.5	21.2	7.6	28.8
1951		21.2	7.8	28.9	0.0	-6.8	-6.7	21.2	1.0	22.2
1936		21.2	12.8	34.0	0.0	-4.5	-4.5	21.2	8.3	29.5
1979		21.2	12.6	33.8	-0.1	-4.8	-4.8	21.1	7.8	28.9
1975		21.2	13.1	34.3	0.0	-2.8	-2.8	21.2	10.4	31.6
2000		21.2	11.3	32.5	0.0	-3.3	-3.3	21.2	8.0	29.2
1946		21.2	8.6	29.8	0.0	-2.7	-2.7	21.2	5.9	27.1
1923		21.2	11.9	33.1	0.0	-3.8	-3.8	21.2	8.1	29.3
1999		21.2	9.7	30.9	0.0	-4.3	-4.3	21.2	5.4	26.6
2009		21.2	10.0	31.2	0.0	-7.4	-7.4	21.2	2.6	23.8
2003	Normal-Dry	21.2	9.6	30.8	0.0	-7.5	-7.5	21.2	2.2	23.4
1970		21.2	8.9	30.1	0.0	-5.8	-5.8	21.2	3.1	24.3
1925		21.2	6.2	27.4	0.0	-5.7	-5.7	21.2	0.6	21.8
1971		21.2	8.2	29.4	0.0	-6.7	-6.7	21.2	1.5	22.7
1957		21.2	6.8	28.0	0.0	-3.8	-3.8	21.2	3.0	24.2
1954		21.2	4.4	25.6	-1.1	-4.4	-5.5	20.1	0.0	20.1
1950		21.2	5.4	26.6	-0.1	-5.4	-5.5	21.1	0.0	21.1
2016		21.2	3.1	24.3	-2.2	-3.1	-5.3	19.0	0.0	19.0
1966		21.2	4.7	25.8	0.0	-2.7	-2.7	21.2	1.9	23.1
1944		21.2	6.2	27.4	0.0	-3.9	-3.9	21.2	2.3	23.5
1953		21.2	5.1	26.3	-0.4	-5.1	-5.5	20.8	0.0	20.8
1948		21.2	1.3	22.5	-5.5	-1.3	-6.8	15.7	0.0	15.7
2002		21.2	3.9	25.1	-3.0	-3.9	-6.9	18.2	0.0	18.2
1949		21.2	4.3	25.5	-2.5	-4.3	-6.8	18.7	0.0	18.7
1926		21.2	2.9	24.1	-1.3	-2.9	-4.2	19.9	0.0	19.9
1955		21.2	4.4	25.6	-1.5	-4.4	-5.9	19.7	0.0	19.7
1928		21.2	5.2	26.4	0.0	-3.7	-3.7	21.2	1.6	22.8
2004		21.2	2.6	23.8	-3.4	-2.6	-6.0	17.8	0.0	17.8
1985		21.2	3.4	24.6	-0.2	-3.4	-3.6	21.0	0.0	21.0
1947		21.2	2.7	23.9	0.0	-2.6	-2.6	21.2	0.1	21.3
2008		21.2	1.7	22.9	-5.1	-1.7	-6.8	16.1	0.0	16.1
1933		21.2	5.6	26.8	-0.9	-5.6	-6.5	20.3	0.0	20.3
1981		21.2	3.7	24.9	0.0	-1.5	-1.5	21.2	2.1	23.3
2001		21.2	2.1	23.3	-3.8	-2.1	-5.9	17.4	0.0	17.4
1972		21.2	2.9	24.1	-2.6	-2.9	-5.5	18.6	0.0	18.6
1991		20.7	0.0	20.7	-6.7	0.0	-6.7	14.1	0.0	14.1
1959		21.2	0.2	21.4	-1.4	-0.2	-1.5	19.8	0.0	19.8
1989		19.5	0.0	19.5	-6.5	0.0	-6.5	13.0	0.0	13.0
1964	Normal-Dry	21.2	2.2	23.4	-3.2	-2.2	-5.4	18.0	0.0	18.0
1939		20.1	0.0	20.1	-4.7	0.0	-4.7	15.3	0.0	15.3
1929		17.1	0.0	17.1	-5.1	0.0	-5.1	12.0	0.0	12.0
1988		17.7	0.0	17.7	-5.9	0.0	-5.9	11.9	0.0	11.9
1968		20.7	0.0	20.7	-3.7	0.0	-3.7	17.0	0.0	17.0
1930		17.6	0.0	17.6	-6.0	0.0	-6.0	11.6	0.0	11.6
2013		17.6	0.0	17.6	-6.0	0.0	-6.0	11.6	0.0	11.6
2012		19.2	0.0	19.2	-4.9	0.0	-4.9	14.3	0.0	14.3
1960		17.0	0.0	17.0	-5.8	0.0	-5.8	11.1	0.0	11.1
1994		17.7	0.0	17.7	1.1	0.0	1.1	18.8	0.0	18.8
1992		17.5	0.0	17.5	-5.7	0.0	-5.7	11.8	0.0	11.8
1987		14.3	0.0	14.3	-1.1	0.0	-1.1	13.3	0.0	13.3
1990		14.8	0.0	14.8	-5.4	0.0	-5.4	9.3	0.0	9.3
1934		15.1	0.0	15.1	-4.7	0.0	-4.7	10.4	0.0	10.4
2007		12.3	0.0	12.3	-3.7	0.0	-3.7	8.6	0.0	8.6
1961	Crit-High	12.1	0.0	12.1	-4.4	0.0	-4.4	7.7	0.0	7.7
1976		16.2	0.0	16.2	-3.6	0.0	-3.6	12.6	0.0	12.6
2014		8.8	0.0	8.8	-4.4	0.0	-4.4	4.4	0.0	4.4
1931		8.3	0.0	8.3	-4.4	0.0	-4.4	3.9	0.0	3.9
1924		11.7	0.0	11.7	-4.4	0.0	-4.4	7.3	0.0	7.3
1977	CL	5.0	0.0	5.0	-0.4	0.0	-0.4	4.6	0.0	4.6
2015		3.7	0.0	3.7	-0.4	0.0	-0.4	3.3	0.0	3.3
Wet Ave		21.2	20.4	41.6	0.0	-2.9	-2.9	21.2	17.5	38.7
Normal-wet Ave		21.2	13.3	34.5	0.0	-4.3	-4.3	21.2	9.0	30.2
Normal-dry Ave		21.1	4.1	25.2	-1.7	-3.5	-5.2	19.4	0.7	20.1
Dry Ave		17.3	0.1	17.5	-4.3	-0.1	-4.5	13.0	0.0	13.0
Critical-H Ave		11.4	0.0	11.4	-4.2	0.0	-4.2	7.2	0.0	7.2
Critical-L Ave		4.3	0.0	4.3	-0.4	0.0	-0.4	3.9	0.0	3.9

Note: Values reported by contract year (March-February)

Shafter-Wasco ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	50.0	23.9	73.9	0.0	-4.7	-4.7	50.0	19.2	69.2
1923	50.0	14.4	64.4	0.0	-4.6	-4.6	50.0	9.8	59.8
1924	27.6	0.0	27.6	-10.4	0.0	-10.4	17.2	0.0	17.2
1925	50.0	7.5	57.5	0.0	-6.8	-6.8	50.0	0.7	50.7
1926	50.0	3.5	53.5	-3.1	-3.5	-6.6	46.9	0.0	46.9
1927	50.0	16.2	66.2	0.0	-2.8	-2.8	50.0	13.4	63.4
1928	50.0	6.3	56.3	0.0	-4.4	-4.4	50.0	1.9	51.9
1929	40.3	0.0	40.3	-12.0	0.0	-12.0	28.3	0.0	28.3
1930	41.5	0.0	41.5	-14.1	0.0	-14.1	27.3	0.0	27.3
1931	19.5	0.0	19.5	-10.3	0.0	-10.3	9.2	0.0	9.2
1932	50.0	18.1	68.1	0.0	-4.6	-4.6	50.0	13.5	63.5
1933	50.0	6.8	56.8	-2.1	-6.8	-8.9	47.9	0.0	47.9
1934	35.6	0.0	35.6	-11.0	0.0	-11.0	24.5	0.0	24.5
1935	50.0	14.2	64.2	-0.2	-5.5	-5.7	49.8	8.7	58.5
1936	50.0	15.4	65.4	-0.1	-5.4	-5.5	49.9	10.0	59.9
1937	50.0	16.6	66.6	0.0	-5.7	-5.7	50.0	10.9	60.9
1938	50.0	26.3	76.3	0.0	-3.4	-3.4	50.0	22.9	72.9
1939	47.3	0.0	47.3	-11.2	0.0	-11.2	36.1	0.0	36.1
1940	50.0	11.0	61.0	0.0	-1.8	-1.8	50.0	9.2	59.2
1941	50.0	25.0	75.0	0.0	-5.7	-5.7	50.0	19.3	69.3
1942	50.0	22.8	72.8	0.0	-5.9	-5.9	50.0	16.9	66.8
1943	50.0	15.6	65.6	-0.1	-6.0	-6.1	49.9	9.6	59.5
1944	50.0	7.5	57.5	0.0	-4.7	-4.7	50.0	2.7	52.7
1945	50.0	18.9	68.9	0.0	-4.0	-4.0	50.0	14.9	64.9
1946	49.9	10.4	60.3	0.1	-3.3	-3.2	50.0	7.1	57.1
1947	50.0	3.2	53.2	0.0	-3.1	-3.1	50.0	0.1	50.1
1948	50.0	1.6	51.6	-12.9	-1.6	-14.5	37.1	0.0	37.1
1949	50.0	5.2	55.2	-5.8	-5.2	-11.1	44.2	0.0	44.2
1950	50.0	6.6	56.6	-0.2	-6.6	-6.8	49.8	0.0	49.8
1951	49.9	9.4	59.3	0.1	-8.2	-8.1	50.0	1.2	51.2
1952	50.0	23.8	73.8	0.0	-2.3	-2.3	50.0	21.5	71.5
1953	50.0	6.2	56.2	-0.9	-6.2	-7.0	49.1	0.0	49.1
1954	50.0	5.3	55.3	-2.7	-5.3	-7.9	47.3	0.0	47.3
1955	50.0	5.3	55.3	-3.5	-5.3	-8.8	46.5	0.0	46.5
1956	50.0	24.1	74.1	0.0	-4.8	-4.8	50.0	19.4	69.4
1957	50.0	8.2	58.2	0.0	-4.5	-4.5	50.0	3.6	53.6
1958	50.0	23.7	73.7	0.0	-3.9	-3.9	50.0	19.8	69.8
1959	50.0	0.2	50.2	-3.3	-0.2	-3.5	46.7	0.0	46.7
1960	40.0	0.0	40.0	-13.8	0.0	-13.8	26.2	0.0	26.2
1961	28.5	0.0	28.5	-10.3	0.0	-10.3	18.1	0.0	18.1
1962	50.0	16.4	66.4	0.0	-5.2	-5.2	50.0	11.3	61.3
1963	50.0	19.7	69.7	0.0	-5.2	-5.2	50.0	14.5	64.5
1964	50.0	2.7	52.7	-7.6	-2.7	-10.3	42.4	0.0	42.4
1965	50.0	19.7	69.7	0.0	-7.1	-7.1	50.0	12.6	62.6
1966	50.0	5.6	55.6	0.0	-3.3	-3.2	50.0	2.3	52.3
1967	50.0	27.3	77.3	0.0	-3.4	-3.4	50.0	23.8	73.8
1968	48.9	0.0	48.9	-8.8	0.0	-8.8	40.0	0.0	40.0
1969	50.0	25.2	75.2	0.0	-1.7	-1.7	50.0	23.5	73.5
1970	50.0	10.7	60.7	0.0	-7.0	-7.0	50.0	3.7	53.7
1971	50.0	9.9	59.9	0.0	-8.0	-8.0	50.0	1.8	51.8
1972	50.0	3.5	53.5	-6.2	-3.5	-9.7	43.8	0.0	43.8
1973	50.0	15.9	65.9	-0.1	-5.8	-5.8	49.9	10.1	60.1
1974	50.0	18.2	68.2	0.0	-5.6	-5.6	50.0	12.6	62.6
1975	50.0	15.9	65.9	0.0	-3.3	-3.3	50.0	12.5	62.5
1976	38.1	0.0	38.1	-8.5	0.0	-8.5	29.7	0.0	29.7
1977	11.7	0.0	11.7	-0.9	0.0	-0.9	10.8	0.0	10.8
1978	50.0	28.4	78.4	0.0	-2.9	-2.9	50.0	25.6	75.5
1979	50.0	15.2	65.2	-0.2	-5.8	-5.9	49.8	9.4	59.2
1980	50.0	24.7	74.7	-0.2	-4.7	-4.9	49.8	20.0	69.8
1981	50.0	4.4	54.4	0.0	-1.9	-1.9	50.0	2.6	52.6
1982	50.0	23.2	73.2	-0.1	-2.7	-2.8	49.9	20.5	70.4
1983	50.0	25.2	75.2	0.0	-1.0	-1.0	50.0	24.2	74.2
1984	50.0	14.2	64.2	-0.2	-5.2	-5.4	49.8	9.1	58.8
1985	50.0	4.1	54.1	-0.5	-4.1	-4.6	49.4	0.0	49.4
1986	50.0	22.9	72.9	0.0	-4.0	-4.0	50.0	19.0	69.0
1987	33.8	0.0	33.8	-2.5	0.0	-2.5	31.3	0.0	31.3
1988	41.8	0.0	41.8	-13.9	0.0	-13.9	28.0	0.0	28.0
1989	45.9	0.0	45.9	-15.3	0.0	-15.3	30.6	0.0	30.6
1990	34.8	0.0	34.8	-12.8	0.0	-12.8	22.0	0.0	22.0
1991	48.9	0.0	48.9	-15.7	0.0	-15.7	33.2	0.0	33.2
1992	41.2	0.0	41.2	-13.4	0.0	-13.4	27.8	0.0	27.8
1993	50.0	25.2	75.2	0.0	-6.5	-6.5	50.0	18.7	68.7
1994	41.7	0.0	41.7	2.7	0.0	2.7	44.4	0.0	44.4
1995	50.0	30.0	80.0	0.0	-2.9	-2.9	50.0	27.1	77.1
1996	50.0	17.4	67.4	0.0	-5.1	-5.1	50.0	12.3	62.3
1997	50.0	13.8	63.8	0.0	-6.6	-6.6	50.0	7.2	57.2
1998	50.0	23.1	73.1	-0.1	-3.7	-3.7	49.9	19.4	69.4
1999	50.0	11.7	61.7	0.0	-5.2	-5.2	50.0	6.6	56.6
2000	50.0	13.7	63.7	0.0	-4.0	-4.0	50.0	9.7	59.7
2001	50.0	2.6	52.6	-8.9	-2.6	-11.5	41.1	0.0	41.1
2002	50.0	4.7	54.7	-7.1	-4.7	-11.8	42.9	0.0	42.9
2003	50.0	11.6	61.6	0.0	-9.0	-9.0	50.0	2.6	52.6
2004	50.0	3.1	53.1	-7.9	-3.1	-11.1	42.1	0.0	42.1
2005	50.0	24.7	74.7	0.0	-2.2	-2.2	50.0	22.6	72.6
2006	50.0	25.0	75.0	0.0	-2.8	-2.8	50.0	22.2	72.2
2007	29.0	0.0	29.0	-8.8	0.0	-8.8	20.2	0.0	20.2
2008	50.0	2.0	52.0	-11.9	-2.0	-14.0	38.1	0.0	38.1
2009	50.0	12.0	62.0	0.0	-8.9	-8.9	50.0	3.1	53.1
2010	50.0	19.8	69.8	0.0	-5.1	-5.1	50.0	14.7	64.7
2011	50.0	26.8	76.8	0.0	-1.8	-1.8	50.0	25.0	75.0
2012	45.4	0.0	45.4	-11.7	0.0	-11.7	33.7	0.0	33.7
2013	41.4	0.0	41.4	-14.1	0.0	-14.1	27.3	0.0	27.3
2014	20.7	0.0	20.7	-10.3	0.0	-10.3	10.4	0.0	10.4
2015	8.7	0.0	8.7	-0.9	0.0	-0.9	7.8	0.0	7.8
2016	50.0	3.7	53.7	-5.1	-3.7	-8.9	44.9	0.0	44.9
Ave All	46.4	10.8	57.3	-3.4	-3.4	-6.7	43.1	7.4	50.5
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	34.9	0.1	35.0	-9.3	-0.1	-9.4	25.6	0.0	25.6

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	50.0	25.2	75.2	0.0	-1.0	-1.0	50.0	24.2	74.2
1969		50.0	25.2	75.2	0.0	-1.7	-1.7	50.0	23.5	73.5
1995		50.0	30.0	80.0	0.0	-2.9	-2.9	50.0	27.1	77.1
1938		50.0	26.3	76.3	0.0	-3.4	-3.4	50.0	22.9	72.9
1978		50.0	28.4	78.4	0.0	-2.9	-2.9	50.0	25.6	75.5
1982		50.0	23.2	73.2	-0.1	-2.7	-2.8	49.9	20.5	70.4
2011		50.0	26.8	76.8	0.0	-1.8	-1.8	50.0	25.0	75.0
1967		50.0	27.3	77.3	0.0	-3.4	-3.4	50.0	23.8	73.8
2006		50.0	25.0	75.0	0.0	-2.8	-2.8	50.0	22.2	72.2
1998		50.0	23.1	73.1	-0.1	-3.7	-3.7	49.9	19.4	69.4
1986		50.0	22.9	72.9	0.0	-4.0	-4.0	50.0	19.0	69.0
1980		50.0	24.7	74.7	-0.2	-4.7	-4.9	49.8	20.0	69.8
1956		50.0	24.1	74.1	0.0	-4.8	-4.8	50.0	19.4	69.4
1952		50.0	23.8	73.8	0.0	-2.3	-2.3	50.0	21.5	71.5
2005		50.0	24.7	74.7	0.0	-2.2	-2.2	50.0	22.6	72.6
1997		50.0	13.8	63.8	0.0	-6.6	-6.6	50.0	7.2	57.2
1993		50.0	25.2	75.2	0.0	-6.5	-6.5	50.0	18.7	68.7
1941		50.0	25.0	75.0	0.0	-5.7	-5.7	50.0	19.3	69.3
1958		50.0	23.7	73.7	0.0	-3.9	-3.9	50.0	19.8	69.8
1922	Normal-Wet	50.0	23.9	73.9	0.0	-4.7	-4.7	50.0	19.2	69.2
1965		50.0	19.7	69.7	0.0	-7.1	-7.1	50.0	12.6	62.6
1942		50.0	22.8	72.8	0.0	-5.9	-5.9	50.0	16.9	66.8
1937		50.0	16.6	66.6	0.0	-5.7	-5.7	50.0	10.9	60.9
1996		50.0	17.4	67.4	0.0	-5.1	-5.1	50.0	12.3	62.3
1974		50.0	18.2	68.2	0.0	-5.6	-5.6	50.0	12.6	62.6
1945		50.0	18.9	68.9	0.0	-4.0	-4.0	50.0	14.9	64.9
1943		50.0	15.6	65.6	-0.1	-6.0	-6.1	49.9	9.6	59.5
1984		50.0	14.2	64.2	-0.2	-5.2	-5.4	49.8	9.1	58.8
1932		50.0	18.1	68.1	0.0	-4.6	-4.6	50.0	13.5	63.5
1973		50.0	15.9	65.9	-0.1	-5.8	-5.8	49.9	10.1	60.1
2010		50.0	19.8	69.8	0.0	-5.1	-5.1	50.0	14.7	64.7
1927		50.0	16.2	66.2	0.0	-2.8	-2.8	50.0	13.4	63.4
1963		50.0	19.7	69.7	0.0	-5.2	-5.2	50.0	14.5	64.5
1962		50.0	16.4	66.4	0.0	-5.2	-5.2	50.0	11.3	61.3
1935		50.0	14.2	64.2	-0.2	-5.5	-5.7	49.8	8.7	58.5
1940		50.0	11.0	61.0	0.0	-1.8	-1.8	50.0	9.2	59.2
1951		49.9	9.4	59.3	0.1	-8.2	-8.1	50.0	1.2	51.2
1936		50.0	15.4	65.4	-0.1	-5.4	-5.5	49.9	10.0	59.9
1979		50.0	15.2	65.2	-0.2	-5.8	-5.9	49.8	9.4	59.2
1975		50.0	15.9	65.9	0.0	-3.3	-3.3	50.0	12.5	62.5
2000		50.0	13.7	63.7	0.0	-4.0	-4.0	50.0	9.7	59.7
1946		49.9	10.4	60.3	0.1	-3.3	-3.2	50.0	7.1	57.1
1923		50.0	14.4	64.4	0.0	-4.6	-4.6	50.0	9.8	59.8
1999		50.0	11.7	61.7	0.0	-5.2	-5.2	50.0	6.6	56.6
2009		50.0	12.0	62.0	0.0	-8.9	-8.9	50.0	3.1	53.1
2003	Normal-Dry	50.0	11.6	61.6	0.0	-9.0	-9.0	50.0	2.6	52.6
1970		50.0	10.7	60.7	0.0	-7.0	-7.0	50.0	3.7	53.7
1925		50.0	7.5	57.5	0.0	-6.8	-6.8	50.0	0.7	50.7
1971		50.0	9.9	59.9	0.0	-8.0	-8.0	50.0	1.8	51.8
1957		50.0	8.2	58.2	0.0	-4.5	-4.5	50.0	3.6	53.6
1954		50.0	5.3	55.3	-2.7	-5.3	-7.9	47.3	0.0	47.3
1950		50.0	6.6	56.6	-0.2	-6.6	-6.8	49.8	0.0	49.8
2016		50.0	3.7	53.7	-5.1	-3.7	-8.9	44.9	0.0	44.9
1966		50.0	5.6	55.6	0.0	-3.3	-3.2	50.0	2.3	52.3
1944		50.0	7.5	57.5	0.0	-4.7	-4.7	50.0	2.7	52.7
1953		50.0	6.2	56.2	-0.9	-6.2	-7.0	49.1	0.0	49.1
1948		50.0	1.6	51.6	-12.9	-1.6	-14.5	37.1	0.0	37.1
2002		50.0	4.7	54.7	-7.1	-4.7	-11.8	42.9	0.0	42.9
1949		50.0	5.2	55.2	-5.8	-5.2	-11.1	44.2	0.0	44.2
1926		50.0	3.5	53.5	-3.1	-3.5	-6.6	46.9	0.0	46.9
1955		50.0	5.3	55.3	-3.5	-5.3	-8.8	46.5	0.0	46.5
1928		50.0	6.3	56.3	0.0	-4.4	-4.4	50.0	1.9	51.9
2004		50.0	3.1	53.1	-7.9	-3.1	-11.1	42.1	0.0	42.1
1985		50.0	4.1	54.1	-0.5	-4.1	-4.6	49.4	0.0	49.4
1947		50.0	3.2	53.2	0.0	-3.1	-3.1	50.0	0.1	50.1
2008		50.0	2.0	52.0	-11.9	-2.0	-14.0	38.1	0.0	38.1
1933		50.0	6.8	56.8	-2.1	-6.8	-8.9	47.9	0.0	47.9
1981		50.0	4.4	54.4	0.0	-1.9	-1.9	50.0	2.6	52.6
2001		50.0	2.6	52.6	-8.9	-2.6	-11.5	41.1	0.0	41.1
1972		50.0	3.5	53.5	-6.2	-3.5	-9.7	43.8	0.0	43.8
1991		48.9	0.0	48.9	-15.7	0.0	-15.7	33.2	0.0	33.2
1959		50.0	0.2	50.2	-3.3	-0.2	-3.5	46.7	0.0	46.7
1989		45.9	0.0	45.9	-15.3	0.0	-15.3	30.6	0.0	30.6
1964	Normal-Dry	50.0	2.7	52.7	-7.6	-2.7	-10.3	42.4	0.0	42.4
1939		47.3	0.0	47.3	-11.2	0.0	-11.2	36.1	0.0	36.1
1929		40.3	0.0	40.3	-12.0	0.0	-12.0	28.3	0.0	28.3
1988		41.8	0.0	41.8	-13.9	0.0	-13.9	28.0	0.0	28.0
1968		48.9	0.0	48.9	-8.8	0.0	-8.8	40.0	0.0	40.0
1930		41.5	0.0	41.5	-14.1	0.0	-14.1	27.3	0.0	27.3
2013		41.4	0.0	41.4	-14.1	0.0	-14.1	27.3	0.0	27.3
2012		45.4	0.0	45.4	-11.7	0.0	-11.7	33.7	0.0	33.7
1960		40.0	0.0	40.0	-13.8	0.0	-13.8	26.2	0.0	26.2
1994		41.7	0.0	41.7	2.7	0.0	2.7	44.4	0.0	44.4
1992		41.2	0.0	41.2	-13.4	0.0	-13.4	27.8	0.0	27.8
1987		33.8	0.0	33.8	-2.5	0.0	-2.5	31.3	0.0	31.3
1990		34.8	0.0	34.8	-12.8	0.0	-12.8	22.0	0.0	22.0
1934		35.6	0.0	35.6	-11.0	0.0	-11.0	24.5	0.0	24.5
2007		29.0	0.0	29.0	-8.8	0.0	-8.8	20.2	0.0	20.2
1961	Crit-High	28.5	0.0	28.5	-10.3	0.0	-10.3	18.1	0.0	18.1
1976		38.1	0.0	38.1	-8.5	0.0	-8.5	29.7	0.0	29.7
2014		20.7	0.0	20.7	-10.3	0.0	-10.3	10.4	0.0	10.4
1931		19.5	0.0	19.5	-10.3	0.0	-10.3	9.2	0.0	9.2
1924		27.6	0.0	27.6	-10.4	0.0	-10.4	17.2	0.0	17.2
1977	CL	11.7	0.0	11.7	-0.9	0.0	-0.9	10.8	0.0	10.8
2015		8.7	0.0	8.7	-0.9	0.0	-0.9	7.8	0.0	7.8
Wet Ave		50.0	24.7	74.7	0.0	-3.5	-3.5	50.0	21.1	71.1
Normal-wet Ave		50.0	16.0	66.0	0.0	-5.2	-5.2	50.0	10.9	60.8
Normal-dry Ave		49.8	5.0	54.8	-4.0	-4.2	-8.2	45.8	0.8	46.6
Dry Ave		40.8	0.2	41.0	-10.2	-0.2	-10.4	30.6	0.0	30.6
Critical-H Ave		26.9	0.0	26.9	-10.0	0.0	-10.0	16.9	0.0	16.9
Critical-L Ave		10.2	0.0	10.2	-0.9	0.0	-0.9	9.3	0.0	9.3

Note: Values reported by contract year (March-February)

Southern San Joaquin MUD Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	97.0	30.2	127.2	0.0	-5.9	-5.9	97.0	24.2	121.2
1923	97.0	18.2	115.2	0.0	-5.8	-5.8	97.0	12.4	109.4
1924	53.6	0.0	53.6	-20.2	0.0	-20.2	33.4	0.0	33.4
1925	97.0	9.5	106.5	0.0	-8.6	-8.6	97.0	0.9	97.9
1926	96.9	4.4	101.4	-6.0	-4.4	-10.4	91.0	0.0	91.0
1927	97.0	20.4	117.4	0.0	-3.5	-3.5	97.0	16.9	113.9
1928	97.0	8.0	105.0	0.0	-5.6	-5.6	97.0	2.4	99.4
1929	78.1	0.0	78.1	-23.3	0.0	-23.3	54.8	0.0	54.8
1930	80.5	0.0	80.5	-27.4	0.0	-27.4	53.0	0.0	53.0
1931	37.9	0.0	37.9	-20.0	0.0	-20.0	17.8	0.0	17.8
1932	97.0	22.9	119.9	0.0	-5.8	-5.8	97.0	17.1	114.1
1933	97.0	8.6	105.6	-4.1	-8.6	-12.7	92.9	0.0	92.9
1934	69.0	0.0	69.0	-21.4	0.0	-21.4	47.6	0.0	47.6
1935	97.0	17.9	114.9	-0.4	-7.0	-7.4	96.6	11.0	107.6
1936	97.0	19.5	116.5	-0.2	-6.8	-7.0	96.8	12.7	109.5
1937	97.0	20.9	117.9	0.0	-7.2	-7.2	97.0	13.7	110.7
1938	97.0	33.3	130.3	0.0	-4.3	-4.3	97.0	29.0	126.0
1939	91.8	0.0	91.8	-21.7	0.0	-21.7	70.1	0.0	70.1
1940	97.0	13.9	110.9	0.0	-2.3	-2.3	97.0	11.6	108.6
1941	97.0	31.6	128.6	0.0	-7.2	-7.2	97.0	24.3	121.3
1942	97.0	28.7	125.7	0.0	-7.4	-7.5	97.0	21.3	118.3
1943	97.0	19.7	116.7	-0.2	-7.6	-7.8	96.8	12.1	108.9
1944	97.0	9.4	106.4	0.0	-6.0	-6.0	97.0	3.5	100.5
1945	97.0	23.9	120.9	0.0	-5.1	-5.1	97.0	18.8	115.8
1946	96.8	13.1	109.9	0.2	-4.2	-3.9	97.0	9.0	106.0
1947	97.0	4.1	101.1	0.0	-3.9	-3.9	97.0	0.2	97.2
1948	97.0	2.0	99.0	-25.1	-2.0	-27.1	71.9	0.0	71.9
1949	97.0	6.6	103.6	-11.3	-6.6	-17.9	85.7	0.0	85.7
1950	97.0	8.3	105.3	-0.4	-8.3	-8.7	96.6	0.0	96.6
1951	96.9	11.8	108.7	0.1	-10.3	-10.2	97.0	1.5	98.5
1952	97.0	30.0	127.0	0.0	-2.9	-2.9	97.0	27.1	124.1
1953	97.0	7.8	104.8	-1.7	-7.8	-9.4	95.3	0.0	95.3
1954	97.0	6.7	103.6	-5.2	-6.7	-11.8	91.8	0.0	91.8
1955	97.0	6.7	103.7	-6.8	-6.7	-13.5	90.2	0.0	90.2
1956	97.0	30.5	127.5	0.0	-6.0	-6.0	97.0	24.5	121.5
1957	97.0	10.3	107.3	0.0	-5.7	-5.7	97.0	4.6	101.6
1958	97.0	29.9	126.9	0.0	-4.9	-4.9	97.0	25.0	122.0
1959	97.0	0.2	97.2	-6.3	-0.2	-6.6	90.7	0.0	90.7
1960	77.7	0.0	77.7	-26.7	0.0	-26.7	50.9	0.0	50.9
1961	55.2	0.0	55.2	-20.0	0.0	-20.0	35.2	0.0	35.2
1962	97.0	20.8	117.8	0.0	-6.5	-6.5	97.0	14.2	111.2
1963	97.0	24.9	121.9	0.0	-6.6	-6.6	97.0	18.3	115.3
1964	97.0	3.4	100.4	-14.7	-3.4	-18.1	82.3	0.0	82.3
1965	97.0	24.9	121.9	0.0	-9.0	-8.9	97.0	15.9	112.9
1966	96.9	7.1	104.0	0.1	-4.1	-4.1	97.0	3.0	100.0
1967	97.0	34.4	131.4	-0.1	-4.3	-4.4	96.9	30.1	127.0
1968	94.8	0.0	94.8	-17.1	0.0	-17.1	77.7	0.0	77.7
1969	97.0	31.8	128.8	0.0	-2.2	-2.2	97.0	29.7	126.7
1970	97.0	13.6	110.5	0.0	-8.9	-8.8	97.0	4.7	101.7
1971	97.0	12.5	109.5	0.0	-10.2	-10.2	97.0	2.3	99.3
1972	97.0	4.4	101.4	-12.0	-4.4	-16.5	85.0	0.0	85.0
1973	97.0	20.0	117.0	-0.1	-7.3	-7.4	96.9	12.8	109.7
1974	97.0	23.0	120.0	0.0	-7.1	-7.1	97.0	15.9	112.9
1975	97.0	20.0	117.0	0.0	-4.2	-4.2	97.0	15.8	112.8
1976	74.0	0.0	74.0	-16.4	0.0	-16.4	57.5	0.0	57.5
1977	22.7	0.0	22.7	-1.8	0.0	-1.8	20.9	0.0	20.9
1978	97.0	35.9	132.9	0.0	-3.6	-3.6	97.0	32.3	129.2
1979	97.0	19.1	116.1	-0.3	-7.3	-7.6	96.7	11.9	108.5
1980	97.0	31.2	128.2	-0.5	-5.9	-6.4	96.5	25.2	121.8
1981	97.0	5.6	102.6	0.0	-2.3	-2.3	97.0	3.2	100.2
1982	97.0	29.3	126.3	-0.1	-3.5	-3.6	96.9	25.9	122.7
1983	97.0	31.8	128.8	0.0	-1.2	-1.2	97.0	30.5	127.5
1984	97.0	17.9	114.9	-0.4	-6.5	-6.9	96.5	11.4	108.0
1985	97.0	5.2	102.1	-1.0	-5.2	-6.2	95.9	0.0	95.9
1986	97.0	29.0	126.0	0.0	-5.0	-5.0	97.0	23.9	120.9
1987	65.6	0.0	65.6	-4.9	0.0	-4.9	60.6	0.0	60.6
1988	81.2	0.0	81.2	-26.9	0.0	-26.9	54.2	0.0	54.2
1989	89.0	0.0	89.0	-29.7	0.0	-29.7	59.3	0.0	59.3
1990	67.6	0.0	67.6	-24.8	0.0	-24.8	42.7	0.0	42.7
1991	94.8	0.0	94.8	-30.5	0.0	-30.5	64.3	0.0	64.3
1992	79.9	0.0	79.9	-25.9	0.0	-25.9	54.0	0.0	54.0
1993	97.0	31.8	128.8	0.0	-8.2	-8.2	97.0	23.7	120.7
1994	80.9	0.0	80.9	5.2	0.0	5.2	86.1	0.0	86.1
1995	97.0	37.9	134.9	0.0	-3.6	-3.6	97.0	34.3	131.3
1996	97.0	21.9	118.9	0.0	-6.4	-6.4	97.0	15.5	112.5
1997	97.0	17.5	114.5	0.0	-8.4	-8.4	97.0	9.1	106.1
1998	97.0	29.2	126.2	-0.1	-4.6	-4.8	96.9	24.5	121.4
1999	97.0	14.8	111.8	0.0	-6.6	-6.6	97.0	8.3	105.3
2000	97.0	17.3	114.3	-0.1	-5.1	-5.1	96.9	12.3	109.2
2001	97.0	3.3	100.3	-17.4	-3.3	-20.6	79.6	0.0	79.6
2002	97.0	6.0	103.0	-13.7	-6.0	-19.6	83.3	0.0	83.3
2003	97.0	14.7	111.7	0.0	-11.4	-11.4	97.0	3.3	100.3
2004	97.0	4.0	101.0	-15.4	-4.0	-19.3	81.6	0.0	81.6
2005	97.0	31.2	128.2	0.0	-2.7	-2.7	97.0	28.5	125.5
2006	97.0	31.5	128.5	0.0	-3.5	-3.5	97.0	28.0	125.0
2007	56.2	0.0	56.2	-17.1	0.0	-17.1	39.1	0.0	39.1
2008	97.0	2.6	99.6	-23.1	-2.6	-25.7	73.9	0.0	73.9
2009	97.0	15.2	112.2	0.0	-11.3	-11.3	97.0	3.9	100.9
2010	97.0	25.0	122.0	0.0	-6.4	-6.5	97.0	18.6	115.5
2011	97.0	33.8	130.8	0.0	-2.2	-2.2	97.0	31.6	128.6
2012	88.0	0.0	88.0	-22.6	0.0	-22.6	65.4	0.0	65.4
2013	80.4	0.0	80.4	-27.4	0.0	-27.4	53.0	0.0	53.0
2014	40.2	0.0	40.2	-20.0	0.0	-20.0	20.2	0.0	20.2
2015	16.8	0.0	16.8	-1.7	0.0	-1.7	15.0	0.0	15.0
2016	97.0	4.7	101.7	-10.0	-4.7	-14.7	87.0	0.0	87.0
Ave All	90.1	13.7	103.7	-6.5	-4.3	-10.8	83.6	9.4	93.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	67.7	0.2	67.8	-18.0	-0.2	-18.2	49.6	0.0	49.6

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	97.0	31.8	128.8	0.0	-1.2	-1.2	97.0	30.5	127.5
1969		97.0	31.8	128.8	0.0	-2.2	-2.2	97.0	29.7	126.7
1995		97.0	37.9	134.9	0.0	-3.6	-3.6	97.0	34.3	131.3
1938		97.0	33.3	130.3	0.0	-4.3	-4.3	97.0	29.0	126.0
1978		97.0	35.9	132.9	0.0	-3.6	-3.6	97.0	32.3	129.2
1982		97.0	29.3	126.3	-0.1	-3.5	-3.6	96.9	25.9	122.7
2011		97.0	33.8	130.8	0.0	-2.2	-2.2	97.0	31.6	128.6
1967		97.0	34.4	131.4	-0.1	-4.3	-4.4	96.9	30.1	127.0
2006		97.0	31.5	128.5	0.0	-3.5	-3.5	97.0	28.0	125.0
1998		97.0	29.2	126.2	-0.1	-4.6	-4.8	96.9	24.5	121.4
1986		97.0	29.0	126.0	0.0	-5.0	-5.0	97.0	23.9	120.9
1980		97.0	31.2	128.2	-0.5	-5.9	-6.4	96.5	25.2	121.8
1956		97.0	30.5	127.5	0.0	-6.0	-6.0	97.0	24.5	121.5
1952		97.0	30.0	127.0	0.0	-2.9	-2.9	97.0	27.1	124.1
2005		97.0	31.2	128.2	0.0	-2.7	-2.7	97.0	28.5	125.5
1997		97.0	17.5	114.5	0.0	-8.4	-8.4	97.0	9.1	106.1
1993		97.0	31.8	128.8	0.0	-8.2	-8.2	97.0	23.7	120.7
1941		97.0	31.6	128.6	0.0	-7.2	-7.2	97.0	24.3	121.3
1958		97.0	29.9	126.9	0.0	-4.9	-4.9	97.0	25.0	122.0
1922	Normal-Wet	97.0	30.2	127.2	0.0	-5.9	-5.9	97.0	24.2	121.2
1965		97.0	24.9	121.9	0.0	-9.0	-8.9	97.0	15.9	112.9
1942		97.0	28.7	125.7	0.0	-7.4	-7.5	97.0	21.3	118.3
1937		97.0	20.9	117.9	0.0	-7.2	-7.2	97.0	13.7	110.7
1996		97.0	21.9	118.9	0.0	-6.4	-6.4	97.0	15.5	112.5
1974		97.0	23.0	120.0	0.0	-7.1	-7.1	97.0	15.9	112.9
1945		97.0	23.9	120.9	0.0	-5.1	-5.1	97.0	18.8	115.8
1943		97.0	19.7	116.7	-0.2	-7.6	-7.8	96.8	12.1	108.9
1984		97.0	17.9	114.9	-0.4	-6.5	-6.9	96.5	11.4	108.0
1932		97.0	22.9	119.9	0.0	-5.8	-5.8	97.0	17.1	114.1
1973		97.0	20.0	117.0	-0.1	-7.3	-7.4	96.9	12.8	109.7
2010		97.0	25.0	122.0	0.0	-6.4	-6.5	97.0	18.6	115.5
1927		97.0	20.4	117.4	0.0	-3.5	-3.5	97.0	16.9	113.9
1963		97.0	24.9	121.9	0.0	-6.6	-6.6	97.0	18.3	115.3
1962		97.0	20.8	117.8	0.0	-6.5	-6.5	97.0	14.2	111.2
1935		97.0	17.9	114.9	-0.4	-7.0	-7.4	96.6	11.0	107.6
1940		97.0	13.9	110.9	0.0	-2.3	-2.3	97.0	11.6	108.6
1951		96.9	11.8	108.7	0.1	-10.3	-10.2	97.0	1.5	98.5
1936		97.0	19.5	116.5	-0.2	-6.8	-7.0	96.8	12.7	109.5
1979		97.0	19.1	116.1	-0.3	-7.3	-7.6	96.7	11.9	108.5
1975		97.0	20.0	117.0	0.0	-4.2	-4.2	97.0	15.8	112.8
2000		97.0	17.3	114.3	-0.1	-5.1	-5.1	96.9	12.3	109.2
1946		96.8	13.1	109.9	0.2	-4.2	-3.9	97.0	9.0	106.0
1923		97.0	18.2	115.2	0.0	-5.8	-5.8	97.0	12.4	109.4
1999		97.0	14.8	111.8	0.0	-6.6	-6.6	97.0	8.3	105.3
2009		97.0	15.2	112.2	0.0	-11.3	-11.3	97.0	3.9	100.9
2003	Normal-Dry	97.0	14.7	111.7	0.0	-11.4	-11.4	97.0	3.3	100.3
1970		97.0	13.6	110.5	0.0	-8.9	-8.8	97.0	4.7	101.7
1925		97.0	9.5	106.5	0.0	-8.6	-8.6	97.0	0.9	97.9
1971		97.0	12.5	109.5	0.0	-10.2	-10.2	97.0	2.3	99.3
1957		97.0	10.3	107.3	0.0	-5.7	-5.7	97.0	4.6	101.6
1954		97.0	6.7	103.6	-5.2	-6.7	-11.8	91.8	0.0	91.8
1950		97.0	8.3	105.3	-0.4	-8.3	-8.7	96.6	0.0	96.6
2016		97.0	4.7	101.7	-10.0	-4.7	-14.7	87.0	0.0	87.0
1966		96.9	7.1	104.0	0.1	-4.1	-4.1	97.0	3.0	100.0
1944		97.0	9.4	106.4	0.0	-6.0	-6.0	97.0	3.5	100.5
1953		97.0	7.8	104.8	-1.7	-7.8	-9.4	95.3	0.0	95.3
1948		97.0	2.0	99.0	-25.1	-2.0	-27.1	71.9	0.0	71.9
2002		97.0	6.0	103.0	-13.7	-6.0	-19.6	83.3	0.0	83.3
1949		97.0	6.6	103.6	-11.3	-6.6	-17.9	85.7	0.0	85.7
1926		96.9	4.4	101.4	-6.0	-4.4	-10.4	91.0	0.0	91.0
1955		97.0	6.7	103.7	-6.8	-6.7	-13.5	90.2	0.0	90.2
1928		97.0	8.0	105.0	0.0	-5.6	-5.6	97.0	2.4	99.4
2004		97.0	4.0	101.0	-15.4	-4.0	-19.3	81.6	0.0	81.6
1985		97.0	5.2	102.1	-1.0	-5.2	-6.2	95.9	0.0	95.9
1947		97.0	4.1	101.1	0.0	-3.9	-3.9	97.0	0.2	97.2
2008		97.0	2.6	99.6	-23.1	-2.6	-25.7	73.9	0.0	73.9
1933		97.0	8.6	105.6	-4.1	-8.6	-12.7	92.9	0.0	92.9
1981		97.0	5.6	102.6	0.0	-2.3	-2.3	97.0	3.2	100.2
2001		97.0	3.3	100.3	-17.4	-3.3	-20.6	79.6	0.0	79.6
1972		97.0	4.4	101.4	-12.0	-4.4	-16.5	85.0	0.0	85.0
1991		94.8	0.0	94.8	-30.5	0.0	-30.5	64.3	0.0	64.3
1959		97.0	0.2	97.2	-6.3	-0.2	-6.6	90.7	0.0	90.7
1989		89.0	0.0	89.0	-29.7	0.0	-29.7	59.3	0.0	59.3
1964	Normal-Dry	97.0	3.4	100.4	-14.7	-3.4	-18.1	82.3	0.0	82.3
1939		91.8	0.0	91.8	-21.7	0.0	-21.7	70.1	0.0	70.1
1929		78.1	0.0	78.1	-23.3	0.0	-23.3	54.8	0.0	54.8
1988		81.2	0.0	81.2	-26.9	0.0	-26.9	54.2	0.0	54.2
1968		94.8	0.0	94.8	-17.1	0.0	-17.1	77.7	0.0	77.7
1930		80.5	0.0	80.5	-27.4	0.0	-27.4	53.0	0.0	53.0
2013		80.4	0.0	80.4	-27.4	0.0	-27.4	53.0	0.0	53.0
2012		88.0	0.0	88.0	-22.6	0.0	-22.6	65.4	0.0	65.4
1960		77.7	0.0	77.7	-26.7	0.0	-26.7	50.9	0.0	50.9
1994		80.9	0.0	80.9	5.2	0.0	5.2	86.1	0.0	86.1
1992		79.9	0.0	79.9	-25.9	0.0	-25.9	54.0	0.0	54.0
1987		65.6	0.0	65.6	-4.9	0.0	-4.9	60.6	0.0	60.6
1990		67.6	0.0	67.6	-24.8	0.0	-24.8	42.7	0.0	42.7
1934		69.0	0.0	69.0	-21.4	0.0	-21.4	47.6	0.0	47.6
2007		56.2	0.0	56.2	-17.1	0.0	-17.1	39.1	0.0	39.1
1961	Crit-High	55.2	0.0	55.2	-20.0	0.0	-20.0	35.2	0.0	35.2
1976		74.0	0.0	74.0	-16.4	0.0	-16.4	57.5	0.0	57.5
2014		40.2	0.0	40.2	-20.0	0.0	-20.0	20.2	0.0	20.2
1931		37.9	0.0	37.9	-20.0	0.0	-20.0	17.8	0.0	17.8
1924		53.6	0.0	53.6	-20.2	0.0	-20.2	33.4	0.0	33.4
1977	CL	22.7	0.0	22.7	-1.8	0.0	-1.8	20.9	0.0	20.9
2015		16.8	0.0	16.8	-1.7	0.0	-1.7	15.0	0.0	15.0
	Wet Ave	97.0	31.1	128.1	0.0	-4.4	-4.5	97.0	26.7	123.6
	Normal-wet Ave	97.0	20.2	117.2	-0.1	-6.5	-6.6	96.9	13.7	110.7
	Normal-dry Ave	96.6	6.3	102.9	-7.8	-5.3	-13.1	88.8	1.0	89.8
	Dry Ave	79.2	0.2	79.5	-19.8	-0.2	-20.0	59.4	0.0	59.4
	Critical-H Ave	52.2	0.0	52.2	-19.3	0.0	-19.3	32.8	0.0	32.8
	Critical-L Ave	19.7	0.0	19.7	-1.8	0.0	-1.8	18.0	0.0	18.0

Stone Corral ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1923	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1924	5.5	0.0	5.5	-2.1	0.0	-2.1	3.4	0.0	3.4
1925	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1926	10.0	0.0	10.0	-0.6	0.0	-0.6	9.4	0.0	9.4
1927	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1928	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1929	8.1	0.0	8.1	-2.4	0.0	-2.4	5.7	0.0	5.7
1930	8.3	0.0	8.3	-2.8	0.0	-2.8	5.5	0.0	5.5
1931	3.9	0.0	3.9	-2.1	0.0	-2.1	1.8	0.0	1.8
1932	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1933	10.0	0.0	10.0	-0.4	0.0	-0.4	9.6	0.0	9.6
1934	7.1	0.0	7.1	-2.2	0.0	-2.2	4.9	0.0	4.9
1935	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1936	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1937	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1938	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1939	9.5	0.0	9.5	-2.2	0.0	-2.2	7.2	0.0	7.2
1940	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1941	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1942	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1943	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1944	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1945	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1946	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1947	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1948	10.0	0.0	10.0	-2.6	0.0	-2.6	7.4	0.0	7.4
1949	10.0	0.0	10.0	-1.2	0.0	-1.2	8.8	0.0	8.8
1950	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1951	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1952	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1953	10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1954	10.0	0.0	10.0	-0.5	0.0	-0.5	9.5	0.0	9.5
1955	10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1956	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1957	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1958	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1959	10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1960	8.0	0.0	8.0	-2.8	0.0	-2.8	5.2	0.0	5.2
1961	5.7	0.0	5.7	-2.1	0.0	-2.1	3.6	0.0	3.6
1962	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1963	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1964	10.0	0.0	10.0	-1.5	0.0	-1.5	8.5	0.0	8.5
1965	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1966	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1967	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1968	9.8	0.0	9.8	-1.8	0.0	-1.8	8.0	0.0	8.0
1969	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1970	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1971	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1972	10.0	0.0	10.0	-1.2	0.0	-1.2	8.8	0.0	8.8
1973	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1974	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1975	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1976	7.6	0.0	7.6	-1.7	0.0	-1.7	5.9	0.0	5.9
1977	2.3	0.0	2.3	-0.2	0.0	-0.2	2.2	0.0	2.2
1978	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1979	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1980	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1981	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1982	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1983	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1984	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1985	10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1986	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1987	6.8	0.0	6.8	-0.5	0.0	-0.5	6.3	0.0	6.3
1988	8.4	0.0	8.4	-2.8	0.0	-2.8	5.6	0.0	5.6
1989	9.2	0.0	9.2	-3.1	0.0	-3.1	6.1	0.0	6.1
1990	7.0	0.0	7.0	-2.6	0.0	-2.6	4.4	0.0	4.4
1991	9.8	0.0	9.8	-3.1	0.0	-3.1	6.6	0.0	6.6
1992	8.2	0.0	8.2	-2.7	0.0	-2.7	5.6	0.0	5.6
1993	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1994	8.3	0.0	8.3	0.5	0.0	0.5	8.9	0.0	8.9
1995	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1996	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1997	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1998	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1999	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2000	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2001	10.0	0.0	10.0	-1.8	0.0	-1.8	8.2	0.0	8.2
2002	10.0	0.0	10.0	-1.4	0.0	-1.4	8.6	0.0	8.6
2003	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2004	10.0	0.0	10.0	-1.6	0.0	-1.6	8.4	0.0	8.4
2005	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2006	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2007	5.8	0.0	5.8	-1.8	0.0	-1.8	4.0	0.0	4.0
2008	10.0	0.0	10.0	-2.4	0.0	-2.4	7.6	0.0	7.6
2009	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2010	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2011	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2012	9.1	0.0	9.1	-2.3	0.0	-2.3	6.7	0.0	6.7
2013	8.3	0.0	8.3	-2.8	0.0	-2.8	5.5	0.0	5.5
2014	4.1	0.0	4.1	-2.1	0.0	-2.1	2.1	0.0	2.1
2015	1.7	0.0	1.7	-0.2	0.0	-0.2	1.6	0.0	1.6
2016	10.0	0.0	10.0	-1.0	0.0	-1.0	9.0	0.0	9.0
Ave All	9.3	0.0	9.3	-0.7	0.0	-0.7	8.6	0.0	8.6

Original Dry Year Classification (Driest 20% Years)

Dry Ave	7.0	0.0	7.0	-1.9	0.0	-1.9	5.1	0.0	5.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1969		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1995		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1938		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1978		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1982		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2011		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1967		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2006		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1998		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1986		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1980		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1956		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1952		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2005		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1997		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1993		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1941		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1958		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1922	Normal-Wet	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1965		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1942		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1937		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1996		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1974		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1945		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1943		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1984		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1932		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1973		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2010		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1927		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1963		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1962		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1935		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1940		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1951		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1936		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1979		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1975		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2000		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1946		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1923		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1999		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2009		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2003	Normal-Dry	10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1970		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1925		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1971		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1957		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1954		10.0	0.0	10.0	-0.5	0.0	-0.5	9.5	0.0	9.5
1950		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2016		10.0	0.0	10.0	-1.0	0.0	-1.0	9.0	0.0	9.0
1966		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1944		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
1953		10.0	0.0	10.0	-0.2	0.0	-0.2	9.8	0.0	9.8
1948		10.0	0.0	10.0	-2.6	0.0	-2.6	7.4	0.0	7.4
2002		10.0	0.0	10.0	-1.4	0.0	-1.4	8.6	0.0	8.6
1949		10.0	0.0	10.0	-1.2	0.0	-1.2	8.8	0.0	8.8
1926		10.0	0.0	10.0	-0.6	0.0	-0.6	9.4	0.0	9.4
1955		10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1928		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2004		10.0	0.0	10.0	-1.6	0.0	-1.6	8.4	0.0	8.4
1985		10.0	0.0	10.0	-0.1	0.0	-0.1	9.9	0.0	9.9
1947		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2008		10.0	0.0	10.0	-2.4	0.0	-2.4	7.6	0.0	7.6
1933		10.0	0.0	10.0	-0.4	0.0	-0.4	9.6	0.0	9.6
1981		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
2001		10.0	0.0	10.0	-1.8	0.0	-1.8	8.2	0.0	8.2
1972		10.0	0.0	10.0	-1.2	0.0	-1.2	8.8	0.0	8.8
1991		9.8	0.0	9.8	-3.1	0.0	-3.1	6.6	0.0	6.6
1959		10.0	0.0	10.0	-0.7	0.0	-0.7	9.3	0.0	9.3
1989		9.2	0.0	9.2	-3.1	0.0	-3.1	6.1	0.0	6.1
1964	Normal-Dry	10.0	0.0	10.0	-1.5	0.0	-1.5	8.5	0.0	8.5
1939		9.5	0.0	9.5	-2.2	0.0	-2.2	7.2	0.0	7.2
1929		8.1	0.0	8.1	-2.4	0.0	-2.4	5.7	0.0	5.7
1988		8.4	0.0	8.4	-2.8	0.0	-2.8	5.6	0.0	5.6
1968		9.8	0.0	9.8	-1.8	0.0	-1.8	8.0	0.0	8.0
1930		8.3	0.0	8.3	-2.8	0.0	-2.8	5.5	0.0	5.5
2013		8.3	0.0	8.3	-2.8	0.0	-2.8	5.5	0.0	5.5
2012		9.1	0.0	9.1	-2.3	0.0	-2.3	6.7	0.0	6.7
1960		8.0	0.0	8.0	-2.8	0.0	-2.8	5.2	0.0	5.2
1994		8.3	0.0	8.3	0.5	0.0	0.5	8.9	0.0	8.9
1992		8.2	0.0	8.2	-2.7	0.0	-2.7	5.6	0.0	5.6
1987		6.8	0.0	6.8	-0.5	0.0	-0.5	6.3	0.0	6.3
1990		7.0	0.0	7.0	-2.6	0.0	-2.6	4.4	0.0	4.4
1934		7.1	0.0	7.1	-2.2	0.0	-2.2	4.9	0.0	4.9
2007		5.8	0.0	5.8	-1.8	0.0	-1.8	4.0	0.0	4.0
1961	Crit-High	5.7	0.0	5.7	-2.1	0.0	-2.1	3.6	0.0	3.6
1976		7.6	0.0	7.6	-1.7	0.0	-1.7	5.9	0.0	5.9
2014		4.1	0.0	4.1	-2.1	0.0	-2.1	2.1	0.0	2.1
1931		3.9	0.0	3.9	-2.1	0.0	-2.1	1.8	0.0	1.8
1924		5.5	0.0	5.5	-2.1	0.0	-2.1	3.4	0.0	3.4
1977	CL	2.3	0.0	2.3	-0.2	0.0	-0.2	2.2	0.0	2.2
2015		1.7	0.0	1.7	-0.2	0.0	-0.2	1.6	0.0	1.6
Wet Ave		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
Normal-wet Ave		10.0	0.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
Normal-dry Ave		10.0	0.0	10.0	-0.8	0.0	-0.8	9.2	0.0	9.2
Dry Ave		8.2	0.0	8.2	-2.0	0.0	-2.0	6.1	0.0	6.1
Critical-H Ave		5.4	0.0	5.4	-2.0	0.0	-2.0	3.4	0.0	3.4
Critical-L Ave		2.0	0.0	2.0	-0.2	0.0	-0.2	1.9	0.0	1.9

Note: Values reported by contract year (March-February)

Tea Pot Dome WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1923	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1924	4.1	0.0	4.1	-1.6	0.0	-1.6	2.6	0.0	2.6
1925	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1926	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1927	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1928	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1929	6.0	0.0	6.0	-1.8	0.0	-1.8	4.2	0.0	4.2
1930	6.2	0.0	6.2	-2.1	0.0	-2.1	4.1	0.0	4.1
1931	2.9	0.0	2.9	-1.5	0.0	-1.5	1.4	0.0	1.4
1932	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1933	7.5	0.0	7.5	-0.3	0.0	-0.3	7.2	0.0	7.2
1934	5.3	0.0	5.3	-1.7	0.0	-1.7	3.7	0.0	3.7
1935	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1936	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1937	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1938	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1939	7.1	0.0	7.1	-1.7	0.0	-1.7	5.4	0.0	5.4
1940	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1941	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1942	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1943	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1944	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1945	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1946	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1947	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1948	7.5	0.0	7.5	-1.9	0.0	-1.9	5.6	0.0	5.6
1949	7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
1950	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1951	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1952	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1953	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1954	7.5	0.0	7.5	-0.4	0.0	-0.4	7.1	0.0	7.1
1955	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1956	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1957	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1958	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1959	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1960	6.0	0.0	6.0	-2.1	0.0	-2.1	3.9	0.0	3.9
1961	4.3	0.0	4.3	-1.5	0.0	-1.5	2.7	0.0	2.7
1962	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1963	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1964	7.5	0.0	7.5	-1.1	0.0	-1.1	6.4	0.0	6.4
1965	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1966	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1967	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1968	7.3	0.0	7.3	-1.3	0.0	-1.3	6.0	0.0	6.0
1969	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1970	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1971	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1972	7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
1973	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1974	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1975	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1976	5.7	0.0	5.7	-1.3	0.0	-1.3	4.4	0.0	4.4
1977	1.8	0.0	1.8	-0.1	0.0	-0.1	1.6	0.0	1.6
1978	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1979	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1980	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1981	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1982	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1983	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1984	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1985	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1986	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1987	5.1	0.0	5.1	-0.4	0.0	-0.4	4.7	0.0	4.7
1988	6.3	0.0	6.3	-2.1	0.0	-2.1	4.2	0.0	4.2
1989	6.9	0.0	6.9	-2.3	0.0	-2.3	4.6	0.0	4.6
1990	5.2	0.0	5.2	-1.9	0.0	-1.9	3.3	0.0	3.3
1991	7.3	0.0	7.3	-2.4	0.0	-2.4	5.0	0.0	5.0
1992	6.2	0.0	6.2	-2.0	0.0	-2.0	4.2	0.0	4.2
1993	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1994	6.3	0.0	6.3	0.4	0.0	0.4	6.7	0.0	6.7
1995	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1996	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1997	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1998	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1999	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2000	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2001	7.5	0.0	7.5	-1.3	0.0	-1.3	6.2	0.0	6.2
2002	7.5	0.0	7.5	-1.1	0.0	-1.1	6.4	0.0	6.4
2003	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2004	7.5	0.0	7.5	-1.2	0.0	-1.2	6.3	0.0	6.3
2005	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2006	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2007	4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
2008	7.5	0.0	7.5	-1.8	0.0	-1.8	5.7	0.0	5.7
2009	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2010	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2011	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2012	6.8	0.0	6.8	-1.7	0.0	-1.7	5.1	0.0	5.1
2013	6.2	0.0	6.2	-2.1	0.0	-2.1	4.1	0.0	4.1
2014	3.1	0.0	3.1	-1.5	0.0	-1.5	1.6	0.0	1.6
2015	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
2016	7.5	0.0	7.5	-0.8	0.0	-0.8	6.7	0.0	6.7
Ave All	7.0	0.0	7.0	-0.5	0.0	-0.5	6.5	0.0	6.5
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	5.2	0.0	5.2	-1.4	0.0	-1.4	3.8	0.0	3.8

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1969	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1995	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1938	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1978	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1982	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2011	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1967	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2006	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1998	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1986	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1980	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1956	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1952	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2005	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1997	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1993	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1941	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1958	Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1922	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1965	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1942	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1937	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1996	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1974	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1945	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1943	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1984	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1932	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1973	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2010	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1927	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1963	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1962	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1935	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1940	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1951	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1936	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1979	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1975	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2000	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1946	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1923	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1999	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2009	Normal-Wet	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2003	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1970	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1925	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1971	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1957	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1954	Normal-Dry	7.5	0.0	7.5	-0.4	0.0	-0.4	7.1	0.0	7.1
1950	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2016	Normal-Dry	7.5	0.0	7.5	-0.8	0.0	-0.8	6.7	0.0	6.7
1966	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1944	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
1953	Normal-Dry	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1948	Normal-Dry	7.5	0.0	7.5	-1.9	0.0	-1.9	5.6	0.0	5.6
2002	Normal-Dry	7.5	0.0	7.5	-1.1	0.0	-1.1	6.4	0.0	6.4
1949	Normal-Dry	7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
1926	Normal-Dry	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1955	Normal-Dry	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1928	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2004	Normal-Dry	7.5	0.0	7.5	-1.2	0.0	-1.2	6.3	0.0	6.3
1985	Normal-Dry	7.5	0.0	7.5	-0.1	0.0	-0.1	7.4	0.0	7.4
1947	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2008	Normal-Dry	7.5	0.0	7.5	-1.8	0.0	-1.8	5.7	0.0	5.7
1933	Normal-Dry	7.5	0.0	7.5	-0.3	0.0	-0.3	7.2	0.0	7.2
1981	Normal-Dry	7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
2001	Normal-Dry	7.5	0.0	7.5	-1.3	0.0	-1.3	6.2	0.0	6.2
1972	Normal-Dry	7.5	0.0	7.5	-0.9	0.0	-0.9	6.6	0.0	6.6
1991	Normal-Dry	7.3	0.0	7.3	-2.4	0.0	-2.4	5.0	0.0	5.0
1959	Normal-Dry	7.5	0.0	7.5	-0.5	0.0	-0.5	7.0	0.0	7.0
1989	Normal-Dry	6.9	0.0	6.9	-2.3	0.0	-2.3	4.6	0.0	4.6
1964	Normal-Dry	7.5	0.0	7.5	-1.1	0.0	-1.1	6.4	0.0	6.4
1939	Normal-Dry	7.1	0.0	7.1	-1.7	0.0	-1.7	5.4	0.0	5.4
1929	Normal-Dry	6.0	0.0	6.0	-1.8	0.0	-1.8	4.2	0.0	4.2
1988	Normal-Dry	6.3	0.0	6.3	-2.1	0.0	-2.1	4.2	0.0	4.2
1968	Normal-Dry	7.3	0.0	7.3	-1.3	0.0	-1.3	6.0	0.0	6.0
1930	Normal-Dry	6.2	0.0	6.2	-2.1	0.0	-2.1	4.1	0.0	4.1
2013	Normal-Dry	6.2	0.0	6.2	-2.1	0.0	-2.1	4.1	0.0	4.1
2012	Normal-Dry	6.8	0.0	6.8	-1.7	0.0	-1.7	5.1	0.0	5.1
1960	Normal-Dry	6.0	0.0	6.0	-2.1	0.0	-2.1	3.9	0.0	3.9
1994	Normal-Dry	6.3	0.0	6.3	0.4	0.0	0.4	6.7	0.0	6.7
1992	Normal-Dry	6.2	0.0	6.2	-2.0	0.0	-2.0	4.2	0.0	4.2
1987	Normal-Dry	5.1	0.0	5.1	-0.4	0.0	-0.4	4.7	0.0	4.7
1990	Normal-Dry	5.2	0.0	5.2	-1.9	0.0	-1.9	3.3	0.0	3.3
1934	Normal-Dry	5.3	0.0	5.3	-1.7	0.0	-1.7	3.7	0.0	3.7
2007	Normal-Dry	4.3	0.0	4.3	-1.3	0.0	-1.3	3.0	0.0	3.0
1961	Crit-High	4.3	0.0	4.3	-1.5	0.0	-1.5	2.7	0.0	2.7
1976	Crit-High	5.7	0.0	5.7	-1.3	0.0	-1.3	4.4	0.0	4.4
2014	Crit-High	3.1	0.0	3.1	-1.5	0.0	-1.5	1.6	0.0	1.6
1931	Crit-High	2.9	0.0	2.9	-1.5	0.0	-1.5	1.4	0.0	1.4
1924	Crit-High	4.1	0.0	4.1	-1.6	0.0	-1.6	2.6	0.0	2.6
1977	CL	1.8	0.0	1.8	-0.1	0.0	-0.1	1.6	0.0	1.6
2015	CL	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
Wet Ave		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
Normal-wet Ave		7.5	0.0	7.5	0.0	0.0	0.0	7.5	0.0	7.5
Normal-dry Ave		7.5	0.0	7.5	-0.6	0.0	-0.6	6.9	0.0	6.9
Dry Ave		6.1	0.0	6.1	-1.5	0.0	-1.5	4.6	0.0	4.6
Critical-H Ave		4.0	0.0	4.0	-1.5	0.0	-1.5	2.5	0.0	2.5
Critical-L Ave		1.5	0.0	1.5	-0.1	0.0	-0.1	1.4	0.0	1.4

Note: Values reported by contract year (March-February)

Terra Bella ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1923	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1924	16.0	0.0	16.0	-6.0	0.0	-6.0	10.0	0.0	10.0
1925	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1926	29.0	0.0	29.0	-1.8	0.0	-1.8	27.2	0.0	27.2
1927	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1928	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1929	23.4	0.0	23.4	-7.0	0.0	-7.0	16.4	0.0	16.4
1930	24.1	0.0	24.1	-8.2	0.0	-8.2	15.9	0.0	15.9
1931	11.3	0.0	11.3	-6.0	0.0	-6.0	5.3	0.0	5.3
1932	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1933	29.0	0.0	29.0	-1.2	0.0	-1.2	27.8	0.0	27.8
1934	20.6	0.0	20.6	-6.4	0.0	-6.4	14.2	0.0	14.2
1935	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1936	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1937	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1938	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1939	27.4	0.0	27.4	-6.5	0.0	-6.5	21.0	0.0	21.0
1940	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1941	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1942	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1943	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1944	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1945	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1946	28.9	0.0	28.9	0.1	0.0	0.1	29.0	0.0	29.0
1947	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1948	29.0	0.0	29.0	-7.5	0.0	-7.5	21.5	0.0	21.5
1949	29.0	0.0	29.0	-3.4	0.0	-3.4	25.6	0.0	25.6
1950	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1951	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1952	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1953	29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1954	29.0	0.0	29.0	-1.5	0.0	-1.5	27.5	0.0	27.5
1955	29.0	0.0	29.0	-2.0	0.0	-2.0	27.0	0.0	27.0
1956	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1957	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1958	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1959	29.0	0.0	29.0	-1.9	0.0	-1.9	27.1	0.0	27.1
1960	23.2	0.0	23.2	-8.0	0.0	-8.0	15.2	0.0	15.2
1961	16.5	0.0	16.5	-6.0	0.0	-6.0	10.5	0.0	10.5
1962	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1963	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1964	29.0	0.0	29.0	-4.4	0.0	-4.4	24.6	0.0	24.6
1965	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1966	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1967	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1968	28.3	0.0	28.3	-5.1	0.0	-5.1	23.2	0.0	23.2
1969	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1970	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1971	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1972	29.0	0.0	29.0	-3.6	0.0	-3.6	25.4	0.0	25.4
1973	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1974	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1975	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1976	22.1	0.0	22.1	-4.9	0.0	-4.9	17.2	0.0	17.2
1977	6.8	0.0	6.8	-0.5	0.0	-0.5	6.2	0.0	6.2
1978	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1979	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1980	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1981	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1982	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1983	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1984	29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1985	29.0	0.0	29.0	-0.3	0.0	-0.3	28.7	0.0	28.7
1986	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1987	19.6	0.0	19.6	-1.5	0.0	-1.5	18.1	0.0	18.1
1988	24.3	0.0	24.3	-8.0	0.0	-8.0	16.2	0.0	16.2
1989	26.6	0.0	26.6	-8.9	0.0	-8.9	17.7	0.0	17.7
1990	20.2	0.0	20.2	-7.4	0.0	-7.4	12.8	0.0	12.8
1991	28.4	0.0	28.4	-9.1	0.0	-9.1	19.2	0.0	19.2
1992	23.9	0.0	23.9	-7.8	0.0	-7.8	16.1	0.0	16.1
1993	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1994	24.2	0.0	24.2	1.6	0.0	1.6	25.7	0.0	25.7
1995	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1996	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1997	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1998	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1999	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2000	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2001	29.0	0.0	29.0	-5.2	0.0	-5.2	23.8	0.0	23.8
2002	29.0	0.0	29.0	-4.1	0.0	-4.1	24.9	0.0	24.9
2003	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2004	29.0	0.0	29.0	-4.6	0.0	-4.6	24.4	0.0	24.4
2005	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2006	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2007	16.8	0.0	16.8	-5.1	0.0	-5.1	11.7	0.0	11.7
2008	29.0	0.0	29.0	-6.9	0.0	-6.9	22.1	0.0	22.1
2009	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2010	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2011	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2012	26.3	0.0	26.3	-6.8	0.0	-6.8	19.6	0.0	19.6
2013	24.0	0.0	24.0	-8.2	0.0	-8.2	15.8	0.0	15.8
2014	12.0	0.0	12.0	-6.0	0.0	-6.0	6.0	0.0	6.0
2015	5.0	0.0	5.0	-0.5	0.0	-0.5	4.5	0.0	4.5
2016	29.0	0.0	29.0	-3.0	0.0	-3.0	26.0	0.0	26.0
Ave All	26.9	0.0	26.9	-1.9	0.0	-1.9	25.0	0.0	25.0
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	20.2	0.0	20.2	-5.4	0.0	-5.4	14.8	0.0	14.8

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1969		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1995		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1938		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1978		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1982		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2011		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1967		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2006		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1998		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1986		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1980		29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1956		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1952		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2005		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1997		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1993		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1941		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1958		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1922	Normal-Wet	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1965		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1942		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1937		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1996		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1974		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1945		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1943		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1984		29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1932		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1973		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2010		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1927		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1963		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1962		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1935		29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1940		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1951		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1936		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1979		29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
1975		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2000		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1946		28.9	0.0	28.9	0.1	0.0	0.1	29.0	0.0	29.0
1923		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1999		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2009		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2003	Normal-Dry	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1970		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1925		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1971		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1957		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1954		29.0	0.0	29.0	-1.5	0.0	-1.5	27.5	0.0	27.5
1950		29.0	0.0	29.0	-0.1	0.0	-0.1	28.9	0.0	28.9
2016		29.0	0.0	29.0	-3.0	0.0	-3.0	26.0	0.0	26.0
1966		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1944		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
1953		29.0	0.0	29.0	-0.5	0.0	-0.5	28.5	0.0	28.5
1948		29.0	0.0	29.0	-7.5	0.0	-7.5	21.5	0.0	21.5
2002		29.0	0.0	29.0	-4.1	0.0	-4.1	24.9	0.0	24.9
1949		29.0	0.0	29.0	-3.4	0.0	-3.4	25.6	0.0	25.6
1926		29.0	0.0	29.0	-1.8	0.0	-1.8	27.2	0.0	27.2
1955		29.0	0.0	29.0	-2.0	0.0	-2.0	27.0	0.0	27.0
1928		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2004		29.0	0.0	29.0	-4.6	0.0	-4.6	24.4	0.0	24.4
1985		29.0	0.0	29.0	-0.3	0.0	-0.3	28.7	0.0	28.7
1947		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2008		29.0	0.0	29.0	-6.9	0.0	-6.9	22.1	0.0	22.1
1933		29.0	0.0	29.0	-1.2	0.0	-1.2	27.8	0.0	27.8
1981		29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
2001		29.0	0.0	29.0	-5.2	0.0	-5.2	23.8	0.0	23.8
1972		29.0	0.0	29.0	-3.6	0.0	-3.6	25.4	0.0	25.4
1991		28.4	0.0	28.4	-9.1	0.0	-9.1	19.2	0.0	19.2
1959		29.0	0.0	29.0	-1.9	0.0	-1.9	27.1	0.0	27.1
1989		26.6	0.0	26.6	-8.9	0.0	-8.9	17.7	0.0	17.7
1964	Normal-Dry	29.0	0.0	29.0	-4.4	0.0	-4.4	24.6	0.0	24.6
1939		27.4	0.0	27.4	-6.5	0.0	-6.5	21.0	0.0	21.0
1929		23.4	0.0	23.4	-7.0	0.0	-7.0	16.4	0.0	16.4
1988		24.3	0.0	24.3	-8.0	0.0	-8.0	16.2	0.0	16.2
1968		28.3	0.0	28.3	-5.1	0.0	-5.1	23.2	0.0	23.2
1930		24.1	0.0	24.1	-8.2	0.0	-8.2	15.9	0.0	15.9
2013		24.0	0.0	24.0	-8.2	0.0	-8.2	15.8	0.0	15.8
2012		26.3	0.0	26.3	-6.8	0.0	-6.8	19.6	0.0	19.6
1960		23.2	0.0	23.2	-8.0	0.0	-8.0	15.2	0.0	15.2
1994		24.2	0.0	24.2	1.6	0.0	1.6	25.7	0.0	25.7
1992		23.9	0.0	23.9	-7.8	0.0	-7.8	16.1	0.0	16.1
1987		19.6	0.0	19.6	-1.5	0.0	-1.5	18.1	0.0	18.1
1990		20.2	0.0	20.2	-7.4	0.0	-7.4	12.8	0.0	12.8
1934		20.6	0.0	20.6	-6.4	0.0	-6.4	14.2	0.0	14.2
2007		16.8	0.0	16.8	-5.1	0.0	-5.1	11.7	0.0	11.7
1961	Crit-High	16.5	0.0	16.5	-6.0	0.0	-6.0	10.5	0.0	10.5
1976		22.1	0.0	22.1	-4.9	0.0	-4.9	17.2	0.0	17.2
2014		12.0	0.0	12.0	-6.0	0.0	-6.0	6.0	0.0	6.0
1931		11.3	0.0	11.3	-6.0	0.0	-6.0	5.3	0.0	5.3
1924		16.0	0.0	16.0	-6.0	0.0	-6.0	10.0	0.0	10.0
1977	CL	6.8	0.0	6.8	-0.5	0.0	-0.5	6.2	0.0	6.2
2015		5.0	0.0	5.0	-0.5	0.0	-0.5	4.5	0.0	4.5
	Wet Ave	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
	Normal-wet Ave	29.0	0.0	29.0	0.0	0.0	0.0	29.0	0.0	29.0
	Normal-dry Ave	28.9	0.0	28.9	-2.3	0.0	-2.3	26.5	0.0	26.5
	Dry Ave	23.7	0.0	23.7	-5.9	0.0	-5.9	17.8	0.0	17.8
	Critical-H Ave	15.6	0.0	15.6	-5.8	0.0	-5.8	9.8	0.0	9.8
	Critical-L Ave	5.9	0.0	5.9	-0.5	0.0	-0.5	5.4	0.0	5.4

Tulare ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	30.0	85.1	115.1	0.0	-16.7	-16.7	30.0	68.3	98.3
1923	30.0	51.2	81.2	0.0	-16.3	-16.3	30.0	35.0	64.9
1924	16.6	0.0	16.6	-6.2	0.0	-6.2	10.3	0.0	10.3
1925	30.0	26.8	56.8	0.0	-24.3	-24.3	30.0	2.5	32.5
1926	30.0	12.5	42.5	-1.8	-12.5	-14.4	28.1	0.0	28.1
1927	30.0	57.7	87.7	0.0	-9.9	-9.9	30.0	47.8	77.8
1928	30.0	22.5	52.5	0.0	-15.8	-15.8	30.0	6.7	36.7
1929	24.2	0.0	24.2	-7.2	0.0	-7.2	17.0	0.0	17.0
1930	24.9	0.0	24.9	-8.5	0.0	-8.5	16.4	0.0	16.4
1931	11.7	0.0	11.7	-6.2	0.0	-6.2	5.5	0.0	5.5
1932	30.0	64.4	94.4	0.0	-16.3	-16.3	30.0	48.2	78.2
1933	30.0	24.2	54.2	-1.3	-24.2	-25.5	28.7	0.0	28.7
1934	21.3	0.0	21.3	-6.6	0.0	-6.6	14.7	0.0	14.7
1935	30.0	50.6	80.6	-0.1	-19.6	-19.8	29.9	31.0	60.9
1936	30.0	54.9	84.9	0.0	-19.2	-19.2	30.0	35.7	65.7
1937	30.0	59.0	89.0	0.0	-20.3	-20.3	30.0	38.7	68.7
1938	30.0	93.8	123.8	0.0	-12.1	-12.1	30.0	81.7	111.7
1939	28.4	0.0	28.4	-6.7	0.0	-6.7	21.7	0.0	21.7
1940	30.0	39.2	69.2	0.0	-6.6	-6.6	30.0	32.6	62.6
1941	30.0	89.0	119.0	0.0	-20.4	-20.4	30.0	68.6	98.6
1942	30.0	81.0	111.0	0.0	-21.0	-21.0	30.0	60.0	90.0
1943	30.0	55.6	85.6	-0.1	-21.4	-21.5	29.9	34.2	64.1
1944	30.0	26.6	56.6	0.0	-16.9	-16.9	30.0	9.8	39.8
1945	30.0	67.4	97.4	0.0	-14.4	-14.4	30.0	53.0	83.0
1946	29.9	37.1	67.0	0.1	-11.7	-11.7	30.0	25.4	55.4
1947	30.0	11.6	41.6	0.0	-11.1	-11.1	30.0	0.5	30.5
1948	30.0	5.7	35.7	-7.8	-5.7	-13.4	22.2	0.0	22.2
1949	30.0	18.6	48.6	-3.5	-18.6	-22.2	26.5	0.0	26.5
1950	30.0	23.4	53.4	-0.1	-23.4	-23.5	29.9	0.0	29.9
1951	30.0	33.4	63.3	0.0	-29.1	-29.1	30.0	4.2	34.2
1952	30.0	84.6	114.6	0.0	-8.1	-8.1	30.0	76.5	106.5
1953	30.0	22.0	52.0	-0.5	-22.0	-22.5	29.5	0.0	29.5
1954	30.0	18.8	48.8	-1.6	-18.8	-20.4	28.4	0.0	28.4
1955	30.0	18.9	48.9	-2.1	-18.9	-21.0	27.9	0.0	27.9
1956	30.0	85.9	115.9	0.0	-16.9	-16.9	30.0	69.0	99.0
1957	30.0	29.0	59.0	0.0	-16.1	-16.1	30.0	12.9	42.9
1958	30.0	84.4	114.4	0.0	-13.7	-13.7	30.0	70.6	100.6
1959	30.0	0.7	30.7	-2.0	-0.7	-2.7	28.0	0.0	28.0
1960	24.0	0.0	24.0	-8.3	0.0	-8.3	15.7	0.0	15.7
1961	17.1	0.0	17.1	-6.2	0.0	-6.2	10.9	0.0	10.9
1962	30.0	58.6	88.6	0.0	-18.4	-18.4	30.0	40.1	70.1
1963	30.0	70.2	100.2	0.0	-18.7	-18.7	30.0	51.6	81.6
1964	30.0	9.6	39.6	-4.5	-9.6	-14.1	25.5	0.0	25.5
1965	30.0	70.2	100.2	0.0	-25.3	-25.3	30.0	44.9	74.9
1966	30.0	20.0	50.0	0.0	-11.7	-11.6	30.0	8.3	38.3
1967	30.0	97.0	127.0	0.0	-12.1	-12.2	30.0	84.9	114.9
1968	29.3	0.0	29.3	-5.3	0.0	-5.3	24.0	0.0	24.0
1969	30.0	89.7	119.7	0.0	-6.1	-6.1	30.0	83.6	113.6
1970	30.0	38.3	68.2	0.0	-25.0	-25.0	30.0	13.2	43.2
1971	30.0	35.1	65.1	0.0	-28.7	-28.7	30.0	6.5	36.5
1972	30.0	12.5	42.5	-3.7	-12.5	-16.2	26.3	0.0	26.3
1973	30.0	56.5	86.5	0.0	-20.5	-20.5	30.0	36.0	66.0
1974	30.0	64.8	94.8	0.0	-19.9	-19.9	30.0	45.0	75.0
1975	30.0	56.5	86.5	0.0	-11.8	-11.8	30.0	44.6	74.6
1976	22.9	0.0	22.9	-5.1	0.0	-5.1	17.8	0.0	17.8
1977	7.0	0.0	7.0	-0.6	0.0	-0.6	6.5	0.0	6.5
1978	30.0	101.1	131.1	0.0	-10.2	-10.2	30.0	91.0	121.0
1979	30.0	54.0	84.0	-0.1	-20.5	-20.6	29.9	33.5	63.4
1980	30.0	87.9	117.9	-0.1	-16.7	-16.8	29.9	71.2	101.0
1981	30.0	15.7	45.7	0.0	-6.6	-6.6	30.0	9.1	39.1
1982	30.0	82.7	112.7	0.0	-9.7	-9.8	30.0	73.0	102.9
1983	30.0	89.6	119.6	0.0	-3.4	-3.4	30.0	86.1	116.1
1984	30.0	50.6	80.6	-0.1	-18.3	-18.5	29.9	32.2	62.1
1985	30.0	14.6	44.6	-0.3	-14.6	-14.9	29.7	0.0	29.7
1986	30.0	81.7	111.7	0.0	-14.2	-14.2	30.0	67.5	97.5
1987	20.3	0.0	20.3	-1.5	0.0	-1.5	18.8	0.0	18.8
1988	25.1	0.0	25.1	-8.3	0.0	-8.3	16.8	0.0	16.8
1989	27.5	0.0	27.5	-9.2	0.0	-9.2	18.3	0.0	18.3
1990	20.9	0.0	20.9	-7.7	0.0	-7.7	13.2	0.0	13.2
1991	29.3	0.0	29.3	-9.4	0.0	-9.4	19.9	0.0	19.9
1992	24.7	0.0	24.7	-8.0	0.0	-8.0	16.7	0.0	16.7
1993	30.0	89.8	119.8	0.0	-23.1	-23.1	30.0	66.7	96.7
1994	25.0	0.0	25.0	1.6	0.0	1.6	26.6	0.0	26.6
1995	30.0	106.8	136.8	0.0	-10.2	-10.2	30.0	96.7	126.7
1996	30.0	61.8	91.8	0.0	-18.1	-18.1	30.0	43.7	73.7
1997	30.0	49.2	79.2	0.0	-23.7	-23.7	30.0	25.6	55.6
1998	30.0	82.3	112.3	0.0	-13.1	-13.1	30.0	69.2	99.2
1999	30.0	41.8	71.8	0.0	-18.5	-18.5	30.0	23.3	53.3
2000	30.0	48.8	78.8	0.0	-14.2	-14.3	30.0	34.5	64.5
2001	30.0	9.2	39.2	-5.4	-9.2	-14.6	24.6	0.0	24.6
2002	30.0	16.8	46.8	-4.2	-16.8	-21.0	25.8	0.0	25.8
2003	30.0	41.5	71.5	0.0	-32.0	-32.0	30.0	9.4	39.4
2004	30.0	11.2	41.2	-4.8	-11.2	-16.0	25.2	0.0	25.2
2005	30.0	88.0	118.0	0.0	-7.7	-7.7	30.0	80.4	110.4
2006	30.0	88.9	118.9	0.0	-10.0	-10.0	30.0	79.0	109.0
2007	17.4	0.0	17.4	-5.3	0.0	-5.3	12.1	0.0	12.1
2008	30.0	7.3	37.3	-7.2	-7.3	-14.5	22.8	0.0	22.8
2009	30.0	42.8	72.8	0.0	-31.8	-31.8	30.0	11.0	41.0
2010	30.0	70.5	100.5	0.0	-18.2	-18.2	30.0	52.3	82.3
2011	30.0	95.4	125.4	0.0	-6.3	-6.3	30.0	89.0	119.0
2012	27.2	0.0	27.2	-7.0	0.0	-7.0	20.2	0.0	20.2
2013	24.9	0.0	24.9	-8.5	0.0	-8.5	16.4	0.0	16.4
2014	12.4	0.0	12.4	-6.2	0.0	-6.2	6.3	0.0	6.3
2015	5.2	0.0	5.2	-0.5	0.0	-0.5	4.7	0.0	4.7
2016	30.0	13.2	43.2	-3.1	-13.2	-16.3	26.9	0.0	26.9
Ave All	27.9	38.5	66.4	-2.0	-12.0	-14.0	25.9	26.5	52.3
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	20.9	0.4	21.4	-5.6	-0.4	-6.0	15.3	0.0	15.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	30.0	89.6	119.6	0.0	-3.4	-3.4	30.0	86.1	116.1
1969		30.0	89.7	119.7	0.0	-6.1	-6.1	30.0	83.6	113.6
1995		30.0	106.8	136.8	0.0	-10.2	-10.2	30.0	96.7	126.7
1938		30.0	93.8	123.8	0.0	-12.1	-12.1	30.0	81.7	111.7
1978		30.0	101.1	131.1	0.0	-10.2	-10.2	30.0	91.0	121.0
1982		30.0	82.7	112.7	0.0	-9.7	-9.8	30.0	73.0	102.9
2011		30.0	95.4	125.4	0.0	-6.3	-6.3	30.0	89.0	119.0
1967		30.0	97.0	127.0	0.0	-12.1	-12.2	30.0	84.9	114.9
2006		30.0	88.9	118.9	0.0	-10.0	-10.0	30.0	79.0	109.0
1998		30.0	82.3	112.3	0.0	-13.1	-13.1	30.0	69.2	99.2
1986		30.0	81.7	111.7	0.0	-14.2	-14.2	30.0	67.5	97.5
1980		30.0	87.9	117.9	-0.1	-16.7	-16.8	29.9	71.2	101.0
1956		30.0	85.9	115.9	0.0	-16.9	-16.9	30.0	69.0	99.0
1952		30.0	84.6	114.6	0.0	-8.1	-8.1	30.0	76.5	106.5
2005		30.0	88.0	118.0	0.0	-7.7	-7.7	30.0	80.4	110.4
1997		30.0	49.2	79.2	0.0	-23.7	-23.7	30.0	25.6	55.6
1993		30.0	89.8	119.8	0.0	-23.1	-23.1	30.0	66.7	96.7
1941		30.0	89.0	119.0	0.0	-20.4	-20.4	30.0	68.6	98.6
1958		30.0	84.4	114.4	0.0	-13.7	-13.7	30.0	70.6	100.6
1922	Normal-Wet	30.0	85.1	115.1	0.0	-16.7	-16.7	30.0	68.3	98.3
1965		30.0	70.2	100.2	0.0	-25.3	-25.3	30.0	44.9	74.9
1942		30.0	81.0	111.0	0.0	-21.0	-21.0	30.0	60.0	90.0
1937		30.0	59.0	89.0	0.0	-20.3	-20.3	30.0	38.7	68.7
1996		30.0	61.8	91.8	0.0	-18.1	-18.1	30.0	43.7	73.7
1974		30.0	64.8	94.8	0.0	-19.9	-19.9	30.0	45.0	75.0
1945		30.0	67.4	97.4	0.0	-14.4	-14.4	30.0	53.0	83.0
1943		30.0	55.6	85.6	-0.1	-21.4	-21.5	29.9	34.2	64.1
1984		30.0	50.6	80.6	-0.1	-18.3	-18.5	29.9	32.2	62.1
1932		30.0	64.4	94.4	0.0	-16.3	-16.3	30.0	48.2	78.2
1973		30.0	56.5	86.5	0.0	-20.5	-20.5	30.0	36.0	66.0
2010		30.0	70.5	100.5	0.0	-18.2	-18.2	30.0	52.3	82.3
1927		30.0	57.7	87.7	0.0	-9.9	-9.9	30.0	47.8	77.8
1963		30.0	70.2	100.2	0.0	-18.7	-18.7	30.0	51.6	81.6
1962		30.0	58.6	88.6	0.0	-18.4	-18.4	30.0	40.1	70.1
1935		30.0	50.6	80.6	-0.1	-19.6	-19.8	29.9	31.0	60.9
1940		30.0	39.2	69.2	0.0	-6.6	-6.6	30.0	32.6	62.6
1951		30.0	33.4	63.3	0.0	-29.1	-29.1	30.0	4.2	34.2
1936		30.0	54.9	84.9	0.0	-19.2	-19.2	30.0	35.7	65.7
1979		30.0	54.0	84.0	-0.1	-20.5	-20.6	29.9	33.5	63.4
1975		30.0	56.5	86.5	0.0	-11.8	-11.8	30.0	44.6	74.6
2000		30.0	48.8	78.8	0.0	-14.2	-14.3	30.0	34.5	64.5
1946		29.9	37.1	67.0	0.1	-11.7	-11.7	30.0	25.4	55.4
1923		30.0	51.2	81.2	0.0	-16.3	-16.3	30.0	35.0	64.9
1999		30.0	41.8	71.8	0.0	-18.5	-18.5	30.0	23.3	53.3
2009		30.0	42.8	72.8	0.0	-31.8	-31.8	30.0	11.0	41.0
2003	Normal-Dry	30.0	41.5	71.5	0.0	-32.0	-32.0	30.0	9.4	39.4
1970		30.0	38.3	68.2	0.0	-25.0	-25.0	30.0	13.2	43.2
1925		30.0	26.8	56.8	0.0	-24.3	-24.3	30.0	2.5	32.5
1971		30.0	35.1	65.1	0.0	-28.7	-28.7	30.0	6.5	36.5
1957		30.0	29.0	59.0	0.0	-16.1	-16.1	30.0	12.9	42.9
1954		30.0	18.8	48.8	-1.6	-18.8	-20.4	28.4	0.0	28.4
1950		30.0	23.4	53.4	-0.1	-23.4	-23.5	29.9	0.0	29.9
2016		30.0	13.2	43.2	-3.1	-13.2	-16.3	26.9	0.0	26.9
1966		30.0	20.0	50.0	0.0	-11.7	-11.6	30.0	8.3	38.3
1944		30.0	26.6	56.6	0.0	-16.9	-16.9	30.0	9.8	39.8
1953		30.0	22.0	52.0	-0.5	-22.0	-22.5	29.5	0.0	29.5
1948		30.0	5.7	35.7	-7.8	-5.7	-13.4	22.2	0.0	22.2
2002		30.0	16.8	46.8	-4.2	-16.8	-21.0	25.8	0.0	25.8
1949		30.0	18.6	48.6	-3.5	-18.6	-22.2	26.5	0.0	26.5
1926		30.0	12.5	42.5	-1.8	-12.5	-14.4	28.1	0.0	28.1
1955		30.0	18.9	48.9	-2.1	-18.9	-21.0	27.9	0.0	27.9
1928		30.0	22.5	52.5	0.0	-15.8	-15.8	30.0	6.7	36.7
2004		30.0	11.2	41.2	-4.8	-11.2	-16.0	25.2	0.0	25.2
1985		30.0	14.6	44.6	-0.3	-14.6	-14.9	29.7	0.0	29.7
1947		30.0	11.6	41.6	0.0	-11.1	-11.1	30.0	0.5	30.5
2008		30.0	7.3	37.3	-7.2	-7.3	-14.5	22.8	0.0	22.8
1933		30.0	24.2	54.2	-1.3	-24.2	-25.5	28.7	0.0	28.7
1981		30.0	15.7	45.7	0.0	-6.6	-6.6	30.0	9.1	39.1
2001		30.0	9.2	39.2	-5.4	-9.2	-14.6	24.6	0.0	24.6
1972		30.0	12.5	42.5	-3.7	-12.5	-16.2	26.3	0.0	26.3
1991		29.3	0.0	29.3	-9.4	0.0	-9.4	19.9	0.0	19.9
1959		30.0	0.7	30.7	-2.0	-0.7	-2.7	28.0	0.0	28.0
1989		27.5	0.0	27.5	-9.2	0.0	-9.2	18.3	0.0	18.3
1964	Normal-Dry	30.0	9.6	39.6	-4.5	-9.6	-14.1	25.5	0.0	25.5
1939		28.4	0.0	28.4	-6.7	0.0	-6.7	21.7	0.0	21.7
1929		24.2	0.0	24.2	-7.2	0.0	-7.2	17.0	0.0	17.0
1988		25.1	0.0	25.1	-8.3	0.0	-8.3	16.8	0.0	16.8
1968		29.3	0.0	29.3	-5.3	0.0	-5.3	24.0	0.0	24.0
1930		24.9	0.0	24.9	-8.5	0.0	-8.5	16.4	0.0	16.4
2013		24.9	0.0	24.9	-8.5	0.0	-8.5	16.4	0.0	16.4
2012		27.2	0.0	27.2	-7.0	0.0	-7.0	20.2	0.0	20.2
1960		24.0	0.0	24.0	-8.3	0.0	-8.3	15.7	0.0	15.7
1994		25.0	0.0	25.0	1.6	0.0	1.6	26.6	0.0	26.6
1992		24.7	0.0	24.7	-8.0	0.0	-8.0	16.7	0.0	16.7
1987		20.3	0.0	20.3	-1.5	0.0	-1.5	18.8	0.0	18.8
1990		20.9	0.0	20.9	-7.7	0.0	-7.7	13.2	0.0	13.2
1934		21.3	0.0	21.3	-6.6	0.0	-6.6	14.7	0.0	14.7
2007		17.4	0.0	17.4	-5.3	0.0	-5.3	12.1	0.0	12.1
1961	Crit-High	17.1	0.0	17.1	-6.2	0.0	-6.2	10.9	0.0	10.9
1976		22.9	0.0	22.9	-5.1	0.0	-5.1	17.8	0.0	17.8
2014		12.4	0.0	12.4	-6.2	0.0	-6.2	6.3	0.0	6.3
1931		11.7	0.0	11.7	-6.2	0.0	-6.2	5.5	0.0	5.5
1924		16.6	0.0	16.6	-6.2	0.0	-6.2	10.3	0.0	10.3
1977	CL	7.0	0.0	7.0	-0.6	0.0	-0.6	6.5	0.0	6.5
2015		5.2	0.0	5.2	-0.5	0.0	-0.5	4.7	0.0	4.7
	Wet Ave	30.0	87.8	117.8	0.0	-12.5	-12.5	30.0	75.3	105.3
	Normal-wet Ave	30.0	57.1	87.1	0.0	-18.3	-18.4	30.0	38.7	68.7
	Normal-dry Ave	29.9	17.7	47.6	-2.4	-14.9	-17.3	27.5	2.8	30.3
	Dry Ave	24.5	0.6	25.1	-6.1	-0.6	-6.8	18.4	0.0	18.4
	Critical-H Ave	16.1	0.0	16.1	-6.0	0.0	-6.0	10.2	0.0	10.2
	Critical-L Ave	6.1	0.0	6.1	-0.5	0.0	-0.5	5.6	0.0	5.6

Note: Values reported by contract year (March-February)

Chowchilla WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	55.0	96.5	151.5	0.0	-19.0	-19.0	55.0	77.6	132.6
1923	55.0	58.1	113.1	0.0	-18.5	-18.5	55.0	39.7	94.7
1924	30.4	0.0	30.4	-11.4	0.0	-11.4	19.0	0.0	19.0
1925	55.0	30.5	85.5	0.0	-27.6	-27.6	55.0	2.9	57.9
1926	55.0	14.2	69.2	-3.4	-14.2	-17.6	51.6	0.0	51.6
1927	55.0	65.4	120.4	0.0	-11.2	-11.2	55.0	54.2	109.2
1928	55.0	25.6	80.6	0.0	-17.9	-17.9	55.0	7.6	62.6
1929	44.3	0.0	44.3	-13.2	0.0	-13.2	31.1	0.0	31.1
1930	45.6	0.0	45.6	-15.5	0.0	-15.5	30.1	0.0	30.1
1931	21.5	0.0	21.5	-11.4	0.0	-11.4	10.1	0.0	10.1
1932	55.0	73.1	128.1	0.0	-18.5	-18.5	55.0	54.6	109.6
1933	55.0	27.4	82.4	-2.3	-27.4	-29.8	52.7	0.0	52.7
1934	39.1	0.0	39.1	-12.1	0.0	-12.1	27.0	0.0	27.0
1935	55.0	57.4	112.4	-0.2	-22.3	-22.5	54.8	35.2	89.9
1936	55.0	62.3	117.3	-0.1	-21.8	-21.9	54.9	40.5	95.4
1937	55.0	66.9	121.9	0.0	-23.0	-23.0	55.0	43.9	98.9
1938	55.0	106.4	161.4	0.0	-13.8	-13.8	55.0	92.7	147.7
1939	52.1	0.0	52.1	-12.3	0.0	-12.3	39.7	0.0	39.7
1940	55.0	44.5	99.5	0.0	-7.5	-7.5	55.0	37.0	92.0
1941	55.0	101.0	156.0	0.0	-23.1	-23.1	55.0	77.9	132.9
1942	55.0	91.9	146.9	0.0	-23.8	-23.8	55.0	68.1	123.1
1943	55.0	63.1	118.1	-0.1	-24.3	-24.4	54.9	38.8	93.7
1944	55.0	30.2	85.2	0.0	-19.2	-19.2	55.0	11.1	66.1
1945	55.0	76.5	131.5	0.0	-16.3	-16.3	55.0	60.2	115.2
1946	54.9	42.1	97.0	0.1	-13.3	-13.2	55.0	28.8	83.8
1947	55.0	13.1	68.1	0.0	-12.6	-12.6	55.0	0.5	55.5
1948	55.0	6.4	61.4	-14.2	-6.4	-20.7	40.8	0.0	40.8
1949	55.0	21.2	76.2	-6.4	-21.2	-27.6	48.6	0.0	48.6
1950	55.0	26.6	81.6	-0.2	-26.6	-26.8	54.8	0.0	54.8
1951	54.9	37.9	92.8	0.1	-33.1	-33.0	55.0	4.8	59.8
1952	55.0	96.0	151.0	0.0	-9.2	-9.2	55.0	86.8	141.8
1953	55.0	24.9	79.9	-0.9	-24.9	-25.9	54.1	0.0	54.1
1954	55.0	21.3	76.3	-2.9	-21.3	-24.2	52.1	0.0	52.1
1955	55.0	21.4	76.4	-3.9	-21.4	-25.3	51.1	0.0	51.1
1956	55.0	97.5	152.5	0.0	-19.2	-19.2	55.0	78.3	133.3
1957	55.0	32.9	87.9	0.0	-18.3	-18.3	55.0	14.6	69.6
1958	55.0	95.7	150.7	0.0	-15.6	-15.6	55.0	80.1	135.1
1959	55.0	0.8	55.8	-3.6	-0.8	-4.4	51.4	0.0	51.4
1960	44.0	0.0	44.0	-15.2	0.0	-15.2	28.9	0.0	28.9
1961	31.3	0.0	31.3	-11.3	0.0	-11.3	20.0	0.0	20.0
1962	55.0	66.5	121.5	0.0	-20.9	-20.9	55.0	45.5	100.5
1963	55.0	79.7	134.7	0.0	-21.2	-21.2	55.0	58.5	113.5
1964	55.0	10.8	65.8	-8.3	-10.8	-19.2	46.7	0.0	46.7
1965	55.0	79.7	134.7	0.0	-28.7	-28.7	55.0	50.9	105.9
1966	55.0	22.7	77.6	0.0	-13.2	-13.2	55.0	9.5	64.5
1967	55.0	110.1	165.1	0.0	-13.8	-13.8	55.0	96.3	151.3
1968	53.7	0.0	53.7	-9.7	0.0	-9.7	44.0	0.0	44.0
1969	55.0	101.8	156.8	0.0	-6.9	-6.9	55.0	94.9	149.9
1970	55.0	43.4	98.4	0.0	-28.4	-28.4	55.0	15.0	70.0
1971	55.0	39.9	94.9	0.0	-32.5	-32.5	55.0	7.4	62.4
1972	55.0	14.2	69.2	-6.8	-14.2	-21.0	48.2	0.0	48.2
1973	55.0	64.1	119.1	-0.1	-23.3	-23.3	54.9	40.8	95.8
1974	55.0	73.6	128.6	0.0	-22.6	-22.6	55.0	51.0	106.0
1975	55.0	64.1	119.1	0.0	-13.4	-13.4	55.0	50.6	105.6
1976	41.9	0.0	41.9	-9.3	0.0	-9.3	32.6	0.0	32.6
1977	12.9	0.0	12.9	-1.0	0.0	-1.0	11.8	0.0	11.8
1978	55.0	114.8	169.8	0.0	-11.5	-11.5	55.0	103.2	158.2
1979	55.0	61.3	116.3	-0.2	-23.2	-23.4	54.8	38.0	92.8
1980	55.0	99.7	154.7	-0.3	-18.9	-19.2	54.7	80.8	135.5
1981	55.0	17.8	72.8	0.0	-7.5	-7.5	55.0	10.4	65.4
1982	55.0	93.8	148.8	-0.1	-11.1	-11.1	54.9	82.8	137.7
1983	55.0	101.6	156.6	0.0	-3.9	-3.9	55.0	97.7	152.7
1984	55.0	57.4	112.4	-0.2	-20.8	-21.0	54.7	36.6	91.3
1985	55.0	16.5	71.5	-0.6	-16.5	-17.1	54.4	0.0	54.4
1986	55.0	92.7	147.7	0.0	-16.1	-16.1	55.0	76.6	131.6
1987	37.2	0.0	37.2	-2.8	0.0	-2.8	34.4	0.0	34.4
1988	46.0	0.0	46.0	-15.3	0.0	-15.3	30.8	0.0	30.8
1989	50.5	0.0	50.5	-16.9	0.0	-16.9	33.6	0.0	33.6
1990	38.3	0.0	38.3	-14.1	0.0	-14.1	24.2	0.0	24.2
1991	53.8	0.0	53.8	-17.3	0.0	-17.3	36.5	0.0	36.5
1992	45.3	0.0	45.3	-14.7	0.0	-14.7	30.6	0.0	30.6
1993	55.0	101.9	156.9	0.0	-26.2	-26.2	55.0	75.7	130.7
1994	45.9	0.0	45.9	2.9	0.0	2.9	48.8	0.0	48.8
1995	55.0	121.2	176.2	0.0	-11.5	-11.5	55.0	109.7	164.7
1996	55.0	70.1	125.1	0.0	-20.6	-20.6	55.0	49.5	104.5
1997	55.0	55.9	110.9	0.0	-26.9	-26.9	55.0	29.0	84.0
1998	55.0	93.4	148.4	-0.1	-14.8	-14.9	54.9	78.5	133.4
1999	55.0	47.5	102.5	0.0	-21.0	-21.0	55.0	26.5	81.5
2000	55.0	55.4	110.4	0.0	-16.2	-16.2	55.0	39.2	94.2
2001	55.0	10.4	65.4	-9.8	-10.4	-20.3	45.2	0.0	45.2
2002	55.0	19.1	74.1	-7.8	-19.1	-26.8	47.2	0.0	47.2
2003	55.0	47.1	102.1	0.0	-36.4	-36.4	55.0	10.7	65.7
2004	55.0	12.7	67.7	-8.7	-12.7	-21.4	46.3	0.0	46.3
2005	55.0	99.9	154.9	0.0	-8.7	-8.7	55.0	91.2	146.2
2006	55.0	100.9	155.9	0.0	-11.3	-11.3	55.0	89.6	144.6
2007	31.9	0.0	31.9	-9.7	0.0	-9.7	22.2	0.0	22.2
2008	55.0	8.3	63.3	-13.1	-8.3	-21.4	41.9	0.0	41.9
2009	55.0	48.5	103.5	0.0	-36.1	-36.1	55.0	12.5	67.5
2010	55.0	80.0	135.0	0.0	-20.6	-20.6	55.0	59.4	114.4
2011	55.0	108.2	163.2	0.0	-7.2	-7.2	55.0	101.0	156.0
2012	49.9	0.0	49.9	-12.8	0.0	-12.8	37.1	0.0	37.1
2013	45.6	0.0	45.6	-15.5	0.0	-15.5	30.1	0.0	30.1
2014	22.8	0.0	22.8	-11.3	0.0	-11.3	11.5	0.0	11.5
2015	9.5	0.0	9.5	-1.0	0.0	-1.0	8.5	0.0	8.5
2016	55.0	15.0	70.0	-5.7	-15.0	-20.7	49.3	0.0	49.3
Ave All	51.1	43.7	94.8	-3.7	-13.6	-17.3	47.4	30.1	77.4
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	38.4	0.5	38.9	-10.2	-0.5	-10.7	28.1	0.0	28.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	55.0	101.6	156.6	0.0	-3.9	-3.9	55.0	97.7	152.7
1969		55.0	101.8	156.8	0.0	-6.9	-6.9	55.0	94.9	149.9
1995		55.0	121.2	176.2	0.0	-11.5	-11.5	55.0	109.7	164.7
1938		55.0	106.4	161.4	0.0	-13.8	-13.8	55.0	92.7	147.7
1978		55.0	114.8	169.8	0.0	-11.5	-11.5	55.0	103.2	158.2
1982		55.0	93.8	148.8	-0.1	-11.1	-11.1	54.9	82.8	137.7
2011		55.0	108.2	163.2	0.0	-7.2	-7.2	55.0	101.0	156.0
1967		55.0	110.1	165.1	0.0	-13.8	-13.8	55.0	96.3	151.3
2006		55.0	100.9	155.9	0.0	-11.3	-11.3	55.0	89.6	144.6
1998		55.0	93.4	148.4	-0.1	-14.8	-14.9	54.9	78.5	133.4
1986		55.0	92.7	147.7	0.0	-16.1	-16.1	55.0	76.6	131.6
1980		55.0	99.7	154.7	-0.3	-18.9	-19.2	54.7	80.8	135.5
1956		55.0	97.5	152.5	0.0	-19.2	-19.2	55.0	78.3	133.3
1952		55.0	96.0	151.0	0.0	-9.2	-9.2	55.0	86.8	141.8
2005		55.0	99.9	154.9	0.0	-8.7	-8.7	55.0	91.2	146.2
1997		55.0	55.9	110.9	0.0	-26.9	-26.9	55.0	29.0	84.0
1993		55.0	101.9	156.9	0.0	-26.2	-26.2	55.0	75.7	130.7
1941		55.0	101.0	156.0	0.0	-23.1	-23.1	55.0	77.9	132.9
1958		55.0	95.7	150.7	0.0	-15.6	-15.6	55.0	80.1	135.1
1922	Normal-Wet	55.0	96.5	151.5	0.0	-19.0	-19.0	55.0	77.6	132.6
1965		55.0	79.7	134.7	0.0	-28.7	-28.7	55.0	50.9	105.9
1942		55.0	91.9	146.9	0.0	-23.8	-23.8	55.0	68.1	123.1
1937		55.0	66.9	121.9	0.0	-23.0	-23.0	55.0	43.9	98.9
1996		55.0	70.1	125.1	0.0	-20.6	-20.6	55.0	49.5	104.5
1974		55.0	73.6	128.6	0.0	-22.6	-22.6	55.0	51.0	106.0
1945		55.0	76.5	131.5	0.0	-16.3	-16.3	55.0	60.2	115.2
1943		55.0	63.1	118.1	-0.1	-24.3	-24.4	54.9	38.8	93.7
1984		55.0	57.4	112.4	-0.2	-20.8	-21.0	54.7	36.6	91.3
1932		55.0	73.1	128.1	0.0	-18.5	-18.5	55.0	54.6	109.6
1973		55.0	64.1	119.1	-0.1	-23.3	-23.3	54.9	40.8	95.8
2010		55.0	80.0	135.0	0.0	-20.6	-20.6	55.0	59.4	114.4
1927		55.0	65.4	120.4	0.0	-11.2	-11.2	55.0	54.2	109.2
1963		55.0	79.7	134.7	0.0	-21.2	-21.2	55.0	58.5	113.5
1962		55.0	66.5	121.5	0.0	-20.9	-20.9	55.0	45.5	100.5
1935		55.0	57.4	112.4	-0.2	-22.3	-22.5	54.8	35.2	89.9
1940		55.0	44.5	99.5	0.0	-7.5	-7.5	55.0	37.0	92.0
1951		54.9	37.9	92.8	0.1	-33.1	-33.0	55.0	4.8	59.8
1936		55.0	62.3	117.3	-0.1	-21.8	-21.9	54.9	40.5	95.4
1979		55.0	61.3	116.3	-0.2	-23.2	-23.4	54.8	38.0	92.8
1975		55.0	64.1	119.1	0.0	-13.4	-13.4	55.0	50.6	105.6
2000		55.0	55.4	110.4	0.0	-16.2	-16.2	55.0	39.2	94.2
1946		54.9	42.1	97.0	0.1	-13.3	-13.2	55.0	28.8	83.8
1923		55.0	58.1	113.1	0.0	-18.5	-18.5	55.0	39.7	94.7
1999		55.0	47.5	102.5	0.0	-21.0	-21.0	55.0	26.5	81.5
2009		55.0	48.5	103.5	0.0	-36.1	-36.1	55.0	12.5	67.5
2003	Normal-Dry	55.0	47.1	102.1	0.0	-36.4	-36.4	55.0	10.7	65.7
1970		55.0	43.4	98.4	0.0	-28.4	-28.4	55.0	15.0	70.0
1925		55.0	30.5	85.5	0.0	-27.6	-27.6	55.0	2.9	57.9
1971		55.0	39.9	94.9	0.0	-32.5	-32.5	55.0	7.4	62.4
1957		55.0	32.9	87.9	0.0	-18.3	-18.3	55.0	14.6	69.6
1954		55.0	21.3	76.3	-2.9	-21.3	-24.2	52.1	0.0	52.1
1950		55.0	26.6	81.6	-0.2	-26.6	-26.8	54.8	0.0	54.8
2016		55.0	15.0	70.0	-5.7	-15.0	-20.7	49.3	0.0	49.3
1966		55.0	22.7	77.6	0.0	-13.2	-13.2	55.0	9.5	64.5
1944		55.0	30.2	85.2	0.0	-19.2	-19.2	55.0	11.1	66.1
1953		55.0	24.9	79.9	-0.9	-24.9	-25.9	54.1	0.0	54.1
1948		55.0	6.4	61.4	-14.2	-6.4	-20.7	40.8	0.0	40.8
2002		55.0	19.1	74.1	-7.8	-19.1	-26.8	47.2	0.0	47.2
1949		55.0	21.2	76.2	-6.4	-21.2	-27.6	48.6	0.0	48.6
1926		55.0	14.2	69.2	-3.4	-14.2	-17.6	51.6	0.0	51.6
1955		55.0	21.4	76.4	-3.9	-21.4	-25.3	51.1	0.0	51.1
1928		55.0	25.6	80.6	0.0	-17.9	-17.9	55.0	7.6	62.6
2004		55.0	12.7	67.7	-8.7	-12.7	-21.4	46.3	0.0	46.3
1985		55.0	16.5	71.5	-0.6	-16.5	-17.1	54.4	0.0	54.4
1947		55.0	13.1	68.1	0.0	-12.6	-12.6	55.0	0.5	55.5
2008		55.0	8.3	63.3	-13.1	-8.3	-21.4	41.9	0.0	41.9
1933		55.0	27.4	82.4	-2.3	-27.4	-29.8	52.7	0.0	52.7
1981		55.0	17.8	72.8	0.0	-7.5	-7.5	55.0	10.4	65.4
2001		55.0	10.4	65.4	-9.8	-10.4	-20.3	45.2	0.0	45.2
1972		55.0	14.2	69.2	-6.8	-14.2	-21.0	48.2	0.0	48.2
1991		53.8	0.0	53.8	-17.3	0.0	-17.3	36.5	0.0	36.5
1959		55.0	0.8	55.8	-3.6	-0.8	-4.4	51.4	0.0	51.4
1989		50.5	0.0	50.5	-16.9	0.0	-16.9	33.6	0.0	33.6
1964	Normal-Dry	55.0	10.8	65.8	-8.3	-10.8	-19.2	46.7	0.0	46.7
1939		52.1	0.0	52.1	-12.3	0.0	-12.3	39.7	0.0	39.7
1929		44.3	0.0	44.3	-13.2	0.0	-13.2	31.1	0.0	31.1
1988		46.0	0.0	46.0	-15.3	0.0	-15.3	30.8	0.0	30.8
1968		53.7	0.0	53.7	-9.7	0.0	-9.7	44.0	0.0	44.0
1930		45.6	0.0	45.6	-15.5	0.0	-15.5	30.1	0.0	30.1
2013		45.6	0.0	45.6	-15.5	0.0	-15.5	30.1	0.0	30.1
2012		49.9	0.0	49.9	-12.8	0.0	-12.8	37.1	0.0	37.1
1960		44.0	0.0	44.0	-15.2	0.0	-15.2	28.9	0.0	28.9
1994		45.9	0.0	45.9	2.9	0.0	2.9	48.8	0.0	48.8
1992		45.3	0.0	45.3	-14.7	0.0	-14.7	30.6	0.0	30.6
1987		37.2	0.0	37.2	-2.8	0.0	-2.8	34.4	0.0	34.4
1990		38.3	0.0	38.3	-14.1	0.0	-14.1	24.2	0.0	24.2
1934		39.1	0.0	39.1	-12.1	0.0	-12.1	27.0	0.0	27.0
2007		31.9	0.0	31.9	-9.7	0.0	-9.7	22.2	0.0	22.2
1961	Crit-High	31.3	0.0	31.3	-11.3	0.0	-11.3	20.0	0.0	20.0
1976		41.9	0.0	41.9	-9.3	0.0	-9.3	32.6	0.0	32.6
2014		22.8	0.0	22.8	-11.3	0.0	-11.3	11.5	0.0	11.5
1931		21.5	0.0	21.5	-11.4	0.0	-11.4	10.1	0.0	10.1
1924		30.4	0.0	30.4	-11.4	0.0	-11.4	19.0	0.0	19.0
1977	CL	12.9	0.0	12.9	-1.0	0.0	-1.0	11.8	0.0	11.8
2015		9.5	0.0	9.5	-1.0	0.0	-1.0	8.5	0.0	8.5
Wet Ave		55.0	99.6	154.6	0.0	-14.2	-14.2	55.0	85.4	140.4
Normal-wet Ave		55.0	64.8	119.7	0.0	-20.8	-20.8	55.0	43.9	98.9
Normal-dry Ave		54.8	20.1	74.9	-4.4	-16.9	-21.4	50.3	3.2	53.5
Dry Ave		44.9	0.7	45.6	-11.2	-0.7	-11.9	33.7	0.0	33.7
Critical-H Ave		29.6	0.0	29.6	-11.0	0.0	-11.0	18.6	0.0	18.6
Critical-L Ave		11.2	0.0	11.2	-1.0	0.0	-1.0	10.2	0.0	10.2

Note: Values reported by contract year (March-February)

Madera ID

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	85.0	112.2	197.2	0.0	-22.0	-22.0	85.0	90.2	175.2
1923	85.0	67.6	152.6	0.0	-21.5	-21.5	85.0	46.1	131.1
1924	47.0	0.0	47.0	-17.7	0.0	-17.7	29.3	0.0	29.3
1925	85.0	35.4	120.4	0.0	-32.1	-32.1	85.0	3.3	88.3
1926	84.9	16.5	101.4	-5.2	-16.5	-21.7	79.7	0.0	79.7
1927	85.0	76.1	161.1	0.0	-13.1	-13.1	85.0	63.0	148.0
1928	85.0	29.7	114.7	0.0	-20.8	-20.8	85.0	8.9	93.9
1929	68.4	0.0	68.4	-20.4	0.0	-20.4	48.0	0.0	48.0
1930	70.5	0.0	70.5	-24.0	0.0	-24.0	46.5	0.0	46.5
1931	33.2	0.0	33.2	-17.6	0.0	-17.6	15.6	0.0	15.6
1932	85.0	85.0	170.0	0.0	-21.5	-21.5	85.0	63.5	148.5
1933	85.0	31.9	116.9	-3.6	-31.9	-35.5	81.4	0.0	81.4
1934	60.5	0.0	60.5	-18.7	0.0	-18.7	41.7	0.0	41.7
1935	85.0	66.8	151.8	-0.4	-25.9	-26.3	84.6	40.9	125.5
1936	85.0	72.4	157.4	-0.1	-25.3	-25.4	84.9	47.1	132.0
1937	85.0	77.8	162.8	0.0	-26.8	-26.8	85.0	51.0	136.0
1938	85.0	123.7	208.7	0.0	-16.0	-16.0	85.0	107.7	192.7
1939	80.4	0.0	80.4	-19.0	0.0	-19.0	61.4	0.0	61.4
1940	85.0	51.7	136.7	0.0	-8.7	-8.7	85.0	43.1	128.1
1941	85.0	117.4	202.4	0.0	-26.9	-26.9	85.0	90.5	175.5
1942	85.0	106.9	191.9	0.0	-27.7	-27.7	85.0	79.2	164.2
1943	85.0	73.3	158.3	-0.1	-28.2	-28.4	84.9	45.1	129.9
1944	85.0	35.1	120.1	0.0	-22.3	-22.3	85.0	12.9	97.9
1945	85.0	88.9	173.9	0.0	-18.9	-19.0	85.0	70.0	155.0
1946	84.8	48.9	133.7	0.2	-15.5	-15.3	85.0	33.5	118.5
1947	85.0	15.3	100.3	0.0	-14.6	-14.6	85.0	0.6	85.6
1948	85.0	7.5	92.5	-22.0	-7.5	-29.5	63.0	0.0	63.0
1949	85.0	24.6	109.6	-9.9	-24.6	-34.5	75.1	0.0	75.1
1950	85.0	30.9	115.9	-0.3	-30.9	-31.2	84.7	0.0	84.7
1951	84.9	44.0	128.9	0.1	-38.5	-38.3	85.0	5.6	90.6
1952	85.0	111.6	196.6	0.0	-10.7	-10.7	85.0	100.9	185.9
1953	85.0	29.0	114.0	-1.5	-29.0	-30.4	83.5	0.0	83.5
1954	85.0	24.8	109.8	-4.5	-24.8	-29.3	80.5	0.0	80.5
1955	85.0	24.9	109.9	-6.0	-24.9	-30.8	79.0	0.0	79.0
1956	85.0	113.3	198.3	0.0	-22.3	-22.3	85.0	91.0	176.0
1957	85.0	38.3	123.3	0.0	-21.3	-21.3	85.0	17.0	102.0
1958	85.0	111.3	196.3	0.0	-18.1	-18.1	85.0	93.1	178.1
1959	85.0	0.9	85.9	-5.6	-0.9	-6.5	79.4	0.0	79.4
1960	68.1	0.0	68.1	-23.4	0.0	-23.4	44.6	0.0	44.6
1961	48.4	0.0	48.4	-17.5	0.0	-17.5	30.8	0.0	30.8
1962	85.0	77.3	162.3	0.0	-24.3	-24.3	85.0	52.9	137.9
1963	85.0	92.7	177.7	0.0	-24.6	-24.6	85.0	68.0	153.0
1964	85.0	12.6	97.6	-12.9	-12.6	-25.5	72.1	0.0	72.1
1965	85.0	92.6	177.6	0.0	-33.4	-33.4	85.0	59.2	144.2
1966	84.9	26.4	111.3	0.1	-15.4	-15.3	85.0	11.0	96.0
1967	85.0	128.0	213.0	-0.1	-16.0	-16.1	84.9	112.0	196.9
1968	83.1	0.0	83.1	-15.0	0.0	-15.0	68.1	0.0	68.1
1969	85.0	118.4	203.4	0.0	-8.0	-8.0	85.0	110.3	195.3
1970	85.0	50.5	135.4	0.0	-33.0	-33.0	85.0	17.4	102.4
1971	85.0	46.4	131.3	0.0	-37.8	-37.8	85.0	8.5	93.5
1972	85.0	16.5	101.5	-10.5	-16.5	-27.0	74.5	0.0	74.5
1973	85.0	74.5	159.5	-0.1	-27.0	-27.1	84.9	47.5	132.4
1974	85.0	85.5	170.5	0.0	-26.2	-26.2	85.0	59.3	144.3
1975	85.0	74.5	159.5	0.0	-15.6	-15.6	85.0	58.9	143.9
1976	64.8	0.0	64.8	-14.4	0.0	-14.4	50.4	0.0	50.4
1977	19.9	0.0	19.9	-1.6	0.0	-1.6	18.3	0.0	18.3
1978	85.0	133.4	218.4	0.0	-13.4	-13.4	85.0	120.0	205.0
1979	85.0	71.2	156.2	-0.3	-27.0	-27.3	84.7	44.2	128.9
1980	85.0	115.9	200.9	-0.4	-22.0	-22.4	84.6	93.9	178.5
1981	85.0	20.7	105.7	0.0	-8.7	-8.7	85.0	12.0	97.0
1982	85.0	109.1	194.1	-0.1	-12.8	-13.0	84.9	96.2	181.1
1983	85.0	118.1	203.1	0.0	-4.5	-4.5	85.0	113.6	198.6
1984	85.0	66.7	151.7	-0.4	-24.2	-24.5	84.6	42.5	127.1
1985	85.0	19.2	104.2	-0.9	-19.2	-20.1	84.1	0.0	84.1
1986	85.0	107.7	192.7	0.0	-18.7	-18.7	85.0	89.1	174.1
1987	57.5	0.0	57.5	-4.3	0.0	-4.3	53.1	0.0	53.1
1988	71.1	0.0	71.1	-23.6	0.0	-23.6	47.5	0.0	47.5
1989	78.0	0.0	78.0	-26.1	0.0	-26.1	51.9	0.0	51.9
1990	59.2	0.0	59.2	-21.8	0.0	-21.8	37.4	0.0	37.4
1991	83.1	0.0	83.1	-26.7	0.0	-26.7	56.4	0.0	56.4
1992	70.0	0.0	70.0	-22.7	0.0	-22.7	47.3	0.0	47.3
1993	85.0	118.5	203.5	0.0	-30.5	-30.5	85.0	88.0	173.0
1994	70.9	0.0	70.9	4.6	0.0	4.6	75.4	0.0	75.4
1995	85.0	140.9	225.9	0.0	-13.4	-13.4	85.0	127.5	212.5
1996	85.0	81.5	166.5	0.0	-23.9	-23.9	85.0	57.6	142.6
1997	85.0	65.0	150.0	0.0	-31.2	-31.2	85.0	33.7	118.7
1998	85.0	108.5	193.5	-0.1	-17.3	-17.4	84.9	91.3	176.2
1999	85.0	55.2	140.2	0.0	-24.4	-24.4	85.0	30.8	115.8
2000	85.0	64.4	149.4	-0.1	-18.8	-18.9	84.9	45.6	130.5
2001	85.0	12.1	97.1	-15.2	-12.1	-27.4	69.8	0.0	69.8
2002	85.0	22.1	107.1	-12.0	-22.1	-34.1	73.0	0.0	73.0
2003	85.0	54.7	139.7	0.0	-42.3	-42.3	85.0	12.4	97.4
2004	85.0	14.8	99.8	-13.5	-14.8	-28.3	71.5	0.0	71.5
2005	85.0	116.1	201.1	0.0	-10.1	-10.1	85.0	106.0	191.0
2006	85.0	117.3	202.3	0.0	-13.1	-13.1	85.0	104.2	189.2
2007	49.3	0.0	49.3	-15.0	0.0	-15.0	34.3	0.0	34.3
2008	85.0	9.6	94.6	-20.3	-9.6	-29.9	64.7	0.0	64.7
2009	85.0	56.4	141.4	0.0	-41.9	-41.9	85.0	14.5	99.5
2010	85.0	93.0	178.0	0.0	-24.0	-24.0	85.0	69.0	154.0
2011	85.0	125.8	210.8	0.0	-8.4	-8.4	85.0	117.4	202.4
2012	77.1	0.0	77.1	-19.8	0.0	-19.8	57.3	0.0	57.3
2013	70.4	0.0	70.4	-24.0	0.0	-24.0	46.5	0.0	46.5
2014	35.2	0.0	35.2	-17.5	0.0	-17.5	17.7	0.0	17.7
2015	14.7	0.0	14.7	-1.5	0.0	-1.5	13.2	0.0	13.2
2016	85.0	17.5	102.5	-8.7	-17.5	-26.2	76.3	0.0	76.3
Ave All	78.9	50.8	129.7	-5.7	-15.9	-21.6	73.2	34.9	108.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	59.3	0.6	59.9	-15.8	-0.6	-16.4	43.5	0.0	43.5

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	85.0	118.1	203.1	0.0	-4.5	-4.5	85.0	113.6	198.6
1969		85.0	118.4	203.4	0.0	-8.0	-8.0	85.0	110.3	195.3
1995		85.0	140.9	225.9	0.0	-13.4	-13.4	85.0	127.5	212.5
1938		85.0	123.7	208.7	0.0	-16.0	-16.0	85.0	107.7	192.7
1978		85.0	133.4	218.4	0.0	-13.4	-13.4	85.0	120.0	205.0
1982		85.0	109.1	194.1	-0.1	-12.8	-13.0	84.9	96.2	181.1
2011		85.0	125.8	210.8	0.0	-8.4	-8.4	85.0	117.4	202.4
1967		85.0	128.0	213.0	-0.1	-16.0	-16.1	84.9	112.0	196.9
2006		85.0	117.3	202.3	0.0	-13.1	-13.1	85.0	104.2	189.2
1998		85.0	108.5	193.5	-0.1	-17.3	-17.4	84.9	91.3	176.2
1986		85.0	107.7	192.7	0.0	-18.7	-18.7	85.0	89.1	174.1
1980		85.0	115.9	200.9	-0.4	-22.0	-22.4	84.6	93.9	178.5
1956		85.0	113.3	198.3	0.0	-22.3	-22.3	85.0	91.0	176.0
1952		85.0	111.6	196.6	0.0	-10.7	-10.7	85.0	100.9	185.9
2005		85.0	116.1	201.1	0.0	-10.1	-10.1	85.0	106.0	191.0
1997		85.0	65.0	150.0	0.0	-31.2	-31.2	85.0	33.7	118.7
1993		85.0	118.5	203.5	0.0	-30.5	-30.5	85.0	88.0	173.0
1941		85.0	117.4	202.4	0.0	-26.9	-26.9	85.0	90.5	175.5
1958		85.0	111.3	196.3	0.0	-18.1	-18.1	85.0	93.1	178.1
1922	Normal-Wet	85.0	112.2	197.2	0.0	-22.0	-22.0	85.0	90.2	175.2
1965		85.0	92.6	177.6	0.0	-33.4	-33.4	85.0	59.2	144.2
1942		85.0	106.9	191.9	0.0	-27.7	-27.7	85.0	79.2	164.2
1937		85.0	77.8	162.8	0.0	-26.8	-26.8	85.0	51.0	136.0
1996		85.0	81.5	166.5	0.0	-23.9	-23.9	85.0	57.6	142.6
1974		85.0	85.5	170.5	0.0	-26.2	-26.2	85.0	59.3	144.3
1945		85.0	88.9	173.9	0.0	-18.9	-19.0	85.0	70.0	155.0
1943		85.0	73.3	158.3	-0.1	-28.2	-28.4	84.9	45.1	129.9
1984		85.0	66.7	151.7	-0.4	-24.2	-24.5	84.6	42.5	127.1
1932		85.0	85.0	170.0	0.0	-21.5	-21.5	85.0	63.5	148.5
1973		85.0	74.5	159.5	-0.1	-27.0	-27.1	84.9	47.5	132.4
2010		85.0	93.0	178.0	0.0	-24.0	-24.0	85.0	69.0	154.0
1927		85.0	76.1	161.1	0.0	-13.1	-13.1	85.0	63.0	148.0
1963		85.0	92.7	177.7	0.0	-24.6	-24.6	85.0	68.0	153.0
1962		85.0	77.3	162.3	0.0	-24.3	-24.3	85.0	52.9	137.9
1935		85.0	66.8	151.8	-0.4	-25.9	-26.3	84.6	40.9	125.5
1940		85.0	51.7	136.7	0.0	-8.7	-8.7	85.0	43.1	128.1
1951		84.9	44.0	128.9	0.1	-38.5	-38.3	85.0	5.6	90.6
1936		85.0	72.4	157.4	-0.1	-25.3	-25.4	84.9	47.1	132.0
1979		85.0	71.2	156.2	-0.3	-27.0	-27.3	84.7	44.2	128.9
1975		85.0	74.5	159.5	0.0	-15.6	-15.6	85.0	58.9	143.9
2000		85.0	64.4	149.4	-0.1	-18.8	-18.9	84.9	45.6	130.5
1946		84.8	48.9	133.7	0.2	-15.5	-15.3	85.0	33.5	118.5
1923		85.0	67.6	152.6	0.0	-21.5	-21.5	85.0	46.1	131.1
1999		85.0	55.2	140.2	0.0	-24.4	-24.4	85.0	30.8	115.8
2009		85.0	56.4	141.4	0.0	-41.9	-41.9	85.0	14.5	99.5
2003	Normal-Dry	85.0	54.7	139.7	0.0	-42.3	-42.3	85.0	12.4	97.4
1970		85.0	50.5	135.4	0.0	-33.0	-33.0	85.0	17.4	102.4
1925		85.0	35.4	120.4	0.0	-32.1	-32.1	85.0	3.3	88.3
1971		85.0	46.4	131.3	0.0	-37.8	-37.8	85.0	8.5	93.5
1957		85.0	38.3	123.3	0.0	-21.3	-21.3	85.0	17.0	102.0
1954		85.0	24.8	109.8	-4.5	-24.8	-29.3	80.5	0.0	80.5
1950		85.0	30.9	115.9	-0.3	-30.9	-31.2	84.7	0.0	84.7
2016		85.0	17.5	102.5	-8.7	-17.5	-26.2	76.3	0.0	76.3
1966		84.9	26.4	111.3	0.1	-15.4	-15.3	85.0	11.0	96.0
1944		85.0	35.1	120.1	0.0	-22.3	-22.3	85.0	12.9	97.9
1953		85.0	29.0	114.0	-1.5	-29.0	-30.4	83.5	0.0	83.5
1948		85.0	7.5	92.5	-22.0	-7.5	-29.5	63.0	0.0	63.0
2002		85.0	22.1	107.1	-12.0	-22.1	-34.1	73.0	0.0	73.0
1949		85.0	24.6	109.6	-9.9	-24.6	-34.5	75.1	0.0	75.1
1926		84.9	16.5	101.4	-5.2	-16.5	-21.7	79.7	0.0	79.7
1955		85.0	24.9	109.9	-6.0	-24.9	-30.8	79.0	0.0	79.0
1928		85.0	29.7	114.7	0.0	-20.8	-20.8	85.0	8.9	93.9
2004		85.0	14.8	99.8	-13.5	-14.8	-28.3	71.5	0.0	71.5
1985		85.0	19.2	104.2	-0.9	-19.2	-20.1	84.1	0.0	84.1
1947		85.0	15.3	100.3	0.0	-14.6	-14.6	85.0	0.6	85.6
2008		85.0	9.6	94.6	-20.3	-9.6	-29.9	64.7	0.0	64.7
1933		85.0	31.9	116.9	-3.6	-31.9	-35.5	81.4	0.0	81.4
1981		85.0	20.7	105.7	0.0	-8.7	-8.7	85.0	12.0	97.0
2001		85.0	12.1	97.1	-15.2	-12.1	-27.4	69.8	0.0	69.8
1972		85.0	16.5	101.5	-10.5	-16.5	-27.0	74.5	0.0	74.5
1991		83.1	0.0	83.1	-26.7	0.0	-26.7	56.4	0.0	56.4
1959		85.0	0.9	85.9	-5.6	-0.9	-6.5	79.4	0.0	79.4
1989		78.0	0.0	78.0	-26.1	0.0	-26.1	51.9	0.0	51.9
1964	Normal-Dry	85.0	12.6	97.6	-12.9	-12.6	-25.5	72.1	0.0	72.1
1939		80.4	0.0	80.4	-19.0	0.0	-19.0	61.4	0.0	61.4
1929		68.4	0.0	68.4	-20.4	0.0	-20.4	48.0	0.0	48.0
1988		71.1	0.0	71.1	-23.6	0.0	-23.6	47.5	0.0	47.5
1968		83.1	0.0	83.1	-15.0	0.0	-15.0	68.1	0.0	68.1
1930		70.5	0.0	70.5	-24.0	0.0	-24.0	46.5	0.0	46.5
2013		70.4	0.0	70.4	-24.0	0.0	-24.0	46.5	0.0	46.5
2012		77.1	0.0	77.1	-19.8	0.0	-19.8	57.3	0.0	57.3
1960		68.1	0.0	68.1	-23.4	0.0	-23.4	44.6	0.0	44.6
1994		70.9	0.0	70.9	4.6	0.0	4.6	75.4	0.0	75.4
1992		70.0	0.0	70.0	-22.7	0.0	-22.7	47.3	0.0	47.3
1987		57.5	0.0	57.5	-4.3	0.0	-4.3	53.1	0.0	53.1
1990		59.2	0.0	59.2	-21.8	0.0	-21.8	37.4	0.0	37.4
1934		60.5	0.0	60.5	-18.7	0.0	-18.7	41.7	0.0	41.7
2007		49.3	0.0	49.3	-15.0	0.0	-15.0	34.3	0.0	34.3
1961	Crit-High	48.4	0.0	48.4	-17.5	0.0	-17.5	30.8	0.0	30.8
1976		64.8	0.0	64.8	-14.4	0.0	-14.4	50.4	0.0	50.4
2014		35.2	0.0	35.2	-17.5	0.0	-17.5	17.7	0.0	17.7
1931		33.2	0.0	33.2	-17.6	0.0	-17.6	15.6	0.0	15.6
1924		47.0	0.0	47.0	-17.7	0.0	-17.7	29.3	0.0	29.3
1977	CL	19.9	0.0	19.9	-1.6	0.0	-1.6	18.3	0.0	18.3
2015		14.7	0.0	14.7	-1.5	0.0	-1.5	13.2	0.0	13.2
Wet Ave		85.0	115.8	200.8	0.0	-16.5	-16.5	85.0	99.3	184.3
Normal-wet Ave		85.0	75.3	160.3	0.0	-24.2	-24.2	84.9	51.1	136.0
Normal-dry Ave		84.7	23.4	108.1	-6.9	-19.7	-26.6	77.8	3.7	81.5
Dry Ave		69.4	0.8	70.3	-17.3	-0.8	-18.2	52.1	0.0	52.1
Critical-H Ave		45.7	0.0	45.7	-16.9	0.0	-16.9	28.8	0.0	28.8
Critical-L Ave		17.3	0.0	17.3	-1.6	0.0	-1.6	15.7	0.0	15.7

Note: Values reported by contract year (March-February)

Gravelly Ford WD

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	0.0	8.4	8.4	0.0	-1.7	-1.7	0.0	6.8	6.8
1923	0.0	5.1	5.1	0.0	-1.6	-1.6	0.0	3.5	3.5
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1925	0.0	2.7	2.7	0.0	-2.4	-2.4	0.0	0.2	0.2
1926	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1927	0.0	5.7	5.7	0.0	-1.0	-1.0	0.0	4.7	4.7
1928	0.0	2.2	2.2	0.0	-1.6	-1.6	0.0	0.7	0.7
1929	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.0	6.4	6.4	0.0	-1.6	-1.6	0.0	4.8	4.8
1933	0.0	2.4	2.4	0.0	-2.4	-2.4	0.0	0.0	0.0
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1935	0.0	5.0	5.0	0.0	-1.9	-1.9	0.0	3.1	3.1
1936	0.0	5.5	5.5	0.0	-1.9	-1.9	0.0	3.5	3.5
1937	0.0	5.9	5.9	0.0	-2.0	-2.0	0.0	3.8	3.8
1938	0.0	9.3	9.3	0.0	-1.2	-1.2	0.0	8.1	8.1
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1940	0.0	3.9	3.9	0.0	-0.7	-0.7	0.0	3.2	3.2
1941	0.0	8.8	8.8	0.0	-2.0	-2.0	0.0	6.8	6.8
1942	0.0	8.0	8.0	0.0	-2.1	-2.1	0.0	6.0	6.0
1943	0.0	5.5	5.5	0.0	-2.1	-2.1	0.0	3.4	3.4
1944	0.0	2.6	2.6	0.0	-1.7	-1.7	0.0	1.0	1.0
1945	0.0	6.7	6.7	0.0	-1.4	-1.4	0.0	5.3	5.3
1946	0.0	3.7	3.7	0.0	-1.2	-1.2	0.0	2.5	2.5
1947	0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
1948	0.0	0.6	0.6	0.0	-0.6	-0.6	0.0	0.0	0.0
1949	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1950	0.0	2.3	2.3	0.0	-2.3	-2.3	0.0	0.0	0.0
1951	0.0	3.3	3.3	0.0	-2.9	-2.9	0.0	0.4	0.4
1952	0.0	8.4	8.4	0.0	-0.8	-0.8	0.0	7.6	7.6
1953	0.0	2.2	2.2	0.0	-2.2	-2.2	0.0	0.0	0.0
1954	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1955	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1956	0.0	8.5	8.5	0.0	-1.7	-1.7	0.0	6.8	6.8
1957	0.0	2.9	2.9	0.0	-1.6	-1.6	0.0	1.3	1.3
1958	0.0	8.4	8.4	0.0	-1.4	-1.4	0.0	7.0	7.0
1959	0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1962	0.0	5.8	5.8	0.0	-1.8	-1.8	0.0	4.0	4.0
1963	0.0	7.0	7.0	0.0	-1.9	-1.9	0.0	5.1	5.1
1964	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1965	0.0	7.0	7.0	0.0	-2.5	-2.5	0.0	4.5	4.5
1966	0.0	2.0	2.0	0.0	-1.2	-1.2	0.0	0.8	0.8
1967	0.0	9.6	9.6	0.0	-1.2	-1.2	0.0	8.4	8.4
1968	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	0.0	8.9	8.9	0.0	-0.6	-0.6	0.0	8.3	8.3
1970	0.0	3.8	3.8	0.0	-2.5	-2.5	0.0	1.3	1.3
1971	0.0	3.5	3.5	0.0	-2.8	-2.8	0.0	0.6	0.6
1972	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1973	0.0	5.6	5.6	0.0	-2.0	-2.0	0.0	3.6	3.6
1974	0.0	6.4	6.4	0.0	-2.0	-2.0	0.0	4.5	4.5
1975	0.0	5.6	5.6	0.0	-1.2	-1.2	0.0	4.4	4.4
1976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.0	10.0	10.0	0.0	-1.0	-1.0	0.0	9.0	9.0
1979	0.0	5.4	5.4	0.0	-2.0	-2.0	0.0	3.3	3.3
1980	0.0	8.7	8.7	0.0	-1.7	-1.7	0.0	7.1	7.1
1981	0.0	1.6	1.6	0.0	-0.7	-0.7	0.0	0.9	0.9
1982	0.0	8.2	8.2	0.0	-1.0	-1.0	0.0	7.2	7.2
1983	0.0	8.9	8.9	0.0	-0.3	-0.3	0.0	8.6	8.6
1984	0.0	5.0	5.0	0.0	-1.8	-1.8	0.0	3.2	3.2
1985	0.0	1.4	1.4	0.0	-1.4	-1.4	0.0	0.0	0.0
1986	0.0	8.1	8.1	0.0	-1.4	-1.4	0.0	6.7	6.7
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	0.0	8.9	8.9	0.0	-2.3	-2.3	0.0	6.6	6.6
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	10.6	10.6	0.0	-1.0	-1.0	0.0	9.6	9.6
1996	0.0	6.1	6.1	0.0	-1.8	-1.8	0.0	4.3	4.3
1997	0.0	4.9	4.9	0.0	-2.4	-2.4	0.0	2.5	2.5
1998	0.0	8.2	8.2	0.0	-1.3	-1.3	0.0	6.9	6.9
1999	0.0	4.2	4.2	0.0	-1.8	-1.8	0.0	2.3	2.3
2000	0.0	4.8	4.8	0.0	-1.4	-1.4	0.0	3.4	3.4
2001	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
2002	0.0	1.7	1.7	0.0	-1.7	-1.7	0.0	0.0	0.0
2003	0.0	4.1	4.1	0.0	-3.2	-3.2	0.0	0.9	0.9
2004	0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
2005	0.0	8.7	8.7	0.0	-0.8	-0.8	0.0	8.0	8.0
2006	0.0	8.8	8.8	0.0	-1.0	-1.0	0.0	7.8	7.8
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.0	0.7	0.7	0.0	-0.7	-0.7	0.0	0.0	0.0
2009	0.0	4.2	4.2	0.0	-3.2	-3.2	0.0	1.1	1.1
2010	0.0	7.0	7.0	0.0	-1.8	-1.8	0.0	5.2	5.2
2011	0.0	9.5	9.5	0.0	-0.6	-0.6	0.0	8.8	8.8
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	1.3	1.3	0.0	-1.3	-1.3	0.0	0.0	0.0
Ave All	0.0	3.8	3.8	0.0	-1.2	-1.2	0.0	2.6	2.6
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	0.0	8.9	8.9	0.0	-0.3	-0.3	0.0	8.6	8.6
1969	Wet	0.0	8.9	8.9	0.0	-0.6	-0.6	0.0	8.3	8.3
1995	Wet	0.0	10.6	10.6	0.0	-1.0	-1.0	0.0	9.6	9.6
1938	Wet	0.0	9.3	9.3	0.0	-1.2	-1.2	0.0	8.1	8.1
1978	Wet	0.0	10.0	10.0	0.0	-1.0	-1.0	0.0	9.0	9.0
1982	Wet	0.0	8.2	8.2	0.0	-1.0	-1.0	0.0	7.2	7.2
2011	Wet	0.0	9.5	9.5	0.0	-0.6	-0.6	0.0	8.8	8.8
1967	Wet	0.0	9.6	9.6	0.0	-1.2	-1.2	0.0	8.4	8.4
2006	Wet	0.0	8.8	8.8	0.0	-1.0	-1.0	0.0	7.8	7.8
1998	Wet	0.0	8.2	8.2	0.0	-1.3	-1.3	0.0	6.9	6.9
1986	Wet	0.0	8.1	8.1	0.0	-1.4	-1.4	0.0	6.7	6.7
1980	Wet	0.0	8.7	8.7	0.0	-1.7	-1.7	0.0	7.1	7.1
1956	Wet	0.0	8.5	8.5	0.0	-1.7	-1.7	0.0	6.8	6.8
1952	Wet	0.0	8.4	8.4	0.0	-0.8	-0.8	0.0	7.6	7.6
2005	Wet	0.0	8.7	8.7	0.0	-0.8	-0.8	0.0	8.0	8.0
1997	Wet	0.0	4.9	4.9	0.0	-2.4	-2.4	0.0	2.5	2.5
1993	Wet	0.0	8.9	8.9	0.0	-2.3	-2.3	0.0	6.6	6.6
1941	Wet	0.0	8.8	8.8	0.0	-2.0	-2.0	0.0	6.8	6.8
1958	Wet	0.0	8.4	8.4	0.0	-1.4	-1.4	0.0	7.0	7.0
1922	Normal-Wet	0.0	8.4	8.4	0.0	-1.7	-1.7	0.0	6.8	6.8
1965	Normal-Wet	0.0	7.0	7.0	0.0	-2.5	-2.5	0.0	4.5	4.5
1942	Normal-Wet	0.0	8.0	8.0	0.0	-2.1	-2.1	0.0	6.0	6.0
1937	Normal-Wet	0.0	5.9	5.9	0.0	-2.0	-2.0	0.0	3.8	3.8
1996	Normal-Wet	0.0	6.1	6.1	0.0	-1.8	-1.8	0.0	4.3	4.3
1974	Normal-Wet	0.0	6.4	6.4	0.0	-2.0	-2.0	0.0	4.5	4.5
1945	Normal-Wet	0.0	6.7	6.7	0.0	-1.4	-1.4	0.0	5.3	5.3
1943	Normal-Wet	0.0	5.5	5.5	0.0	-2.1	-2.1	0.0	3.4	3.4
1984	Normal-Wet	0.0	5.0	5.0	0.0	-1.8	-1.8	0.0	3.2	3.2
1932	Normal-Wet	0.0	6.4	6.4	0.0	-1.6	-1.6	0.0	4.8	4.8
1973	Normal-Wet	0.0	5.6	5.6	0.0	-2.0	-2.0	0.0	3.6	3.6
2010	Normal-Wet	0.0	7.0	7.0	0.0	-1.8	-1.8	0.0	5.2	5.2
1927	Normal-Wet	0.0	5.7	5.7	0.0	-1.0	-1.0	0.0	4.7	4.7
1963	Normal-Wet	0.0	7.0	7.0	0.0	-1.9	-1.9	0.0	5.1	5.1
1962	Normal-Wet	0.0	5.8	5.8	0.0	-1.8	-1.8	0.0	4.0	4.0
1935	Normal-Wet	0.0	5.0	5.0	0.0	-1.9	-1.9	0.0	3.1	3.1
1940	Normal-Wet	0.0	3.9	3.9	0.0	-0.7	-0.7	0.0	3.2	3.2
1951	Normal-Wet	0.0	3.3	3.3	0.0	-2.9	-2.9	0.0	0.4	0.4
1936	Normal-Wet	0.0	5.5	5.5	0.0	-1.9	-1.9	0.0	3.5	3.5
1979	Normal-Wet	0.0	5.4	5.4	0.0	-2.0	-2.0	0.0	3.3	3.3
1975	Normal-Wet	0.0	5.6	5.6	0.0	-1.2	-1.2	0.0	4.4	4.4
2000	Normal-Wet	0.0	4.8	4.8	0.0	-1.4	-1.4	0.0	3.4	3.4
1946	Normal-Wet	0.0	3.7	3.7	0.0	-1.2	-1.2	0.0	2.5	2.5
1923	Normal-Wet	0.0	5.1	5.1	0.0	-1.6	-1.6	0.0	3.5	3.5
1999	Normal-Wet	0.0	4.2	4.2	0.0	-1.8	-1.8	0.0	2.3	2.3
2009	Normal-Wet	0.0	4.2	4.2	0.0	-3.2	-3.2	0.0	1.1	1.1
2003	Normal-Dry	0.0	4.1	4.1	0.0	-3.2	-3.2	0.0	0.9	0.9
1970	Normal-Dry	0.0	3.8	3.8	0.0	-2.5	-2.5	0.0	1.3	1.3
1925	Normal-Dry	0.0	2.7	2.7	0.0	-2.4	-2.4	0.0	0.2	0.2
1971	Normal-Dry	0.0	3.5	3.5	0.0	-2.8	-2.8	0.0	0.6	0.6
1957	Normal-Dry	0.0	2.9	2.9	0.0	-1.6	-1.6	0.0	1.3	1.3
1954	Normal-Dry	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1950	Normal-Dry	0.0	2.3	2.3	0.0	-2.3	-2.3	0.0	0.0	0.0
2016	Normal-Dry	0.0	1.3	1.3	0.0	-1.3	-1.3	0.0	0.0	0.0
1966	Normal-Dry	0.0	2.0	2.0	0.0	-1.2	-1.2	0.0	0.8	0.8
1944	Normal-Dry	0.0	2.6	2.6	0.0	-1.7	-1.7	0.0	1.0	1.0
1953	Normal-Dry	0.0	2.2	2.2	0.0	-2.2	-2.2	0.0	0.0	0.0
1948	Normal-Dry	0.0	0.6	0.6	0.0	-0.6	-0.6	0.0	0.0	0.0
2002	Normal-Dry	0.0	1.7	1.7	0.0	-1.7	-1.7	0.0	0.0	0.0
1949	Normal-Dry	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1926	Normal-Dry	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1955	Normal-Dry	0.0	1.9	1.9	0.0	-1.9	-1.9	0.0	0.0	0.0
1928	Normal-Dry	0.0	2.2	2.2	0.0	-1.6	-1.6	0.0	0.7	0.7
2004	Normal-Dry	0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
1985	Normal-Dry	0.0	1.4	1.4	0.0	-1.4	-1.4	0.0	0.0	0.0
1947	Normal-Dry	0.0	1.1	1.1	0.0	-1.1	-1.1	0.0	0.0	0.0
2008	Normal-Dry	0.0	0.7	0.7	0.0	-0.7	-0.7	0.0	0.0	0.0
1933	Normal-Dry	0.0	2.4	2.4	0.0	-2.4	-2.4	0.0	0.0	0.0
1981	Normal-Dry	0.0	1.6	1.6	0.0	-0.7	-0.7	0.0	0.9	0.9
2001	Normal-Dry	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1972	Normal-Dry	0.0	1.2	1.2	0.0	-1.2	-1.2	0.0	0.0	0.0
1991	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1959	Normal-Dry	0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
1989	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1964	Normal-Dry	0.0	0.9	0.9	0.0	-0.9	-0.9	0.0	0.0	0.0
1939	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1929	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1930	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1960	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1934	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	Normal-Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1961	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1931	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1924	Crit-High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.0	8.7	8.7	0.0	-1.2	-1.2	0.0	7.5	7.5
Normal-wet Ave		0.0	5.7	5.7	0.0	-1.8	-1.8	0.0	3.8	3.8
Normal-dry Ave		0.0	1.8	1.8	0.0	-1.5	-1.5	0.0	0.3	0.3
Dry Ave		0.0	0.1	0.1	0.0	-0.1	-0.1	0.0	0.0	0.0
Critical-H Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

City of Fresno

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1923	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1924	33.2	0.0	33.2	-12.5	0.0	-12.5	20.7	0.0	20.7
1925	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1926	60.0	0.0	60.0	-3.7	0.0	-3.7	56.3	0.0	56.3
1927	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1928	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1929	48.3	0.0	48.3	-14.4	0.0	-14.4	33.9	0.0	33.9
1930	49.8	0.0	49.8	-17.0	0.0	-17.0	32.8	0.0	32.8
1931	23.4	0.0	23.4	-12.4	0.0	-12.4	11.0	0.0	11.0
1932	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1933	60.0	0.0	60.0	-2.5	0.0	-2.5	57.5	0.0	57.5
1934	42.7	0.0	42.7	-13.2	0.0	-13.2	29.4	0.0	29.4
1935	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1936	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1937	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1938	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1939	56.8	0.0	56.8	-13.4	0.0	-13.4	43.4	0.0	43.4
1940	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1941	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1942	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1943	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1944	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1945	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1946	59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1947	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1948	60.0	0.0	60.0	-15.5	0.0	-15.5	44.5	0.0	44.5
1949	60.0	0.0	60.0	-7.0	0.0	-7.0	53.0	0.0	53.0
1950	60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1951	59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1952	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1953	60.0	0.0	60.0	-1.0	0.0	-1.0	59.0	0.0	59.0
1954	60.0	0.0	60.0	-3.2	0.0	-3.2	56.8	0.0	56.8
1955	60.0	0.0	60.0	-4.2	0.0	-4.2	55.8	0.0	55.8
1956	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1957	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1958	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1959	60.0	0.0	60.0	-3.9	0.0	-3.9	56.1	0.0	56.1
1960	48.0	0.0	48.0	-16.5	0.0	-16.5	31.5	0.0	31.5
1961	34.1	0.0	34.1	-12.4	0.0	-12.4	21.8	0.0	21.8
1962	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1963	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1964	60.0	0.0	60.0	-9.1	0.0	-9.1	50.9	0.0	50.9
1965	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1966	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1967	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1968	58.6	0.0	58.6	-10.6	0.0	-10.6	48.0	0.0	48.0
1969	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1970	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1971	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1972	60.0	0.0	60.0	-7.4	0.0	-7.4	52.6	0.0	52.6
1973	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1974	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1975	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1976	45.8	0.0	45.8	-10.2	0.0	-10.2	35.6	0.0	35.6
1977	14.0	0.0	14.0	-1.1	0.0	-1.1	12.9	0.0	12.9
1978	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1979	60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1980	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1981	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1982	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1983	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1984	60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1985	60.0	0.0	60.0	-0.6	0.0	-0.6	59.3	0.0	59.3
1986	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1987	40.6	0.0	40.6	-3.1	0.0	-3.1	37.5	0.0	37.5
1988	50.2	0.0	50.2	-16.6	0.0	-16.6	33.6	0.0	33.6
1989	55.1	0.0	55.1	-18.4	0.0	-18.4	36.7	0.0	36.7
1990	41.8	0.0	41.8	-15.4	0.0	-15.4	26.4	0.0	26.4
1991	58.7	0.0	58.7	-18.9	0.0	-18.9	39.8	0.0	39.8
1992	49.4	0.0	49.4	-16.0	0.0	-16.0	33.4	0.0	33.4
1993	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1994	50.0	0.0	50.0	3.2	0.0	3.2	53.2	0.0	53.2
1995	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1996	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1997	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1998	60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1999	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2000	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2001	60.0	0.0	60.0	-10.7	0.0	-10.7	49.3	0.0	49.3
2002	60.0	0.0	60.0	-8.5	0.0	-8.5	51.5	0.0	51.5
2003	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2004	60.0	0.0	60.0	-9.5	0.0	-9.5	50.5	0.0	50.5
2005	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2006	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2007	34.8	0.0	34.8	-10.6	0.0	-10.6	24.2	0.0	24.2
2008	60.0	0.0	60.0	-14.3	0.0	-14.3	45.7	0.0	45.7
2009	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2010	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2011	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2012	54.4	0.0	54.4	-14.0	0.0	-14.0	40.5	0.0	40.5
2013	49.7	0.0	49.7	-16.9	0.0	-16.9	32.8	0.0	32.8
2014	24.9	0.0	24.9	-12.3	0.0	-12.3	12.5	0.0	12.5
2015	10.4	0.0	10.4	-1.1	0.0	-1.1	9.3	0.0	9.3
2016	60.0	0.0	60.0	-6.2	0.0	-6.2	53.8	0.0	53.8
Ave All	55.7	0.0	55.7	-4.0	0.0	-4.0	51.7	0.0	51.7
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	41.9	0.0	41.9	-11.2	0.0	-11.2	30.7	0.0	30.7

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1969		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1995		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1938		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1978		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1982		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
2011		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1967		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2006		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1998		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1986		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1980		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1956		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1952		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2005		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1997		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1993		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1941		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1958		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1922	Normal-Wet	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1965		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1942		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1937		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1996		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1974		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1945		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1943		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1984		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1932		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1973		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
2010		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1927		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1963		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1962		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1935		60.0	0.0	60.0	-0.3	0.0	-0.3	59.7	0.0	59.7
1940		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1951		59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1936		60.0	0.0	60.0	-0.1	0.0	-0.1	59.9	0.0	59.9
1979		60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
1975		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2000		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1946		59.9	0.0	59.9	0.1	0.0	0.1	60.0	0.0	60.0
1923		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1999		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2009		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2003	Normal-Dry	60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1970		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1925		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1971		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1957		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1954		60.0	0.0	60.0	-3.2	0.0	-3.2	56.8	0.0	56.8
1950		60.0	0.0	60.0	-0.2	0.0	-0.2	59.8	0.0	59.8
2016		60.0	0.0	60.0	-6.2	0.0	-6.2	53.8	0.0	53.8
1966		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1944		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
1953		60.0	0.0	60.0	-1.0	0.0	-1.0	59.0	0.0	59.0
1948		60.0	0.0	60.0	-15.5	0.0	-15.5	44.5	0.0	44.5
2002		60.0	0.0	60.0	-8.5	0.0	-8.5	51.5	0.0	51.5
1949		60.0	0.0	60.0	-7.0	0.0	-7.0	53.0	0.0	53.0
1926		60.0	0.0	60.0	-3.7	0.0	-3.7	56.3	0.0	56.3
1955		60.0	0.0	60.0	-4.2	0.0	-4.2	55.8	0.0	55.8
1928		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2004		60.0	0.0	60.0	-9.5	0.0	-9.5	50.5	0.0	50.5
1985		60.0	0.0	60.0	-0.6	0.0	-0.6	59.3	0.0	59.3
1947		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2008		60.0	0.0	60.0	-14.3	0.0	-14.3	45.7	0.0	45.7
1933		60.0	0.0	60.0	-2.5	0.0	-2.5	57.5	0.0	57.5
1981		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
2001		60.0	0.0	60.0	-10.7	0.0	-10.7	49.3	0.0	49.3
1972		60.0	0.0	60.0	-7.4	0.0	-7.4	52.6	0.0	52.6
1991		58.7	0.0	58.7	-18.9	0.0	-18.9	39.8	0.0	39.8
1959		60.0	0.0	60.0	-3.9	0.0	-3.9	56.1	0.0	56.1
1989		55.1	0.0	55.1	-18.4	0.0	-18.4	36.7	0.0	36.7
1964	Normal-Dry	60.0	0.0	60.0	-9.1	0.0	-9.1	50.9	0.0	50.9
1939		56.8	0.0	56.8	-13.4	0.0	-13.4	43.4	0.0	43.4
1929		48.3	0.0	48.3	-14.4	0.0	-14.4	33.9	0.0	33.9
1988		50.2	0.0	50.2	-16.6	0.0	-16.6	33.6	0.0	33.6
1968		58.6	0.0	58.6	-10.6	0.0	-10.6	48.0	0.0	48.0
1930		49.8	0.0	49.8	-17.0	0.0	-17.0	32.8	0.0	32.8
2013		49.7	0.0	49.7	-16.9	0.0	-16.9	32.8	0.0	32.8
2012		54.4	0.0	54.4	-14.0	0.0	-14.0	40.5	0.0	40.5
1960		48.0	0.0	48.0	-16.5	0.0	-16.5	31.5	0.0	31.5
1994		50.0	0.0	50.0	3.2	0.0	3.2	53.2	0.0	53.2
1992		49.4	0.0	49.4	-16.0	0.0	-16.0	33.4	0.0	33.4
1987		40.6	0.0	40.6	-3.1	0.0	-3.1	37.5	0.0	37.5
1990		41.8	0.0	41.8	-15.4	0.0	-15.4	26.4	0.0	26.4
1934		42.7	0.0	42.7	-13.2	0.0	-13.2	29.4	0.0	29.4
2007		34.8	0.0	34.8	-10.6	0.0	-10.6	24.2	0.0	24.2
1961	Crit-High	34.1	0.0	34.1	-12.4	0.0	-12.4	21.8	0.0	21.8
1976		45.8	0.0	45.8	-10.2	0.0	-10.2	35.6	0.0	35.6
2014		24.9	0.0	24.9	-12.3	0.0	-12.3	12.5	0.0	12.5
1931		23.4	0.0	23.4	-12.4	0.0	-12.4	11.0	0.0	11.0
1924		33.2	0.0	33.2	-12.5	0.0	-12.5	20.7	0.0	20.7
1977	CL	14.0	0.0	14.0	-1.1	0.0	-1.1	12.9	0.0	12.9
2015		10.4	0.0	10.4	-1.1	0.0	-1.1	9.3	0.0	9.3
Wet Ave		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
Normal-wet Ave		60.0	0.0	60.0	0.0	0.0	0.0	60.0	0.0	60.0
Normal-dry Ave		59.8	0.0	59.8	-4.8	0.0	-4.8	54.9	0.0	54.9
Dry Ave		49.0	0.0	49.0	-12.2	0.0	-12.2	36.8	0.0	36.8
Critical-H Ave		32.3	0.0	32.3	-12.0	0.0	-12.0	20.3	0.0	20.3
Critical-L Ave		12.2	0.0	12.2	-1.1	0.0	-1.1	11.1	0.0	11.1

Note: Values reported by contract year (March-February)

City of Orange Cove

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1923	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1924	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1925	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1926	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1927	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1928	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1929	1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1930	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1931	0.5	0.0	0.5	-0.3	0.0	-0.3	0.3	0.0	0.3
1932	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1933	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1934	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
1935	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1936	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1937	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1938	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1939	1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1940	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1941	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1942	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1943	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1944	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1945	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1946	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1948	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1949	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1950	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1951	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1952	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1953	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1954	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1955	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1956	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1957	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1958	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1959	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1960	1.1	0.0	1.1	-0.4	0.0	-0.4	0.7	0.0	0.7
1961	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1962	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1963	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1964	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1965	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1966	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1967	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1968	1.4	0.0	1.4	-0.2	0.0	-0.2	1.1	0.0	1.1
1969	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1970	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1971	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1972	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1973	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1974	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1975	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1976	1.1	0.0	1.1	-0.2	0.0	-0.2	0.8	0.0	0.8
1977	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
1978	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1979	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1980	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1981	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1982	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1983	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1984	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1985	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1987	0.9	0.0	0.9	-0.1	0.0	-0.1	0.9	0.0	0.9
1988	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1989	1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1990	1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
1991	1.4	0.0	1.4	-0.4	0.0	-0.4	0.9	0.0	0.9
1992	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1993	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1994	1.2	0.0	1.2	0.1	0.0	0.1	1.2	0.0	1.2
1995	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1996	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1997	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1998	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2000	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2001	1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
2002	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
2003	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2004	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
2005	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2006	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2007	0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
2008	1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
2009	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2010	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2011	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2012	1.3	0.0	1.3	-0.3	0.0	-0.3	0.9	0.0	0.9
2013	1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2014	0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
2015	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016	1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
Ave All	1.3	0.0	1.3	-0.1	0.0	-0.1	1.2	0.0	1.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1969		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1995		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1938		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1978		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1982		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2011		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1967		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2006		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1998		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1986		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1980		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1956		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1952		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2005		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1997		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1993		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1941		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1958		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1922	Normal-Wet	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1965		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1942		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1937		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1996		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1974		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1945		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1943		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1984		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1932		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1973		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2010		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1927		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1963		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1962		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1935		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1940		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1951		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1936		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1979		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1975		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2000		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1946		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1923		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1999		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2009		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2003	Normal-Dry	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1970		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1925		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1971		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1957		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1954		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1950		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2016		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1966		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1944		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1953		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1948		1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
2002		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1949		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1926		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1955		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1928		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2004		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1985		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
1947		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2008		1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1933		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1981		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
2001		1.4	0.0	1.4	-0.3	0.0	-0.3	1.1	0.0	1.1
1972		1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1991		1.4	0.0	1.4	-0.4	0.0	-0.4	0.9	0.0	0.9
1959		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
1989		1.3	0.0	1.3	-0.4	0.0	-0.4	0.9	0.0	0.9
1964	Normal-Dry	1.4	0.0	1.4	-0.2	0.0	-0.2	1.2	0.0	1.2
1939		1.3	0.0	1.3	-0.3	0.0	-0.3	1.0	0.0	1.0
1929		1.1	0.0	1.1	-0.3	0.0	-0.3	0.8	0.0	0.8
1988		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1968		1.4	0.0	1.4	-0.2	0.0	-0.2	1.1	0.0	1.1
1930		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2013		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
2012		1.3	0.0	1.3	-0.3	0.0	-0.3	0.9	0.0	0.9
1960		1.1	0.0	1.1	-0.4	0.0	-0.4	0.7	0.0	0.7
1994		1.2	0.0	1.2	0.1	0.0	0.1	1.2	0.0	1.2
1992		1.2	0.0	1.2	-0.4	0.0	-0.4	0.8	0.0	0.8
1987		0.9	0.0	0.9	-0.1	0.0	-0.1	0.9	0.0	0.9
1990		1.0	0.0	1.0	-0.4	0.0	-0.4	0.6	0.0	0.6
1934		1.0	0.0	1.0	-0.3	0.0	-0.3	0.7	0.0	0.7
2007		0.8	0.0	0.8	-0.2	0.0	-0.2	0.6	0.0	0.6
1961	Crit-High	0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1976		1.1	0.0	1.1	-0.2	0.0	-0.2	0.8	0.0	0.8
2014		0.6	0.0	0.6	-0.3	0.0	-0.3	0.3	0.0	0.3
1931		0.5	0.0	0.5	-0.3	0.0	-0.3	0.3	0.0	0.3
1924		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
1977	CL	0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3
2015		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-wet Ave		1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	1.4
Normal-dry Ave		1.4	0.0	1.4	-0.1	0.0	-0.1	1.3	0.0	1.3
Dry Ave		1.1	0.0	1.1	-0.3	0.0	-0.3	0.9	0.0	0.9
Critical-H Ave		0.8	0.0	0.8	-0.3	0.0	-0.3	0.5	0.0	0.5
Critical-L Ave		0.3	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.3

Note: Values reported by contract year (March-February)

City of Lindsay

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1923	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1924	1.4	0.0	1.4	-0.5	0.0	-0.5	0.9	0.0	0.9
1925	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1926	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1927	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1928	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1929	2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1930	2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
1931	1.0	0.0	1.0	-0.5	0.0	-0.5	0.5	0.0	0.5
1932	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1933	2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1934	1.8	0.0	1.8	-0.6	0.0	-0.6	1.2	0.0	1.2
1935	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1936	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1937	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1938	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1939	2.4	0.0	2.4	-0.6	0.0	-0.6	1.8	0.0	1.8
1940	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1941	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1942	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1943	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1944	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1945	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1946	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1947	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1948	2.5	0.0	2.5	-0.6	0.0	-0.6	1.9	0.0	1.9
1949	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1950	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1951	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1952	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1953	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1954	2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1955	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1956	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1957	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1958	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1959	2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1960	2.0	0.0	2.0	-0.7	0.0	-0.7	1.3	0.0	1.3
1961	1.4	0.0	1.4	-0.5	0.0	-0.5	0.9	0.0	0.9
1962	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1963	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1964	2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
1965	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1966	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1967	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1968	2.4	0.0	2.4	-0.4	0.0	-0.4	2.0	0.0	2.0
1969	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1970	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1971	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1972	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1973	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1974	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1975	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1976	1.9	0.0	1.9	-0.4	0.0	-0.4	1.5	0.0	1.5
1977	0.6	0.0	0.6	0.0	0.0	0.0	0.5	0.0	0.5
1978	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1979	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1980	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1981	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1982	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1983	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1984	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1985	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1986	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1987	1.7	0.0	1.7	-0.1	0.0	-0.1	1.6	0.0	1.6
1988	2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
1989	2.3	0.0	2.3	-0.8	0.0	-0.8	1.5	0.0	1.5
1990	1.7	0.0	1.7	-0.6	0.0	-0.6	1.1	0.0	1.1
1991	2.4	0.0	2.4	-0.8	0.0	-0.8	1.7	0.0	1.7
1992	2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
1993	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1994	2.1	0.0	2.1	0.1	0.0	0.1	2.2	0.0	2.2
1995	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1996	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1997	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1998	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1999	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2000	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2001	2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
2002	2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
2003	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2004	2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
2005	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2006	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2007	1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
2008	2.5	0.0	2.5	-0.6	0.0	-0.6	1.9	0.0	1.9
2009	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2010	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2011	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2012	2.3	0.0	2.3	-0.6	0.0	-0.6	1.7	0.0	1.7
2013	2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
2014	1.0	0.0	1.0	-0.5	0.0	-0.5	0.5	0.0	0.5
2015	0.4	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.4
2016	2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
Ave All	2.3	0.0	2.3	-0.2	0.0	-0.2	2.2	0.0	2.2

Original Dry Year Classification (Driest 20% Years)

Dry Ave	1.7	0.0	1.7	-0.5	0.0	-0.5	1.3	0.0	1.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1969		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1995		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1938		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1978		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1982		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2011		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1967		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2006		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1998		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1986		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1980		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1956		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1952		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2005		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1997		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1993		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1941		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1958		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1922	Normal-Wet	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1965		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1942		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1937		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1996		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1974		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1945		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1943		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1984		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1932		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1973		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2010		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1927		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1963		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1962		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1935		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1940		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1951		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1936		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1979		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1975		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2000		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1946		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1923		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1999		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2009		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2003	Normal-Dry	2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1970		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1925		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1971		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1957		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1954		2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1950		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2016		2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1966		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1944		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1953		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1948		2.5	0.0	2.5	-0.6	0.0	-0.6	1.9	0.0	1.9
2002		2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
1949		2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1926		2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1955		2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1928		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2004		2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
1985		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
1947		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2008		2.5	0.0	2.5	-0.6	0.0	-0.6	1.9	0.0	1.9
1933		2.5	0.0	2.5	-0.1	0.0	-0.1	2.4	0.0	2.4
1981		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
2001		2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
1972		2.5	0.0	2.5	-0.3	0.0	-0.3	2.2	0.0	2.2
1991		2.4	0.0	2.4	-0.8	0.0	-0.8	1.7	0.0	1.7
1959		2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
1989		2.3	0.0	2.3	-0.8	0.0	-0.8	1.5	0.0	1.5
1964	Normal-Dry	2.5	0.0	2.5	-0.4	0.0	-0.4	2.1	0.0	2.1
1939		2.4	0.0	2.4	-0.6	0.0	-0.6	1.8	0.0	1.8
1929		2.0	0.0	2.0	-0.6	0.0	-0.6	1.4	0.0	1.4
1988		2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
1968		2.4	0.0	2.4	-0.4	0.0	-0.4	2.0	0.0	2.0
1930		2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
2013		2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
2012		2.3	0.0	2.3	-0.6	0.0	-0.6	1.7	0.0	1.7
1960		2.0	0.0	2.0	-0.7	0.0	-0.7	1.3	0.0	1.3
1994		2.1	0.0	2.1	0.1	0.0	0.1	2.2	0.0	2.2
1992		2.1	0.0	2.1	-0.7	0.0	-0.7	1.4	0.0	1.4
1987		1.7	0.0	1.7	-0.1	0.0	-0.1	1.6	0.0	1.6
1990		1.7	0.0	1.7	-0.6	0.0	-0.6	1.1	0.0	1.1
1934		1.8	0.0	1.8	-0.6	0.0	-0.6	1.2	0.0	1.2
2007		1.4	0.0	1.4	-0.4	0.0	-0.4	1.0	0.0	1.0
1961	Crit-High	1.4	0.0	1.4	-0.5	0.0	-0.5	0.9	0.0	0.9
1976		1.9	0.0	1.9	-0.4	0.0	-0.4	1.5	0.0	1.5
2014		1.0	0.0	1.0	-0.5	0.0	-0.5	0.5	0.0	0.5
1931		1.0	0.0	1.0	-0.5	0.0	-0.5	0.5	0.0	0.5
1924		1.4	0.0	1.4	-0.5	0.0	-0.5	0.9	0.0	0.9
1977	CL	0.6	0.0	0.6	0.0	0.0	0.0	0.5	0.0	0.5
2015		0.4	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.4
Wet Ave		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
Normal-wet Ave		2.5	0.0	2.5	0.0	0.0	0.0	2.5	0.0	2.5
Normal-dry Ave		2.5	0.0	2.5	-0.2	0.0	-0.2	2.3	0.0	2.3
Dry Ave		2.0	0.0	2.0	-0.5	0.0	-0.5	1.5	0.0	1.5
Critical-H Ave		1.3	0.0	1.3	-0.5	0.0	-0.5	0.8	0.0	0.8
Critical-L Ave		0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.5

Note: Values reported by contract year (March-February)

Fresno County Water Works

Deliveries - Chronological Listing

	Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
Year	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1924	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1925	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1927	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1928	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1929	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1930	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1931	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1933	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1934	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1935	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1936	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1937	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1940	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1943	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1944	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1946	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1947	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1949	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1950	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1951	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1952	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1954	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1955	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1956	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1959	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1960	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1962	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1964	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1965	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1966	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1967	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1968	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1969	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1971	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1972	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1973	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1974	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1976	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1979	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1980	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1981	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1983	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1985	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1986	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1987	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1989	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1991	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1992	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1993	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1994	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1995	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1997	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1999	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2001	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2002	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2003	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2005	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2007	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2008	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2009	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2011	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2012	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2013	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2014	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
Ave All	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1

Note: Values reported by contract year (March-February)

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

		Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
Year		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1978		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1982		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2011		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2006		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1986		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1956		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1993		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1922	Normal-Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1942		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1937		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1974		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1943		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1984		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1932		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1973		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2010		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1927		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1962		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1935		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1940		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1936		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1979		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1975		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1946		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1923		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1999		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1925		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1957		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1950		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2016		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1966		0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2
1944		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1948		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2002		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1949		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1926		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1955		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1928		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1985		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1947		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2008		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1933		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1981		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1972		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1991		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1959		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1989		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1964	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1939		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1929		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1968		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1930		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2013		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2012		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1960		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1994		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1992		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1987		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1934		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2007		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	Crit-High	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1976		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2014		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Normal-wet Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Normal-dry Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Dry Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-H Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Madera County

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
	Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1922	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1924	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1925	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1927	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1928	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1929	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1930	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1931	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1932	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1933	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1934	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1935	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1936	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1937	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1940	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1943	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1944	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1947	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1949	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1950	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1955	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1956	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1959	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1960	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1961	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1962	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1964	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1966	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1968	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1972	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1973	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1974	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1976	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1977	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1979	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1981	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1983	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1985	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1986	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1987	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1988	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1989	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1990	0.1	0.0	0.1	-0.1	0.0	-0.1	0.1	0.0	0.1
1991	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1992	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1993	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1994	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1999	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2002	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2007	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2008	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2011	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2012	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2013	0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
2014	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Ave All	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year		Current Releases Modeled Deliveries			SJRRP+10 Reductions to Deliveries			SJRRP+10 Deliveries		
		Class 1	Class 2	Total	Class 1	Class 2	Total	Class 1	Class 2	Total
1983	Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1969		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1995		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1938		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1978		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1982		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2011		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1967		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2006		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1998		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1986		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1980		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1956		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1952		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2005		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1997		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1993		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1941		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1958		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1922	Normal-Wet	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1965		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1942		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1937		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1996		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1974		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1945		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1943		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1984		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1932		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1973		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2010		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1927		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1963		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1962		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1935		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1940		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1951		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1936		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1979		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1975		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2000		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1946		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1923		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1999		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2009		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2003	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1970		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1925		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1971		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1957		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1954		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1950		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2016		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1966		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1944		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1953		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1948		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
2002		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1949		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1926		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1955		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1928		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2004		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1985		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1947		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2008		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1933		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1981		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
2001		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1972		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1991		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1959		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1989		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1964	Normal-Dry	0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1939		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1929		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1988		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1968		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1930		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
2013		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
2012		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
1960		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1994		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
1992		0.2	0.0	0.2	-0.1	0.0	-0.1	0.1	0.0	0.1
1987		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1990		0.1	0.0	0.1	-0.1	0.0	-0.1	0.1	0.0	0.1
1934		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
2007		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1961	Crit-High	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1976		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
2014		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1931		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1924		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
1977	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Normal-wet Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Normal-dry Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.2
Dry Ave		0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1
Critical-H Ave		0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Critical-L Ave		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Values reported by contract year (March-February)

System

Deliveries - Chronological Listing

Year	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1922	800.0	845.4	1645.4	0.0	-166.1	-166.1	800.0	679.3	1479.3
1923	799.9	509.3	1309.2	-0.1	-161.9	-161.9	799.8	347.4	1147.3
1924	442.1	0.0	442.1	-166.4	0.0	-166.4	275.8	0.0	275.8
1925	800.0	266.8	1066.8	0.0	-241.8	-241.8	800.0	25.0	825.0
1926	799.3	124.4	923.7	-49.1	-124.4	-173.5	750.2	0.0	750.2
1927	800.0	573.2	1373.2	0.0	-98.4	-98.4	800.0	474.8	1274.8
1928	800.0	223.8	1023.8	0.0	-156.9	-156.9	800.0	66.9	866.9
1929	644.2	0.0	644.2	-192.2	0.0	-192.2	452.0	0.0	452.0
1930	663.6	0.0	663.6	-226.1	0.0	-226.1	437.5	0.0	437.5
1931	312.3	0.0	312.3	-165.2	0.0	-165.2	147.1	0.0	147.1
1932	800.0	640.6	1440.6	0.0	-161.9	-161.9	800.0	478.7	1278.7
1933	800.0	240.4	1040.4	-33.7	-240.4	-274.1	766.3	0.0	766.3
1934	569.1	0.0	569.1	-176.4	0.0	-176.4	392.7	0.0	392.7
1935	800.0	503.1	1303.1	-3.5	-195.1	-198.5	796.5	308.0	1104.6
1936	800.0	545.7	1345.7	-1.3	-190.7	-192.0	798.7	355.0	1153.7
1937	800.0	586.2	1386.2	0.0	-201.9	-201.9	800.0	384.4	1184.4
1938	800.0	932.3	1732.3	0.0	-120.5	-120.5	800.0	811.8	1611.8
1939	757.2	0.0	757.2	-179.0	0.0	-179.0	578.2	0.0	578.2
1940	800.0	389.7	1189.7	0.0	-65.3	-65.3	800.0	324.4	1124.4
1941	800.0	884.6	1684.6	0.0	-202.6	-202.6	800.0	682.1	1482.1
1942	800.0	805.2	1605.2	-0.3	-208.4	-208.7	799.7	596.8	1396.5
1943	800.0	552.3	1352.3	-1.4	-212.8	-214.2	798.6	339.5	1138.1
1944	800.0	264.7	1064.7	0.0	-167.8	-167.8	800.0	96.9	896.9
1945	800.0	669.9	1469.9	-0.1	-142.8	-142.8	799.9	527.2	1327.1
1946	798.3	368.6	1166.8	1.7	-116.5	-114.7	800.0	252.1	1052.1
1947	800.0	115.0	915.0	0.0	-110.2	-110.2	800.0	4.8	804.8
1948	800.0	56.4	856.4	-206.8	-56.4	-263.2	593.2	0.0	593.2
1949	800.0	185.4	985.4	-93.5	-185.4	-278.8	706.5	0.0	706.5
1950	800.0	232.8	1032.8	-2.9	-232.8	-235.8	797.1	0.0	797.1
1951	798.8	331.6	1130.4	1.2	-289.7	-288.5	800.0	41.9	841.9
1952	800.0	840.9	1640.9	0.0	-81.0	-81.0	800.0	759.9	1559.9
1953	800.0	218.3	1018.3	-13.7	-218.3	-232.0	786.3	0.0	786.3
1954	799.9	186.6	986.6	-42.5	-186.6	-229.1	757.4	0.0	757.4
1955	800.0	187.5	987.5	-56.1	-187.5	-243.6	743.9	0.0	743.9
1956	800.0	853.7	1653.7	0.0	-168.3	-168.3	800.0	685.4	1485.4
1957	800.0	288.5	1088.5	0.0	-160.4	-160.4	800.0	128.1	928.1
1958	800.0	838.5	1638.5	0.0	-136.7	-136.7	800.0	701.8	1501.8
1959	800.0	6.9	806.9	-52.3	-6.9	-59.2	747.7	0.0	747.7
1960	640.5	0.0	640.5	-220.5	0.0	-220.5	420.0	0.0	420.0
1961	455.2	0.0	455.2	-165.0	0.0	-165.0	290.2	0.0	290.2
1962	800.0	582.1	1382.1	0.0	-183.2	-183.2	800.0	398.9	1198.9
1963	800.0	698.1	1498.1	-0.1	-185.5	-185.6	799.9	512.7	1312.5
1964	800.0	94.9	894.9	-121.2	-94.9	-216.1	678.8	0.0	678.8
1965	799.7	697.9	1497.6	0.3	-251.8	-251.5	800.0	446.1	1246.1
1966	799.4	198.7	998.1	0.6	-115.9	-115.3	800.0	82.9	882.9
1967	800.0	964.5	1764.5	-0.6	-120.8	-121.3	799.4	843.8	1643.2
1968	781.7	0.0	781.7	-141.1	0.0	-141.1	640.6	0.0	640.6
1969	800.0	891.8	1691.8	0.0	-60.3	-60.3	800.0	831.4	1631.4
1970	799.7	380.2	1179.9	0.3	-249.0	-248.6	800.0	131.3	931.3
1971	799.9	349.2	1149.2	0.1	-284.8	-284.7	800.0	64.4	864.4
1972	800.0	124.3	924.3	-99.2	-124.3	-223.5	700.8	0.0	700.8
1973	800.0	561.5	1361.5	-0.9	-203.8	-204.7	799.1	357.7	1156.8
1974	800.0	644.5	1444.5	0.0	-197.7	-197.7	800.0	446.8	1246.8
1975	800.0	561.2	1361.2	0.0	-117.8	-117.8	800.0	443.5	1243.5
1976	610.0	0.0	610.0	-135.6	0.0	-135.6	474.4	0.0	474.4
1977	187.1	0.0	187.1	-14.8	0.0	-14.8	172.3	0.0	172.3
1978	800.0	1005.2	1805.2	-0.2	-101.0	-101.2	799.8	904.3	1704.1
1979	800.0	536.8	1336.8	-2.8	-203.6	-206.4	797.2	333.2	1130.4
1980	800.0	873.4	1673.4	-3.8	-165.9	-169.6	796.2	707.5	1503.8
1981	800.0	156.2	956.2	0.0	-65.5	-65.5	800.0	90.7	890.7
1982	800.0	822.0	1622.0	-1.1	-96.8	-97.9	798.9	725.2	1524.0
1983	800.0	890.2	1690.2	0.0	-34.1	-34.1	800.0	856.1	1656.1
1984	799.7	502.6	1302.2	-3.4	-182.3	-185.7	796.3	320.3	1116.6
1985	799.6	144.8	944.5	-8.6	-144.8	-153.4	791.1	0.0	791.1
1986	800.0	811.8	1611.8	0.0	-140.7	-140.7	800.0	671.1	1471.1
1987	540.9	0.0	540.9	-40.7	0.0	-40.7	500.2	0.0	500.2
1988	669.3	0.0	669.3	-222.0	0.0	-222.0	447.3	0.0	447.3
1989	734.1	0.0	734.1	-245.3	0.0	-245.3	488.8	0.0	488.8
1990	557.1	0.0	557.1	-204.8	0.0	-204.8	352.3	0.0	352.3
1991	782.2	0.0	782.2	-251.7	0.0	-251.7	530.5	0.0	530.5
1992	659.2	0.0	659.2	-213.8	0.0	-213.8	445.4	0.0	445.4
1993	800.0	892.7	1692.7	0.0	-229.8	-229.8	800.0	662.9	1462.9
1994	667.0	0.0	667.0	42.9	0.0	42.9	709.9	0.0	709.9
1995	800.0	1061.7	1861.7	0.0	-100.9	-100.9	800.0	960.8	1760.8
1996	800.0	614.2	1414.2	0.0	-180.3	-180.4	800.0	433.9	1233.9
1997	800.0	489.4	1289.4	0.0	-235.3	-235.3	800.0	254.2	1054.2
1998	799.8	817.9	1617.7	-1.0	-130.0	-131.0	798.8	687.8	1486.6
1999	800.0	415.8	1215.8	0.0	-184.0	-184.0	800.0	231.8	1031.8
2000	800.0	484.9	1284.9	-0.6	-141.6	-142.2	799.4	343.4	1142.8
2001	800.0	91.5	891.5	-143.2	-91.5	-234.7	656.8	0.0	656.8
2002	800.0	166.9	966.9	-112.8	-166.9	-279.7	687.2	0.0	687.2
2003	800.0	412.2	1212.2	0.0	-318.5	-318.5	800.0	93.7	893.7
2004	800.0	111.4	911.4	-126.8	-111.4	-238.2	673.2	0.0	673.2
2005	800.0	875.1	1675.1	0.0	-76.4	-76.4	800.0	798.7	1598.7
2006	800.0	884.0	1684.0	0.0	-98.9	-98.9	800.0	785.1	1585.1
2007	463.8	0.0	463.8	-141.0	0.0	-141.0	322.8	0.0	322.8
2008	800.0	72.5	872.5	-190.9	-72.5	-263.4	609.1	0.0	609.1
2009	800.0	425.2	1225.2	0.0	-316.0	-316.0	800.0	109.2	909.2
2010	800.0	700.8	1500.8	-0.1	-180.6	-180.7	799.9	520.2	1320.1
2011	800.0	948.0	1748.0	0.0	-63.0	-63.0	800.0	884.9	1684.9
2012	725.9	0.0	725.9	-186.5	0.0	-186.5	539.4	0.0	539.4
2013	663.0	0.0	663.0	-225.8	0.0	-225.8	437.2	0.0	437.2
2014	331.3	0.0	331.3	-164.6	0.0	-164.6	166.8	0.0	166.8
2015	138.5	0.0	138.5	-14.4	0.0	-14.4	124.0	0.0	124.0
2016	800.0	131.7	931.7	-82.3	-131.7	-214.0	717.7	0.0	717.7
Ave All	743.0	382.7	1125.7	-53.7	-119.5	-173.2	689.3	263.2	952.6
Original Dry Year Classification (Driest 20% Years)									
Dry Ave	558.1	4.3	562.4	-148.8	-4.3	-153.1	409.3	0.0	409.3

Deliveries - Rank Ordered by Year Type - 1,000 acre-feet

Year	Year Type	Current Releases Modeled Deliveries Class 1	Class 2	Total	SJRRP+10 Reductions to Deliveries Class 1	Class 2	Total	SJRRP+10 Deliveries Class 1	Class 2	Total
1983	Wet	800.0	890.2	1,690.2	0.0	-34.1	-34.1	800.0	856.1	1,656.1
1969		800.0	891.8	1,691.8	0.0	-60.3	-60.3	800.0	831.4	1,631.4
1995		800.0	1,061.7	1,861.7	0.0	-100.9	-100.9	800.0	960.8	1,760.8
1938		800.0	932.3	1,732.3	0.0	-120.5	-120.5	800.0	811.8	1,611.8
1978		800.0	1,005.2	1,805.2	-0.2	-101.0	-101.2	799.8	904.3	1,704.1
1982		800.0	822.0	1,622.0	-1.1	-96.8	-97.9	798.9	725.2	1,524.0
2011		800.0	948.0	1,748.0	0.0	-63.0	-63.0	800.0	884.9	1,684.9
1967		800.0	964.5	1,764.5	-0.6	-120.8	-121.3	799.4	843.8	1,643.2
2006		800.0	884.0	1,684.0	0.0	-98.9	-98.9	800.0	785.1	1,585.1
1998		799.8	817.9	1,617.7	-1.0	-130.0	-131.0	798.8	687.8	1,486.6
1986		800.0	811.8	1,611.8	0.0	-140.7	-140.7	800.0	671.1	1,471.1
1980		800.0	873.4	1,673.4	-3.8	-165.9	-169.6	796.2	707.5	1,503.8
1956		800.0	853.7	1,653.7	0.0	-168.3	-168.3	800.0	685.4	1,485.4
1952		800.0	840.9	1,640.9	0.0	-81.0	-81.0	800.0	759.9	1,559.9
2005		800.0	875.1	1,675.1	0.0	-76.4	-76.4	800.0	798.7	1,598.7
1997		800.0	489.4	1,289.4	0.0	-235.3	-235.3	800.0	254.2	1,054.2
1993		800.0	892.7	1,692.7	0.0	-229.8	-229.8	800.0	662.9	1,462.9
1941		800.0	884.6	1,684.6	0.0	-202.6	-202.6	800.0	682.1	1,482.1
1958		800.0	838.5	1,638.5	0.0	-136.7	-136.7	800.0	701.8	1,501.8
1922	Normal-Wet	800.0	845.4	1,645.4	0.0	-166.1	-166.1	800.0	679.3	1,479.3
1965		799.7	697.9	1,497.6	0.3	-251.8	-251.5	800.0	446.1	1,246.1
1942		800.0	805.2	1,605.2	-0.3	-208.4	-208.7	799.7	596.8	1,396.5
1937		800.0	586.2	1,386.2	0.0	-201.9	-201.9	800.0	384.4	1,184.4
1996		800.0	614.2	1,414.2	0.0	-180.3	-180.4	800.0	433.9	1,233.9
1974		800.0	644.5	1,444.5	0.0	-197.7	-197.7	800.0	446.8	1,246.8
1945		800.0	669.9	1,469.9	-0.1	-142.8	-142.8	799.9	527.2	1,327.1
1943		800.0	552.3	1,352.3	-1.4	-212.8	-214.2	798.6	339.5	1,138.1
1984		799.7	502.6	1,302.2	-3.4	-182.3	-185.7	796.3	320.3	1,116.6
1932		800.0	640.6	1,440.6	0.0	-161.9	-161.9	800.0	478.7	1,278.7
1973		800.0	561.5	1,361.5	-0.9	-203.8	-204.7	799.1	357.7	1,156.8
2010		800.0	700.8	1,500.8	-0.1	-180.6	-180.7	799.9	520.2	1,320.1
1927		800.0	573.2	1,373.2	0.0	-98.4	-98.4	800.0	474.8	1,274.8
1963		800.0	698.1	1,498.1	-0.1	-185.5	-185.6	799.9	512.7	1,312.5
1962		800.0	582.1	1,382.1	0.0	-183.2	-183.2	800.0	398.9	1,198.9
1935		800.0	503.1	1,303.1	-3.5	-195.1	-198.5	796.5	308.0	1,104.6
1940		800.0	389.7	1,189.7	0.0	-65.3	-65.3	800.0	324.4	1,124.4
1951		798.8	331.6	1,130.4	1.2	-289.7	-288.5	800.0	41.9	841.9
1936		800.0	545.7	1,345.7	-1.3	-190.7	-192.0	798.7	355.0	1,153.7
1979		800.0	536.8	1,336.8	-2.8	-203.6	-206.4	797.2	333.2	1,130.4
1975		800.0	561.2	1,361.2	0.0	-117.8	-117.8	800.0	443.5	1,243.5
2000		800.0	484.9	1,284.9	-0.6	-141.6	-142.2	799.4	343.4	1,142.8
1946		798.3	368.6	1,166.8	1.7	-116.5	-114.7	800.0	252.1	1,052.1
1923		799.9	509.3	1,309.2	-0.1	-161.9	-161.9	799.8	347.4	1,147.3
1999		800.0	415.8	1,215.8	0.0	-184.0	-184.0	800.0	231.8	1,031.8
2009		800.0	425.2	1,225.2	0.0	-316.0	-316.0	800.0	109.2	909.2
2003	Normal-Dry	800.0	412.2	1,212.2	0.0	-318.5	-318.5	800.0	93.7	893.7
1970		799.7	380.2	1,179.9	0.3	-249.0	-248.6	800.0	131.3	931.3
1925		800.0	266.8	1,066.8	0.0	-241.8	-241.8	800.0	25.0	825.0
1971		799.9	349.2	1,149.2	0.1	-284.8	-284.7	800.0	64.4	864.4
1957		800.0	288.5	1,088.5	0.0	-160.4	-160.4	800.0	128.1	928.1
1954		799.9	186.6	986.6	-42.5	-186.6	-229.1	757.4	0.0	757.4
1950		800.0	232.8	1,032.8	-2.9	-232.8	-235.8	797.1	0.0	797.1
2016		800.0	131.7	931.7	-82.3	-131.7	-214.0	717.7	0.0	717.7
1966		799.4	198.7	998.1	0.6	-115.9	-115.3	800.0	82.9	882.9
1944		800.0	264.7	1,064.7	0.0	-167.8	-167.8	800.0	96.9	896.9
1953		800.0	218.3	1,018.3	-13.7	-218.3	-232.0	786.3	0.0	786.3
1948		800.0	56.4	856.4	-206.8	-56.4	-263.2	593.2	0.0	593.2
2002		800.0	166.9	966.9	-112.8	-166.9	-279.7	687.2	0.0	687.2
1949		800.0	185.4	985.4	-93.5	-185.4	-278.8	706.5	0.0	706.5
1926		799.3	124.4	923.7	-49.1	-124.4	-173.5	750.2	0.0	750.2
1955		800.0	187.5	987.5	-56.1	-187.5	-243.6	743.9	0.0	743.9
1928		800.0	223.8	1,023.8	0.0	-156.9	-156.9	800.0	66.9	866.9
2004		800.0	111.4	911.4	-126.8	-111.4	-238.2	673.2	0.0	673.2
1985		799.6	144.8	944.5	-8.6	-144.8	-153.4	791.1	0.0	791.1
1947		800.0	115.0	915.0	0.0	-110.2	-110.2	800.0	4.8	804.8
2008		800.0	72.5	872.5	-190.9	-72.5	-263.4	609.1	0.0	609.1
1933		800.0	240.4	1,040.4	-33.7	-240.4	-274.1	766.3	0.0	766.3
1981		800.0	156.2	956.2	0.0	-65.5	-65.5	800.0	90.7	890.7
2001		800.0	91.5	891.5	-143.2	-91.5	-234.7	656.8	0.0	656.8
1972		800.0	124.3	924.3	-99.2	-124.3	-223.5	700.8	0.0	700.8
1991		782.2	0.0	782.2	-251.7	0.0	-251.7	530.5	0.0	530.5
1959		800.0	6.9	806.9	-52.3	-6.9	-59.2	747.7	0.0	747.7
1989		734.1	0.0	734.1	-245.3	0.0	-245.3	488.8	0.0	488.8
1964	Normal-Dry	800.0	94.9	894.9	-121.2	-94.9	-216.1	678.8	0.0	678.8
1939		757.2	0.0	757.2	-179.0	0.0	-179.0	578.2	0.0	578.2
1929		644.2	0.0	644.2	-192.2	0.0	-192.2	452.0	0.0	452.0
1988		669.3	0.0	669.3	-222.0	0.0	-222.0	447.3	0.0	447.3
1968		781.7	0.0	781.7	-141.1	0.0	-141.1	640.6	0.0	640.6
1930		663.6	0.0	663.6	-226.1	0.0	-226.1	437.5	0.0	437.5
2013		663.0	0.0	663.0	-225.8	0.0	-225.8	437.2	0.0	437.2
2012		725.9	0.0	725.9	-186.5	0.0	-186.5	539.4	0.0	539.4
1960		640.5	0.0	640.5	-220.5	0.0	-220.5	420.0	0.0	420.0
1994		667.0	0.0	667.0	42.9	0.0	42.9	709.9	0.0	709.9
1992		659.2	0.0	659.2	-213.8	0.0	-213.8	445.4	0.0	445.4
1987		540.9	0.0	540.9	-40.7	0.0	-40.7	500.2	0.0	500.2
1990		557.1	0.0	557.1	-204.8	0.0	-204.8	352.3	0.0	352.3
1934		569.1	0.0	569.1	-176.4	0.0	-176.4	392.7	0.0	392.7
2007		463.8	0.0	463.8	-141.0	0.0	-141.0	322.8	0.0	322.8
1961	Crit-High	455.2	0.0	455.2	-165.0	0.0	-165.0	290.2	0.0	290.2
1976		610.0	0.0	610.0	-135.6	0.0	-135.6	474.4	0.0	474.4
2014		331.3	0.0	331.3	-164.6	0.0	-164.6	166.8	0.0	166.8
1931		312.3	0.0	312.3	-165.2	0.0	-165.2	147.1	0.0	147.1
1924		442.1	0.0	442.1	-166.4	0.0	-166.4	275.8	0.0	275.8
1977	CL	187.1	0.0	187.1	-14.8	0.0	-14.8	172.3	0.0	172.3
2015		138.5	0.0	138.5	-14.4	0.0	-14.4	124.0	0.0	124.0
Wet Ave		800.0	872.5	1672.5	-0.4	-124.4	-124.7	799.6	748.2	1547.8
Normal-wet Ave		799.9	567.2	1367.0	-0.4	-182.3	-182.7	799.4	384.9	1184.3
Normal-dry Ave		796.9	176.3	973.3	-64.7	-148.3	-213.0	732.3	28.0	760.3
Dry Ave		653.5	6.3	659.8	-163.2	-6.3	-169.5	490.3	0.0	490.3
Critical-H Ave		430.2	0.0	430.2	-159.4	0.0	-159.4	270.9	0.0	270.9
Critical-L Ave		162.8	0.0	162.8	-14.6	0.0	-14.6	148.2	0.0	148.2

Note: Values reported by contract year (March-February)