Appendix A: Coldwater Pool Diversion Analysis (EID 2009)

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Region
Central California Area Office
7794 Folsom Dam Road
Folsom, CA 95630-1799

IN REPLY REFER TO:

FEB 0 1 2011

CC-608A
PRJ-4.00

ORIGINAL IN FILE

Mr. Bob Rice
Senior Engineer
El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

Subject: Lowest Intake Revision Recommendation, Folsom Lake Intake and Pump Station
El Dorado Irrigation District (EID) Project No. 04003E.02

Dear Mr. Rice:

Thank you for your letter dated December 17, 2010, which proposes to raise the lowest water intake for the EID Temperature Control Device from elevation 320 to 325 feet mean sea level. We have reviewed the Folsom Lake Temperature Model iterations created by the contractor, HDR, Inc., other supporting information, and discussed the foreseeable impacts to the Folsom Lake cold water pool.

On October 16, 2009 the Bureau of Reclamation approved EID's proposed intake elevations at 320, 370, and 410 feet mean sea level.

Reclamation concurs with the change of the lowest intake from 320 to 325 feet mean sea level which should have no adverse impact on the preservation of the Folsom Lake cold water pool. Reclamation also wants to reiterate the two points made in our October 2009 letter:

1. Taking water from the lowest intake should be minimized as much as possible.
2. Temperature Control Device operation logs should be made available to Reclamation.

Please direct any questions to Mr. Peter Funkhouser at 916-989-7161 or pfunkhouser@usbr.gov.

Sincerely,

Michael R. Finnegan

Michael R. Finnegan
Area Manager

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FEB 03 2011
ADMINISTRATIVE SERVICES

cc: See next page.

cc: Mr. Thomas D. Cumpston
El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

United States Department of the Interior

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ADMINISTRATIVE SERVICES

Mr. Thomas D. Cumpston
General Counsel/Interim General Manager
El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

Subject: Final Cold Water Pool Diversion Analysis, Folsom Lake Temperature Control Device

Dear Mr. Cumpston:

In response to your transmittal letter dated August 18, 2009, we have reviewed the El Dorado Irrigation District's Folsom Lake Cold Water Pool Diversion Analysis report.

The report concludes that three intakes are most practical and the elevations of the proposed intakes; 320, 370, and 410 feet mean sea level will reduce withdrawals from the cold water pool. The Bureau of Reclamation concurs with these conclusions and general design concept with the following comments:

1. Taking water from the 320 feet intake should be minimized as much as possible.
2. Temperature Control Device operation logs should be made available to Reclamation.

Please direct any questions to Peter Funkhouser at 916-989-7161 or pfunkhouser@usbr.gov.

Sincerely,

Michael R. Finnegan

Michael R. Finnegan
Area Manager

cc: Mr Bob Rice
El Dorado Irrigation District
2890 Mosquito Road
Placerville, California 95667

In Reply Refer To: M0809-066 and EOL0809-196

August 18, 2009

Michael Finnegan
Area Manager, Central California Area Office
U.S. Bureau of Reclamation
7794 Folsom Dam Road
Folsom, CA 95630-1799

Subject: Final Cold Water Pool Diversion Analysis, Folsom Lake Temperature Control Device

Mike
Dear Mr. Finnegan:

The El Dorado Irrigation District (EID) is pleased to submit the enclosed final temperature model and summary results for the Folsom Lake cold water pool diversion analysis. The model was created to assist EID in designing the new Folsom Lake Temperature Control Device (TCD) consistent with U.S. Bureau of Reclamation (Reclamation) Cooperative Agreement 05FC2011041 (Agreement), which states that the TCD would allow for EID to preserve more of the cold water pool for downstream Reclamation needs.

As specified by subtasks 1A and 2A of the Agreement, EID has completed this analysis as a screening study to determine the overall management, administrative, and environmental liability and economic attractiveness of different design concepts without pursuing the concepts in great detail. The documentation included with this screening study are a summary of the modeling analysis, model output tables, full VBA macro Microsoft Excel model (via CD), and a tutorial that will assist Reclamation's review of the model.

EID is seeking Reclamation's concurrence with the three-intake design concept outlined below, so that EID may complete design of the temperature control component of EID's new Folsom Lake intake. Because EID has identified this screening study as a critical path in the design process, we request Reclamation's concurrence on this design concept by September 18, 2009.

The enclosed submittals are the fruit of an extended collaborative effort. Over the past year, staff from our respective agencies have been working together to develop the enclosed model as a tool for designing the temperature control device component of EID's new Folsom Lake intake. Based upon the recommendations of Reclamation staff, this final version of the model incorporates the following revisions to assist in its evaluation:

1. The ability to vary the target temperature between 60^0F and 64^0F to model Reclamation's downstream temperature targets at Watt Avenue.

2. Presentation of diversion data in both acre-feet and as a percentage of volume to evaluate benefits of each alternative configuration.

3. Results for each calendar year (2002 through 2008) based on lake level and temperature conditions for demands ranging from existing demand to projected years 2013 and 2030 demands.

To assist with Reclamation review of the model findings, EID has enclosed summary figures generated by the model output to illustrate the results and support our recommendations for the number and elevation of the intakes. Figures 1 through 7 illustrate the intake elevations as optimized by the model, for individual calendar years 2002 through 2008. Each figure represents one specific calendar year, and each year's results illustrate six alternatives of various numbers of intakes. These figures allow direct side-by-side comparison of the cumulative benefit resulting from the sequential addition of intakes. Figure 8 provides the final best average configuration based on temperature and lake level conditions throughout the entire period of 2002 through 2008. Also provided with this transmittal are Tables 1 through 12 generated by the model, which include the detailed data utilized to generate the above listed figures. Each pair of tables provides results in tabular form for a given demand flow (existing, and years 2013 and 2030), given minimum head required over the intake screen, (10 ft or 15 ft), and diversion results in either acre-feet or percent.

These figures demonstrate significant benefits to Reclamation's maintenance of the cold water pool over existing conditions when the low-water intake is supplemented by one and two temperature control intakes. However, any additional temperature control intakes provide negligible benefits to the cold water pool while representing significant additional capital and operations and maintenance costs to EID.

Based on review of the final model results, EID is requesting Reclamation's concurrence that intakes at 320 feet (ft) mean sea level (MSL), 370 ft MSL, and 410 ft MSL operating at a minimum depth of 15 ft will fulfill the Agreement by minimizing withdrawals from the cold water pool while allowing EID to maintain a reliable diversion of water from Folsom Lake. Again, Reclamation's concurrence with a total of three intakes is necessary before EID can proceed with the design phase. To maintain our schedule, we are requesting that concurrence no later than September 18.

We thank you for the assistance of your staff in developing this tool and look forward to your concurrence. If there are any questions regarding the analysis, please contact Bob Rice, EID Senior Engineer at (530) 642-4079 or brice@eid.org.

Sincerely,

Thomas D. Cumpston
General Counsel/Interim General Manager

TC/BR:ss

Enclosures:

- Technical Memorandum: Cold Water Pool Diversion Analysis for Folsom Lake Raw Water Pump Station
- Addendum: Temperature Control Device Model Tutorial
- Figures 1 through 8: Best Annual and Average Configuration 2002-2008
- Tables 1 through 12: Comparison of Alternative Intake Configurations under Existing, 2013, and 2030 Projected Demands
- Temperature Model Program (2 CD's to Peter Funkhouser only)

cc w/enclosures:

Dan Netto, Reclamation
Peter Funkhouser, Reclamation
Robert Schroeder, Reclamation

El Dorado Irrigation District:

Brian Mueller, Director of Engineering
David Witter, Director of Natural Resources
Dan Corcoran, Environmental Manager
Bob Rice, Senior Civil Engineer

Cold Water Pool Diversion Analysis

For

El Dorado Irrigation District

Folsom Lake Raw Water Pump Station

Executive Summary

Folsom Lake is operated by the United States Bureau of Reclamation (Reclamation) as part of the Central Valley Project (CVP) to provide water for irrigation, municipal and industrial uses, hydroelectric power, recreation, water quality, flood control, and fish protection. One of Reclamation's operational goals at Folsom Lake is to manage the temperature of the water releases from Folsom Lake for the benefit of the downstream aquatic resources in the lower American River (LAR). This goal requires careful management by Reclamation of the available Cold Water Pool (CWP) in Folsom Lake to balance the seasonal temperature needs of the downstream aquatic resources throughout the year. Most outlets at Folsom Dam have or will soon have some type of Temperature Control Device (TCD) to facilitate improved management of cold water in the reservoir. This water is released to control the water temperature in the LAR for the benefit of anadromous fish species downstream of the dam.

The Folsom Lake Raw Water Pump Station (FLRWPS), owned and operated by El Dorado Irrigation District (EID), is located on the south side of the lake, about two miles upstream of Folsom Dam., near El Dorado Hills, California. The FLRWPS provides municipal and industrial (M&I) water to the El Dorado Hills area of El Dorado County. The plant uses submersible pumps inserted in steel casings that extend down the bank of the reservoir.

The current pump operations of FLRWPS utilizing intakes located at lower elevations in the lake reduces the volume of cold water available in the CWP. EID, in collaboration with Reclamation, is proposing to construct a TCD for its water intake facilities at Folsom Lake in order to preserve more of the CWP that can then be used by Reclamation to meet seasonal temperature needs in the LAR.

The purpose of the analysis presented in this technical memorandum (TM) is to assist in the design and construction of the proposed new intake facility with an incorporated TCD. EID desires to incorporate a capability to control the temperature of the water diverted through inclusion of a TCD in the design of the intake. The TCD would provide EID the ability to withdraw water from Folsom Lake at varying depths, thereby minimizing cold water extraction from the reservoir. The TCD would minimize the negative effects of the EID diversion on the Folsom Lake CWP by withdrawing warmer water though the intake.

The TM is designed to address subtasks 1A and 2A of Cooperative Agreement 05FC201041 between Reclamation and EID by studying the feasibility of alternative configurations as they relate to economic attractiveness and environment management. The goal of this TM is to find the appropriate balance between capital costs and environmental benefits.

Folsom Lake Cold Water Pool

Folsom Lake is characterized by a seasonal temperature stratification process such that during the winter and early spring, the temperature in the lake is uniformly cold at all elevations due to low ambient air temperatures and the high volume spring inflow of very cold snowmelt water. During the summer, a warmer upper layer referred to as the "epilimnion" forms as cold water inflows decrease and the upper surface water of the lake warms due to higher ambient air temperatures and increased solar radiation. The warm water tends to "float" on the colder water deeper in the lake. This colder, lower layer is referred to as the "hypolimnion". Between these two layers, a thin layer called the "thermocline" forms, which is a region of rapid temperature change between the epilimnion and the hypolimnion. The elevation of the thermocline declines over the summer as the epilimnion increases.

The CWP at Folsom Lake is described as all water in the lake at or below approximately 60°F. This value has been generally accepted by Reclamation as it represents an approximate upper limit to the release temperature from Folsom Lake that protects downstream aquatic resources in the LAR during the critical fall time period. The temperature also typically falls near the thermocline region of Folsom Lake when it is stratified and is therefore an indicator of the temperature stratification of the lake. Reclamation operates Folsom Dam and Nimbus Dam to maintain daily average water temperatures that does not exceed 65°F in the LAR at Watt Avenue from June 1 through October 15 for juvenile steelhead over-summer rearing. Reclamation assumes 5°F of warming as water moves downstream, so a 65°F Watt Avenue temperature requires 60°F water released from Folsom Dam. This temperature is referred to as the target temperature and annual temperature targets have varied between 60°F and 64°F for the period of record used in the analysis presented in this TM. Annual temperature targets for releases at Folsom Dam were as follows: 2002-62°F, 2003-60°F, 2004-64°F, 2005-60°F, 2006-60°F, 2007-63°F, and 2008-64°F.

Temperature Control Device

A TCD operates by allowing control of the elevation, and therefore the temperature, of the water diversion. An intake with a single low level intake maintains no ability to control the temperature of water and may access cold water during the spring and summer and warm water late in the summer and fall as the surface elevation falls and the epilimnion becomes thicker. Adding additional intake levels and/or reducing the required minimum hydraulic head required for pumps improve the intake performance in regard to cold water extraction by allowing access to the warmer water earlier in the year, thereby protecting the CWP for Reclamation use.

While no TCD structure can eliminate all potential effects to the Folsom Lake CWP from future diversion, incorporating a TCD on the FLRWPS with multiple intake elevations provides the opportunity to greatly reduce impacts from future EID diversions. The configurations evaluated in this analysis indicate that a TCD with a minimum or base intake elevation at 320 feet msl, combined with intakes clustered at higher levels provides significant benefits to conservation of the CWP.

Analytical Methods

An Excel-based tool was developed to perform the analysis of the TCD. The number of intakes proposed for the TCD, the minimum head requirement, and an annual temperature target between 60°F and 64 °F are all parameters that can be specified in the tool. The Excel-based tool represents a comparative assessment for evaluation of multiple TCD configuration scenarios. The numbers in the report are not derived from hydraulic or temperature modeling and do not represent absolute volume of water or temperature results. The model does not take into consideration operation and maintenance considerations, costs, recreation, aesthetics, and physical design constraints and is purely a numerical analysis. A tutorial including assumptions, operations, and input requirements used by the Excel-based tool are presented as an addendum to this Technical Memorandum.

For an intake to function there is a minimum head that must be present above the intake based on hydraulic considerations. As long as this pump head requirement is met, individual intake elevations are only required to provide adequate head to allow sufficient flow into the intake structure to meet the pumping rate. Two hydraulic head values were considered, consisting of 10-feet and 15-feet hydraulic head.

The model then selects the location of the intake elevations based on the operation of the TCD for the 2002 through 2008 period using EID projected water demands, Folsom Lake temperature profiles provided by Reclamation, and historical annual target temperatures provided by Reclamation for each of those years. Due to the large number of potential TCD configuration, a VBA macro was developed in the Excel model that analyzes all potential combinations of intake elevations for diversions. The possible combinations of TCD intake elevations for a given number of intake elevations are evaluated and the macro cycles through each of the combinations, and selects the sets of intake elevations that yield the largest May-October and annual average diversion greater than the target temperature. May-October is the time of year is when the TCD is anticipated to provide CWP to Folsom Lake.

The temperature data used in the model is based on Folsom Lake temperature profiles from 2002 to 2008 provided by Reclamation. The water temperature at 5-foot intervals between 300 feet msl and the lake surface and the temperature profile for each day in the period of record was estimated from each temperature profile using linear interpolation. EID furnished existing water demand, future water demand at year 2013 (when the TCD is anticipated to be operational), and at full build-out, year 2030 for the FLRWPS. The existing demand calculation is based on the average pumping from the years 2004 to 2008. The future pumping assumes an annual total of 13,000 acre-feet (af) for year 2013 and 28,700 af for year 2030 using demand magnitude distributed on the same monthly pattern as the existing level water demand.

Summary

For this analysis, the assumption is made that all water that is diverted with a temperature greater than the target temperature (60°F to 64°F) does not negatively affect the CWP, or conversely that water diverted with a temperature of less than the target temperature may negatively affect the CWP.

The results of the TCD analysis are presented in Tables 1 through 12, which show existing water demands, year 2013 water demands, and year 2030 water demands. The tables compare the results of the existing condition intake configuration and the one-, two-, three-, and four-intake configurations, using a 10-foot and 15-foot minimum intake head requirement. The model output tables also show percent of water diverted from the CWP as well as elevations on all outputs showing adit elevations with maximum benefit to the CWP.

The first column, "≥ Target Diverted", represents the water diverted at a temperature greater than the target temperature ranked by TCD performance. The second column, "≥ Target Missed", represents the water diverted at less than the target temperature because of limited number of intake elevations (due to the elevation of the TCD intake). The third column, "≥ Target Unavailable", represents the water diverted at less than target temperature because of limitation based on minimum hydraulic head requirements. The fourth column, "No Water ≥ Target", represents the volume of water diverted when no water greater than the target temperature was available in the reservoir. The fifth column, "< Target Diverted", provides the sum of columns two through four representing the total amount of water less than target temperature diverted whether due to facility constraints or environmental conditions.

Cold water diverted as a result of intake location or minimum head requirements can be minimized by careful placement and design considerations of the intakes and/or incorporation of additional intake elevations in the TCD. These considerations allow the TCD to better follow the elevation between the top of the CWP and the minimum head requirement to protect the CWP.

This implies that the design configuration of the TCD impacts its effectiveness in two main ways:

- Minimum hydraulic head requirement – Defines how early in the year warm water can be accessed to protect the CWP.
- Number and elevation of intakes – Defines how well the TCD can follow the minimum hydraulic head requirement.

As shown in the tables, all proposed TCD configurations provide improved operational capability compared to existing conditions. Based on the analysis, a significant reduction of the CWP diversion is realized by utilization of the TCD for all water demand scenarios. Costs were not included in this evaluation, however cost trade-offs will occur in reducing the minimum required hydraulic head and adding additional intake elevations. The optimal configurations appear to include the minimum intake elevation with the other intake elevations clustered at the higher elevations. This implies that the minimum intake elevation should be designed to be used in many years and not just as an emergency intake for years with extremely low Folsom storage levels.

Notes on tables:

1. Number of intakes represents base intake at 320 feet msl plus additional intakes above the base intake elevation.
2. Target Missed: Water diverted at less than the target temperature because of a limitation in number of intakes.
3. Target Unavailable: Water diverted at less than the target temperature because of the minimum hydraulic head requirement.
4. All water in lake less than target temperature.

Addendum: El Dorado Irrigation District Temperature Control Device Model Tutorial

1.0 Introduction

This tutorial is intended to provide information for use by EID in the design and implementation of a new intake with a Temperature Control Device (TCD) to meet projected future demands. The attached CD containing the TCD Model should be accompanied by this tutorial at all times to explain its use. The analysis represents an evaluation of the effectiveness of potential TCD configurations under consideration in protection of the Folsom Lake Cold Water Pool (CWP). The spreadsheet tool used in this evaluation represents a comparative assessment for evaluation of multiple TCD configuration scenarios based on interpolation of current available data from EID and Reclamation. The numbers in the report are not derived from hydraulic or temperature modeling and do not represent absolute volume of water or temperature results.

2.0 Potential TCD Operation

For this analysis, the assumption is made that all water that is diverted at an elevation with a temperature greater than the target diversion temperature (60°F to 64°F) does not negatively affect the CWP, or conversely that water diverted with a temperature of less than the target diversion temperature may negatively affect the CWP.

For an intake at any elevation to function, there is a minimum head that must be present above the intake based on hydraulic considerations. With the pumps at a fixed elevation at the lower end of the intake, there would be a minimum head requirement for operation of the pumps that would not vary. As long as this pump head requirement is met, individual intake elevations would only require adequate head to allow sufficient flow into the intake structure to meet the pumping rate. This minimum head has a potentially large impact on the effectiveness of the TCD. This implies that the design configuration of the TCD impacts its effectiveness in two main ways:

- Minimum hydraulic head requirement – Defines how early in the year warm water can be accessed to protect the CWP.
- Number and elevation of intakes – Defines how well the TCD can follow the minimum hydraulic head requirement.

3.0 Evaluation Tool

An Excel-based tool was developed to perform the analysis of the TCD performance. The user can enter the desired minimum head requirement, an annual target diversion temperature between 60°F and 64 °F, and the number of the intakes proposed for the TCD. The tool models the operation of the TCD for the historical 2002 through 2008 period using EID current and projected future water demands.

The Excel-based tool operates such that for each day of data:

1. Estimate the hydraulic head limit as the surface elevation minus the user input minimum head requirement. Check that the water surface elevation is above the required minimum elevation for the intake structure. This verifies that the intake structure is physically capable of a diversion that day.

2. Estimate the water temperature at this elevation.
3. Select the highest available outlet elevation.
4. Estimate the water temperature at this elevation.
5. Select the highest usable intake elevation based on the surface elevation and the minimum required head for that intake elevation.
6. Obtain the water temperature at that intake elevation.
7. Classify the diversion according to the water temperatures as:
    a. If surface temp < target temperature, diversion goes into None Avail > target temperature (60°F to 64°F) and into Diversion < target temperature (60°F to 64°F)
    b. If head limit temp < target temperature (60°F to 64°F), diversion goes into Unavail > target temperature (60°F to 64°F) and into Div < target temperature (60°F to 64°F).
    c. If intake elevation temp < target temperature (60°F to 64°F), diversion goes into Missed > target temperature (60°F to 64°F) and into Div < target temperature (60°F to 64°F)
    d. Goes into Div > target temperature (60°F to 64°F)
8. Save the set of intake elevations that produce the highest volume of water greater than the target temperature for each intake configuration.
9. Develop a revised output summary to support the new analysis.
10. The evaluation criteria used will be to maximize the volume of water diverted above the target temperature to minimize the effect on the CWP from the EID diversion

The Excel workbook contains a worksheet for each TCD alternative configuration. Each of these sheets can accept input of annual diversion target temperature and the minimum hydraulic head. The VBA macro that analyzes all potential combinations of intake elevations under the design assumptions cycles though each of the combinations, saves the results of each evaluation, and selects the set of intake elevations that yield the largest year-by-year annual average and May-October Div > target temperature, in addition to the all year average. The results for each year are summarized in both tabular and graphical formats, on individual worksheets and on the summary sheet. The results of the evaluation are summarized in tabular and graphical formats. **Figure 1** is an example of the graphical output. The elevation of each intake can also be manually entered, which allows alternative configurations that may be necessary for operational constraints to be quantitatively compared to the modeling optimization.

The line plots in the upper portion of the graphic include the water surface elevation, the maximum hydraulic limit on intake elevation, the top of the CWP (target temperature), and the intake used in the day. The colored area plots at the bottom of the figure represent the results of the analysis. The green represents the water diverted at a temperature > target temperature implying the more green the better the TCD performed. All other colors represent water diverted at < target temperature.

The red area represents the water diverted at < target temperature because of the minimum hydraulic head requirement, the bright blue (missed) represents the water diverted at < target temperature because of the limited number of intake elevations, and the light blue represents the water diverted at < target temperature because there was no water > target temperature in Folsom Lake. This gives a visual representation of the performance of the TCD and the potential for improvements.

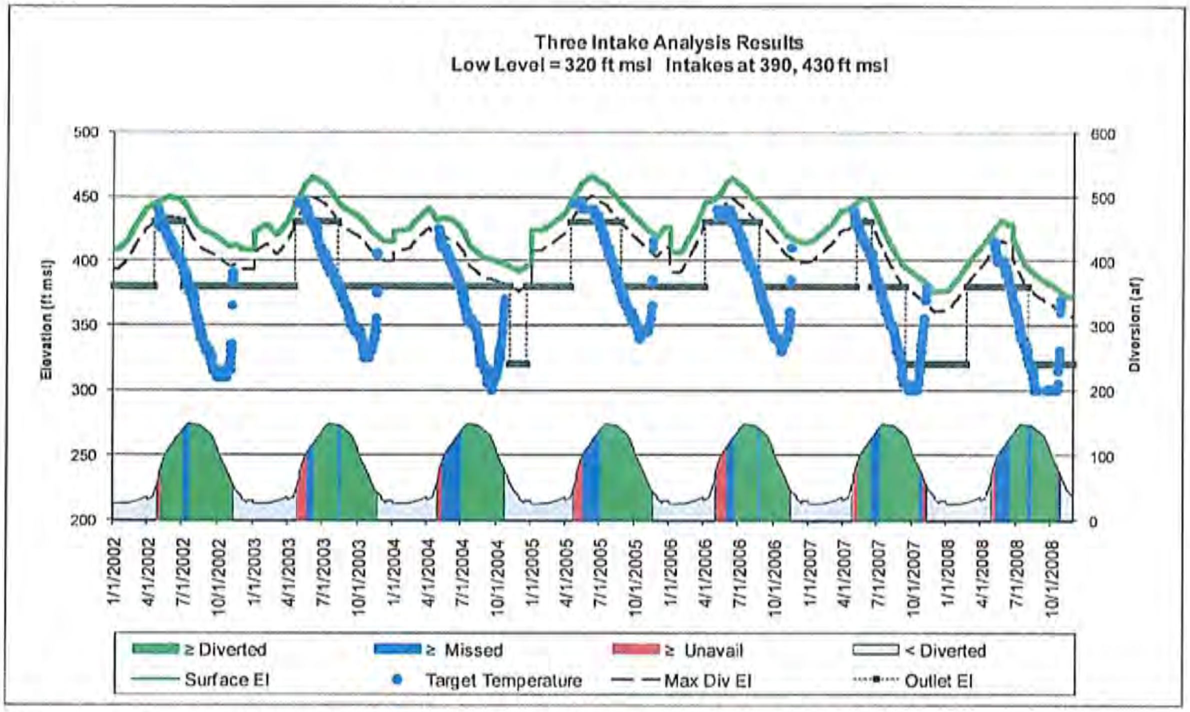


Figure 1 - Example Output for an Alternative Evaluation, with annual target temperature.

There are a large number of potential TCD configurations. A VBA macro was developed in the Excel tool that analyzes all potential combinations of intake elevations under the design assumptions. All possible combinations of TCD intake elevations for the given number of intake elevations are listed on the appropriate worksheets. The macro cycles through each of the combinations, saves the results of each evaluation, selects the sets of intake elevations that yield the largest all year and annual average May-October Div > target temperature. The results are summarized in both tabular and graphical formats.

An additional VBA macro was then developed to cycle through the different number of intake elevation worksheets, and the potential minimum hydraulic head values. This macro sets the minimum hydraulic head then calls the appropriate macro to compute the "optimal" set of intake elevations for the current worksheet. The "optimal" results are then copied to the worksheet "Summary" where they are stored and used to produce graphical and tabular summaries of the entire analysis. This macro can be executed by clicking the button in the "Summary" worksheet.

4.0 TCD Analysis Assumptions

Constant:

- Assume the 2002 through 2008 period is adequate to represent the potential range of operation of Folsom Lake for selection of the number and elevation of the intakes for the TCD since this is the entire period of record available for this data. This data set covers essentially the entire range of reservoir conditions through dry to wet years.
- Assume a low-level intake at 320-foot elevation mean sea level (msl) for use in extreme surface drawdown years to ensure adequate hydraulic head for operation of the intake in all alternatives.

This intake could also be utilized during winter when water is not available with no impact to the CWP.

- Assume that each intake elevation has sufficient flow capacity to handle the entire anticipated diversion rate. EID's goal for the TCD is to divert the warmest water possible to protect the CWP while minimizing raw water treatment costs and odor and taste concerns of treated water.

Vary by Alternative:

- For each minimum hydraulic head, assume an alternative with an intake every 5 feet from 330 to 440 feet msl elevation. This alternative is an attempt to eliminate the "lost" diversion to give an estimate of a theoretical best TCD configuration at each minimum hydraulic head.
- Assume a minimum Folsom Reservoir surface elevation of 350 feet msl for use of the intake structure. The reservoir elevation data included in the analysis tool never goes below 366 feet msl during the analysis period and this minimum does not constrain the current analysis. The elevation was included in the tool to provide opportunity for future design changes, if necessary.
- Assume a minimum required head for use at each intake elevation. Two minimum head values, 10 and 15 feet were used to explore the sensitivity of the TCD performance to this variable. Final minimum head submergence will be determined during the design process.
- Assume the maximum intake elevation for the TCD is 440 feet msl. This assumption adds a number of additional potential intake elevation combinations to each configuration.

4.1 Temperature Data Development

The basic temperature data is the historical Folsom Lake water temperature profiles from 2002 to 2008. Linear interpolation was used to estimate the water temperature at 5-foot intervals between the 300 foot msl elevation and the surface elevation at each profile date. Linear interpolation was then used between dates to get an estimated water temperature profile for each day of the period of record. There is a time period between the late fall and early spring in each year, when the temperature data is not available due to lack of profile data. This does not affect the analysis as there is little or no stratification of Folsom Lake during this time period and the water temperatures are always below the 60°F target.

4.2 EID Diversion Data

EID furnished both existing and projected future water demand data for the FLRWPS as shown in Table 1. The existing data is based on the historical pumping from 2004 to 2008. The 2030 "buildout" demand assumes an annual total water demand of 28,700 acre-feet (af) distributed on the same magnitude and monthly pattern as the existing level water demand. The data was converted to daily values by simply taking a daily running average of the data for each day of the month. The resulting daily values were then summed by month and compared to the original monthly data to verify that the total monthly volume was maintained. **Figure 2** shows the comparison. **Figure 3** shows the original monthly data and the monthly total data from the new daily data. This process results in a set of daily values with two potential considerations:

- The daily peak diversion matches the mean monthly peak diversion
- The monthly totals computed from the daily flows do not exactly match the initial monthly diversion totals.

These two issues are both relatively small and within the limits of other assumptions in the analysis. The final computed volumes in each category are intended for comparative use as an indicator of TCD effectiveness and not as absolute volumes. Since these values will be the same in all alternatives they are assumed to not have a substantial impact on the comparative analysis.

Table 1 - Estimated EID Diversion at FLRWPS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	(acre-feet)												
Existing	241	226	297	367	861	1075	1289	1272	1086	770	428	280	8191
2030	843	793	1040	1285	3017	3768	4516	4456	3805	2697	1499	982	28700

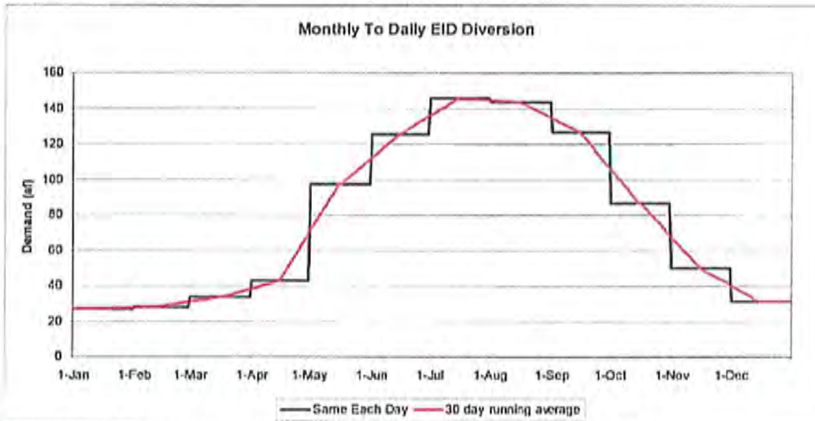


Figure 2 - Monthly to Daily EID Diversion at FLRWPS

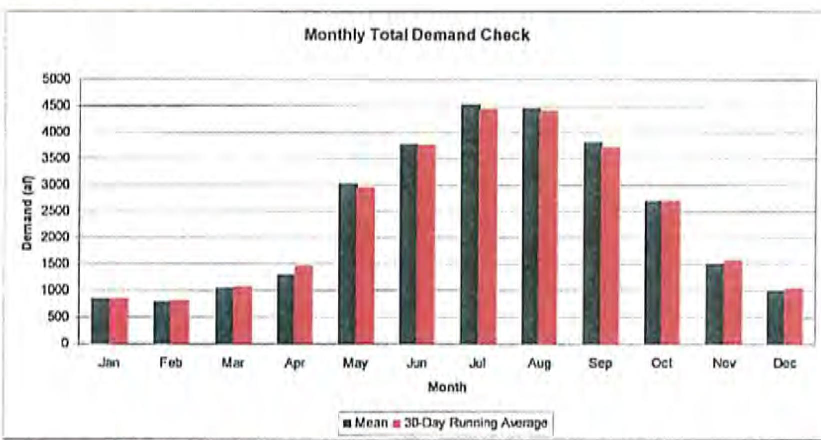
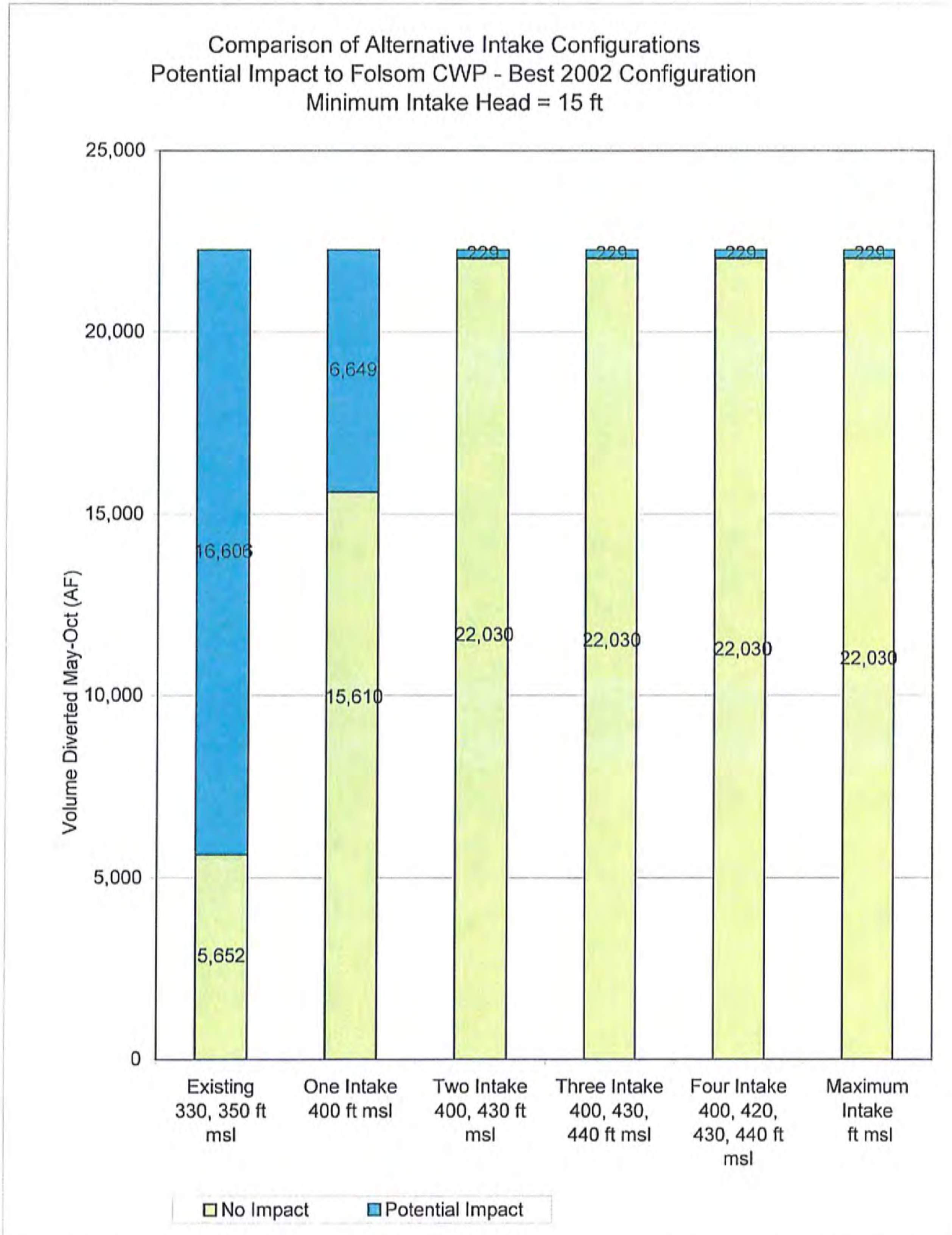


Figure3 - Monthly Total Demand Check

An additional worksheet was included in the workbook to evaluate the existing EID diversion under the same rules as the potential TCD configurations to represent existing and potential future demands without a TCD in place. The existing level monthly diversion data furnished by EID was converted to daily diversion values using the same process as used with the future level data. The existing intake was configured with two intake elevations at 330 and 350 feet msl elevation. These were assumed to operate with up to 1/3 of the maximum daily diversion diverted through the 350 foot msl intake if hydraulically available.



Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2002 Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
16,606
5,652
6,649
15,610
229
22,030
Existing 330, 350 ft msl
One Intake 400 ft msl
Two Intake 400, 430 ft msl
Three Intake 400, 430, 440 ft msl
Four Intake 400, 420, 430, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 1

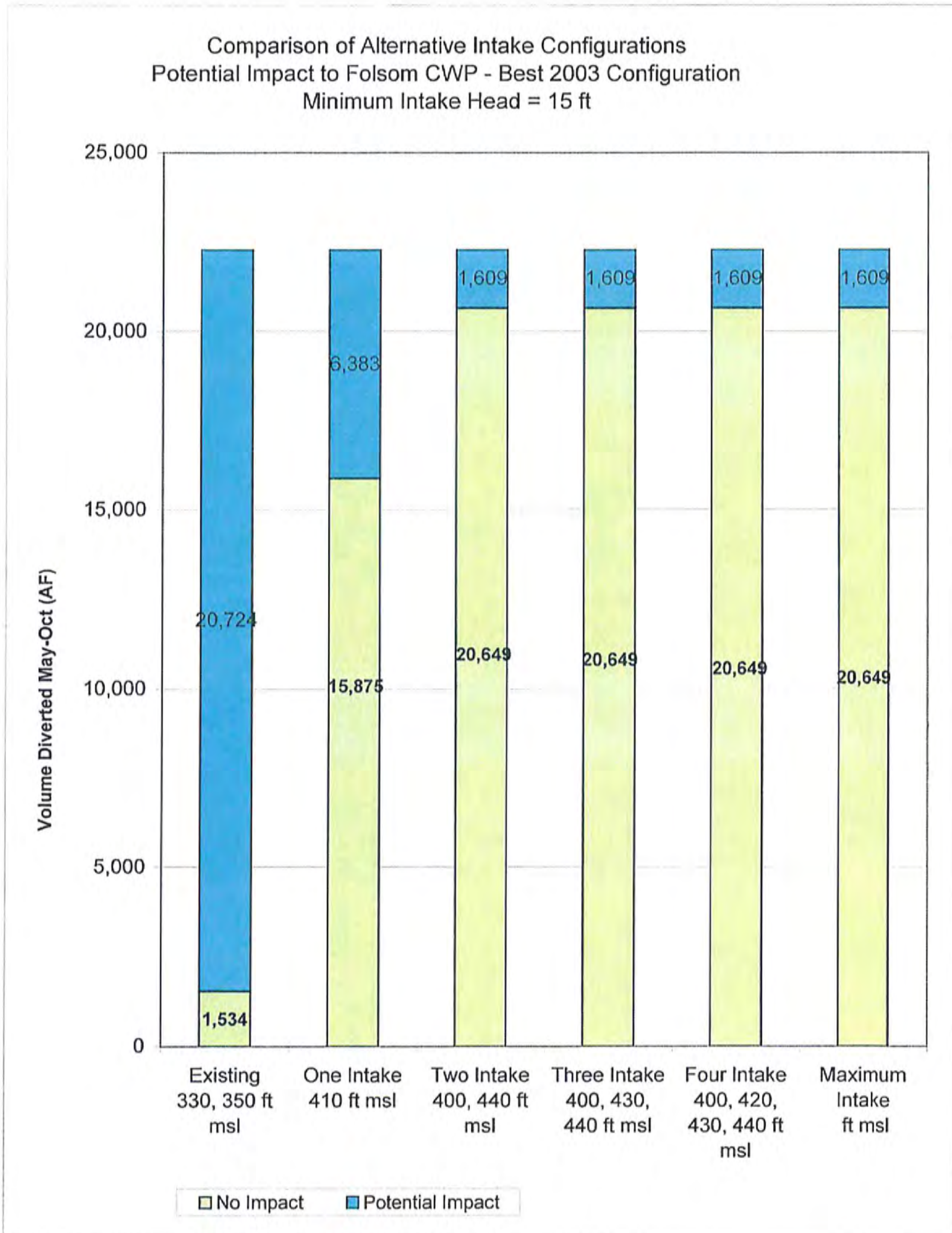

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2003 Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
20,724
1,534
6,383
15,875
1,609
20,649
1,609
20,649
1,609
20,649
1,609
20,649
Existing 330, 350 ft msl
One Intake 410 ft msl
Two Intake 400, 440 ft msl
Three Intake 400, 430, 440 ft msl
Four Intake 400, 420, 430, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 2

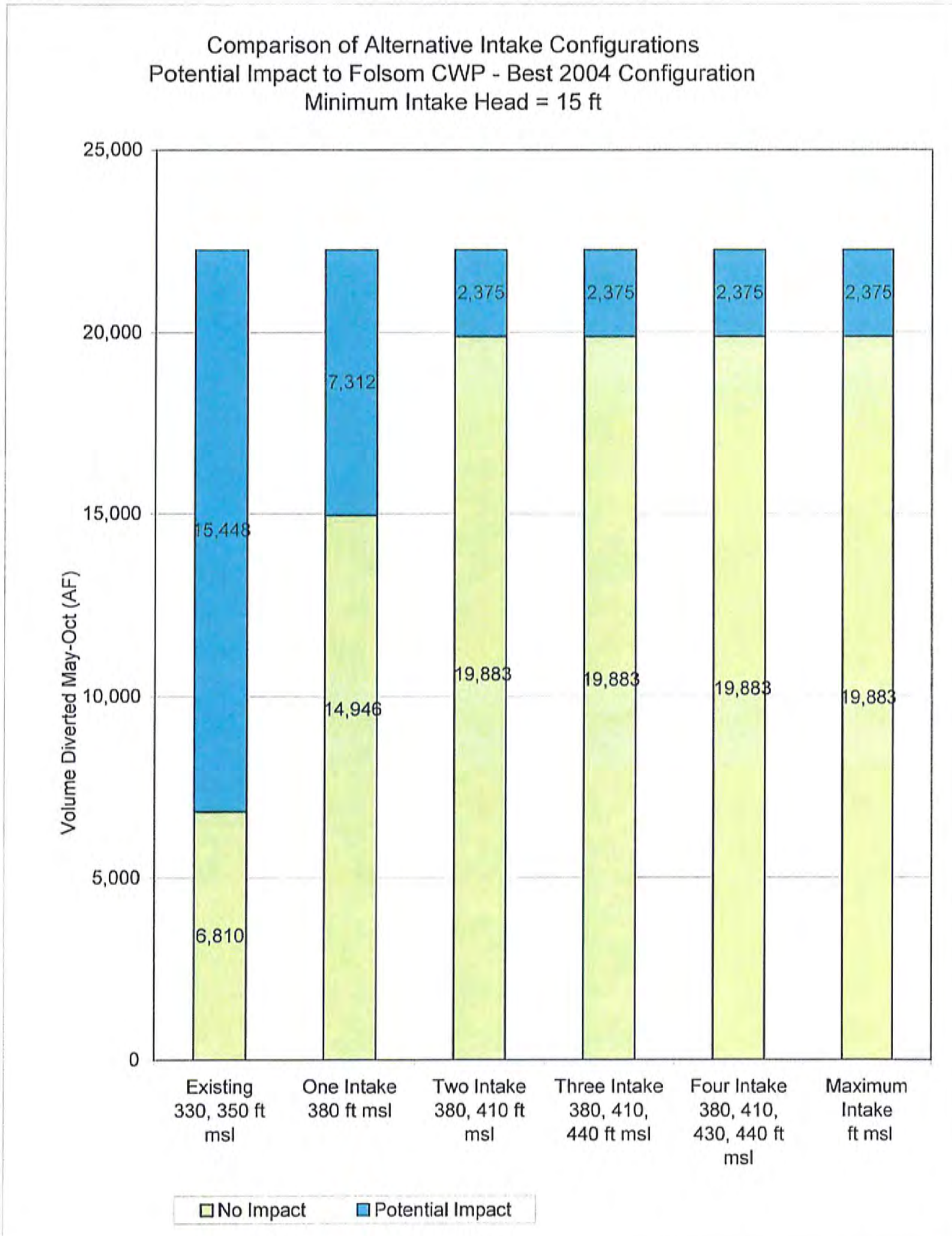

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2004 Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
15,448
6,810
7,312
14,946
2,375
19,883
2,375
19,883
2,375
19,883
2,375
19,883
Existing 330, 350 ft msl
One Intake 380 ft msl
Two Intake 380, 410 ft msl
Three Intake 380, 410, 440 ft msl
Four Intake 380, 410, 430, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 3

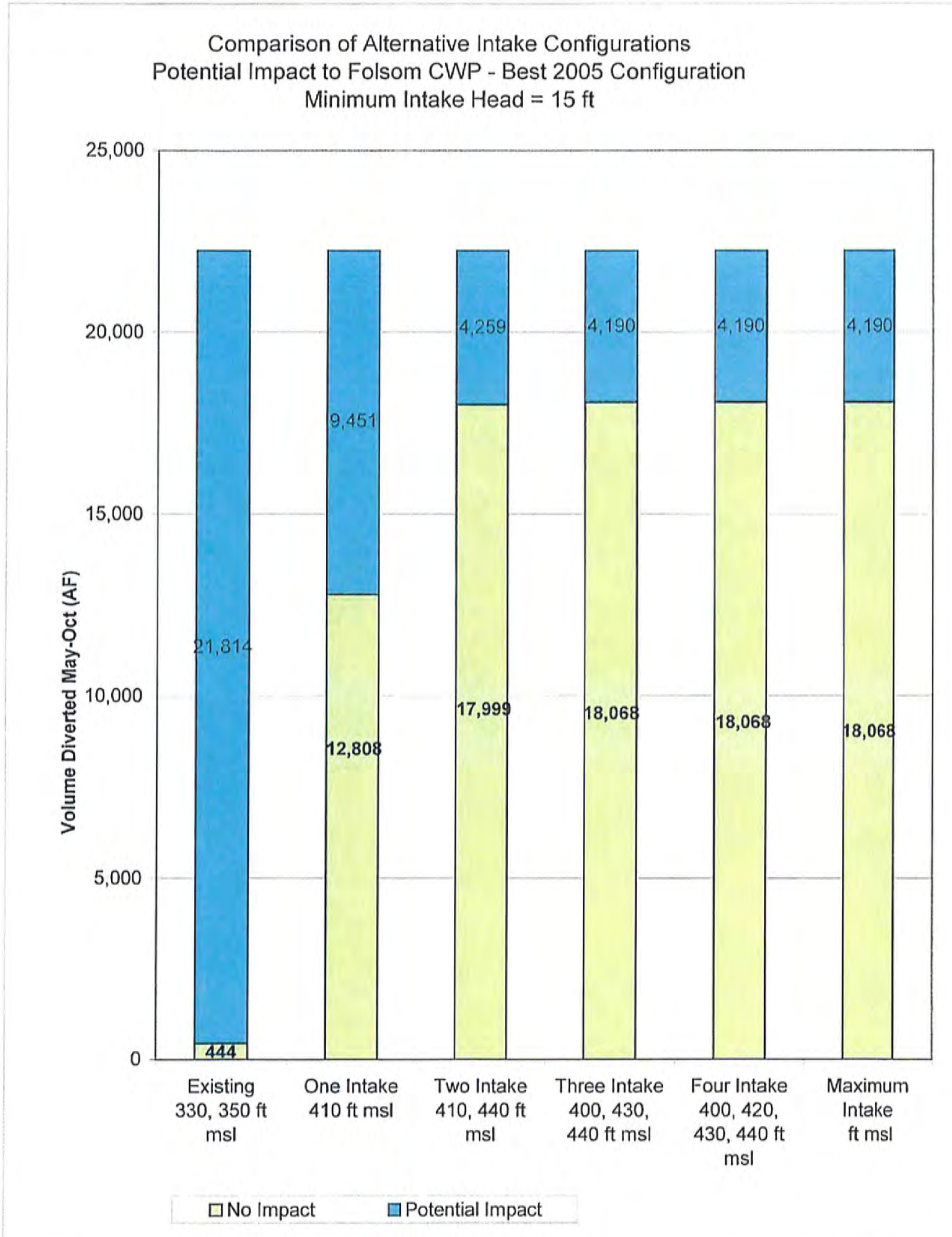

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2005 Configuration
Minimum Intake Head = 15 ft
25,000
20,000
15,000
10,000
5,000
0
Volume Diverted May-Oct (AF)
21,814
444
9,451
12,808
4,259
17,999
4,190
18,068
4,190
18,068
4,190
18,068
Existing 330, 350 ft msl
One Intake 410 ft msl
Two Intake 410, 440 ft msl
Three Intake 400, 430, 440 ft msl
Four Intake 400, 420, 430, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 4

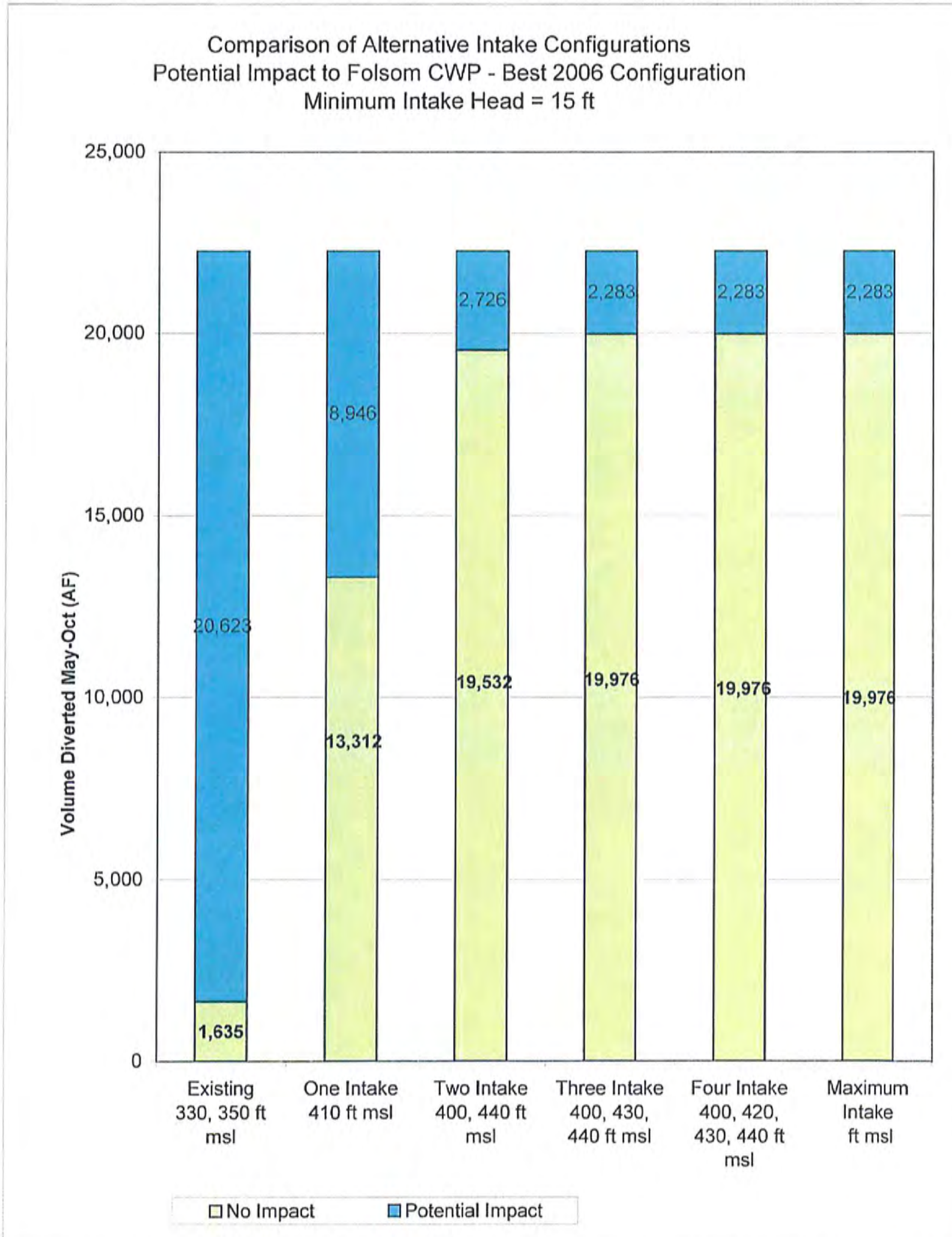

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2006 Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
20,623
1,635
8,946
13,312
2,726
19,532
2,283
19,976
2,283
19,976
2,283
19,976
Existing 330, 350 ft msl
One Intake 410 ft msl
Two Intake 400, 440 ft msl
Three Intake 400, 430, 440 ft msl
Four Intake 400, 420, 430, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 5

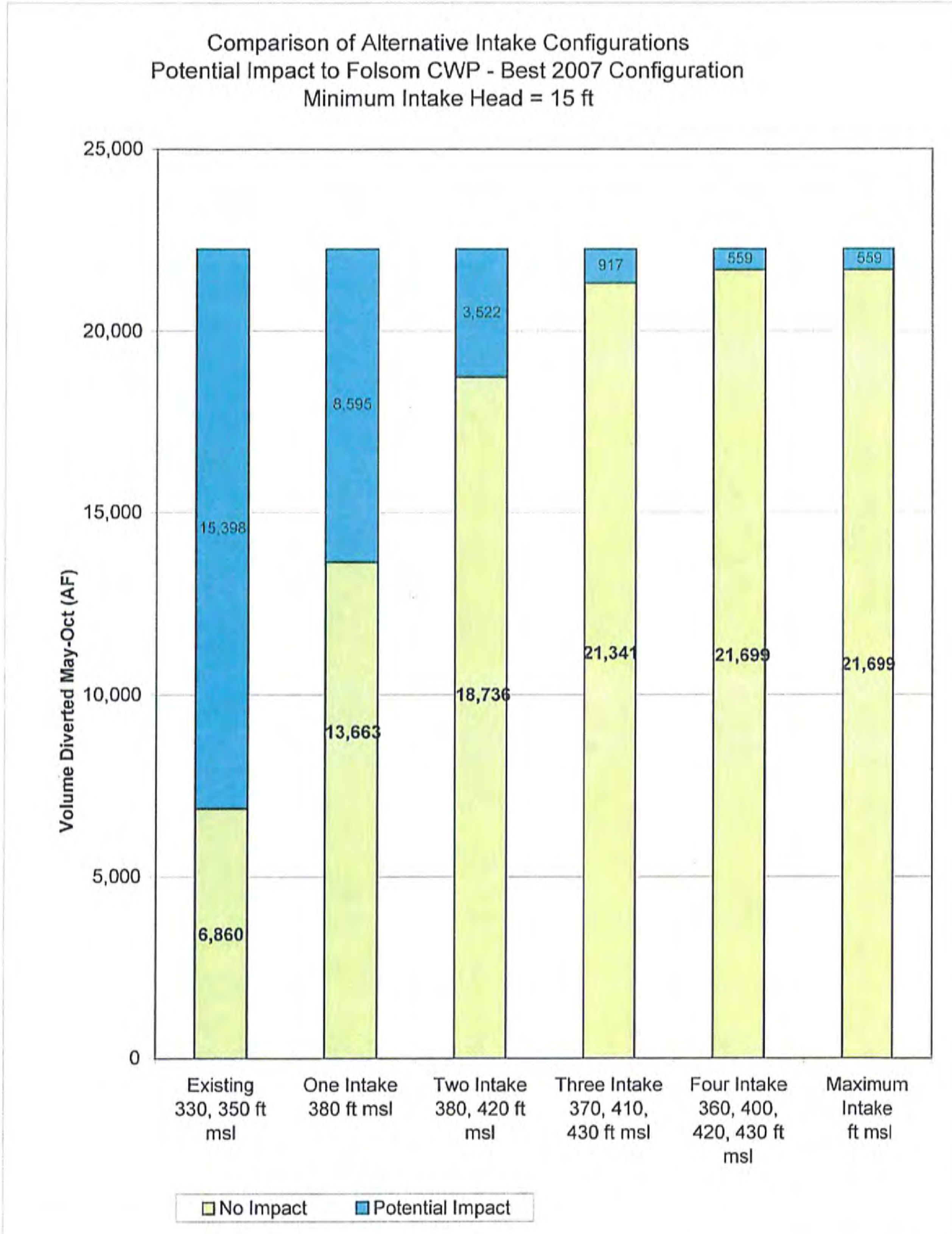

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2007 Configuration
Minimum Intake Head = 15 ft
25,000
20,000
15,000
10,000
5,000
0
Volume Diverted May-Oct (AF)
15,398
6,860
8,595
13,663
3,522
18,736
917
21,341
559
21,699
559
21,699
Existing 330, 350 ft msl
One Intake 380 ft msl
Two Intake 380, 420 ft msl
Three Intake 370, 410, 430 ft msl
Four Intake 360, 400, 420, 430 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 6

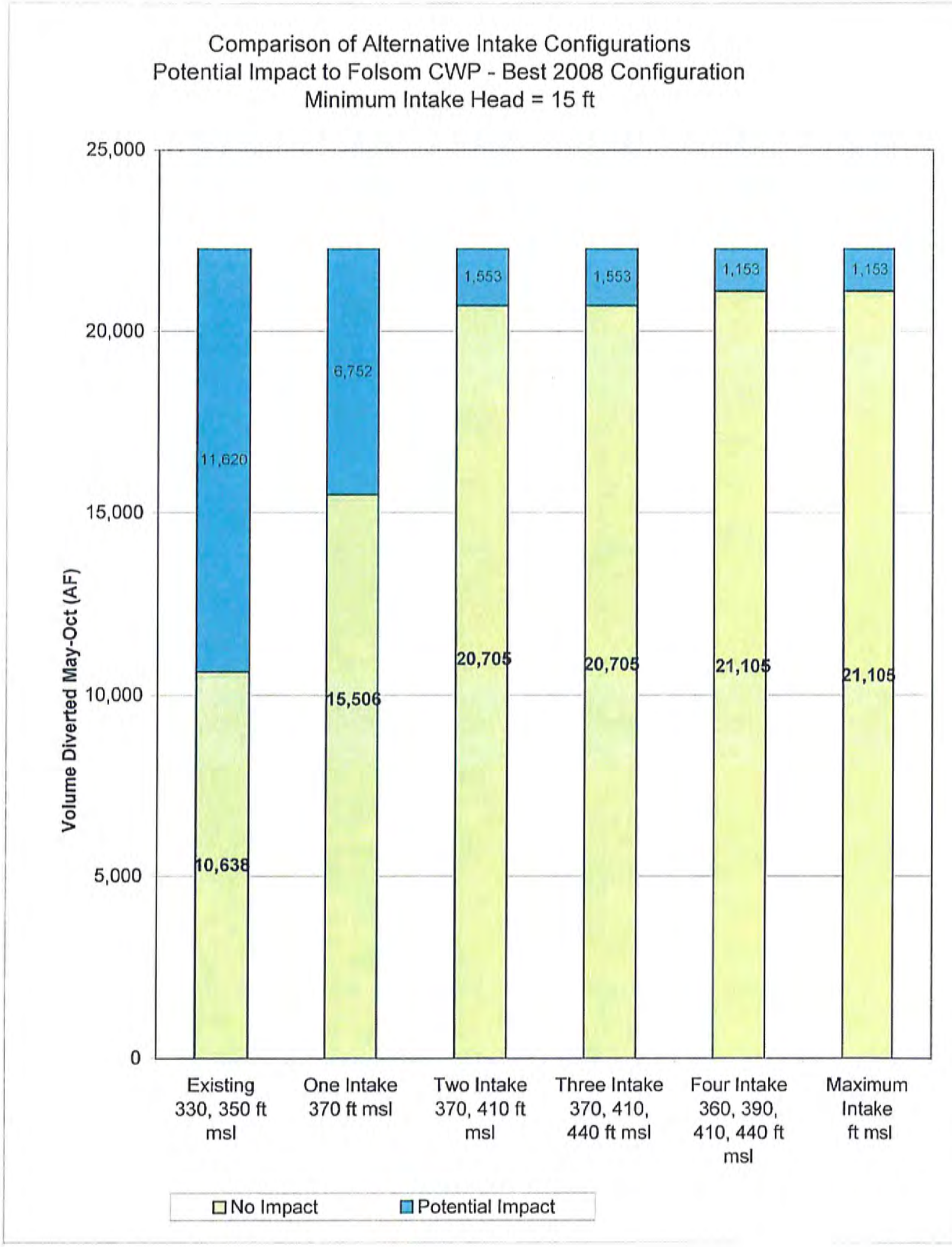
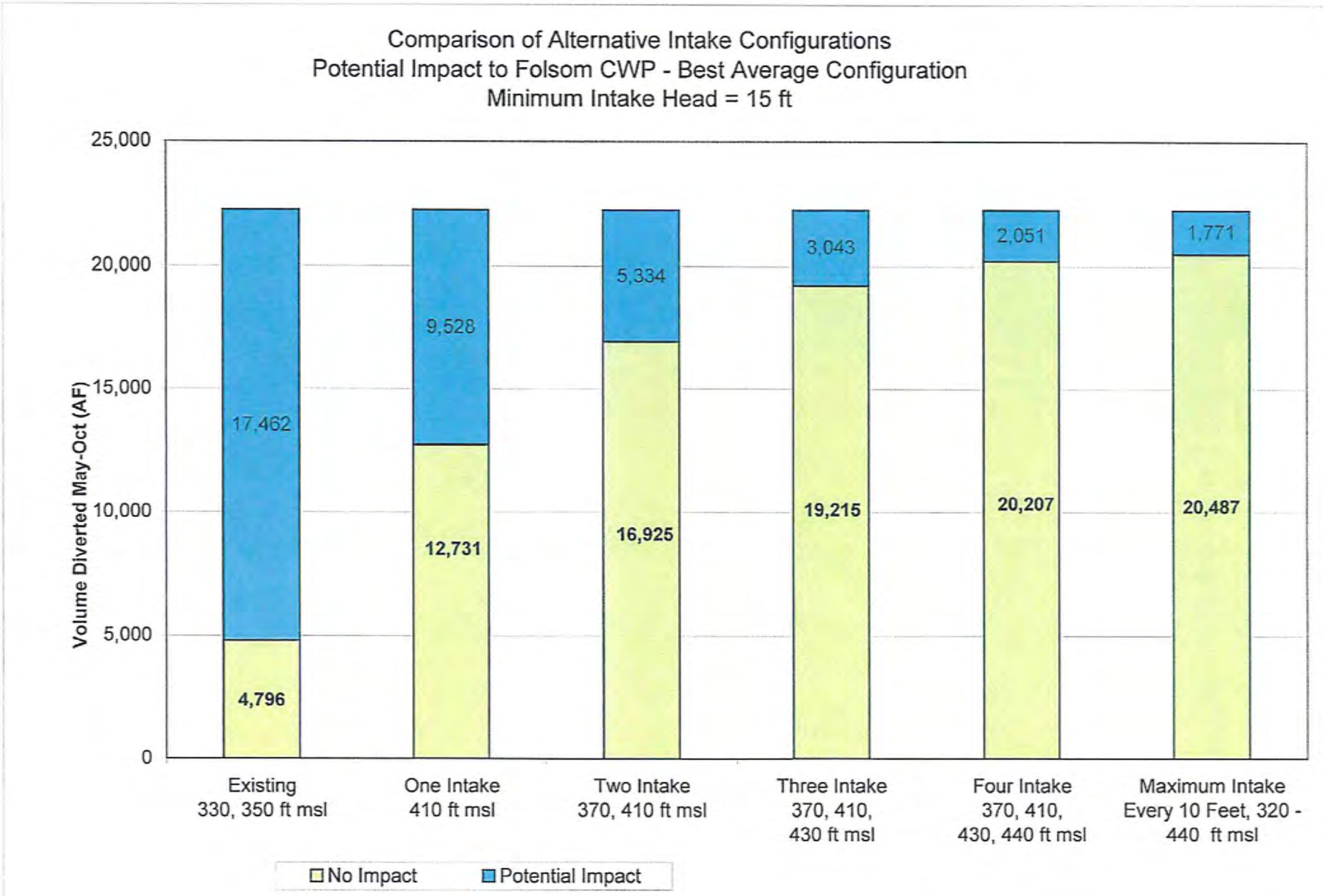

Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best 2008 Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
11,620
10,638
6,752
15,506
1,553
20,705
1,553
20,705
1,153
21,105
1,153
21,105
Existing 330, 350 ft msl
One Intake 370 ft msl
Two Intake 370, 410 ft msl
Three Intake 370, 410, 440 ft msl
Four Intake 360, 390, 410, 440 ft msl
Maximum Intake ft msl
No Impact
Potential Impact

Figure 7



Comparison of Alternative Intake Configurations
Potential Impact to Folsom CWP - Best Average Configuration
Minimum Intake Head = 15 ft
Volume Diverted May-Oct (AF)
25,000
20,000
15,000
10,000
5,000
0
17,462
4,796
9,528
12,731
5,334
16,925
3,043
19,215
2,051
20,207
1,771
20,487
Existing
330, 350 ft msl
One Intake
410 ft msl
Two Intake
370, 410 ft msl
Three Intake
370, 410,
430 ft msl
Four Intake
370, 410,
430, 440 ft msl
Maximum Intake
Every 10 Feet, 320 -
440 ft msl
No Impact
Potential Impact

Figure 8

Table 1

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

Existing Demand 8,193 AF

(UNITS = AF)

2002

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,882	3,452	21	0	4,473	1,977	4,509	51	1,604	6,214	330	353			
2 Intake (Base + 1)	5,157	1,175	21	0	1,196	5,170	1,311	51	1,704	3,016	410				10
3 Intake (Base + 2)	5,288	44	21	0	65	6,308	181	51	1,604	1,885	410	433			10
4 Intake (Base + 3)	5,288	44	21	0	65	6,308	181	51	1,613	1,885	410	433	440		10
5 Intake (Base + 4)	5,288	44	21	0	65	6,308	181	61	1,613	1,885	410	423	430	440	10

2003

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	704	3,182	262	0	5,549	918	5,468	377	1,428	7,273	330	353			
2 Intake (Base + 1)	4,548	1,443	262	0	1,705	4,648	1,744	377	1,428	3,549	420				10
3 Intake (Base + 2)	5,893	137	262	0	455	6,150	237	377	1,428	2,041	410	443			10
4 Intake (Base + 3)	5,893	137	262	0	455	6,150	237	377	1,428	2,041	410	433	440		10
5 Intake (Base + 4)	5,893	137	262	0	455	6,150	237	377	1,428	2,041	410	423	430	440	10

2004

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,158	3,953	65	170	4,214	2,136	3,960	118	1,983	6,062	330	353			
2 Intake (Base + 1)	4,266	1,832	65	170	2,067	4,266	1,832	118	1,983	3,934	380				10
3 Intake (Base + 2)	5,675	423	65	170	658	5,675	423	118	1,983	2,525	380	413			10
4 Intake (Base + 3)	6,093	3	65	189	255	6,096	0	118	1,983	2,102	380	413	420		10
5 Intake (Base + 4)	6,098	3	65	189	255	6,098	0	118	1,983	2,102	380	413	420	440	10

2005

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	5,845	65	0	5,908	616	5,967	287	1,320	7,575	330	353			
2 Intake (Base + 1)	3,819	2,468	65	0	2,533	3,815	2,764	287	1,320	4,372	420				10
3 Intake (Base + 2)	5,157	1,131	65	0	1,196	5,453	1,131	287	1,320	2,738	410	443			10
4 Intake (Base + 3)	5,157	1,131	65	0	1,196	5,453	1,131	287	1,320	2,738	410	433	440		10
5 Intake (Base + 4)	5,157	1,131	65	0	1,196	5,453	1,131	287	1,320	2,738	410	423	430	440	10

2006

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	743	5,474	135	0	5,609	984	5,555	171	1,481	7,207	330	353			
2 Intake (Base + 1)	4,081	2,206	135	0	2,341	4,064	2,455	171	1,481	4,107	410				10
3 Intake (Base + 2)	6,025	192	135	0	327	6,058	441	171	1,481	2,093	410	443			10
4 Intake (Base + 3)	6,025	192	135	0	327	6,058	441	171	1,481	2,093	410	433	440		10
5 Intake (Base + 4)	6,025	192	135	0	327	6,096	441	171	1,481	2,093	410	423	430	440	10

2007

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,193	4,549	111	0	4,659	2,199	4,048	181	1,613	5,815	330	350			
2 Intake (Base + 1)	4,216	2,025	111	0	2,135	4,215	2,044	181	1,613	3,875	390				10
3 Intake (Base + 2)	5,688	554	111	0	665	5,689	572	318	1,613	2,504	390	430			10
4 Intake (Base + 3)	6,193	48	111	0	159	6,212	44	318	1,613	1,979	370	410	430		10
5 Intake (Base + 4)	6,193	48	111	0	159	6,212	44	318	1,613	1,979	370	410	430	440	10

2008

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,282	2,708	232	81	3,071	3,282	2,758	232	1,648	4,638	330	350			
2 Intake (Base + 1)	4,684	1,386	232	81	1,563	4,684	1,386	232	1,648	3,235	380				10
3 Intake (Base + 2)	5,934	136	232	81	418	5,934	136	232	1,648	1,985	380	410			10
4 Intake (Base + 3)	5,934	136	232	81	418	5,934	136	232	1,648	1,985	380	410	441		10
5 Intake (Base + 4)	6,048	22	232	81	304	6,048	22	232	1,648	1,871	360	400	413	440	10

Mean

Intake Configuration[1]	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,626	4,565	123	36	4,723	1,730	4,624	224	1,583	6,392	330	350			
2 Intake (Base + 1)	3,400	2,288	123	36	2,443	3,551	2,795	224	1,583	4,602	380				10
3 Intake (Base + 2)	4,862	1,322	123	36	1,483	5,012	1,334	224	1,543	3,142	380	410			10
4 Intake (Base + 3)	5,252	522	123	39	900	5,701	646	224	1,584	2,453	380	410	442		10
5 Intake (Base + 4)	5,678	313	123	39	475	6,025	380	224	1,584	2,129	370	410	432	440	10

Table 2

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

Existing Demand 8,193 AF

(UNITS = %)

2002

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)
Existing	30%	70%	0%	0%	70%	24%	55%	1%	20%	76%
2 Intake (Base + 1)	81%	18%	0%	0%	19%	63%	16%	1%	20%	37%
3 Intake (Base + 2)	99%	1%	0%	0%	1%	77%	2%	1%	22%	23%
4 Intake (Base + 3)	99%	1%	0%	0%	1%	77%	2%	1%	20%	23%
5 Intake (Base + 4)	99%	1%	0%	0%	1%	77%	2%	1%	20%	23%

2003

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	11%	85%	4%	0%	89%	11%	67%	5%	17%	89%
2 Intake (Base + 1)	73%	23%	4%	0%	27%	57%	21%	5%	17%	43%
3 Intake (Base + 2)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
4 Intake (Base + 3)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
5 Intake (Base + 4)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%

2004

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	34%	52%	1%	3%	66%	26%	48%	1%	24%	74%
2 Intake (Base + 1)	67%	29%	1%	3%	33%	52%	22%	1%	24%	48%
3 Intake (Base + 2)	89%	7%	1%	3%	11%	69%	5%	1%	24%	31%
4 Intake (Base + 3)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%
5 Intake (Base + 4)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%

2005

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	7%	92%	1%	0%	93%	8%	73%	4%	16%	92%
2 Intake (Base + 1)	47%	39%	1%	0%	40%	47%	34%	4%	16%	53%
3 Intake (Base + 2)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%
4 Intake (Base + 3)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%
5 Intake (Base + 4)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%

2006

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	12%	86%	2%	0%	88%	12%	68%	2%	18%	88%
2 Intake (Base + 1)	63%	35%	2%	0%	37%	50%	30%	2%	18%	50%
3 Intake (Base + 2)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
4 Intake (Base + 3)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
5 Intake (Base + 4)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%

2007

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)
Existing	35%	64%	2%	0%	65%	27%	51%	2%	20%	73%
2 Intake (Base + 1)	66%	32%	2%	0%	34%	52%	25%	2%	20%	47%
3 Intake (Base + 2)	92%	9%	2%	0%	10%	69%	7%	4%	20%	31%
4 Intake (Base + 3)	97%	1%	2%	0%	3%	76%	1%	4%	20%	24%
5 Intake (Base + 4)	97%	1%	2%	0%	3%	76%	4%	4%	20%	24%

2008

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	52%	44%	3%	1%	48%	42%	35%	3%	21%	58%
2 Intake (Base + 1)	74%	22%	3%	1%	26%	59%	17%	3%	21%	41%
3 Intake (Base + 2)	93%	2%	3%	1%	7%	75%	2%	3%	21%	25%
4 Intake (Base + 3)	93%	2%	3%	1%	7%	75%	2%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	3%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration[1]	May-Oct Diversion					Annual Diversion				
	No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact
Existing	25%	72%	2%	1%	74%	22%	57%	3%	19%	78%
2 Intake (Base + 1)	54%	44%	2%	1%	46%	44%	34%	3%	19%	56%
3 Intake (Base + 2)	77%	21%	2%	1%	23%	63%	16%	3%	19%	37%
4 Intake (Base + 3)	87%	10%	2%	1%	13%	70%	8%	3%	19%	30%
5 Intake (Base + 4)	93%	5%	2%	1%	7%	74%	4%	3%	19%	26%

Table 3

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 15

Existing Demand 8,193 AF

(Units = AF)

2002

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,352	4,426	65	3	4,471	1,977	4,455	135	1,604	6,214	330	350			
2 Intake (Base + 1)	4,455	1,862	65	0	1,956	4,371	1,589	135	1,604	3,718	400				15
3 Intake (Base + 2)	6,288	0	65	0	65	6,306	117	135	1,604	1,886	400	450			15
4 Intake (Base + 3)	6,288	0	65	0	65	6,306	117	135	1,633	1,885	400	450	440		15
5 Intake (Base + 4)	6,288	0	65	0	65	6,306	117	135	1,633	1,885	400	420	430	443	15

2003

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	734	5,218	430	0	5,649	910	5,302	545	1,428	7,275	330	350			
2 Intake (Base + 1)	4,531	1,375	430	0	1,822	4,531	1,687	545	1,428	3,660	400				15
3 Intake (Base + 2)	5,898	29	430	0	459	6,190	29	545	1,428	2,002	400	440			15
4 Intake (Base + 3)	5,898	29	430	0	459	6,190	29	545	1,428	2,002	400	450	440		15
5 Intake (Base + 4)	5,898	29	430	0	459	6,190	29	545	1,428	2,002	400	420	430	443	15

2004

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,138	3,856	160	170	4,214	2,133	3,856	215	1,981	6,062	330	350			
2 Intake (Base + 1)	4,266	1,718	160	170	2,087	4,266	1,718	216	1,981	3,934	380				15
3 Intake (Base + 2)	5,675	329	160	170	678	5,675	329	213	1,981	2,525	380	400			15
4 Intake (Base + 3)	5,675	329	160	170	678	5,675	329	213	1,981	2,525	380	400	440		15
5 Intake (Base + 4)	5,675	329	160	170	678	5,675	329	213	1,981	2,525	380	400	430	443	15

2005

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	5,564	345	0	5,500	616	5,608	567	1,320	7,575	330	350			
2 Intake (Base + 1)	3,655	2,354	345	0	2,697	3,655	2,649	567	1,320	4,536	400				15
3 Intake (Base + 2)	5,137	871	345	0	1,216	5,137	1,157	567	1,320	3,054	400	440			15
4 Intake (Base + 3)	5,157	851	345	0	1,196	5,453	851	567	1,320	2,738	400	450	440		15
5 Intake (Base + 4)	5,157	851	345	0	1,196	5,453	851	567	1,320	2,738	400	420	430	443	15

2006

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	743	5,119	491	0	5,606	994	5,199	527	1,481	7,207	330	350			
2 Intake (Base + 1)	3,709	2,053	491	0	2,553	3,799	2,394	527	1,481	4,392	400				15
3 Intake (Base + 2)	5,575	287	491	0	778	5,956	287	527	1,481	2,295	400	440			15
4 Intake (Base + 3)	5,701	161	491	0	652	6,021	161	527	1,481	2,169	400	450	440		15
5 Intake (Base + 4)	5,701	161	491	0	652	6,021	161	527	1,481	2,169	400	420	430	443	15

2007

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,191	4,003	162	0	4,155	2,191	4,030	339	1,611	5,813	330	350			
2 Intake (Base + 1)	3,903	2,234	162	0	2,451	3,900	2,312	329	1,611	4,292	380				15
3 Intake (Base + 2)	5,343	846	162	0	1,005	5,348	864	366	1,611	2,844	380	420			15
4 Intake (Base + 3)	6,091	102	162	0	262	6,091	121	366	1,611	2,100	370	410	430		15
5 Intake (Base + 4)	6,153	0	162	0	160	6,212	[illegible]	366	1,611	1,572	360	400	420	430	15

2008

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,282	2,741	243	86	3,071	3,282	2,741	249	1,646	4,638	330	350			
2 Intake (Base + 1)	4,426	1,598	243	86	1,927	4,426	1,598	249	1,646	3,494	370				15
3 Intake (Base + 2)	5,910	114	243	86	443	5,910	114	249	1,646	2,050	370	410			15
4 Intake (Base + 3)	5,910	114	243	86	443	5,910	114	249	1,646	2,050	370	410	440		15
5 Intake (Base + 4)	6,024	0	243	86	329	6,024	0	249	1,646	1,896	360	390	410	440	15

Mean

Intake Configuration[1]	May-Oct Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Annual Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,526	4,417	271	46	4,726	2,733	4,466	352	1,583	6,397	330	350			
2 Intake (Base + 1)	3,634	2,439	271	36	2,729	3,836	2,562	352	1,583	4,513	410				15
3 Intake (Base + 2)	4,930	1,213	271	38	1,522	4,925	1,213	372	1,583	3,170	370	410			15
4 Intake (Base + 3)	5,484	539	271	39	899	5,629	570	372	1,583	2,525	370	410	432		15
5 Intake (Base + 4)	5,567	276	271	39	585	5,512	316	372	1,583	2,242	330	410	432	440	15

Table 4

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 15

Existing Demand 8,193 AF

(UNITS = %)

2002

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)
Existing	32%	69%	1%	0%	70%	24%	53%	2%	20%	76%
2 Intake (Base + 1)	72%	29%	1%	0%	30%	55%	24%	2%	20%	45%
3 Intake (Base + 2)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%
4 Intake (Base + 3)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%
5 Intake (Base + 4)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%

2003

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	11%	82%	7%	0%	89%	11%	65%	7%	17%	89%
2 Intake (Base + 1)	71%	22%	7%	0%	29%	55%	21%	7%	17%	45%
3 Intake (Base + 2)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%
4 Intake (Base + 3)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%
5 Intake (Base + 4)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%

2004

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	34%	62%	3%	3%	66%	26%	47%	3%	24%	74%
2 Intake (Base + 1)	67%	27%	3%	3%	33%	52%	21%	3%	24%	48%
3 Intake (Base + 2)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%
4 Intake (Base + 3)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%
5 Intake (Base + 4)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%

2005

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	7%	88%	5%	0%	93%	8%	68%	7%	16%	92%
2 Intake (Base + 1)	58%	37%	5%	0%	42%	45%	32%	7%	16%	55%
3 Intake (Base + 2)	81%	14%	5%	0%	19%	63%	14%	7%	16%	37%
4 Intake (Base + 3)	81%	13%	5%	0%	19%	67%	10%	7%	16%	33%
5 Intake (Base + 4)	81%	13%	5%	0%	19%	67%	10%	7%	16%	33%

2006

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	11%	81%	8%	0%	89%	12%	63%	6%	18%	88%
2 Intake (Base + 1)	60%	32%	8%	0%	40%	46%	29%	6%	18%	54%
3 Intake (Base + 2)	88%	5%	8%	0%	12%	72%	4%	6%	18%	28%
4 Intake (Base + 3)	90%	3%	8%	0%	10%	74%	2%	6%	18%	26%
5 Intake (Base + 4)	90%	3%	8%	0%	10%	74%	2%	6%	18%	26%

2007

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)
Existing	35%	63%	3%	0%	65%	27%	50%	3%	20%	73%
2 Intake (Base + 1)	61%	36%	3%	0%	39%	48%	28%	3%	20%	52%
3 Intake (Base + 2)	83%	14%	3%	0%	16%	65%	11%	4%	20%	35%
4 Intake (Base + 3)	96%	2%	3%	0%	4%	74%	1%	4%	20%	26%
5 Intake (Base + 4)	97%	0%	3%	0%	4%	74%	1%	4%	20%	26%

2008

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	52%	43%	4%	1%	48%	41%	35%	3%	21%	59%
2 Intake (Base + 1)	70%	25%	4%	1%	30%	56%	20%	3%	21%	44%
3 Intake (Base + 2)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
4 Intake (Base + 3)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	4%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration[1]	May-Oct Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Annual Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact
Existing	26%	70%	4%	1%	74%	21%	55%	4%	19%	79%
2 Intake (Base + 1)	57%	38%	4%	1%	43%	45%	31%	4%	19%	55%
3 Intake (Base + 2)	76%	17%	4%	1%	24%	61%	15%	5%	19%	39%
4 Intake (Base + 3)	86%	9%	4%	1%	14%	69%	7%	5%	19%	31%
5 Intake (Base + 4)	91%	4%	4%	1%	9%	73%	4%	5%	19%	27%

Table 5

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

2013 Demand 13,000 AF

(UNITS = AF)

2002

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water 2 Target	Potential Impact (AF < 62 °F)	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water 2 Target	Potential Impact (AF < 62 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,707	7,234	34	0	7,328	2,837	7,410	145	2,549	10,119	350	350			
2 Intake (Base + 1)	8,104	1,867	34	0	1,900	8,224	2,684	145	2,549	4,702	410				10
3 Intake (Base + 2)	9,991	70	34	0	104	10,021	287	145	2,519	2,496	410	430			10
4 Intake (Base + 3)	9,991	70	34	0	104	10,021	287	145	2,564	2,596	410	430	440		10
5 Intake (Base + 4)	9,991	70	34	0	104	10,021	287	145	2,564	2,596	410	420	430	440	10

2003

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	839	8,779	417	0	9,195	1,114	9,634	599	2,269	11,902	330	350			
2 Intake (Base + 1)	7,386	2,292	417	0	2,709	7,386	2,462	599	2,269	5,630	420				10
3 Intake (Base + 2)	9,365	315	417	0	732	9,772	376	599	2,269	3,244	410	460			10
4 Intake (Base + 3)	9,365	315	417	0	732	9,772	376	599	2,269	3,244	410	450	440		10
5 Intake (Base + 4)	9,365	315	417	0	732	9,772	376	599	2,269	3,244	410	420	430	440	10

2004

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	4,287	6,453	104	270	6,857	3,737	6,459	188	3,152	9,792	330	350			
2 Intake (Base + 1)	6,778	2,912	104	270	3,316	5,778	2,912	188	3,152	6,251	330				10
3 Intake (Base + 2)	9,017	573	104	270	1,377	9,017	673	188	3,152	4,013	330	410			10
4 Intake (Base + 3)	9,690	0	104	301	405	9,690	0	188	3,152	3,340	330	410	420		10
5 Intake (Base + 4)	9,690	0	104	301	405	9,690	0	188	3,152	3,340	330	410	420	440	10

2005

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	9,547	104	0	9,652	616	9,945	457	2,030	12,400	330	330			
2 Intake (Base + 1)	6,059	3,922	104	0	4,035	6,066	4,392	457	2,030	6,542	420				10
3 Intake (Base + 2)	8,134	1,797	104	0	1,900	8,665	1,797	457	2,030	4,351	410	440			10
4 Intake (Base + 3)	8,134	1,797	104	0	1,900	8,665	1,797	457	2,030	4,351	410	430	440		10
5 Intake (Base + 4)	8,134	1,797	104	0	1,900	8,665	1,797	457	2,030	4,351	410	420	430	440	10

2006

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	953	8,927	215	0	9,141	1,157	9,294	272	2,353	11,919	330	350			
2 Intake (Base + 1)	6,374	3,505	215	0	3,720	6,490	3,901	272	2,353	6,527	410				10
3 Intake (Base + 2)	9,574	305	215	0	520	9,690	701	272	2,353	3,326	410	440			10
4 Intake (Base + 3)	9,574	305	215	0	520	9,690	701	272	2,353	3,326	410	430	440		10
5 Intake (Base + 4)	9,574	305	215	0	520	9,690	701	272	2,353	3,326	410	420	430	440	10

2007

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water 2 Target	Potential Impact (AF < 63 °F)	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water 2 Target	Potential Impact (AF < 63 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,291	6,626	177	0	6,833	3,291	6,626	288	2,564	9,431	330	350			
2 Intake (Base + 1)	6,700	3,218	177	0	3,395	6,720	3,247	288	2,564	6,316	390				10
3 Intake (Base + 2)	9,038	880	177	0	1,057	9,038	910	535	2,564	3,978	390	430			10
4 Intake (Base + 3)	9,841	77	177	0	254	9,671	77	535	2,564	3,145	370	410	430		10
5 Intake (Base + 4)	9,841	77	177	0	254	9,671	508	535	2,564	3,145	370	410	430	440	10

2008

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	5,013	4,633	321	128	5,082	5,013	4,633	321	2,618	7,572	330	350			
2 Intake (Base + 1)	7,444	2,222	321	128	2,651	7,444	2,222	321	2,618	5,141	380				10
3 Intake (Base + 2)	9,430	216	321	128	665	9,430	216	321	2,618	3,155	380	410			10
4 Intake (Base + 3)	9,430	216	321	128	665	9,430	216	321	2,618	3,155	360	410	410		10
5 Intake (Base + 4)	9,611	35	321	128	484	9,611	35	321	2,618	2,974	360	400	410	440	10

Mean

Intake Configuration	May-Oct Diversion					Annual Diversion					Other Intakes				
	No Impact	Missed	Unavail	No Water 2 Target	Potential Impact	No Impact	Missed	Unavail	No Water 2 Target	Potential Impact	1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,372	7,465	193	57	7,722	2,481	7,599	324	2,515	10,434	330	350			
2 Intake (Base + 1)	6,235	3,544	193	57	3,821	6,435	3,645	324	2,515	6,517	410				10
3 Intake (Base + 2)	8,032	1,826	193	57	2,063	8,247	1,887	355	2,515	4,728	380	430			10
4 Intake (Base + 3)	9,071	967	193	61	1,224	9,505	980	355	2,517	3,852	370	430	430		10
5 Intake (Base + 4)	9,333	498	193	61	755	9,572	573	355	2,517	3,383	370	410	430	440	10

Table 6

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

2013 Demand 13,000 AF

(UNITS = %)

2002

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water 2 Target	Potential Impact (AF < 62 °F)	No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water 2 Target	Potential Impact (AF < 62 °F)
Existing	27%	72%	0%	0%	73%	22%	57%	1%	20%	78%
2 Intake (Base + 1)	81%	18%	0%	0%	19%	63%	16%	1%	20%	37%
3 Intake (Base + 2)	99%	1%	0%	0%	1%	77%	2%	1%	20%	23%
4 Intake (Base + 3)	99%	1%	0%	0%	1%	77%	2%	1%	20%	23%
5 Intake (Base + 4)	99%	1%	0%	0%	1%	77%	2%	1%	20%	23%

2003

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	9%	87%	4%	0%	91%	9%	69%	5%	17%	91%
2 Intake (Base + 1)	73%	23%	4%	0%	27%	57%	21%	5%	17%	43%
3 Intake (Base + 2)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
4 Intake (Base + 3)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
5 Intake (Base + 4)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%

2004

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)
Existing	32%	64%	1%	3%	68%	25%	50%	1%	24%	75%
2 Intake (Base + 1)	67%	29%	1%	3%	33%	52%	22%	1%	24%	48%
3 Intake (Base + 2)	89%	7%	1%	3%	11%	68%	5%	1%	24%	31%
4 Intake (Base + 3)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%
5 Intake (Base + 4)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%

2005

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	4%	95%	1%	0%	96%	5%	75%	4%	16%	95%
2 Intake (Base + 1)	60%	39%	1%	0%	40%	47%	34%	4%	16%	53%
3 Intake (Base + 2)	81%	18%	1%	0%	19%	57%	14%	4%	16%	33%
4 Intake (Base + 3)	81%	18%	1%	0%	19%	57%	14%	4%	16%	33%
5 Intake (Base + 4)	81%	18%	1%	0%	19%	57%	14%	4%	16%	33%

2006

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)	No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	9%	89%	2%	0%	91%	9%	71%	2%	18%	91%
2 Intake (Base + 1)	63%	35%	2%	0%	37%	50%	30%	2%	18%	50%
3 Intake (Base + 2)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
4 Intake (Base + 3)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
5 Intake (Base + 4)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%

2007

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water 2 Target	Potential Impact (AF < 63 °F)	No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water 2 Target	Potential Impact (AF < 63 °F)
Existing	33%	65%	2%	0%	67%	26%	52%	2%	20%	74%
2 Intake (Base + 1)	66%	32%	2%	0%	34%	51%	27%	2%	20%	49%
3 Intake (Base + 2)	90%	9%	2%	0%	11%	69%	7%	4%	20%	31%
4 Intake (Base + 3)	97%	1%	2%	0%	3%	76%	1%	4%	20%	24%
5 Intake (Base + 4)	97%	1%	2%	0%	3%	76%	0%	4%	20%	24%

2008

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)	No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water 2 Target	Potential Impact (AF < 64 °F)
Existing	50%	45%	3%	1%	50%	40%	37%	3%	21%	60%
2 Intake (Base + 1)	74%	22%	3%	1%	26%	59%	17%	3%	21%	41%
3 Intake (Base + 2)	95%	2%	3%	1%	5%	75%	2%	2%	21%	25%
4 Intake (Base + 3)	95%	1%	3%	1%	5%	75%	2%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	3%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration	May-Oct Diversion					Annual Diversion				
	No Impact	Missed	Unavail	No Water 2 Target	Potential Impact	No Impact	Missed	Unavail	No Water 2 Target	Potential Impact
Existing	23%	74%	2%	1%	77%	19%	59%	3%	19%	81%
2 Intake (Base + 1)	62%	35%	2%	1%	38%	50%	28%	3%	19%	50%
3 Intake (Base + 2)	79%	18%	2%	1%	21%	64%	14%	3%	19%	36%
4 Intake (Base + 3)	88%	10%	2%	1%	12%	70%	8%	3%	19%	30%
5 Intake (Base + 4)	93%	5%	2%	1%	7%	74%	4%	3%	19%	26%

Table 7

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 15

2013 Demand 13,000 AF

(Units = AF)

2002

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unaval	No Water 2 Target	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 52 °F)	≥ 52 °F Missed	≥ 52 °F Unaval	No Water 2 Target	Potential Impact (AF < 52 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,757	7,224	104	0	7,328	2,857	7,340	215	2,549	10,113	330	350			
2 Intake (Base + 1)	7,079	2,917	104	0	3,015	7,109	3,129	215	2,549	5,507	430				15
3 Intake (Base + 2)	5,991	0	104	0	104	10,021	217	215	2,549	2,596	430	430			15
4 Intake (Base + 3)	5,991	0	104	0	104	10,021	217	215	2,564	2,596	435	430	440		15
5 Intake (Base + 4)	5,991	0	104	0	104	10,021	217	215	2,564	2,596	430	420	430	442	15

2003

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 50 °F)	≥ 52 °F Missed	≥ 52 °F Unaval	No Water 2 Target	Potential Impact (AF < 50 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	879	8,512	684	0	9,195	1,114	9,767	366	2,269	11,902	330	350			
2 Intake (Base + 1)	7,200	2,211	684	0	2,895	7,202	2,681	366	2,269	5,316	410				15
3 Intake (Base + 2)	5,365	46	684	0	730	9,835	46	366	2,269	3,181	420	440			15
4 Intake (Base + 3)	5,365	46	684	0	730	9,835	46	366	2,269	3,181	430	420	440		15
5 Intake (Base + 4)	5,365	46	684	0	730	9,835	46	366	2,269	3,181	430	420	430	440	15

2004

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 54 °F)	≥ 54 °F Missed	≥ 54 °F Unaval	No Water 2 Target	Potential Impact (AF < 54 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,237	6,303	254	270	6,857	3,237	6,303	338	3,152	9,792	330	330			
2 Intake (Base + 1)	6,778	2,762	254	270	3,286	6,778	2,762	338	3,152	6,251	390				15
3 Intake (Base + 2)	9,017	523	254	270	1,077	9,017	523	338	3,152	4,012	380	410			15
4 Intake (Base + 3)	9,017	523	254	270	1,077	9,017	523	338	3,152	4,012	380	410	440		15
5 Intake (Base + 4)	9,017	523	254	270	1,077	9,017	523	338	3,152	4,012	380	410	420	440	15

2005

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 50 °F)	≥ 50 °F Missed	≥ 50 °F Unaval	No Water 2 Target	Potential Impact (AF < 50 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	9,101	547	0	9,650	426	9,401	901	2,098	12,400	310	350			
2 Intake (Base + 1)	5,809	3,739	547	0	4,286	5,809	4,209	901	2,098	7,207	410				15
3 Intake (Base + 2)	8,203	1,384	547	0	1,931	8,563	1,854	901	2,098	4,853	410	440			15
4 Intake (Base + 3)	8,194	1,350	547	0	1,930	8,565	1,353	901	2,098	4,351	400	450	442		15
5 Intake (Base + 4)	8,194	1,358	547	0	1,930	8,565	1,353	901	2,098	4,351	400	420	430	443	15

2006

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 50 °F)	≥ 50 °F Missed	≥ 50 °F Unaval	No Water 2 Target	Potential Impact (AF < 50 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	353	8,362	782	0	9,141	1,197	8,829	837	2,353	11,819	330	350			
2 Intake (Base + 1)	6,037	3,270	782	0	4,057	6,037	3,789	837	2,353	6,979	410				15
3 Intake (Base + 2)	8,658	453	782	0	1,236	9,363	457	837	2,353	3,647	400	440			15
4 Intake (Base + 3)	9,059	255	782	0	1,035	9,570	255	837	2,353	3,446	400	420	440		15
5 Intake (Base + 4)	9,059	255	782	0	1,035	9,570	255	837	2,353	3,446	400	420	430	443	15

2007

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unaval	No Water 2 Target	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unaval	No Water 2 Target	Potential Impact (AF < 63 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,231	6,550	254	0	6,803	3,291	6,550	365	2,564	9,431	330	350			
2 Intake (Base + 1)	6,137	3,645	254	0	3,898	6,197	3,674	365	2,564	6,015	360				15
3 Intake (Base + 2)	8,497	1,344	254	0	1,597	8,497	1,613	382	2,564	4,519	380	420			15
4 Intake (Base + 3)	9,679	162	254	0	415	9,679	747	382	2,564	3,367	360	415	430		15
5 Intake (Base + 4)	9,841	0	254	0	254	9,871	2,904	382	2,554	3,145	360	413	430	443	15

2008

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	5,013	4,559	395	128	5,082	5,013	4,559	395	2,618	7,572	330	350			
2 Intake (Base + 1)	7,032	2,539	395	128	3,062	7,052	2,539	395	2,618	5,552	370				15
3 Intake (Base + 2)	9,390	181	395	128	704	9,390	181	395	2,618	3,194	370	420			15
4 Intake (Base + 3)	9,390	181	395	128	704	9,390	181	395	2,618	3,194	370	420	440		15
5 Intake (Base + 4)	9,571	0	395	128	523	9,571	0	395	2,618	3,013	360	390	430	440	15

Mean

Intake Configuration	May-Oct Diversion: No Impact	Missed	Unaval	No Water 2 Target	Potential Impact	Annual Diversion: No Impact	Missed	Unaval	No Water 2 Target	Potential Impact	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	2,372	7,230	431	57	7,722	2,481	7,364	559	2,515	10,434	330	350			
2 Intake (Base + 1)	5,774	3,829	431	57	4,321	5,776	4,021	559	2,515	7,178	410				15
3 Intake (Base + 2)	7,676	1,927	431	57	2,419	7,935	1,944	559	2,515	5,061	370	410			15
4 Intake (Base + 3)	8,714	889	431	61	1,393	8,944	905	570	2,517	4,022	370	410	430		15
5 Intake (Base + 4)	9,164	438	431	61	930	9,314	505	570	2,517	3,562	370	410	430	440	15

Table 8

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 15

2013 Demand 13,000 AF

(Units = %)

2002

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unaval	No Water 2 Target	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unaval	No Water 2 Target	Potential Impact (AF < 62 °F)
Existing	27%	72%	1%	0%	73%	22%	56%	2%	20%	78%
2 Intake (Base + 1)	70%	29%	1%	0%	30%	55%	24%	2%	20%	45%
3 Intake (Base + 2)	99%	2%	1%	0%	1%	77%	2%	2%	20%	23%
4 Intake (Base + 3)	99%	2%	1%	0%	1%	77%	2%	2%	20%	23%
5 Intake (Base + 4)	99%	2%	1%	0%	1%	77%	2%	2%	20%	23%

2003

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	9%	84%	7%	0%	91%	9%	67%	3%	17%	91%
2 Intake (Base + 1)	71%	22%	7%	0%	29%	55%	21%	3%	17%	45%
3 Intake (Base + 2)	93%	0%	7%	0%	7%	76%	0%	3%	17%	24%
4 Intake (Base + 3)	93%	0%	7%	0%	7%	76%	0%	3%	17%	24%
5 Intake (Base + 4)	93%	0%	7%	0%	7%	76%	0%	3%	17%	24%

2004

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)
Existing	32%	62%	3%	3%	68%	25%	48%	3%	24%	75%
2 Intake (Base + 1)	67%	27%	3%	3%	33%	52%	21%	3%	24%	48%
3 Intake (Base + 2)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%
4 Intake (Base + 3)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%
5 Intake (Base + 4)	89%	5%	3%	3%	11%	69%	4%	3%	24%	31%

2005

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	4%	90%	5%	0%	96%	3%	72%	7%	16%	97%
2 Intake (Base + 1)	58%	37%	5%	0%	42%	45%	32%	7%	16%	55%
3 Intake (Base + 2)	81%	14%	5%	0%	19%	63%	14%	7%	16%	37%
4 Intake (Base + 3)	81%	13%	5%	0%	19%	67%	10%	7%	16%	33%
5 Intake (Base + 4)	81%	13%	5%	0%	19%	67%	10%	7%	16%	33%

2006

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unaval	No Water 2 Target	Potential Impact (AF < 60 °F)
Existing	9%	83%	8%	0%	91%	9%	66%	6%	18%	91%
2 Intake (Base + 1)	60%	32%	8%	0%	40%	46%	29%	6%	18%	54%
3 Intake (Base + 2)	88%	5%	8%	0%	12%	72%	4%	6%	18%	28%
4 Intake (Base + 3)	90%	3%	8%	0%	10%	74%	2%	6%	18%	26%
5 Intake (Base + 4)	90%	3%	8%	0%	10%	74%	2%	6%	18%	26%

2007

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unaval	No Water 2 Target	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unaval	No Water 2 Target	Potential Impact (AF < 63 °F)
Existing	33%	65%	3%	0%	67%	26%	51%	3%	20%	74%
2 Intake (Base + 1)	61%	36%	3%	0%	39%	48%	29%	3%	20%	52%
3 Intake (Base + 2)	84%	13%	3%	0%	16%	65%	11%	4%	20%	35%
4 Intake (Base + 3)	96%	2%	3%	0%	4%	74%	1%	4%	20%	26%
5 Intake (Base + 4)	97%	0%	3%	0%	3%	76%	22%	4%	20%	24%

2008

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unaval	No Water 2 Target	Potential Impact (AF < 64 °F)
Existing	50%	45%	4%	1%	50%	40%	36%	3%	21%	60%
2 Intake (Base + 1)	70%	25%	4%	1%	30%	56%	20%	3%	21%	44%
3 Intake (Base + 2)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
4 Intake (Base + 3)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	4%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration	May-Oct Diversion: No Impact	Missed	Unaval	No Water 2 Target	Potential Impact	Annual Diversion: No Impact	Missed	Unaval	No Water 2 Target	Potential Impact
Existing	18%	72%	4%	1%	76%	15%	57%	4%	19%	81%
2 Intake (Base + 1)	57%	30%	4%	1%	35%	35%	31%	4%	19%	55%
3 Intake (Base + 2)	76%	19%	4%	1%	24%	61%	15%	5%	19%	39%
4 Intake (Base + 3)	85%	9%	4%	1%	14%	69%	7%	5%	19%	31%
5 Intake (Base + 4)	91%	4%	4%	1%	9%	72%	4%	5%	19%	27%

Table 9

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

2030 Demand 28,730 AF

(UNITS = AF)

2002

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	5,612	16,532	74	0	16,606	5,088	16,840	319	5,621	22,812	330	350			
2 Intake (Base + 1)	18,014	4,116	74	0	4,190	18,134	4,534	319	5,621	10,466	410				10
3 Intake (Base + 2)	22,030	154	74	0	229	22,395	653	319	5,621	6,605	410	430			10
4 Intake (Base + 3)	22,030	154	74	0	229	22,395	653	319	5,653	6,605	410	430	440		10
5 Intake (Base + 4)	22,030	154	74	0	229	22,395	653	319	5,653	6,605	410	420	430	440	10

2003

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,554	19,806	918	0	20,724	1,783	20,628	1,320	5,003	26,951	330	350			
2 Intake (Base + 1)	16,285	5,054	918	0	5,973	16,285	4,097	1,320	5,003	12,415	420				10
3 Intake (Base + 2)	20,643	631	918	0	1,509	21,547	830	1,320	5,003	7,153	410	440			10
4 Intake (Base + 3)	20,643	631	918	0	1,509	21,547	830	1,320	5,003	7,153	410	430	440		10
5 Intake (Base + 4)	20,643	631	918	0	1,509	21,547	830	1,320	5,003	7,153	410	420	430	440	10

2004

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	6,810	14,556	229	595	15,448	5,810	14,556	415	6,949	21,920	330	350			
2 Intake (Base + 1)	14,345	6,420	229	595	7,312	14,546	6,420	415	6,949	13,784	380				12
3 Intake (Base + 2)	19,883	1,483	229	595	2,375	19,883	1,483	415	6,949	8,847	380	410			12
4 Intake (Base + 3)	21,366	2	229	663	893	21,366	0	415	6,949	7,364	380	410	420		12
5 Intake (Base + 4)	21,366	2	229	663	893	21,366	0	415	6,949	7,364	380	410	420	440	12

2005

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	21,585	229	0	21,814	416	22,450	1,037	4,626	28,004	330	350			
2 Intake (Base + 1)	13,342	8,648	229	0	6,605	13,282	9,605	1,037	4,626	15,318	420				13
3 Intake (Base + 2)	18,068	3,961	229	0	4,190	19,105	3,961	1,037	4,626	9,535	430	443			13
4 Intake (Base + 3)	18,068	3,961	229	0	4,190	19,105	3,961	1,037	4,626	9,535	430	433	443		13
5 Intake (Base + 4)	18,068	3,961	229	0	4,190	19,105	3,961	1,037	4,626	9,535	430	423	433	443	13

2006

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,635	20,149	474	0	20,623	1,879	21,032	600	5,199	26,921	380	353			
2 Intake (Base + 1)	14,055	7,729	474	0	8,203	14,909	8,602	600	5,189	14,291	413				13
3 Intake (Base + 2)	21,111	673	474	0	1,147	21,365	1,546	600	5,189	7,335	413	443			13
4 Intake (Base + 3)	21,111	673	474	0	1,147	21,365	1,546	600	5,189	7,335	413	433	443		13
5 Intake (Base + 4)	21,111	673	474	0	1,147	21,365	1,546	600	5,189	7,335	413	423	433	443	13

2007

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	6,860	15,304	390	0	15,396	6,863	15,008	695	5,658	21,133	330	353			
2 Intake (Base + 1)	14,773	7,095	390	0	7,485	14,773	7,161	635	5,653	13,923	390				10
3 Intake (Base + 2)	19,928	1,540	390	0	2,331	19,928	2,006	1,114	5,653	8,772	392	433			10
4 Intake (Base + 3)	21,699	169	390	0	556	21,765	160	1,114	5,653	6,935	373	413	433		10
5 Intake (Base + 4)	21,699	169	390	0	559	21,765	1,120	1,114	5,653	6,935	373	413	433	440	10

2008

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	10,658	10,593	708	282	11,623	10,658	10,633	708	5,773	17,110	333	353			
2 Intake (Base + 1)	16,419	4,855	708	282	5,845	16,413	4,855	708	5,773	11,335	383				10
3 Intake (Base + 2)	20,733	476	708	282	1,466	20,733	476	708	5,773	6,956	383	410			10
4 Intake (Base + 3)	20,733	476	708	282	1,466	20,733	476	708	5,773	6,956	383	410	430		10
5 Intake (Base + 4)	21,130	76	708	282	1,066	21,130	76	708	5,773	6,557	363	400	410	440	10

Mean

Intake Configuration[1]	May-Oct Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Annual Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	4,795	16,895	412	125	17,432	4,920	17,306	715	5,545	23,556	330	350			
2 Intake (Base + 1)	13,826	7,815	412	125	8,352	14,138	8,037	715	5,545	14,370	410				12
3 Intake (Base + 2)	17,444	4,225	412	125	4,592	18,185	4,051	763	5,545	10,383	390	420			12
4 Intake (Base + 3)	19,560	2,131	412	135	2,595	20,076	2,160	763	5,549	8,493	370	410	440		12
5 Intake (Base + 4)	20,553	1,098	412	135	1,645	21,139	1,203	763	5,549	7,460	370	410	430	440	12

Table 12

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 10

2030 Demand 28,730 AF

(UNITS = %)

2002

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed[2]	≥ 62 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 62 °F)
Existing	25%	74%	0%	7%	75%	31%	59%	1%	20%	79%
2 Intake (Base + 1)	81%	18%	0%	3%	19%	63%	16%	1%	20%	37%
3 Intake (Base + 2)	99%	1%	0%	3%	1%	77%	2%	1%	20%	23%
4 Intake (Base + 3)	99%	1%	0%	3%	1%	77%	2%	1%	20%	23%
5 Intake (Base + 4)	99%	1%	0%	3%	1%	77%	2%	1%	20%	23%

2003

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	7%	89%	4%	0%	93%	6%	72%	5%	17%	94%
2 Intake (Base + 1)	73%	23%	4%	0%	27%	57%	21%	5%	17%	43%
3 Intake (Base + 2)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
4 Intake (Base + 3)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%
5 Intake (Base + 4)	93%	3%	4%	0%	7%	75%	3%	5%	17%	25%

2004

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	31%	65%	1%	3%	69%	24%	51%	1%	24%	76%
2 Intake (Base + 1)	67%	29%	1%	3%	33%	52%	22%	1%	24%	48%
3 Intake (Base + 2)	89%	7%	1%	3%	11%	69%	5%	1%	24%	31%
4 Intake (Base + 3)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%
5 Intake (Base + 4)	96%	0%	1%	3%	4%	74%	0%	1%	24%	26%

2005

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	2%	97%	1%	0%	98%	2%	78%	4%	16%	98%
2 Intake (Base + 1)	60%	39%	1%	0%	40%	47%	34%	4%	16%	53%
3 Intake (Base + 2)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%
4 Intake (Base + 3)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%
5 Intake (Base + 4)	81%	18%	1%	0%	19%	67%	14%	4%	16%	33%

2006

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed[2]	≥ 60 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 60 °F)
Existing	7%	91%	2%	0%	93%	7%	73%	2%	18%	93%
2 Intake (Base + 1)	63%	35%	2%	0%	37%	50%	30%	2%	18%	50%
3 Intake (Base + 2)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
4 Intake (Base + 3)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%
5 Intake (Base + 4)	95%	3%	2%	0%	5%	74%	5%	2%	18%	26%

2007

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed[2]	≥ 63 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 63 °F)
Existing	31%	67%	2%	0%	69%	24%	52%	2%	20%	76%
2 Intake (Base + 1)	66%	32%	2%	0%	34%	51%	25%	4%	20%	49%
3 Intake (Base + 2)	92%	9%	2%	0%	10%	69%	7%	4%	20%	31%
4 Intake (Base + 3)	97%	1%	2%	0%	3%	76%	1%	4%	20%	24%
5 Intake (Base + 4)	97%	1%	2%	0%	3%	76%	0%	4%	20%	24%

2008

Intake Configuration[1]	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed[2]	≥ 64 °F Unavail[3]	No Water ≥ Target[4]	Potential Impact (AF < 64 °F)
Existing	49%	49%	3%	1%	52%	38%	38%	3%	21%	62%
2 Intake (Base + 1)	74%	22%	3%	1%	26%	59%	17%	3%	21%	41%
3 Intake (Base + 2)	93%	2%	3%	1%	7%	75%	2%	3%	21%	25%
4 Intake (Base + 3)	93%	2%	3%	1%	7%	75%	2%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	3%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration[1]	May-Oct Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact	Annual Diversion: No Impact	Missed[2]	Unavail[3]	No Water ≥ Target[4]	Potential Impact
Existing	22%	76%	2%	1%	79%	17%	61%	3%	19%	83%
2 Intake (Base + 1)	62%	35%	2%	1%	38%	50%	28%	3%	19%	50%
3 Intake (Base + 2)	78%	19%	2%	1%	21%	64%	14%	3%	19%	36%
4 Intake (Base + 3)	88%	10%	2%	1%	12%	70%	8%	3%	19%	30%
5 Intake (Base + 4)	92%	5%	2%	1%	7%	74%	4%	3%	19%	26%

Table 11

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head - 15

2030 Demand 28,700 AF

(Units = AF)

2002

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water ≥ Target	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water ≥ Target	Potential Impact (AF < 62 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	5,651	16,377	229	0	14,606	5,009	15,036	473	5,521	22,812	330	350			
2 Intake (Base + 1)	15,610	5,420	229	0	6,649	15,575	6,809	473	5,521	13,025	400				15
3 Intake (Base + 2)	22,070	3	229	0	229	22,395	479	473	5,521	6,005	400	430			15
4 Intake (Base + 3)	22,090	3	229	0	229	22,395	479	473	5,553	6,005	400	430	440		15
5 Intake (Base + 4)	22,090	3	229	0	229	22,395	479	473	5,553	6,005	400	420	430	440	15

2003

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,534	19,217	1,506	0	20,724	1,745	23,039	1,909	5,303	26,951	338	350			
2 Intake (Base + 1)	15,575	4,875	1,506	0	6,383	15,575	5,012	1,909	5,303	17,625	410				15
3 Intake (Base + 2)	20,649	102	1,506	0	1,609	21,586	102	1,909	5,303	7,014	400	440			15
4 Intake (Base + 3)	20,649	102	1,506	0	1,609	21,586	102	1,909	5,303	7,014	400	430	440		15
5 Intake (Base + 4)	20,649	102	1,506	0	1,607	21,586	102	1,909	5,303	7,014	400	420	430	440	15

2004

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	6,810	14,225	559	595	15,448	6,652	14,226	745	6,943	21,920	333	350			
2 Intake (Base + 1)	14,946	6,090	559	595	7,312	14,946	7,095	745	6,943	13,784	383				15
3 Intake (Base + 2)	19,883	1,152	559	595	2,375	19,883	1,153	745	6,943	8,847	383	410			15
4 Intake (Base + 3)	19,883	1,153	559	665	2,375	19,883	1,153	745	6,943	8,847	383	410	440		15
5 Intake (Base + 4)	19,883	1,152	559	663	2,375	19,883	1,153	745	6,943	8,847	383	410	430	440	15

2005

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	444	20,607	1,207	0	21,814	656	21,472	1,306	4,626	28,004	330	350			
2 Intake (Base + 1)	12,808	4,249	1,207	0	9,451	12,008	9,291	1,306	4,626	15,892	410				15
3 Intake (Base + 2)	17,999	3,053	1,207	0	4,259	17,359	4,089	1,306	4,626	10,701	410	440			15
4 Intake (Base + 3)	18,098	2,983	1,207	0	4,190	19,105	2,983	1,306	4,626	9,595	400	430	440		15
5 Intake (Base + 4)	18,098	2,983	1,207	0	4,190	19,105	2,983	1,306	4,626	9,595	400	420	430	440	15

2006

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	1,635	18,903	1,720	0	20,623	1,879	19,766	1,846	5,189	26,801	330	350			
2 Intake (Base + 1)	13,312	7,223	1,720	0	8,946	13,312	8,354	1,846	5,189	15,368	410				15
3 Intake (Base + 2)	19,532	1,007	1,720	0	2,726	20,659	1,007	1,846	5,189	8,041	400	440			15
4 Intake (Base + 3)	19,976	563	1,720	0	2,283	21,102	563	1,846	5,189	7,593	400	430	440		15
5 Intake (Base + 4)	19,976	563	1,720	0	2,283	21,102	563	1,846	5,189	7,598	400	420	430	440	15

2007

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water ≥ Target	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water ≥ Target	Potential Impact (AF < 63 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	5,860	14,839	559	0	15,398	5,960	14,839	424	5,653	21,153	330	350			
2 Intake (Base + 1)	13,663	8,036	559	0	8,595	15,663	8,101	424	5,653	15,027	380				15
3 Intake (Base + 2)	18,735	2,963	559	0	3,522	18,736	3,028	1,282	5,653	9,364	380	420			15
4 Intake (Base + 3)	21,341	358	559	0	317	21,341	424	1,282	5,653	7,359	370	410	[illegible]		15
5 Intake (Base + 4)	21,683	0	559	0	559	21,765	6,447	1,282	5,653	6,335	360	400	420	430	15

2008

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	10,553	12,467	871	263	11,670	13,638	13,457	871	5,773	17,110	330	350			
2 Intake (Base + 1)	15,505	5,599	871	262	6,752	15,505	5,593	871	5,773	12,242	370				15
3 Intake (Base + 2)	20,705	399	871	283	1,553	22,305	399	871	5,773	7,043	372	410			15
4 Intake (Base + 3)	20,705	399	871	282	1,553	22,305	399	871	5,773	7,043	372	410	440		15
5 Intake (Base + 4)	21,205	0	871	283	1,153	21,505	0	871	5,775	6,544	360	393	410	440	15

Mean

Intake Configuration	May-Oct Diversion: No Impact	Missed	Unavail	No Water ≥ Target	Potential Impact	Annual Diversion: No Impact	Missed	Unavail	No Water ≥ Target	Potential Impact	Other Intakes: 1 (ft msl)	2 (ft msl)	3 (ft msl)	4 (ft msl)	Min Head (ft msl)
Existing	3,790	15,177	950	125	17,462	4,900	16,730	1,233	5,545	23,556	330	350			
2 Intake (Base + 1)	12,738	4,442	950	125	9,526	12,740	8,907	1,233	5,545	15,828	410				15
3 Intake (Base + 2)	16,325	4,298	950	125	5,394	17,433	4,287	1,302	5,545	11,130	370	410			15
4 Intake (Base + 3)	19,215	1,958	950	115	3,043	18,721	1,956	1,302	5,545	8,547	370	410	430		15
5 Intake (Base + 4)	20,237	906	952	115	2,050	21,217	1,109	1,302	5,545	7,855	370	410	430	440	15

Table 12

Comparison of Alternative Intake Configurations

Potential Impact to Folsom CWP

Minimum Intake Head = 15

2030 Demand 28,700 AF

(Units = %)

2002

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water ≥ Target	Potential Impact (AF < 62 °F)	Annual Diversion: No Impact (AF ≥ 62 °F)	≥ 62 °F Missed	≥ 62 °F Unavail	No Water ≥ Target	Potential Impact (AF < 62 °F)
Existing	23%	74%	1%	0%	75%	20%	58%	2%	20%	70%
2 Intake (Base + 1)	72%	25%	1%	0%	30%	55%	24%	2%	20%	45%
3 Intake (Base + 2)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%
4 Intake (Base + 3)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%
5 Intake (Base + 4)	99%	0%	1%	0%	1%	77%	2%	2%	20%	23%

2003

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)
Existing	7%	86%	7%	0%	93%	6%	70%	7%	17%	94%
2 Intake (Base + 1)	71%	22%	7%	0%	29%	55%	21%	7%	17%	45%
3 Intake (Base + 2)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%
4 Intake (Base + 3)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%
5 Intake (Base + 4)	93%	0%	7%	0%	7%	76%	0%	7%	17%	24%

2004

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)
Existing	31%	64%	3%	3%	69%	24%	50%	3%	24%	76%
2 Intake (Base + 1)	67%	27%	3%	3%	33%	52%	21%	3%	24%	48%
3 Intake (Base + 2)	83%	5%	3%	3%	11%	69%	4%	3%	24%	31%
4 Intake (Base + 3)	83%	5%	3%	3%	11%	69%	4%	3%	24%	31%
5 Intake (Base + 4)	83%	5%	3%	3%	11%	69%	4%	3%	24%	31%

2005

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)
Existing	2%	93%	5%	2%	98%	2%	75%	7%	16%	98%
2 Intake (Base + 1)	58%	37%	5%	2%	42%	45%	32%	7%	16%	55%
3 Intake (Base + 2)	81%	14%	5%	2%	19%	67%	14%	7%	16%	33%
4 Intake (Base + 3)	81%	13%	5%	2%	19%	67%	10%	7%	16%	33%
5 Intake (Base + 4)	81%	13%	5%	2%	19%	67%	10%	7%	16%	33%

2006

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)	Annual Diversion: No Impact (AF ≥ 60 °F)	≥ 60 °F Missed	≥ 60 °F Unavail	No Water ≥ Target	Potential Impact (AF < 60 °F)
Existing	7%	85%	8%	2%	93%	7%	69%	6%	18%	93%
2 Intake (Base + 1)	60%	32%	8%	2%	40%	46%	29%	6%	18%	54%
3 Intake (Base + 2)	87%	5%	8%	2%	13%	72%	4%	6%	18%	28%
4 Intake (Base + 3)	90%	3%	8%	2%	10%	74%	2%	6%	18%	26%
5 Intake (Base + 4)	90%	3%	8%	2%	10%	74%	2%	6%	18%	26%

2007

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water ≥ Target	Potential Impact (AF < 63 °F)	Annual Diversion: No Impact (AF ≥ 63 °F)	≥ 63 °F Missed	≥ 63 °F Unavail	No Water ≥ Target	Potential Impact (AF < 63 °F)
Existing	30%	67%	3%	0%	69%	24%	53%	3%	22%	76%
2 Intake (Base + 1)	61%	36%	3%	0%	39%	48%	26%	3%	22%	52%
3 Intake (Base + 2)	84%	13%	3%	0%	16%	65%	11%	4%	22%	35%
4 Intake (Base + 3)	96%	2%	3%	0%	5%	74%	1%	4%	22%	26%
5 Intake (Base + 4)	97%	0%	3%	0%	3%	76%	0%	4%	22%	24%

2008

Intake Configuration	May-Oct Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)	Annual Diversion: No Impact (AF ≥ 64 °F)	≥ 64 °F Missed	≥ 64 °F Unavail	No Water ≥ Target	Potential Impact (AF < 64 °F)
Existing	48%	47%	4%	1%	52%	38%	38%	3%	21%	62%
2 Intake (Base + 1)	70%	25%	4%	1%	30%	56%	20%	3%	21%	44%
3 Intake (Base + 2)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
4 Intake (Base + 3)	93%	2%	4%	1%	7%	75%	1%	3%	21%	25%
5 Intake (Base + 4)	95%	0%	4%	1%	5%	76%	0%	3%	21%	24%

Mean

Intake Configuration	May-Oct Diversion: No Impact	Missed	Unavail	No Water ≥ Target	Potential Impact	Annual Diversion: No Impact	Missed	Unavail	No Water ≥ Target	Potential Impact
Existing	22%	74%	4%	1%	78%	17%	50%	4%	13%	83%
2 Intake (Base + 1)	57%	38%	4%	1%	43%	49%	31%	4%	13%	51%
3 Intake (Base + 2)	78%	15%	4%	1%	24%	62%	15%	5%	13%	38%
4 Intake (Base + 3)	88%	9%	4%	1%	14%	69%	7%	5%	13%	31%
5 Intake (Base + 4)	92%	4%	4%	1%	9%	73%	4%	5%	13%	27%