



TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD • SONORA, CA 95370
(209) 532-5536 • Fax (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Dennis Dahlin
Ron W. Ringen
Delbert Rotelli

October 18, 2012

State Water Resources Control Board
Division of Water Rights
Attn: Jeffrey Parks
P.O. Box 2000
Sacramento, CA 95812

RE: Comment Letter – Pinecrest Conditions Workshop submitted by Tuolumne Utilities District (TUD)

Dear Mr. Parks,

The Tuolumne Utilities District (TUD) appreciates the opportunity to submit comments on the draft modification to the Water Quality Certification (Certification) conditions – Pinecrest Reservoir Lake level Elevation Conditions for the Spring-Gap Stanislaus Hydroelectric Project. As you are aware, 95% of the water supply for the residents, businesses, agriculture and visitors of Tuolumne County comes from the South Fork Stanislaus River system, of which Pinecrest Reservoir serves as the source of primary supply during the summer. Our community has a long-term, vested interest in the outcome of this decision and simply cannot allow for the entertainment needs of seasonal recreationalists to be placed in a position of superiority over that of the water supply needs of an entire county.

The laws and constitution of the State of California, past actions of the State Water Board (SWB), court decisions and common sense do not support the lack of balance exhibited in the staff recommendation to fix the minimum elevation of Pinecrest Reservoir at a level nearly two feet above the 30+ year average operating elevation of the reservoir. The minimum elevations proposed by State Water Board staff are not supported by the record, are arbitrary, capricious, and lack any basis in fact. The Federal Clean Water Act was enacted to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” “Section 401 of the Clean Water Act requires every applicant for a federal license or permit which may result in a discharge to navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act.” In order to implement these provisions of the Clean Water Act, the Regional Water Quality Control Boards have adopted water quality control plans (basin plans) for each watershed basin in the State.

The Regional Water Quality Control Board of the Central Valley Region has adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (the “Basin Plan”) and implements portions of it through the 401 certification process. Page i-1.00 of the Basin Plan provides: “according to Section 13050 of the California Water Code, Basin Plans consist of a designation or establishment for the waters within a specified area of beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives.” Thus, basin plans

designate the beneficial uses of waters within each watershed basin, and water quality objectives designed to protect those uses.

Although this is the legal background for the SWRCB's 401 certification program, the SWRCB does not have the authority to issue 401 certifications unsupported by water quality objectives, analyses, or standards. Yet this is what the SWRCB is attempting to do. The SWRCB requirements are not supported by specific rationales or evidence as to how they relate to the beneficial uses of the waters in the project area, let alone any specific water quality standards or objectives. Instead, the SWRCB appears to impose its own requirements and claim that it can directly regulate a stream system under the Clean Water Act regardless of whether the regulation has anything to do with water quality or whether it is meeting its beneficial use designation. In this case, the SWRCB has exceeded its jurisdiction and provides no evidence or rationale for imposing additional requirements to meet specific water quality objectives or the beneficial uses that are already being met.

Put differently, the specific water quality standards to be met are not identified and the staff decision contains no evidence or analysis of how Pinecrest Lake Reservoir levels below 5,608' before Labor Day or the additional stream flow requirements will affect water quality or be affected by continued consumptive uses below that level. It appears this elevation has been selected merely because lower levels may impair access to a boat dock. Furthermore, there is evidence that holding water back to maintain reservoir levels at 5608' through Labor Day has the potential to affect water quality downstream. Specifically, such requirements can cause Lyons Reservoir to drop below 1500 acre-feet in storage. This has been proven to cause water quality concerns such as higher water temperatures and releases, and algae blooms, which then result in treated water taste and odor concerns to downstream domestic customers.

In summary, SWRCB staff has not balanced the beneficial uses within the watershed—instead, it has given recreational use (which is not even an authorized use of PG&Es water right¹) total dominance over water use. The only justification that the SWRCB staff for this decision is that some of the landowners who live on Pinecrest oppose lowering the water level any further—while the rest of Tuolumne County shrivels and blows away.

This is inconsistent with and in violation of California law:

Water Code Section 106 provides:

It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and the next highest use is for irrigation.

Water Code Section 1254 provides:

In acting upon applications to appropriate water the board shall be guided by the policy that domestic use is the highest use and irrigation is the next highest use of water.

And Water Code Section 106.5 provides:

It is hereby declared to be the established policy of this State that the right of a municipality to acquire and hold rights to the use of water should be protected to the fullest extent necessary for existing and future uses, but that no municipality shall acquire or hold any right to waste water, or to use water for other than municipal purposes, or to prevent the appropriation of water in excess of its reasonable and existing needs to useful purposes by others subject to the rights of the municipality to apply such water to municipal uses as and when necessity therefore exists.

These three statutes individually, and cumulatively, stand for the proposition that water for domestic use takes precedence over all other uses. This is not to say that in the event of competing uses lower priority uses have to yield in total. To the contrary, what we are saying is that domestic use must be weighed with other competing uses and then given deference to ensure domestic needs are adequately met. Ignoring these rules of law and issuing a Certification that puts recreation in front of domestic and municipal use is a legally reversible error. By maintaining a reservoir elevation of 5608', only TUD's domestic water customers suffer while the landowners who live around Pinecrest sail their boats around a full lake.

The water stored behind Strawberry Dam is based on a 1911 water right adjudicated, originally, to the Sierra and San Francisco Power Company in the 1928 Stanislaus River Decree. Under the Decree, 16,710 acre-feet of water was adjudicated to PG&E's predecessor-in-interest Sierra and San Francisco Power Company for the generation of electrical energy and public service (i.e. water supply). "Recreation" is not an authorized purpose of use and if the SWRCB desires to allow the use of Pinecrest for recreation, it must first approve a petition to change PG&E's water right for the new use or PG&E must go back to the court and ask for a change in the adjudication.

Since the original Draft Water Quality Certification for this project was circulated in 2008, TUD has worked cooperatively with PG&E and State Board staff to provide data and evidence that a fixed minimum elevation at Pinecrest Reservoir was not only inconsistent with the historical operating regime of the lake, but also that the originally proposed minimum elevation proposed at 5610 above sea level (ASL) was impossible to maintain in most water years, even without diverting any water to TUD.

In fact, TUD, State Water Board staff, PG&E and dozens of stakeholders (Stanislaus Planning Action Team – or SPLAT) worked diligently for years to come to agreement on all resource measures to be included in the PG&E relicensing. Although the State Board staff never formally endorsed or adopted the resource measures, all agreed upon measures were included or referenced in the original project Water Quality Certification, except, very notably, one measure related to the surface elevation of Pinecrest Lake.

It was agreed upon in SPLAT, as well as reflected in the US Forest Service 4E conditions and approved in the Federal Environmental Impact Statement (FEIS) that the elevation of Pinecrest Lake is to be kept as close to 5610 ASL for as long as possible following end of spill. An annually negotiated lake drawdown curve was required to be conducted each year, and a lake level dispute resolution process was developed. **NO MINIMUM LAKE LEVEL ELEVATION WAS EVER CONTEMPLATED BY THE PARTIES TO SPLAT** and therefore, through all the years of negotiation, there were never any impacts anticipated to the water supply of Tuolumne County. The lake had never been operated with a fixed minimum

elevation. Had a minimum elevation been discussed during SPLAT, many stakeholders would have demanded an analysis of the impacts of a reduced summertime water supply on Tuolumne County and its environment, economy and citizens. The Water Board adopted the minimum elevation in direct conflict with the SPLAT agreements and without any input by TUD or PG&E, and without any analysis of the impacts on the water supply of an entire region of the state.

In addition, during face to face communication with State Board staff, PG&E and TUD realized that the State Board had used flawed hydraulic model assumptions in issuing its determination that the fixed elevation of 5610 ASL meets the demands of PG&E, TUD and modified in stream flow requirements. Due to these facts, separate petitions for reconsideration were filed by PG&E and TUD. These petitions for reconsideration, and all the supporting documents, are incorporated by reference into this letter and we demand that they be part of the administrative record for the SWRCB decision.

In these petitions, both parties clearly articulated that the fixed elevation restriction of 5610 ASL at Pinecrest was not supported by the project's administrative record. Over the ensuing months, TUD, PG&E, State Board staff, the US Forest Service and CDFG negotiated lake level conditions. In its analysis of the Project, the State developed Initial Study denied approval of a "target" elevation, stating that the effects on recreation of a fluctuating water surface elevation, as allowed and contemplated under the SPLAT agreements and FEIS, could not adequately be analyzed under CEQA. Therefore, in negotiations toward consideration of a modified lake level, the State Board staff proposed that PG&E analyze the effects on recreation of a fluctuating lake level.

This concept was incorporated into a revised Certification that was ultimately approved by the SWRCB on June 16, 2009, but only after TUD filed a Supplemental Petition for Reconsideration and a Second Supplemental Petition for Reconsideration, both of which are incorporated by reference into this letter. Notably, the most frustratingly, TUD's acceptance of the revised Certification was made expressly contingent upon the State Water Resources Control Board, not staff, making the decision on the new lake level (see TUD's Second Supplemental Petition for Reconsideration). Yet, here we are today with staff attempting to approve a lake level in direct violation of the settlement reached in 2009.

The record reveals that the Lake Level Study (Study) was completed and approved by State Board staff on June 17, 2011. The Study identified only minor impacts to recreation over the range of lake elevations studied. All major features of the lake, including boat ramp, boat docks and beaches remain fully accessible and functional down to elevation 5600 ASL.

The request for modified elevation submitted by PG&E on December 16, 2011 was directly supported by substantial factual information, including historical and projected future lake operating data, the findings of the Lake Level Study and the State Board staff's request to have an identified elevation, or range of elevations which was easily enforceable. Unfortunately, after over a decade of meetings, successful negotiations among multiple state and local agencies, and at significant cost to the customers of TUD, State Board staff has developed a recommended modified lake level which is not supported by accurate data or analysis. In fact, in developing the recommended modified elevations listed in the (undated) October 4, 2012 Workshop Notice, State staff disregarded the findings and recommendations

of the PG&E conducted Lake Level Study, and the Request for Modified lake Level submitted by PG&E in December 2011, the results of which were not even discussed at the recent October 4th workshop in Sonora. Instead, State Board staff during the October 4th workshop stated that they used the following discussion, data and analysis in arriving at the State recommended modified lake level:

1. **TUD water demand** was met in 2012 without dropping the lake below 5608.
2. The **TUD Urban Water Management Plan** states that adequate water supply is available to TUD through 2035.
3. State Water Board uses Department of Transportation **population data** which show flat or declining growth while TUD's Urban Water Management Plan assumes steady population growth through 2035, resulting in an overstated future water demand.
4. Evaluation of **historical Pinecrest lake levels** is not comparable. The dam structure at Pinecrest leaked 10cfs in the 1980's and 20cfs in the 1990's, causing the lake level to operate at a lower elevation by Labor Day. Repair work by PG&E in 2002 reduced the leakage to 1-5cfs.
5. Each foot in lake elevation equals 260 acre feet of water. A claimed **40% leakage in the ditch** delivery system results in only 156 acre feet of this water available to TUD customers. In addition, a claim that the use of the Tuolumne Ditch System is a waste and unreasonable use of water was submitted via the internet reporting system, has yet to be substantiated or investigated by the State Board, but has been recognized as a potential valid claim for the purposes of denying the PG&E modified lake level request and reopening the Certification to modify its conditions related to water use by TUD.
6. The Lake Level Study and comments received from Pinecrest recreationalists reveal that hazards and **loss of recreation viability** begin to appear below elevation 5606.

Each of the above factors used by State Board staff in its decision to deny PG&E's request for a modified lake level, and instead develop an arbitrary minimum lake level restriction of 5608 and 5606 ASL, is uninformed, incorrect, or unsupported by the record as further detailed below.

TUD Water Demand 2012

The statement that TUD water demand would have been met in 2012 under the State recommended modified lake level restrictions of 5608 and 5606 is demonstrably misleading which leads the reader to a false conclusion. The only reason TUD was able to meet water demands in 2012 was because PG&E decided to forego ALL water deliveries into its Philadelphia ditch system. Apparently State Water Board staff believes that PGE will be willing to year after year forego utilization of its water rights and the development of power and maintenance of its facilities in order to deliver small amounts of water to TUD and to keep an artificially high lake level in Pinecrest. PG&E cannot do this year after year without jeopardizing its water rights, the ditch, and the lost power production at the Spring Gap Powerhouse. Thus, the concept that TUD "met" its water demand is a half-truth that staff is using to force a predetermined result, one that we attempted to avoid by demanding in our second supplemental petition that the lake level decision not be made by staff, but by the SWRCB.

2012 was not the earliest end of spill on record. State staff said in his presentation that the end of spill was June 2 in 2012. However, precipitation on and about June 3, 2012 postponed the end of spill to June 11, 2012 at Pinecrest and June 14, 2012 at Lyons. The earliest end of spill on record (1974-2012) was about June 9th in 2007, with a resulting Labor Day Pinecrest elevation of 5605.2.

In its determination that TUD had adequate water supply in 2012, the State Staff uses the hydrology data from only one year (2012) to determine Tuolumne County's domestic water supply will be met for the next 35 years. This methodology is simply not supportable. Climate, hydrology, water usage patterns and needs can vary significantly from year to year and water supply projections are always performed based on multiyear averages, as well as evaluation of worst and best case supply scenarios. The State chose to focus on a single year, rather than analyze the significant data submitted for the record by TUD and PG&E prior to 2012, all of which supports the decision to approve a modified lake level of lower than 5606. State Board staff presented no valid data, analysis or assessments in support of its decision to deny PG&E's request for modified lake level and, instead, developed an arbitrary and capricious lake level proposal without any valid justification for doing so.

Had State Board staff analyzed the evidence submitted in support of the PG&E modified lake level request, it would have been concluded that the reason PG&E was able to maintain the Labor Day elevation at 5608 in 2012 was due to:

- PG&E eliminated flows to the Philadelphia Diversion. Because of this approximately 800 acre-feet was diverted by PG&E to Lyons Reservoir, that otherwise would have been required from Pinecrest prior to Labor Day. There is 533 acre feet stored in Pinecrest between elevations 5608 and 5606. Had these 800 acre feet been diverted from Pinecrest rather than diverted from the normal Philadelphia flows, the Pinecrest elevation would have dropped over two feet to 5606 or below.
- Water Conservation measures implemented by TUD reduced customer water consumption to an estimated 161 gallons per capita day (GPCD), which is below the required 2020 conservation targets of 165 GPCD.
- Water storage in Lyons was allowed to be reduced to 1600 acre feet, which due to the low water year and warm end of summer temperatures, resulted in a significant increase in algae growth and water treatment costs and effort, as well as many customer water taste and odor complaints.

State staff would have further concluded that PG&E does not have the obligation to discontinue flows to the Philadelphia and has historically not done so. Conversation with TUD staff and analysis of TUD's Urban Water Management Plan would have revealed that further water conservation below that achieved during 2012 would be unreasonable to assume due to demand hardening at such low consumption levels. Therefore, State staff's use of the 2012 water year as the baseline "norm" is inaccurate, inappropriate and misleading.

TUD Urban Water Management Plan and Adequacy of Water Supply Through 2035

State Board staff in its fact sheet and PowerPoint presentation issued for the October 4th meeting, recognized that TUD's water supply is linked to the operation of Pinecrest. In fact, the presentation at the meeting clearly recognized that the community relies on water supplies from Pinecrest and staff claims that based on TUD's Urban Water Management Plan, there is adequate supply from Pinecrest through 2035. State Board staff stated during the meeting that since TUD referenced the Certification's lake level restriction in their UWMP, they assumed that TUD had reflected the minimum lake level restriction in its future water supply projections.

This is a false assumption. In development of its UWMP, TUD did not assume that access to its only water supply would actually be restricted, due to the fact that the PG&E conducted Lake Level Study had just been completed and revealed that the lake could be operated over its historical Labor Day ranges of 5608 to 5600 without significant impact to recreation. In addition, at the time of preparation of the UWMP, no final decision on the minimum lake level had been issued by the State Board; therefore it was assumed that TUD could receive water deliveries from Pinecrest so long as justification was submitted, pursuant to the provisions of Condition #5 of the Certification.

Had State Board staff contacted TUD staff or reviewed the supporting narrative contained in the TUD UWMP in making its claim that adequate water supply is available to TUD through 2035, they would have read that the water supply available as detailed in Table 6.5 of the TUD UWMP, is based on the historic reliability and availability of the South Fork of the Stanislaus River and that it is presented in terms of seasonal and climatic shortages and does NOT identify any specific Pinecrest Lake Level constraint¹. The UWMP also properly depicts that the vulnerability of the TUD water supply is the water elevation at Pinecrest at Labor Day. The UWMP also depicts that a Dry Year, early end of spill requires the delivery of water from Pinecrest prior to Labor Day, which is not allowed under the staff proposed lake level modifications for the revised Certification. Included in this response as **Attachment 1** is a worksheet showing the water supply calculations used to prepare the TUD UWMP; modified with the lake operated pursuant to the 5608 minimum lake level restriction currently contained in the Certification. Attachment 1 reveals that where TUD had adequate water supply available to support normal growth in demand through 2035, when the current lake level restrictions are factored in, as of 2012 there is no water supply available to support the future growth and economic development of Tuolumne County.

The State Board Staff indicated several times during the October 4, 2012 workshop that it is not the intent of the Certification to leave TUD without water or impact its future reasonable growth. However, every proposed restriction on the elevation of Pinecrest since the initial Certification was issued in 2008 has disregarded the evidence, analysis and assessments presented by PG&E and TUD, in favor of developing an "enforceable" lake level elevation which severely restricts access to water supply in many years.

¹ TUD Urban Water Management Plan, Chapter 6, Water Supply Reliability

The State Board staff recommended minimum lake level elevations of 5608 and 5606 do not allow for any increases in water consumption as estimated in TUD's UWMP and therefore cannot be supported.

Variations in Population Data Used

The State staff refers to the TUD UWMP regarding growth statistics and disagreed with the TUD analysis and used their own growth figures without reviewing the UWMP narrative which supports the data presented. The state staff did not contact TUD to discuss this perceived discrepancy. In an effort to prove that TUD had presented inflated population growth and water consumption figures in its UWMP, state staff presented figures detailing that growth in Tuolumne County would be less than 1% or even shrinking. There are several reasons that state staff is incorrect in its assumptions regarding growth in TUD customers and anticipated water supply for the next 35 years:

Included with this response as **Attachment 2** is a memorandum which is contained within the UWMP and provides discussion and analysis supporting the growth projections contained in TUD's UWMP. This memorandum discusses the fact that much of the growth in TUD comes from system acquisitions of private/mutual water companies that already exist within the county. This growth is not population growth from Census data but is growth that TUD must expect over the next 35 years for TUD. Over the past decade, TUD has grown significantly from these system acquisitions. Attachment 2 clearly outlines this issue of system acquisition and identifies those existing water companies within the TUD service area who will likely be acquired by TUD over the next 20 years as their systems get older and require higher levels of repair and renovation and require higher levels of (state) certifications for staff due to ever increasing federal and state regulations for delivery of safe water. **Attachment 3** contained herein details the growth in water supply consumption for all purposes including new development and small system acquisitions.

In addition, the state staff did not consider that TUD serves a significant transient population. Statistics for the City of Sonora reveal that daytime population in the city can grow from the 5,000 resident population to over 20,000 during the tourist season and including those who travel to Sonora for employment. This level of tourist population influx is not uncommon and results in spikes in mid-summer water demand, which occurs at the same time as the restrictions on the withdrawal of water from Pinecrest Lake. This increased water demand is not reflected in the population growth statistics used by the state staff.

TUD worked extensively with local planning staff from the City and County agencies to develop the growth projections contained in the UWMP; which contains accurate population and water consumption growth projections and includes all estimated normal growth, system acquisition growth and transient population growth.

The TUD UWMP uses a population (system) growth of 2.27% for long range planning of infrastructure. However, water supply growth in TUD, as detailed in Attachment 3, will be less than 2.27%. The reason is that many of the systems anticipated to be acquired by TUD already either use raw water from TUD now. However there are many systems yet to be acquired using water from wells or other sources that

will be absorbed into the TUD system and will equate to higher growth for water supply than reflected in a general population growth from standard census data. TUD is using a water supply growth of 1.45% in the next 20 years and 1.08 % growth beyond that.

This population and water supply usage growth information is presented to validate the water supply projections contained within the TUD UWMP. As stated previously, the 5608 and 5606 lake level restrictions are based upon a multitude of false assumptions and provide no water supply available for future growth of the region.

Historical Pinecrest Lake Levels

The next faulty assumption made by State Board staff was to assume that because a leak below Pinecrest had been repaired historic lake levels could not be compared to lake levels today. This assumption is wrong on several accounts.

On a number of occasions, TUD has submitted data regarding the historical operating levels of Pinecrest Lake at Labor Day. The data reveals that the Labor Day elevation of the reservoir has ranged between 5610 and 5600, based on climate, hydrology, and the water needs of PG&E and TUD. In its presentation on October 4, 2012, State Board staff attempted to discredit this data by stating that leaks in the Pinecrest dam structure in the amount of 10cfs in the 1980's and 20cfs in the 1990's caused the lake to operate at a lower average Labor Day elevation. Staff indicated that since the leaks in the dam were repaired in 2002, the reservoir has operated at a higher Labor Day elevation.

In reality, the PG&E instream flow compliance location is downstream of dam and would measure and include any dam leakage, plus release water in determining instream flows. If the dam was leaking in the amount stated by State staff, PG&E would simply reduce or eliminate the amount of water released through the discharge valve. The result is no change in average lake elevation based on whether the dam is leaking 10cfs or 10cfs is being released by PG&E through the discharge valve.

If the dam was leaking after end of spill, then that water would have gone to Lyons Reservoir. With the dam leaks now fixed, less water will now be flowing to Lyons Reservoir. Therefore, leakage from the dam would reduce the likelihood that TUD would require water deliveries from Pinecrest between end of spill and Labor Day. In fact, if 20cfs were leaking continuously from the dam, TUD would not need additional water released from Pinecrest in most years. Fixing the leaks on the dam provide less water to TUD, not more.

Effect of Claimed Canal Leakage on Water Supply

The SWB needs to explain what their point is here. Where the Pinecrest Lake Level ends up at Labor Day is a function of climate and hydrological conditions not TUD demand. The amount of snow in the watershed and the timing of the run off effect how much storage will be available for TUD and what Pinecrest Lake elevation will be on Labor Day.

The State has wrongfully inserted the Waste and Unreasonable Use Charge into the certification. At this point in time this is only an unsubstantiated claim by a member of the general public who has no

knowledge of the district operations. The State appears to be presuming that there is a wasteful use of water and is incorporating that conclusion into their analysis. If State Board staff believes that TUD's ditch losses amount to a waste and unreasonable use of water, then set the matter for a hearing where TUD will be able to present its evidence and witnesses and cross-examine the State witnesses. By simply assuming, based upon an unsubstantiated claim, that TUD's ditch losses amount to a waste and unreasonable use, without providing the hearing and due process of law required by our State and Federal constitutions, amounts to a denial of TUD's rights and based upon our conversations with our attorney, is legally reversible error.

Thus, if State Board staff wishes to pursue this issue, then give TUD notice and a hearing during which it can defend itself. If State Board staff prevails, any cease and desist order issued could require TUD to reduce losses. Such restrictions would be consistent with and entirely compatible with the lake level arrived at in this process. There is no need, and no legally defensible manner, to conflate these two issues and backdoor an unsubstantiated assertion into the lake level process.

As proposed, the staff recommendation allows for reopening the certification to address the result of the unsubstantiated waste and unreasonable use claim, which is inappropriate. As discussed above, the appropriate procedure in this situation is to maintain separation of the two processes. There is no reason to "reopen" the certification if State Board staff prevails on the waste and unreasonable use claim; any cease and desist order can address any waste or unreasonable use found by the Board.

Loss of Recreation Viability

The intent of the State Water Board staff in requiring the development of the Pinecrest lake Level Study was to provide the analysis necessary to determine the effects on recreation of Pinecrest Lake level which fluctuated, as it always has throughout history, at a range between 5610 and 5600. In addition, the Study was intended to provide the evaluation and evidence necessary to support State Board adoption of a modified lake level in an amended Certification; if requested by PG&E.

State Board staff, PG&E, TUD, US Forest Service and California Department of Fish and Game met on a number of occasions in Sacramento and on site in Pinecrest to negotiate and develop the Study Plan, which was ultimately published publicly and approved by State Board staff. The final Lake Level Study was completed pursuant to the Plan, publicly circulated and accepted by the State Board staff.

State staff presented during the October 4, 2012 workshop that the majority of the comments received regarding the final Lake Level Study opposed lowering the Labor Day lake level. These comments do not invalidate the findings of the Study, rather they attempt to influence the next step of the decision making, a request by PG&E for a modified lake level. As no data regarding the need for a lower modified lake level was contained within the Lake Level Study, these public comments were irrelevant to the matter of whether the fluctuating lake level impacts recreation.

TUD did not submit comments on the final Study, as the document was meticulously prepared in accordance with the Study Plan which was developed and approved by the agencies as detailed above.

Included herein as **Attachment 4** is the Executive Summary from the Lake Level Study. The Study compares the condition of recreation to the baseline; which is elevations above 5610. The baseline at 5610 is considered ideal for recreation. The Study reveals that throughout the range of elevations studied, recreation remains relatively unimpaired. All major recreation features such as the boat ramp, boat docks and beaches remain functional and easily accessible. The Study further details that recreational features such as beach surface degrade in some areas as the lake level drops, and improves as the lake drops a few feet further. Features such as the buoyed swim area reduce in size as the lake level drops. At some lower levels, tree stumps and boulders appear in the beach and swimming areas. According to the Study's Mitigation Plan, removal of rocks and stumps, installation of beach sand and installation of a modified swim buoy line will mitigate any impairment of recreation and return the condition of that feature to that of the(ideal) baseline.

There is no analysis or evidence contained in the State Board mandated Lake Level Study to substantiate the claim that the viability of recreation is permanently impacted or that any identified hazard cannot be mitigated. There is nothing contained in the record, or the Lake Level Study to validate the State Water Board Staff recommendation to fix the minimum elevation of Pinecrest at 5608 and 5606. In fact, it is deceptive for the State staff not to recognize that it required PG&E to develop the Study to justify a request for modified lake level with the intention that the Study would serve as the evidence needed to approve the modified minimum lake level. It appears that State staff blatantly disregarded the results of the Study, as well as the additional data submitted to support the request for modified lake level.

The Math Simply does not Work

From a very simple math perspective the lake levels selected by State Board have always been wrong. The end of spill is defined as when the surface elevation of Pinecrest drops below 5,617. Another way of saying this is the amount of water entering the lake is equal to or less than what is lost in the lake at elevation 5,617. The Certification has established increased minimum instream flows that, in and of themselves will lower the lake below the 5608 elevation.

In a dry year the minimum instream flow is 10 cfs in the river and the maximum flow in the Philadelphia canal is 6 cfs. As a practical operational point PG&E will hold the river at least one cfs above the minimum and hold the canal one cfs below the maximum. In a dry year with early end of spill such as this last one, that would mean 82 days at 16 cfs after the end of spill which would lower the lake to 5,607. This shows that the original proposed 5,608 elevation is impossible to achieve even without diversions to Lyons. In a normal year the instream flows increase to 15 cfs. In a normal year when the end of spill is after July 1, there will be up to 66 days at 20 cfs which would lower the lake to 5,607.6. This shows that even the revised elevation of 5,608 is impossible to achieve even without diversions to Lyons.

Additionally, the evaporation losses and the diversions by the USFS and the Pinecrest permittees will lower the lake level even farther. TUD has no objection to the instream flows but it is clear that the state has not adequately accounted for them in its selection of the target elevations.

Balancing of Uses

The State Board staff claimed in its presentation that one of its many obligations is to “balance beneficial uses.” However, we see no evidence of balancing in this situation. Over the past 38 years, Pinecrest has only maintained an elevation of 5608 at Labor Day 17 times; it has been below this level the majority of years. Considering that leaks in the dam have been fixed, providing less water to Lyons and TUD, releases from Lyons and Pinecrest have been increased which produces a net loss of water available and lower lake levels, it will be more likely in the future that the elevation of 5608 can be maintained. **Attachment 5** herein details the Labor Day elevation of Pinecrest Lake from 1974 to 2012.

Yet State Board staff claims it is attempting “balance” existing uses by requiring a new, and therefore, artificially high Labor Day lake level. Thus, what State Board staff is doing is much more than “balancing” existing uses; it is enhancing recreational uses over consumptive uses. There is no other explanation for what State Board staff is doing. Put differently, there is only a fixed amount of water available per year. In the past, this fixed supply has been shared among the various users. What State Board staff is now doing is transferring some of the water that had been historically used for consumptive uses to recreational uses so that the latter can continue for a longer period of time than has ever been possible. State Board staff is simply transferring water from one form of user to another based upon a value judgment that recreational uses, which are not authorized under PGE’s water rights, are more important than a water supply for tens of thousands of people.

State Board staff also refers to 14 letters it received that do not support lowering the lake level. Yet State Board staff fails to note that nearly all of these letters come from people who own cabins on the lake. Of course they are going to oppose lowering the lake level; they have the opportunity to get a free benefit from the State. Also worth noting is that many of these folks did not know what the historical lake levels have even been (one letter writer claims that any level below 5612’ exposes dangerous ravines), and make statement that are in direct conflict with the Lake Level Study prepared by PG&E. While the letters should be considered, it appears that State Board staff has elevated the recreational desires of 14 people over the health and safety needs of tens of thousands of people.

In closing, TUD and PG&E have submitted a request for modified Pinecrest lake Level which is supported by the record, the extensive analysis, the lake Level Study, public input and the law. In order to dedicate water supply to the future economic recovery of our region, we must have a predictable, long term water supply available. The State staff recommendation does not provide future predictability or reliability. With a fixed minimum reservoir elevation, there is no flexibility to ensure water supply today or in the future. No one can accurately predict the impact of Climate Change on our water supply; and flexibility in restrictions must take this into account, which the State staff recommendation does not.

TUD requests that the modified lake level proposal submitted by TUD and PG&E be approved as presented, by the State Water Board.

Sincerely,



Peter J. Kampa
General Manager, Tuolumne Utilities District

Cc: Charles Hoppin, chair SWRCB

TUOLUMNE UTILITIES DISTRICT

WATER SUPPLY ANALYSIS FOR A DRY PERIOD (South Fork Stanislaus River)

July - August constraint of the SWRCB 401 Certification Pinecrest Lake Level at Labor Day (5606)

Criteria:

Pinecrest remains at or above 5606 feet elevation at Labor Day

Lyons Reservoir Storage 1,500 AF Min.

Phase III water reduction in place ~350 acre-feet (Jul-Aug)

Calendar Year	TUD Treatment Plant Production (Surface) (ac ft)	Untreated Consumption (ac ft)	Total Consumption (ac ft)	Est. Ditch and system Operational Use (ac ft)	Total Main Canal volume (ac ft)	Est. Main Canal Operational Use	Total Avail. Supply SFSR (Jul-Aug) (ac ft)	Uncommitted Reserve (ac ft)	Open Conveyance System Conservation	Increased efficiency Treated Water System (ac ft)	Adjusted Reserves (ac ft)	Est. Dry Year Conservation (ac ft)
Starting Values	1,550	990					4,257					
2006												
2007	1,593	929	2,491	1,636	4,437	311	4,257	-180	0	0	-180	342
2008	1,662	974	2,603	1,780	4,713	330	4,257	-456	0	0	-456	358
2009	1,630	876	2,474	1,704	4,492	314	4,257	-235	0	0	-235	335
2010	1,549	856	2,375	1,624	4,300	301	4,257	-43	0	0	-43	323
2011	1,419	790	2,181	2,108	4,612	323	4,257	-355	0	0	-355	297
2012	1,529	967	2,466	1,487	4,251	298	4,257	6	0	0	6	343
2013	1,550	990	2,540	1,488	4,325	303	4,257	-68	5	5	-58	353
2014	1,572	1,001	2,573	1,514	4,390	307	4,257	-133	10	10	-113	357
2015	1,595	1,011	2,607	1,536	4,451	312	4,257	-194	15	15	-164	362
2016	1,618	1,022	2,641	1,558	4,510	316	4,257	-253	45	20	-188	366
2017	1,642	1,033	2,675	1,579	4,570	320	4,257	-313	50	25	-238	371
2018	1,666	1,045	2,710	1,599	4,630	324	4,257	-373	55	30	-288	375
2019	1,690	1,056	2,746	1,620	4,690	328	4,257	-433	60	35	-338	380
2020	1,714	1,067	2,782	1,642	4,752	333	4,257	-495	100	40	-355	385
2021	1,739	1,079	2,818	1,663	4,814	337	4,257	-557	100	40	-417	390
2022	1,764	1,090	2,855	1,685	4,877	341	4,257	-620	100	40	-480	395
2023	1,790	1,102	2,892	1,707	4,940	346	4,257	-683	100	40	-543	399
2024	1,816	1,114	2,930	1,729	5,005	350	4,257	-748	100	40	-608	404
2025	1,842	1,126	2,968	1,752	5,071	355	4,257	-814	100	40	-674	409
2026	1,869	1,138	3,007	1,775	5,137	360	4,257	-880	100	40	-740	415

ATTACHMENT 1

Calendar Year	TUD Treatment Plant Production (Surface)	Untreated Consumption	Total Consumption	Est. Ditch and system Operational Use	Total Main Canal volume	Est. Main Canal Operational Use	Total Avail. Supply SFSR (Jul-Aug)	Uncommitted Reserve	Open Conveyance System Conservation	Increased efficiency Treated Water System	Adjusted Reserves	Est. Dry Year Conservation
	(ac ft)	(ac ft)	(ac ft)	(ac ft)	(ac ft)		(ac ft)	(ac ft)	(ac ft)	(ac ft)	(ac ft)	(ac ft)
2027	1,896	1,151	3,047	1,798	5,204	364	4,257	-947	100	40	-807	420
2028	1,924	1,163	3,087	1,822	5,272	369	4,257	-1,015	100	40	-875	425
2029	1,951	1,176	3,127	1,845	5,342	374	4,257	-1,085	100	40	-945	430
2030	1,980	1,188	3,168	1,870	5,412	379	4,257	-1,155	100	40	-1,015	436
2031	2,008	1,201	3,210	1,894	5,483	384	4,257	-1,226	100	40	-1,086	441
2032	2,038	1,214	3,252	1,919	5,554	389	4,257	-1,297	100	40	-1,157	447
2033	2,060	1,214	3,274	1,944	5,607	392	4,257	-1,350	100	40	-1,210	449
2034	2,082	1,214	3,296	1,962	5,651	396	4,257	-1,394	100	40	-1,254	451
2035	2,104	1,214	3,318	1,978	5,692	398	4,257	-1,435	100	40	-1,295	453
2036	2,127	1,214	3,341	1,992	5,732	401	4,257	-1,475	100	40	-1,335	456
2037	2,150	1,214	3,364	2,006	5,772	404	4,257	-1,515	100	40	-1,375	458
2038	2,173	1,214	3,387	2,020	5,811	407	4,257	-1,554	100	40	-1,414	460
2039	2,197	1,214	3,411	2,034	5,852	410	4,257	-1,595	100	40	-1,455	463
2040	2,220	1,214	3,435	2,048	5,892	412	4,257	-1,635	100	40	-1,495	465
2041	2,244	1,214	3,459	2,062	5,933	415	4,257	-1,676	100	40	-1,536	467
2042	2,269	1,214	3,483	2,077	5,975	418	4,257	-1,718	100	40	-1,578	470
2043	2,293	1,214	3,507	2,091	6,017	421	4,257	-1,760	100	40	-1,620	472
2044	2,318	1,214	3,532	2,106	6,059	424	4,257	-1,802	100	40	-1,662	475
2045	2,343	1,214	3,557	2,121	6,102	427	4,257	-1,845	100	40	-1,705	477
2046	2,368	1,214	3,582	2,136	6,145	430	4,257	-1,888	100	40	-1,748	480
2047	2,394	1,214	3,608	2,151	6,189	433	4,257	-1,932	100	40	-1,792	482
2048	2,420	1,214	3,634	2,166	6,233	436	4,257	-1,976	100	40	-1,836	485
2049	2,446	1,214	3,660	2,182	6,278	439	4,257	-2,021	100	40	-1,881	487
2050	2,472	1,214	3,686	2,197	6,323	443	4,257	-2,066	100	40	-1,926	490

(Please refer to both footnotes and general notes for further explanation)

NOTES

General	The years are listed starting in 2007, a Dry water year with increasingly wet years through 2011. Projections start for 2013. Uncommitted groundwater is not considered in this analysis to be available water rather it is to be used as an additional contingency source. The groundwater quantity is estimated as follows: Total developed groundwater reduced by 50% (for reliability) less the current average annual pumped quantity and further reduced by pumping 2/3 of the year: $(27\% \text{ of } 1311 \text{ AF}) / 2 - 50 \times 2/3 = 143$ acre feet of available developed groundwater supply.
1	2012 was a Dry early-end-of-spill Water Year. There was about 170 AF of Treated water conserved and about the same conserved in the distribution system in July - August 2012. The starting production value for 2013 is the production in 2012 plus about 1.45%. This value represents the production for July and August if Phase III water conservation is in force.
2	Amount of water billed by TUD to ditch water customers in July and August of 2012, increased by Raw Water Factor annually thereafter. This reflects water conservation Phase III imposed.
3	The total consumption column is the sum of the treated production and raw water sales.
4	This column reflects the difference between the total Main Canal Diversions and the estimated TUD customer water use. The forecasted/estimated volumes reflects the same percentages as occurred in 2012 starting in 2013 then declining as the over the next 10 years as it has in the past 10 years.
5	The Total Main Canal column is estimated diversions from Lyons Reservoir.
5a	This column is the total estimated difference between the main canal diversion and volume delivered to TUD. This value has varied year to year.
6	The Total Supply column is the total amount of available water based on the following criteria: Volume of water available in July and August from Lyons Reservoir if Pinecrest is held at or above 5606 feet at Labor Day and Lyons is held at or above 1,500 acre-feet minimum after Labor Day and the end of spill occurs like in the year 2007 (June 9th).
7	The Uncommitted Reserve column is the difference between Total Supply (6) and Total Demand (5) and reflects the annual amount of water available from the South Fork Stanislaus River.
8	The System Conservation column reflects anticipated annual water savings from improvements to the Tuolumne Ditch System. Several Capital Improvement Projects are identified in the Ditch Optimization Study. This is shown as a total volume vs. percentage reduction. It is assumed that reductions will these improvements will flatten out over time.
9	The Demand Conservation column reflects the water savings anticipated from demand side water conservation programs in July and August. The amount saved increases over the next 10 years but flattens out over time and remains constant due to the age and a deterioration of installed water conservation devices and saturation of the market for the devices.
10	The Adjusted Reserves is the amount of available water from the South Fork Stanislaus River Lyons Reservoir for new growth within the TUD service area assuming the forecasted conservation can be met for existing customers and infrastructure.
11	Dry Year Water Conservation is considered to be a short term annual water saving measure to be used as a contingency buffer during a Dry year. The value reflected is the estimated limit of customer behavior based on the volume conserved in 2013 during the state imposed Phase III water conservation.



Memo

To: Kennedy Jenks Consultants

Project Manager: Tim Williams

From: Tuolumne Utilities District

District Engineer: Thomas L. Scesa

Date: 6/23/2011

Re: Treated Water Systems Optimization Plan

Projected 20- Year Growth Rates in Active Water Service Connections
by Water Service Area

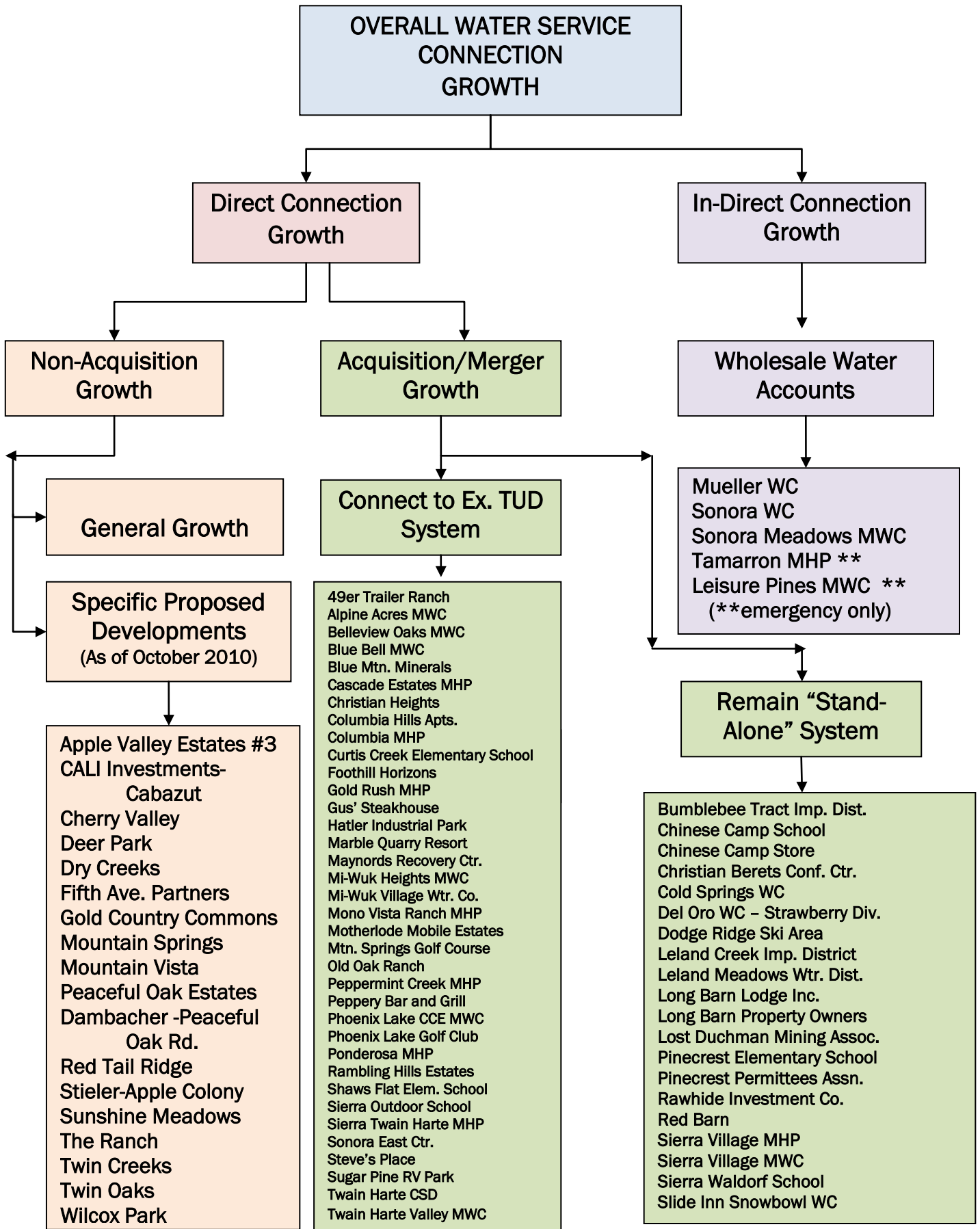
This memorandum will identify historical and projected growth rates in active water service connections for the period of 2010 – 2030. The data contained in this memorandum shall serve as the basis for projecting the future water demands to be used in the Treated Water Systems Optimization Plan. Through the process detailed below, it has been determined that the annual growth rate for the next 20 years (0-20) is assumed to be 2.27%. If growth within the District's current wholesalers is excluded, the annual growth rate is assumed to be 2.34%. ***For purposes of the Treated Water Systems Optimization Plan an annual growth rate of 2.27% will be used.***

Population trends do not correlate well to growth in active water service connections. Since 1993, approximately 55% of the District's growth in water services was associated with acquisition of existing private/mutual water companies.

Water service connection growth is separated into two categories: 1) Direct and 2) Indirect, which includes connections served through wholesale water accounts. Water to wholesale accounts is delivered through a master meter, which is technically counted as one-(1) service connection. Growth in those areas will not register as growth in the number of water service connections and will not be addressed in this memo, but will contribute to an increase in water demands.

Increases in direct connections are further categorized as: 1) Non-Acquisition Growth, which includes specific proposed developments and General Growth resulting from population increases and hookups of parcels previously served by wells to the public water system; and 2) Acquisition/Merger Growth, which is associated with the acquisition/merger of discrete private and mutual water companies, as well as, any community service districts or water districts.

Unit water demands will be addressed in a separate memorandum.



Assumptions

1. Growth in water service connections does not distinguish between a residential, commercial, industrial, or institutional type use. Increases in water demands due to type of use, as well as other factors such as elevation and parcel size, will be addressed in a separate memorandum.
2. Any proposed development that currently has an approved Tentative Subdivision Map or a Recorded Map on file with Tuolumne County will be developed to completion within the next 20 year time period.
3. Private and/or mutual water companies that are acquired by the District are assumed to consist of residential water connections only.
4. The overall growth rate for the entire District is calculated by summing the non-acquisition growth distributed amongst all systems and the acquisition/merger growth derived from private and public water systems.
5. Private and/or mutual water companies that are identified as candidates for acquisition by the District will be assigned to the District water system that is best suited to extending water service. For purposes of the Treated Water Systems Optimization Plan, a growth rate will be assigned that assumes that the District will provide water service to each of those private water companies by the Year 2030. Since, there is now way of knowing when those blocks of new connections will be added to the District, it is assumed that the growth will be spread out over a 20-year planning horizon.

Historic Connection Growth

- *Appendix A* details historic growth statistics.
- The District added 4,078 connections between 1993-2010. Of those, 1,847 (45%) were categorized as non-acquisition growth and 2,231 (55%) were associated with acquisition/merger growth. Non-Acquisition growth from 1993-2010 averaged 1.08% annually.
- After factoring in acquisitions of Sugar Pine, Gibbs, Ponderosa, Mono Village, Big Hill, Monte Grande, Curtis Creek Ranches, and Wards Ferry Ranches Water Systems, the average growth rate from 1993-2010 increases to 2.16% annually.
- The Sonora/Jamestown and Crystal Falls systems accounted for over half, 55%, of the non-acquisition growth.

Allocation of Growth

- Water systems ranked by projected share of non-acquisition growth:

TABLE A

20-Yr. Non-Acquisition Growth

	<u>%</u>	<u>(Connections)</u>
1. Sonora/Jamestown	42.00%	1366
2. Mono Village	10.50%	341
3. Crystal Falls	10.00%	325
4. Upper Basin	9.00%	293
5. Columbia/Gibbs	8.00%	260
6. Cedar Ridge	5.00%	163
Tuolumne City	5.00%	163
7. Ponderosa Hills	3.75%	122
8. Cuesta Ctr./Lambert Lakes	2.25%	73
9. Apple Valley	1.50%	49
Big Hill	1.50%	49
10. Monte Grande	0.50%	16
Scenic View/Brook	0.50%	16
11. East Sonora	0.20%	7
12. Peaceful Pines	0.10%	3
Phoenix Lake Park	0.10%	3
Wards Ferry Ranches	0.10%	<u>3</u>
		Total 3252

- Water systems ranked by projected share of acquisition growth:

TABLE B

	20-Yr. Acquisition Growth	
	%	(Connections)
1. Upper Basin	62.02%	2752
2. Columbia/Gibbs	8.34%	370
3. Cuesta Ctr/Lambert Lakes	6.78%	301
4. Sonora/Jamestown	2.73%	121
5. Scenic View/Brook	2.03%	90
6. Big Hill	1.15%	51
7. Apple Valley	0.34%	15
Monte Grande	0.34%	15
8. Mono Village	0.11%	<u>5</u>
		Total 4437

Recommended Growth Rate:

For purposes of this Treated Water System Optimization Plan, the District will use a rate of **2.27% for systemwide annual growth for the next 20 years**, which is allocated by system in accordance with *Appendix D*. The projected growth rate from years 21-40 would be 1.08% assuming all acquisitions would be exhausted in the first 20 year time frame.

Appendix B identifies proposed new developments and which District water system would likely provide service.

Appendix C identifies all of the private, mutual, community services districts, and mobile home parks whose water systems could be acquired by the District at some time within the next 20 years. The table also distinguishes between those systems that are expected to remain as “stand-alone” service areas and those systems that could connect to one of the District’s existing water systems.

APPENDIX A
HISTORIC WATER CONNECTION GROWTH

Year	# New Connection Notices	Acquisitions	Yearly Total	Estimated Total Active Direct Connections	Annual % Increase in Total Active Connections	Estimated Total Active Connections (Including Wholesale)	Apple Valley	Big Hill	Cedar Ridge	Columbia/Gibbs	Crystal Falls	Cuesta Ctr - Lambert Lks	East Sonora	Mono Village	Monte Grande	Peacetail Pines	Phoenix Lake Park	Ponderosa Hills	Scenic View/Brook	Sonora/Jamestown	Tuolumne City	Upper Basin	Wards Ferry Ranches		
1992				8,681		9,526																			
1993	73		73	8,754	0.84%	9,599																			
1994	54		54	8,808	0.62%	9,653																			
1995	58	349	407	9,215	4.62%	10,060																349			
1996	57	585	642	9,857	6.97%	10,702				585															
1997	81		81	9,938	0.82%	10,783																			
1998	104	536	640	10,578	6.44%	11,423												536							
1999	112		112	10,690	1.06%	11,535																			
2000	148		148	10,838	1.38%	11,683																			
2001	149	305	454	11,292	4.19%	12,137	12	235	0	16	28	7	3	-	70	0	0	10	4	52	6	11	-		
2002	157		157	11,449	1.39%	12,294	4	-	5	20	36	16	0	-	-	0	2	12	2	47	2	11	-		
2003	214		214	11,663	1.87%	12,508	2	-	8	18	86	14	1	-	-	0	2	6	2	53	3	19	-		
2004	184	275	459	12,122	3.94%	12,967	3	-	14	8	56	6	2	275	-	0	3	5	6	59	11	11	-		
2005	167		167	12,289	1.38%	13,134	1	-	12	28	31	5	1	1	-	0	1	6	1	63	5	12	-		
2006	118	181	299	12,588	2.43%	13,433	3	-	6	20	20	7	0	2	158	0	1	7	2	34	2	14	23		
2007	78		78	12,666	0.62%	13,511	1	0	4	12	17	10	0	1	1	1	2	0	0	16	1	11	-		
2008	56		56	12,722	0.44%	13,567	0	0	3	11	10	5	0	0	0	0	0	6	0	18	0	3	-		
2009	22		22	12,744	0.17%	13,589	0	1	0	4	5	4	2	0	0	0	0	2	1	3	0	0	-		
2010	15		15	12,759	0.12%	13,604	1			1	1	1					1	1	1	5		2			
	1847	2231			Avg. Annual Non-Acquisition Growth Rate 1993-2010		Acquisition																		
	45%	55%			Avg. Annual Acquisition Growth Rate 1993-2010																				
					Avg. Annual Combined Growth Rate 1993-2010																				
Water System New Connection Growth 2001-2009																									
Non-Acquisition Connection Growth 2001-2010							27	1	52	138	290	75	9	5	2	1	10	57	19	350	30	94	0		
% of Total Non-Acquisition Growth							2.33%	0.09%	4.48%	11.90%	25.00%	6.47%	0.78%	0.43%	0.17%	0.09%	0.86%	4.91%	1.64%	30.17%	2.59%	8.10%	0.00%		
Water System Acquisition/Merger Growth 1993-2009																									
Acquisition Growth 1993-2010							0	235	0	585	0	0	0	0	275	228	0	0	536	0	0	0	349	23	

APPENDIX B

PROPOSED NEW DEVELOPMENT

	Proposed New Development	Development Name
System	# Svcs	
Apple Valley	8	Apple Valley Estates Unit #3
	Subtotal	8
Columbia/ Gibbs	19	Wilcox Park
	Subtotal	19
Crystal Falls	34	Sunshine Meadows
	6	Deer Park
	Subtotal	40
Mono Village	306	Peaceful Oak Estates
	18	Peaceful Oak Rd. - Dambacher
	Subtotal	324
Sonora Jamestown	45	The Ranch
	11	Mountain Vista
	305	Dry Creeks
	600	Mountain Springs
	20	CALI Investments - Cabazut
	61	Twin Creeks
	69	Fifth Ave. Partners
	41	Gold Country Commons
	46	Red Tail Ridge
	Subtotal	1198
Tuolumne City	75	Cherry Valley
	9	Stieler-Apple Colony
	Subtotal	84
	TOTAL	1673

APPENDIX C
POTENTIAL ACQUISITIONS/MERGERS

	Number of Connections	IS or assumed WILL BE Connected to TUD System within 30 Yrs.	Remain "Stand-Alone" Service Area	Ex. Wholesale Customer (Active)	Ex. Wholesale Customer (Emergency Only)	Additional Connection Load by TUD System																	
						Apple Valley	Big Hill	Cedar Ridge	Columbia/Gibbs	Crystal Falls	Cuesta Center/Lambert Lakes	East Sonora	Mono Village	Monte Grande	Peaceful Pines	Phoenix Lake Park	Ponderosa Hills	Scenic View/Brook	Sonora-Jamestown	Tuolumne City	Upper Basin	Wards Ferry Ranches	
FOOTHILL HORIZONS 1100 H STREET MODESTO, CA 95354-2338	15	✓				15																	
GOLD RUSH MOBILE HOME PARK P.O. BOX 1639 EL CERRITO, CA 94530	58	✓							58														
GUS S STEAKHOUSE 1183 MONO WAY SONORA, CA 95370	5	✓																5					
HATLER INDUSTRIAL PARK 16732 BIG HILL RD SONORA, CA 95370	10	✓						10															
LEISURE PINES MUTUAL WATER CO 19812 WANITA LN TWIN HARTS, CA 95383	85	✓			✓																	85	
LELAND CREEK IMPROVEMENT ASSOC 270 E. Harper St. STOCKTON, CA 95204	22		✓																				
LELAND MEADOW WATER DISTRICT 9406 BAINBRIDGE PL STOCKTON, CA 95209	60		✓																				
LONG BARN LODGE INC. P.O. BOX 100 LONG BARN, CA 95335	15		✓																				
LONG BARN PROPERTY OWNERS P.O. BOX 260 LONG BARN, CA 95335	150		✓																				
LOST DUTCHMAN MINING ASSOC P.O. BOX 1199 COLUMBIA, CA 95310	5	✓							5														
MARBLE QUARRY RESORT 11551 YANKEE HILL ROAD COLUMBIA, CA 95310	87	✓							87														
MAYNARDS RECOVERY CENTER 19325 CHEROKEE RD TUOLUMNE, CA 95379	15	✓										15											
MI-WUK HEIGHTS MWC 20977 LAMA TEUMETE MI WUK VILLAGE, CA 95346	160	✓																				160	
MI-WUK VILLAGE MUT WTR CO P.O. BOX 61 MI-WUK VILLAGE, CA 95346	768	✓																				768	
MONO VISTA RANCH MHP 12645 MT HAMILTON RD SAN JOSE, CA 95124	30	✓							30														
MOTHER LODE MOBILE ESTATES 14192 TUOLUMNE RD SONORA, CA 95370	76	✓								76													

APPENDIX D
20-YR. ALLOCATED GROWTH BY SYSTEM

Non-Acquisition Growth Rate	# of (N) Svcs over 20 yrs.	20 Year Water Service Growth Projections						
		Non-Acquisition Growth		Total Non-Acquisition Growth	Total Acquisition/Merger Growth ²	Total Combined Growth ³	Total Existing Active Connections (incl. wholesale) (2010) ⁴	Calculated Annual Growth Rate by System ⁵
System	% Allocation of Non-Acquisition Growth ¹	Proposed New Development	General Growth					
1.08%	3252							
Apple Valley	1.50%	8	41	49	15	64	104	2.41%
Big Hill	1.50%		49	49	51	100	217	1.91%
Cedar Ridge	5.00%		163	163		163	622	1.17%
Columbia/Gibbs	8.00%	19	241	260	370	630	1559	1.71%
Crystal Falls	10.00%	40	285	325	717	1042	2610	1.69%
Cuesta Ctr. - Lambert Lakes	2.25%		73	73	301	374	156	6.30%
East Sonora	0.20%		7	7		7	113	0.28%
Mono Village	10.50%	324	0	341	5	346	264	4.28%
Monte Grande	0.50%		16	16	15	31	227	0.65%
Peaceful Pines	0.10%		3	3		3	30	0.52%
Phoenix Lake Park	0.10%		3	3		3	50	0.31%
Ponderosa Hills	3.75%		122	122		122	641	0.87%
Scenic View/Brook	0.50%		16	16	90	106	254	1.76%
Sonora/Jamestown	42.00%	1198	168	1366	121	1487	4632	1.40%
Tuolumne City	5.00%	84	79	163		163	663	1.10%
Upper Basin	9.00%		293	293	2752	3045	1437	5.85%
Wards Ferry Ranches	0.10%		3	3		3	24	0.65%
Systemwide TOTAL	100.00%	1673	1561	3252	4437	7689	13604	2.27%
				42%	58%	Total Est. Active Connections (2030)	21293	

Notes:

- ¹ Allocations were originally based upon historic growth from 2001-2010 and assuming future development will mimic that pattern. However several developments have been proposed that require the growth allocation to be adjusted. Most proposed developments fall within Sonora/Jamestown and Mono Village. These larger developments will result in a higher growth allocation being assigned to those areas and a smaller growth allocation being assigned to the remaining systems. Furthermore, projections required an iterative process to ensure that the projected in-fill growth did not exceed the current count on vacant parcels.
- ² Based on most recent data from CDPH regarding number of connections for regulated water systems in Tuolumne County. Excludes connections in systems where the District already wholesales water (ie. Sonora Meadows) and systems that would remain as isolated, discrete water service areas, and would not likely connect to an existing TUD system.
- ³ Total combined growth is growth in all classes of service connections (residential, commercial, industrial, and institutional). The District does not have growth numbers by customer class broken out by individual system. The reality is that most growth in commercial and institutional services will occur in the Sonora/Jamestown system which has been allocated 42% of all non-acquisition growth for the next 20 years.
- ⁴ Existing services by system are based data from 2010 and include the number of active connections within wholesale accounts.
- ⁵ Historically the District has seen an overall annual growth rate of 2.16% from 1993-2010. Approximately, 55% of that growth has been associated with system acquisition. The District would expect this trend to continue. We expect system acquisition/merger to account for approximately 58% of all new services over the next 20 years.

System	Total ADD by system service area (including Transfers) (gpm)	Notes	Water Transfers			Average Flow Distributed by specific WTP and/or Wells (gpm)	Notes	TUD Surface Water WTPs - Average Flow Distributed by specific WTP July - August 2010 (except where noted)			2010 Average Demands from Resale Entities (Resale don't Contribute to Raw Water Demands) (gpm)	July - Aug. 2010 Demands from Resale Entities (Resale don't Contribute to Raw Water Demands) (gpm)	Notes	July-Aug. 2010 Total Raw Water Demands (gpm)		Projected 2030 ADD (Treated Water) by System (gpm)	Projected July-Aug. 2030 ADD (Treated Water) by System (gpm)	Projected July-Aug. 2030 ADD (Treated Water & Raw Water) by WTP (gpm)		Notes	
			from--> to	ADF (gpm)	Notes			(gpm)	Notes	Peaking Factor (July-Aug. Demands/ADD)				(gpm)	(gpm)			(gpm)	(AF/day)		(gpm)
Apple Valley (AV)	38	1	AV --> SV	2	2	40	1														
Big Hill (BH)	39	1				39		85		2.15				85	0.38	48	104	104	0.46		
Cedar Ridge (CR)	59	1				59		116	19	1.96				116	0.51	75	146	146	0.65		
Columbia/Gibbs (CG)	322	1	SJ --> CG	1	2	321	4	526		1.64				526	2.32	451	739	739	3.26		
Crystal Falls (CF)	489	1	MG --> CF	78	5	387	7	582		1.50				582	2.57	685	1029	617	2.73	23	
			UB --> CF	24	6																
Cuesta Ctr. - Lambert Lakes (CL)	60	1	SJ --> CL	51	2	9	8														
East Sonora (ES)	60	1	SJ --> ES	60	2	0	9														
Mono Village (MV)	76	1	ES --> MV	51	2	25	8														
Monte Grande (MG)	53	10	MG --> CF	78	11	131	12	318		2.42				318	1.41	57	138	550	2.43	24	
Peaceful Pines (PP)	3	1				3	13														
Phoenix Lake Park (PLP)	10	1				10	13														
Ponderosa Hills (PH)	116	1				116	13	212	19	1.83				212	0.94	141	257	257	1.14		
Scenic View/Brook (SV)	62	1	AV --> SV	2	2	60		115	19	1.91				115	0.51	89	170	170	0.75		
			SJ --> CG	1	2																
			SJ --> CL	61	2																
			SJ --> ES	112	2																
Sonora/Jamestown (SJ)	1634	14				1808	15	2707	20	1.50	31	47	21	2754	12.17	2614	3913	3913	17.29		
Tuolumne City (TC)	163	1				163		283		1.73				283	1.25	203	352	352	1.56		
Upper Basin (UB)	172	1	UB --> CF	26	2	198	16	338		1.71	291	497	22	835	3.69	536	915	915	4.05		
Wards Ferry Ranches (WFR)	11	1				11	13														
Totals								5282 (gpm)			322 (gpm)	544 (gpm)		5826 (gpm)	25.7 (AF/day)	4898 (gpm)	7764 (gpm)	7764 (gpm)	34.3 (AF/day)		

Notes

- 1 Average consumption 2008-2010.
- 2 Average transfer rate 2008-2010.
- 3 Average consumption + transfers to Scenic View.
- 4 Average consumption - transfers in from Sonora/Jamestown.
- 5 Average transfer rate 2/3/09-2/3/10. The Soulsbyville intertie was not in operation prior to 2/3/09.
- 6 Average transfer rate from 11/8/08 - 11/8/10.
- 7 Average consumption - transfers in from Monte Grande and Upper Basin.
- 8 Average consumption - transfers in from Sonora/Jamestown.
- 9 All of East Sonora's demands are satisfied from Sonora/Jamestown.
- 10 Average consumption 2009-2010. (Curtis Creek Ranches and Soulsbyville intertie not completed until late 2008)
- 11 Average transfer rate 2/3/09-2/3/10.
- 12 Average consumption - transfers to Crystal Falls.
- 13 All demands are satisfied from wells.
- 14 Avg Day demand based on average Sonora distribution flow of 1,573 gpm + average Greenley production of 234 gpm - Average Daily Transfers of 1 gpm to Columbia and 173 gpm to East Sonora and Cuesta Lambert = 1,634 gpm.
- 15 Sum of average distribution rate of Sonora and production rate of Greenley for 11/8/07-11/8/10
- 16 Average consumption + transfers to Crystal Falls.
- 17 Does not use surface water supply.
- 18 Flows are included in Sonora/Jamestown WTP (also includes Greenley)
- 19 Reported flows are based on an average for July-August 2007-2009 from operator logs.
- 20 Based on Sonora WTP demands at 2099 + Greenley WTP demands of 608 gpm for a total of 2707 gpm.
- 21 Resale customers receive raw water from TUD and then treat it. If they were to become direct TUD customers the overall raw water demand would not change. Resale customers in the Sonora/Jamestown area includes the Peppermint Creek MHP.
- 22 Resale customers receive raw water from TUD and then treat it. If they were to become direct TUD customers the overall raw water demand would not change. Resale customers in the Upper Basin area include Mi-Wuk Village MWC, Twain Harte CSD, and Twain Harte Valley MWC.
- 23 Although the projected demand of the Crystal Falls system in July-Aug. 2030 will be 1,029 gpm; a portion of that demand will be met by the Monte Grande WTP. The Monte Grande WTP will have the ability to deliver 550 gpm into the system. Approximately 138 gpm will be used in Monte Grande. The balance (550-138=412 gpm) will be transferred to Crystal Falls.
- 24 The Monte Grande WTP will be able to deliver up to 550 gpm into the distribution system; however, the Monte Grande service area is projected to have a demand in July-Aug. 2030 of 138 gpm. The balance (550-138=412 gpm) will be transferred into the Crystal Falls system.
- 25 The TWSOP has a projected average annual growth rate (Yrs. 1-20) in treated water demands of 2.25%. However, a significant share of the increase in treated water demands could come from "Resale" customers who already rely on TUD raw (aka. Ditch) water as their source of supply. Acquiring "Resale" customers such as Mi-Wuk Village MWC, Peppermint Creek MHP, Twain Harte CSD, and Twain Harte Valley MWC has no net effect on overall raw water demands. It does result in a change in the point of service; however, it does not effect raw water demands on Lyons. Consequently, the projected average annual growth rate in raw water demands (Yrs. 1-20) is 1.45%, which is less than the projected average annual growth rate in treated water demands of 2.25%.
- 26 The average annual growth rate in raw water demands (Yrs. 21-40) will be the same as the average annual growth rate in treated water demands for the period (Yrs. 21-40) because all the growth associated with the addition of "Resale" customers will take place in Years 1-20. The projected growth rate is 1.08%.

Average Annual Growth Rate in Raw Water Demands (Yrs 1-20):	1.45%
Average Annual Growth Rate in Raw Water Demands (Yrs 21-40):	1.08%

EXECUTIVE SUMMARY

This study focuses on the potential usability of recreation facilities at Pinecrest Reservoir at a range of potential lake levels that might be utilized between the end of spill and Labor Day. Pinecrest Reservoir is a component of the Pacific Gas and Electric Company's (PG&E) Spring Gap-Stanislaus Hydroelectric Project. The reservoir encompasses approximately 300 acres, at a maximum water surface elevation of approximately 5,617 feet (ft) mean sea level (msl)¹. Pinecrest Reservoir is located off of Highway 108, approximately 25 miles northeast of Sonora, California on the South Fork of the Stanislaus River. Water stored in Pinecrest Lake is used for hydroelectric generation by PG&E, is used for local water supply, and is diverted by the Tuolumne Utilities District (TUD) for water supply.

The purpose of this study is to determine the minimum operating lake level that protects specific recreational uses at identified facilities located at Pinecrest Reservoir between the end of spill and Labor Day. Specifically, this study evaluates the potential impairment to recreation usability for lake elevations from 5,608 to 5,595 ft compared to baseline usability within the elevation range of 5,617 to 5,610 ft. The effects of these elevations were studied, as they occurred, during summer and fall 2010.

Pinecrest Reservoir Lake provides for multiple recreational activities (e.g., swimming, boating, fishing, and picnicking). Based on consultation with the California State Water Resources Control Board (State Water Board), U.S. Department of Agriculture Forest Service (Forest Service), and TUD, a total of seven recreation features (facilities) were evaluated under this study. Although each facility is unique in terms of its location, there was overlap in the types of activities found at each facility.

During summer and fall 2010, data were collected in the field using agreed upon data collection protocols. Data were collected at lake level elevations of 5,617–5,610 ft at 2-foot intervals to establish a baseline. For lake level elevations of 5,608–5,595 ft, the range used to assess usability of the recreation facilities, data were collected at 1-ft intervals. Recreation usability at

¹ All lake level elevations included in this report are at mean sea level (msl).

lake levels in this range were compared to the baseline values in order to determine changes to recreation usability due to lowered lake levels.

Criteria were developed for each facility to evaluate the recreational uses specific to that facility. These criteria were evaluated at all elevations studied, and potential impairments to recreation were estimated.

Overall, as lake level drops, recreation usability at facilities such as docks and boat ramps is not impaired. However, recreation usability at beach and other day-use facilities becomes impaired at various lowered lake elevations.

Possible mitigation actions are identified that could maintain recreation usability levels found in the baseline elevations at lowered elevations.

Actual Pinecrest Lake Elevation for Sept 5, 1974-2012

ATTACHMENT #5

