September 19, 2024 – SUPPLEMENTAL CORRESPONDENCE

BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

September 19, 2024

Correspondence and media coverage of interest between September 13, 2024 and September 19, 2024

Correspondence

From: Margaret Tollner, Lakewood, Ca.
To: BAWSCA Board of Directors
Date: September 19, 2024
Subject: Restore Remote Public Comment at BAWSCA

From: Peter Drekmeier
To: BAWSCA Board of
Date: September 16, 2024
Subject: SFPUC Water Quiz

From: Dave Warner
To: BAWSCA Board of Directors and Nicole Sandkulla
Date: September 13, 2024
Subject: Wholesale Water Rates Under Various Demand and Supply Scenarios

Water Management:

Date: September 14, 2024
Source: Turlock Journal
Article: Restoring the Tuolumne River

Date: September 13, 2024
Source: San Francisco Chronicle
Article: San Francisco is trying to restore the river it drinks from — but environmentalists say it's not enough

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From: Margaret Tollner (mtollner@dhs.lacounty.gov) Sent You a Personal Message
To: bawscaboardofdirectors
Subject: Restore Remote Public Comment at BAWSCA
Date: Thursday, September 19, 2024 9:39:17 AM

Dear BAWSCA Board of Directors,

Dear Board Members,

The removal of remote participation in BAWSCA Board meetings has reduced the transparency of the agency and has excluded the voices of the elderly, working-class, and caregiving community members from sharing their vital perspectives on the actions BAWSCA takes.

Remote participation became the new normal during the pandemic and remains in place in the majority of California cities. BAWSCA has made great progress by returning livestreams of Board meetings and the Agency must continue by implementing remote public comment services. As BAWSCA considers continuing its anti-environmental lawsuit against the State Water Board and chooses to support environmentally harmful voluntary agreements (VAs), the Board must remain transparent and ensure the voices of marginalized communities are heard at public meetings.

The Board must restore remote participation, including remote public comment. Thank you for recognizing the impact that remote participation has on increasing the accessibility and transparency of BAWSCA.

Sincerely,

Sincerely,

Margaret Tollner
4138 Marwick Ave
Lakewood, CA 90713
mtollner@dhs.lacounty.gov
(562) 425-7123

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From: Peter Drekmeier
To: bawscaboardofdirectors
Subject: SFPUC Water Quiz
Date: Monday, September 16, 2024 10:05:48 AM
Attachments: SFPUC Water Quiz.docx

Dear BAWSCA Board,

With a new school year having begun, I thought it might be fun to test our knowledge of SFPUC water issues. Please feel free to take the attached quiz. There will be no official grades.

-Peter

Peter Drekmeier
Policy Director
Tuolumne River Trust
peter@tuolumne.org

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SFPUC Water Quiz

1) Which Federal act allowed San Francisco to build the Hetch Hetchy Water System?

a) Yosemite Act
b) Garfield Act
c) Raker Act
d) Phelan Act

2) What year was the above act passed?

a) 1906
b) 1907
c) 1913
d) 1923

3) Hetch Hetchy Reservoir can hold what percentage of the SFPUC's total storage?

a) 1/4
b) 1/2
c) 3/4
d) All

4) At total system storage, the SFPUC has enough water to last how many years?

a) 3
b) 4
c) 5
d) 6

5) In an average year, the SFPUC is entitled to enough water to last how many years?

a) 1
b) 2
c) 3
d) 4

6) How many year's-worth of water did the SFPUC have in storage at the height of the recent 3-year drought (2020-2022)?

a) 1
b) 2
c) 3

d) 4

7) In Water Year 2022/23 (wet), the SFPUC was entitled to enough water to last how many years?

a) 6
b) 8
c) 10
d) 12

8) Which two water agencies own and operate Don Pedro Reservoir?

a) Modesto and Stanislaus Irrigation Districts.
b) Turlock and Modesto Irrigation Districts.
c) Stanislaus and Tuolumne Irrigation Districts.
d) Tuolumne and Modesto Irrigation Districts.

9) How much does the SFPUC currently charge the BAWSCA agencies for an acre-foot of water?

a) $1,000
b) $1,500
c) $2,000
d) $2,500

10) How much do the Irrigation District's charge farmers for an acre-foot of Tuolumne River water?

a) $25
b) $100
c) $200
d) $300

<u>Extra Credit</u>

Could the SFPUC manage the adopted (but yet to be implemented) Bay Delta Plan flow requirement without a serious risk of running out of water?

a) Yes
b) No
c) Depends
d) Don't know

September 13, 2024

Re: Wholesale Water Rates Under Various Demand and Supply Scenarios

Dear BAWSCA Board Members and CEO Sandkulla,

As you know from my letter of July 9 (attached), the SFPUC is facing significant financial risks which puts further pressure on our already high water rates. As future demand is highly uncertain[1], this letter provides an estimate of 2045 water rates under various demand and supply scenarios and is based upon the SFPUC's current financial projections.

We're in difficult times for California water managers. Urban water use has plateaued despite population growth. Will population growth continue? Will per capita demand continue to decline? If demand and water sales decline, that puts pressure on water rates and the ability to make infrastructure investments. If demand grows and water managers haven't made needed investments, there could be adverse consequences. Water managers are living in an environment where growth in water demand is uncertain.

Actions that some agencies have taken:

- The Metropolitan Water District of Southern California projected declining demand and provided scenarios and options to its Board for different ways to address the decline and impact to its financial health.
- Valley Water, as part of its long-term planning, provided the board with lower demand planning scenarios, "balancing affordability and reliability."
- The San Diego County Water Authority experienced bigger drops in demand than expected and is in the process of working through challenging financial times.

The SFPUC's Water Enterprise division has a couple of additional unique challenges. It has a supply guarantee to BAWSCA that could cause a massive investment in alternative water supplies (AWS). Water Enterprise is also carrying a large debt load due to the needed Water System Improvement Program (WSIP).

[1] Kudos to the BAWSCA team and BAWSCA Board for its groundbreaking 2022 demand study which included a sensitivity analysis for how projected demand could change under different scenarios.

The debt load is a primary cause of the SFPUC already having amongst the highest per unit water rates in the State.

By looking at various scenarios of future demand and water rates, it provides a chance to be better prepared for an uncertain future.

What demand scenarios should be considered?

Water managers are generally strong at planning for increasing demand scenarios. Declining scenarios, not as much.

Figure 1 plots SFPUC Regional Water System (RWS) per capita demand (GPCD) since 1990 within a statistical control chart[2]. Historical data points stay within the chart's control limits, the blue dashed lines, meaning that the decline in demand since 1990 is a stable process and should continue to generate results within the control limits. During this time a lot has been happening: People have been buying water from the SFPUC for decades, through droughts, up and down economic cycles, water conservation programs and innovation, price increases, population changes, etc. And still demand continued to stay within the control limits. The chart also projects the trend line and control limits to 2045 along with plotting UWMP projections and SFPUC Finance projections.

[2] For further information see: Joiner, Brian L*., Fourth Generation Management: The New Business Consciousness*, R.R. Donnelley & Sons Company, 1994, pages 147-150

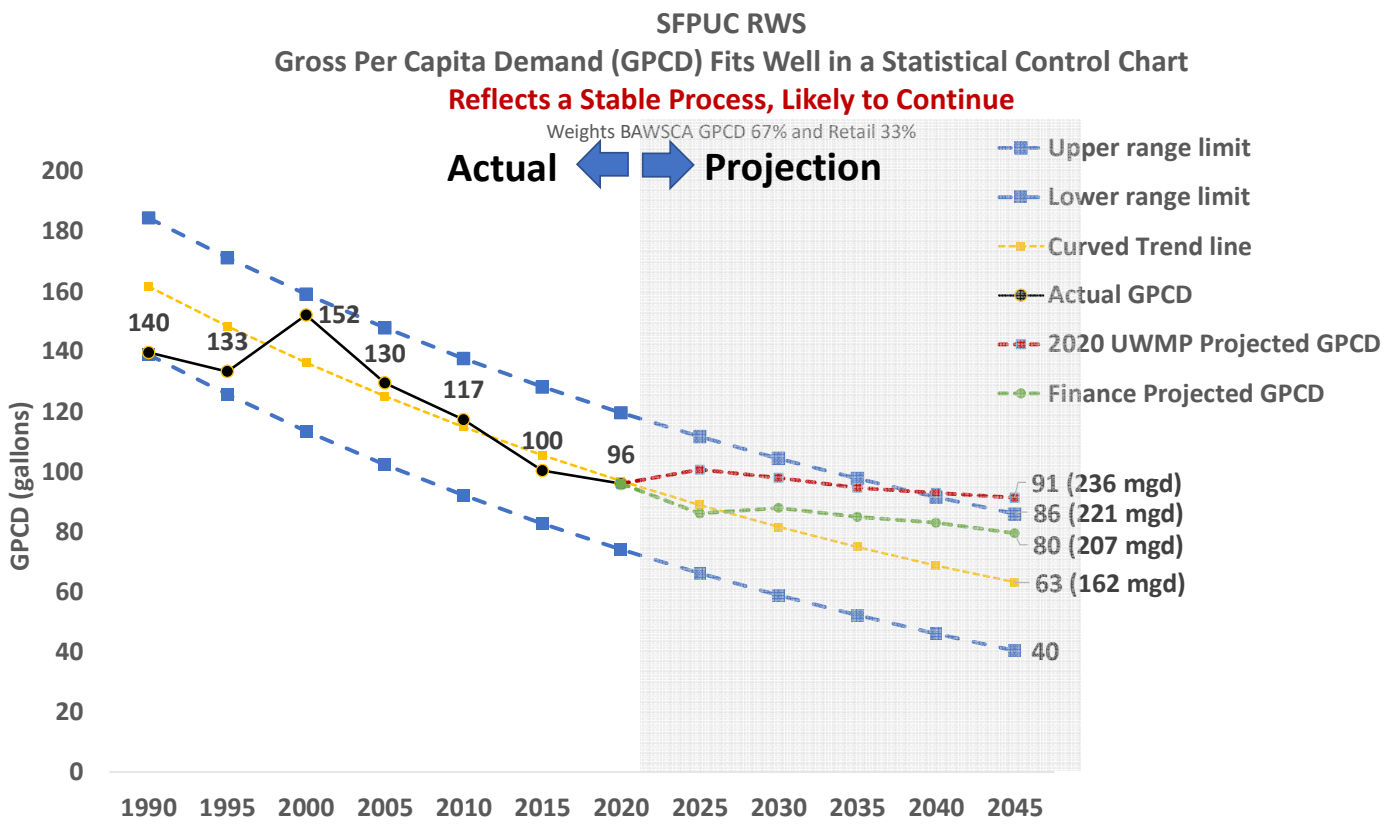


Figure 1

Some water managers argue that the system will experience "demand hardening," where the limit has been reached for how much water can be conserved, particularly pointing out how low San Francisco's per capita water demand is relative to the rest of the State. Demand hardening might be in our future. But it doesn't preclude being prepared for a scenario where it's not the case.

Figure 1 suggests that based on the curved/flattening trend line that Regional Water System (RWS) demand will be 63 GPCD in 2045, with an upper bounds of 86 GPCD and a lower bounds of 40 GPCD. For convenience and with simplifying assumptions the associated total annual demand has been added for each GPCD result. For example 63 GPCD in 2045 equates to annual demand of 162 mgd. The red dashed line shows demand from the 2020 Urban Water Management Plan (UWMP) at 236 mgd in 2045. The green dashed line is the SFPUC's finance department projection for 2045, at 207 mgd.

A water manager might scoff at such a low demand projection, 162 mgd. In 2000, when RWS demand was 261 mgd, the 2000 UWMP projected 2020 demand to be 292.5 mgd. Back then no one could have imagined that 2020 demand would be 198.6 mgd. It's worth taking a look at the implications of 162 mgd demand in 2045, just in case.

This rates analysis will look at the demand scenarios in **figure 2** for 2045.

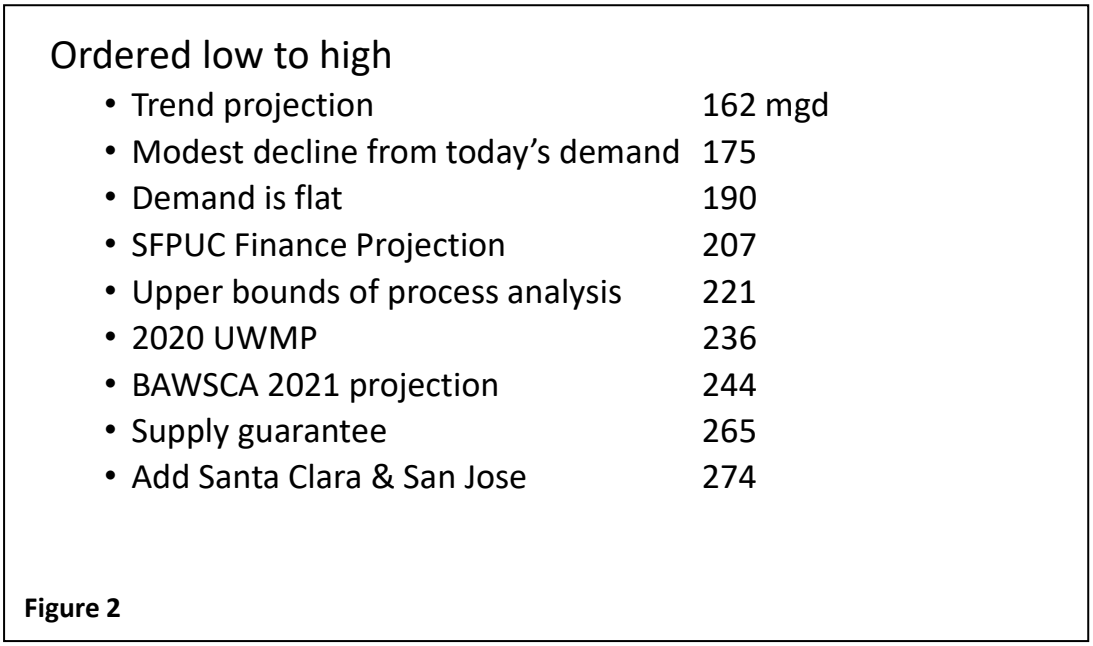


Figure 2

All Demand Scenarios Require Alternative Water Supplies (AWS)

To determine water rates, the cost of increasing our supply needs to be determined. As per the AWS Plan the SFPUC RWS provides a firm yield of 152 mgd. Any demand above that requires AWS. For example, for demand of 162 mgd, there's a supply gap of 10 mgd. 12% of the gap, or 1 mgd can be covered by rationing, the other 9 mgd require AWS.

Figure 3 shows AWS needed for each of the scenarios. The lowest scenario, 162 mgd, is from the trend projection in the statistical control chart. The highest scenario, 274 mgd, is the "obligations" scenario from the SFPUC's AWS Plan

Alternative Water Supply Amounts Needed for Each Scenario

Scenario	Demand (mgd)	RWS Firm Yield (mgd)	Gap (mgd)	Supplied by Rationing (mgd)	AWS Needed (mgd)
Trend projection	162	152	10	1	**9**
Small decline	175	152	23	3	**20**
Flat	190	152	38	5	**33**
Finance projection	207	152	55	7	**48**
Upper bounds	221	152	69	8	**61**
UWMP	236	152	84	10	**74**
BAWSCA projection	244	152	92	11	**81**
Supply guarantee	265	152	113	14	**99**
+San Jose & Santa Clara	274	152	122	15	**107**

Figure 3

document and includes 9 mgd for San Jose and Santa Clara. It should be noted that for the SFPUC Finance Department projection, the cost of the needed 48 mgd of AWS had not been included. This analysis will include the cost of needed AWS for each scenario.

The AWS Plan Projects are Expensive

The average capital cost per mgd for the 6 projects listed in the June 2024 AWS plan report comes to $204 million. This is a surprisingly costly figure, likely in part due to the small scale of the projects. Figure 4 shows the derivation of the $204 million per mgd

Average Cost Per MGD for Projects Listed in AWS Plan

Project	mgd	Capital Cost ($ millions)	Budget+10 year CIP allocation ($ millions)	Capital cost per mgd ($millions)
Daly City	0.7	$ 120	$ 125	$ 171
PureWater Peninsula	6	$ 1,168	$ 12	$ 195
ACWD-USD	5.4	$ 1,301	$ 10	$ 241
South Bay Purified Water	3.5	$ 658	$ 7	$ 188
Los Vaqueros expansion*	3.9	$ 539	$ 55	$ 138
Calaveras expansion	28.6	$ 6,011	$ 5	$ 210
Total	48.1	$ 9,797	$ 213	$ 204

* Used midpoint of capital cost estimate range

Average Cost Per MGD for Other SFPUC Projects NOT in the AWS Plan

Per May 2022 SFPUC San Francisco Puriefied Water Opportunities Study

Project	mgd	Capital Cost ($ millions)	Capital cost per mgd ($millions)
Oceanside wastewater plant	5.1	$ 197	$ 39
Southeast wastewater plant	38.5	$ 708	$ 18
Total	43.6	$ 905	$ 21

Figure 4

Both San Diego's and Los Angeles' current recycling projects are in the price range of $50 million per mgd of capital cost (and have much larger scale than the SFPUC AWS Plan projects). It should be noted that San Francisco's Southeast and Oceanside potential recycling projects, not included in the latest AWS plan, had an estimated combined per mgd capital cost of $21 million[3]. **For this rates analysis**

[3] Per the SFPUC "San Francisco Purified Water Opportunities Study" dated May 2022

the assumption used is $100 million per mgd capital cost, about half of the average of what was in the AWS plan report, but still a relatively high figure.

Figure 5 shows the estimated AWS cost for each of the demand scenarios. For example, the Finance scenario of 207 mgd would require $4.8 billion in capital investment. This would raise the projected 2045 cost per acre foot from $2,900 to $4,500.[4] The current cost per acre foot is $2,470.

Estimated AWS Cost for Each Demand Scenario

Using $100 million per MGD Capital Cost Assumption

Scenario	AWS Needed (mgd)	Assumed Capital Cost ($ millions)	Assumed Annual O&M Costs ($ millions)
Trend projection	9	$ 900	$ 7
Small decline	20	$ 2,000	$ 17
Flat	33	$ 3,300	$ 28
Finance projection	48	$ 4,800	$ 41
Upper bounds	61	$ 6,100	$ 51
UWMP	74	$ 7,400	$ 62
BAWSCA projection	81	$ 8,100	$ 68
Supply guarantee	99	$ 9,900	$ 84
+San Jose & Santa Clara	107	$ 10,700	$ 90

Figure 5

Debt is a Big Contributor to High Water Rates

Today 50% of Water Enterprise revenue goes to debt service. This means that 50% of today's $2,470/af cost is used to pay interest and principal on debt for existing projects. This is a high proportion compared to other water agencies. Figure 6 provides a comparison to selected other agencies of debt service costs as a percent of customers' water bills. If the SFPUC could reduce its reliance on debt, that would help reduce the high prices charged for water. Aside from grants, the

[4] BAWSCA Board members and staff may recall a 2033 projected rate of $3,093 per acre foot. The SFPUC financial projections show wholesale rates declining starting in 2041, likely due to WSIP debt starting to be paid off.

typical way to do this is to reduce capital spending, delay projects until they can be financed with less debt, or raise near term rates even more for more cash to be available.

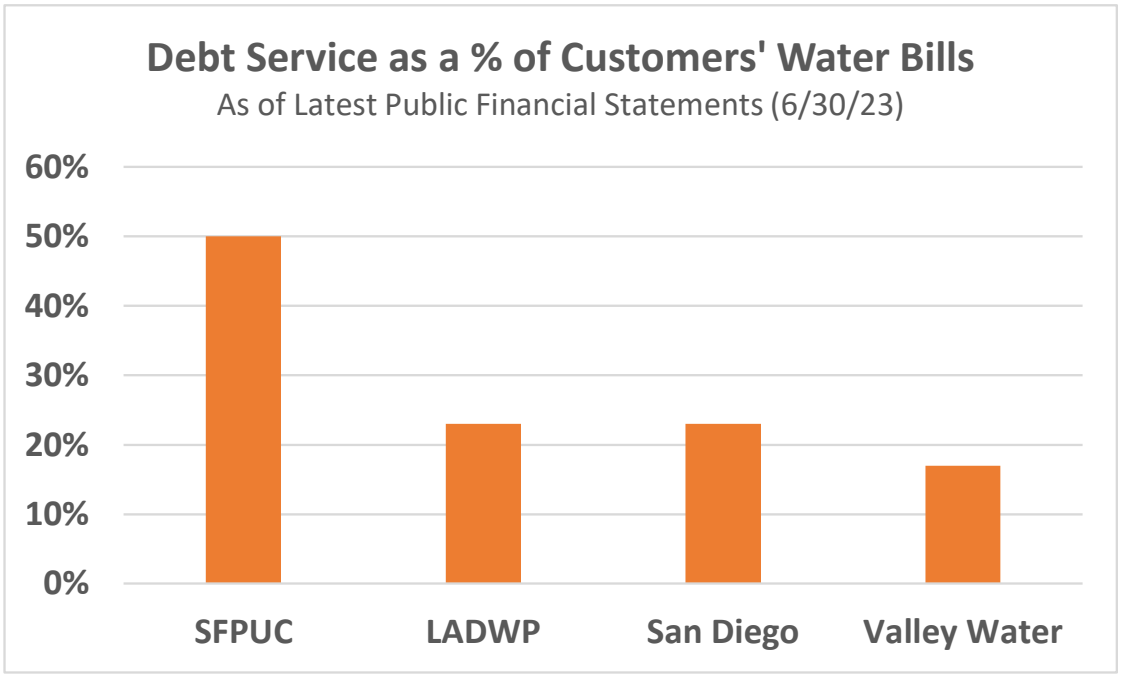


Figure 6

2045 Price Per Acre Foot in Various Demand Supply Scenarios

Figure 7 provides the price per acre foot in various supply and demand scenarios. Supply scenarios are listed across the top starting with the 162 mgd scenario on the left and finishing with the 274 mgd scenario on the right.

Using the finance department projection as an example, let's look at the best case scenario where both supply built and demand are 207 mgd. Looking across the top, find the 207 mgd supply column and looking down the left, find the 207 mgd demand row. Where the column and row intersect is the highlighted yellow cell showing a per acre foot price of $4,500.

For a second example, let's say supply is still 207 mgd but demand turns out to be only 190 mgd. Staying in the 207 mgd supply column but looking across the 190 mgd row (one row up from the 207 mgd row), the price of water comes to $4,900 per acre foot (in the cell above the yellow highlighted cell). The 190 mgd demand with a 207 mgd built supply increases the price of water from $4,500 to $4,900.

For a third example, let's say supply is still built to 207 mgd but demand turns out to be higher, 221 mgd. Since we don't have enough supply, the consequence is that the design drought shortens from 8.5 years to 7.7 years.

For a last example let's say demand is 207 mgd but this time we've built out supply to BAWSCA's 2022 demand projections of 244 mgd. Looking down the 244 mgd supply column and across the 207 mgd demand column, the price per acre foot comes to $5,700.

All these prices are very high, even under the perfect forecasting scenario 207 mgd supply and 207 mgd demand. No one wants to assume we can forecast long term demand perfectly, so we likely want to build with at least a modest supply/demand cushion. We need to find ways to lower these costs.

Cost per Acre Foot Under Varios Demand and Supply Scenarios

2045 demand (mgd)		2045 Supply (mgd) 162	175	190	207	221	236	244	265	274
Trend projection	162	$ 4,200	$ 4,600	$ 5,200	$ 5,800	$ 6,300	$ 6,900	$ 7,200	$ 8,000	$ 8,400
Small decline	175	7.8 yrs	$ 4,300	$ 4,800	$ 5,300	$ 5,800	$ 6,400	$ 6,700	$ 7,400	$ 7,800
Flat	190	7.0 yrs	7.7 yrs	$ 4,400	$ 4,900	$ 5,400	$ 5,900	$ 6,200	$ 6,900	$ 7,100
Finance projection	207		6.7 yrs	7.6 yrs	**$ 4,500**	$ 5,000	$ 5,400	$ 5,700	$ 6,300	$ 6,600
Upper bounds	221			6.8 yrs	7.7 yrs	$ 4,700	$ 5,100	$ 5,300	$ 5,900	$ 6,200
UWMP	236				6.9 yrs	7.7 yrs	$ 4,800	$ 5,000	$ 5,500	$ 5,800
BAWSCA projection	244					7.2 yrs	8.1 yrs	$ 4,800	$ 5,400	$ 5,600
Supply guarantee	265						6.9 yrs	7.3 yrs	$ 5,000	$ 5,200
+San Jose & Santa Clara	274							6.8 yrs	8.0 yrs	$ 5,000

Figure 7

Looking Closer at the $4,500 per Acre Foot Price of Water

Figure 8 shows a quick breakdown of the $4,500 per acre foot price. Starting from the left:

- The darker blue section shows the 2015 price of an acre foot of water, $1,276.
- The orange section shows the increase in price to this year, $2,470 and roughly doubles the price from 10 years ago.
- The very tiny section where the price increases to $2,500 shows last year's SFPUC projection for the 2045 price of water without any AWS. The SFPUC's financial projections had shown the price of water starting to decline in 2041 as the original Water System Improvement Program (WSIP) bonds were starting to be paid off.
- The yellowish box shows how in one year alone the 2045 price increased from last year's financial projection to this year's by ~$400. This is due in large part to the 38% 1-year jump in Water Enterprise's 10 year capital plan (which did not include any significant AWS investment).
- The lighter blue section reflects the added cost of the needed AWS if the capital cost of AWS were $50 million per mgd, bringing the price to $3,800 per mgd.
- The green section reflects the additional cost of AWS if the price were $100 million per mgd, bringing the price to $4,500. $100 million per mgd capital cost is the amount I used for building the table in figure 7.
- The lightly shaded section reflects the additional cost of AWS if the price were $200 million per mgd, the average per mgd cost shown in the most recent AWS Plan.

As mentioned earlier, debt service is about half of the cost.

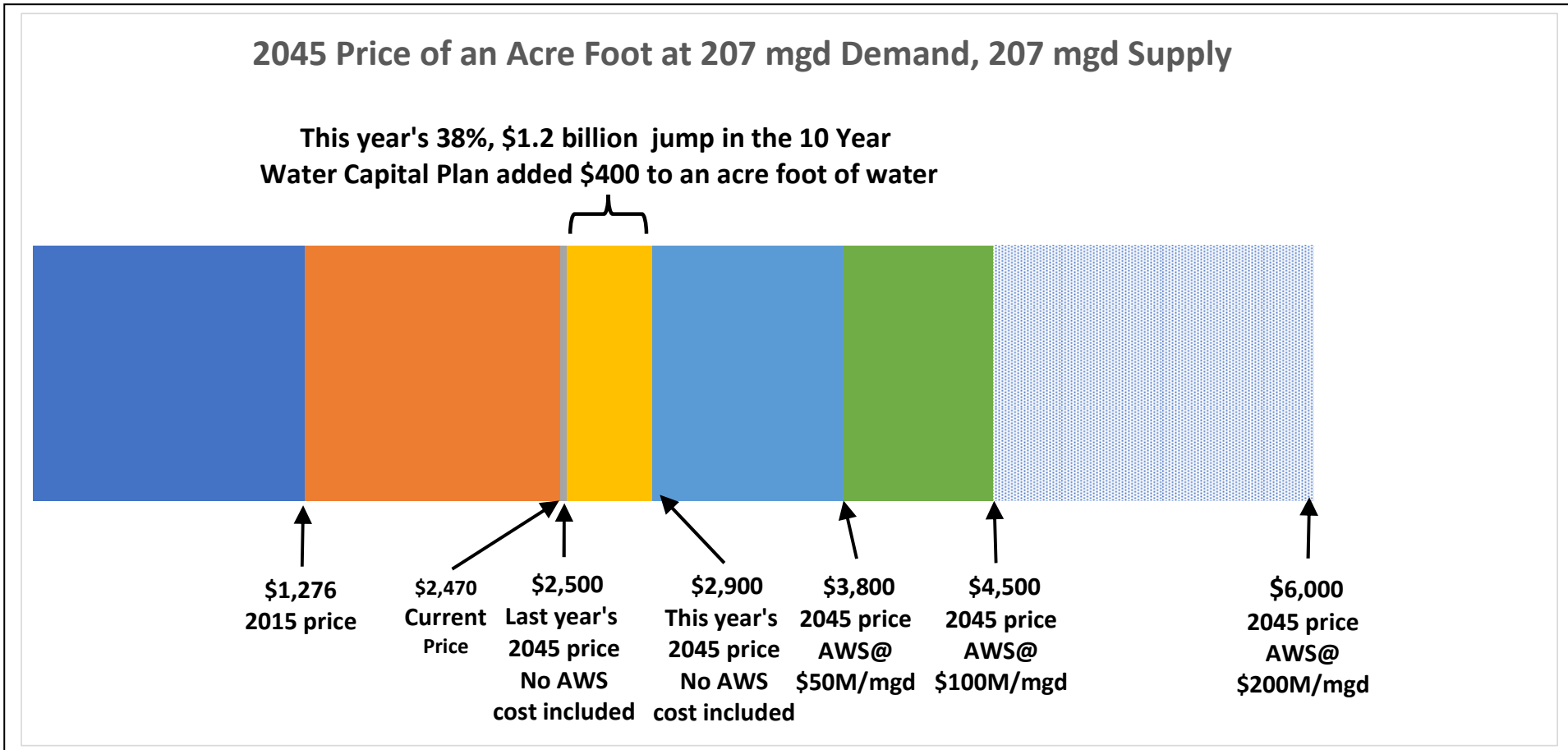

2045 Price of an Acre Foot at 207 mgd Demand, 207 mgd Supply
This year's 38%, $1.2 billion jump in the 10 Year
Water Capital Plan added $400 to an acre foot of water
$1,276
2015 price
$2,470
Current
Price
$2,500
Last year's
2045 price
No AWS
cost included
$2,900
This year's
2045 price
No AWS
cost included
$3,800
2045 price
AWS@
$50M/mgd
$4,500
2045 price
AWS@
$100M/mgd
$6,000
2045 price
AWS@
$200M/mgd

Figure 8

Find Ways to Reduce the Future Price of Water

All the scenarios in Figure 7 are expensive and at least some are cost prohibitive. We need to find ways of assuring a reliable supply at an affordable price. Until now our BAWSCA's primary focus has been a reliable supply and to assure that we're paying no more than our fair share.

We should consider doing more on the cost side and we should start soon. The Water Enterprise's latest capital plan is massive and as each month goes by we lose flexibility to adjust. Add in that it looks like we'll be getting three new inexperienced SFPUC Commissioners and losing BAWSCA's longtime CEO.

The SFPUC has already seen its debt downgraded by one rating agency. This could cause an increase in borrowing costs. As debt is the primary source of funds for capital plans, higher borrowing costs will adversely affect rates.

The SFPUC's track record on completing its projects within budget isn't great. The latest Water Enterprise report showed that current capital projects on average were 20% over budget. This puts yet more pressure on water rates.

Possible actions:

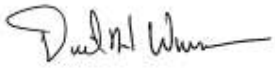
- Determine if there is agreement amongst board members that the future price of water is an issue.
- BAWSCA ask the SFPUC to do its own supply, demand and wholesale rates analysis.

Other thoughts:

- Should BAWSCA take a closer look at the SFPUC's capital spending plans, looking for opportunities to scale back or delay projects?
- Should BAWSCA take a closer look at the cost of the SFPUC's various AWS projects and alternatives, hoping to avoid those that cost $200 million per mgd?
- Should BAWSCA ask the SFPUC for an analysis of raising rates more in the short term, allowing it to reduce its reliance on debt and holding down rates in the long term?
- Unfortunately it is a lightning rod/controversial issue, but a finance professional would be remiss to not include it: Should BAWSCA ask the

SFPUC to do a risk analysis on the reliability of the design drought planning model? If it is on the conservative side, perhaps that has an impact on how much additional supply is built.

Kind regards,



Dave Warner

enclosure

July 9, 2024

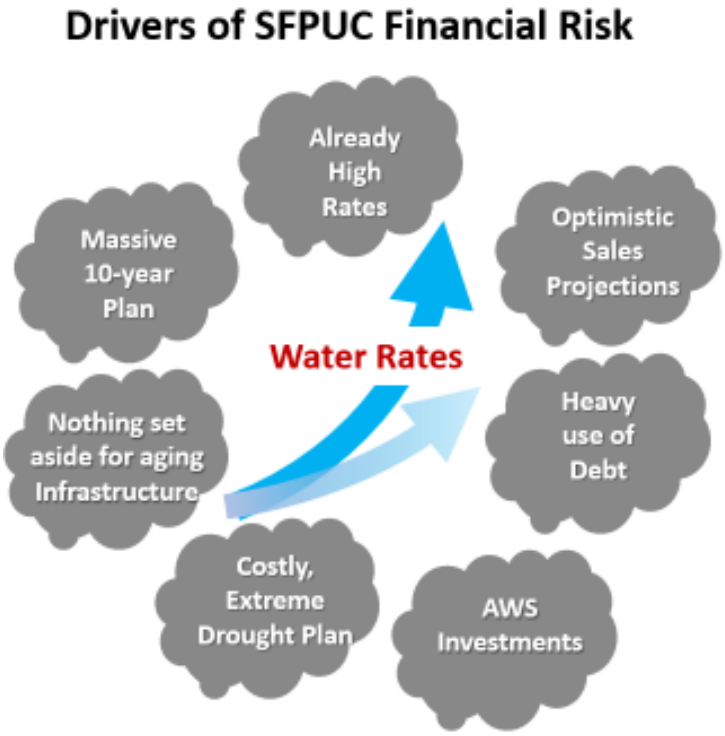
Re: The SFPUC's Significant Financial Risks and Our Rates

Dear BAWSCA Board Members and CEO Sandkulla,

Thank you for your service!

The SFPUC is facing significant financial risks which puts further upward pressure on our already high water rates. But remarkably SFPUC leadership doesn't appear to understand the problem (or disregards it) and BAWSCA so far has not given it attention. Please consider pressing for corrective action. Step one could be requesting an operational audit of the SFPUC by an independent third party which should include an assessment of the issues below.

The SFPUC's financial risks to ratepayers have at least seven components which all contribute to driving up already exceptionally high water rates:



1) **<u>Wholesale rates have already jumped:</u>** Less than 3 years ago wholesale water rates were $1,786 per acre foot. Starting July 1 they jumped to $2,470 per acre foot, an almost 40% increase. The 2015 rate was $1,276 per acre foot. Our rates will have almost doubled in just 10 years. We already have the highest wholesale water rates of all the major California water suppliers.

2) **<u>A stunning 10 year capital plan:</u>** Last year's 10 year capital plan was massive in itself, at $8.8 billion. This year's 10 year capital plan grew by 34%, to $11.8 billion. The SFPUC argued that the investments were needed, particularly related to sewer systems (which we don't pay for), but the biggest component of the increases is related to water systems, not sewer systems. To exacerbate this problem, the 10 year capital plan has no significant investment in Alternative Water Supplies (AWS). Even without any significant investment in AWS, the SFPUC projects our wholesale water rates to grow to $3,200 per acre foot in 2034.

3) **<u>Projections based on increasing water demand/sales.</u>** For the last 20 years the SFPUC's Regional Water System (RWS) demand has been in decline, from ~260 mgd in 2003 to 178

mgd in 2023, a 30%+ drop. If water demand doesn't grow as the SFPUC and BAWSCA currently projects, this will put further upward pressure on rates as selling less volume means that the per unit price has to go up in order to cover costs. While SFPUC staff and the BAWSCA CEO have been pressing for years that water demand is "hardening," (meaning, will stop going down) demand continues to decline. The SFPUC commissioner who's a water scientist expects that we have not reached demand "hardening." The Pacific Institute, a respected water resilience think tank, shares this view.

4) **The SFPUC says we need to develop 92 mgd of AWS despite demand trends.** The SFPUC's June AWS report projects a 92 mgd shortfall in supply. Developing 92 mgd of AWS would cost in the range of $17 billion, all incremental to the current 10 year capital plan again causing rates to increase well beyond projections. Worse yet, if the AWS are built and not needed, rates would need to go even higher still. In the context of long term declining demand, it's hard to imagine that anything close to 92 mgd of AWS will be needed.

   The SFPUC's 2021 Long Term Vulnerability Assessment (LTVA) warned about the impacts of demand and spending on water rates:

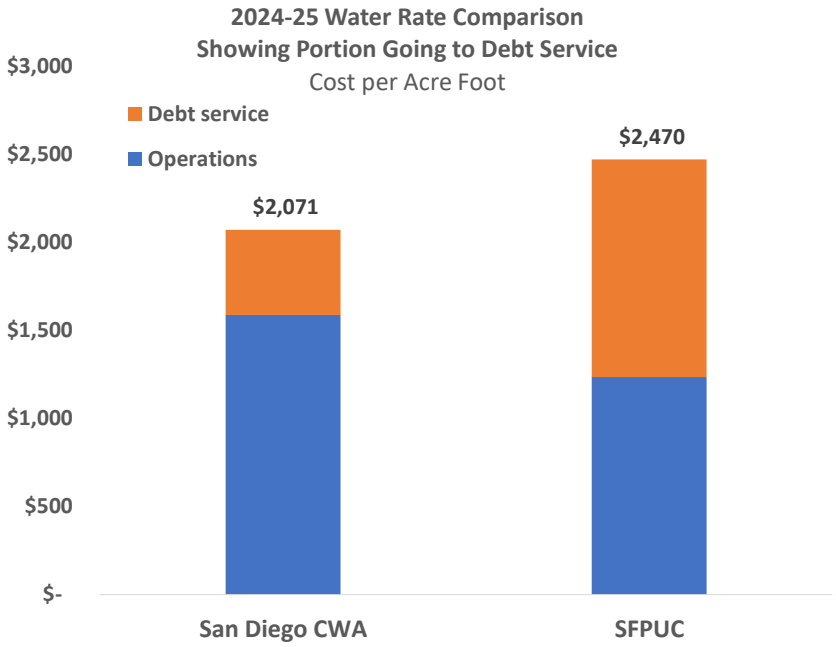
   > "In a situation in which major capital investment is required to add additional supply to the system as a result of new instream flow requirements and/ or decreases in precipitation as a result of climate change, demand would need to increase significantly to mitigate substantial increases in the price of water for customers. For example, if annual CAPEX spend were to increase from the 2020 baseline of $350M to $525M under the $500M OPEX spend scenario (right hand side of Figure 5-84), demand would have to increase by 30% in order to maintain existing prices or else rise by ~50% from $10/ccf to $15/ccf. However, results presented above also show that system performance is very sensitive to even small increases in demand. **Thus, in considering new capital investments, a trade off must be made between reliability and price."**[1]

   To put it in today's context, the LTVA contemplated demand scenarios from 227 mgd to 334 mgd. Last year's demand was 178 mgd. The LTVA's referenced 2020 capital spending was $350 million. FY 24/25 capital spending for Water Enterprise and Hetchy Water is $1,045 million and for FY 25/26 is $1,004 million. The projected 10 year average capital spending is $450 million but includes no significant investment in alternative water supplies. As compared to 2020, now 4 years later we have already exceeded the LTVA capital spending

[1] "Long Term Vulnerability Assessment and Adaptation Plan for the San Francisco Public Utilities Commission Water Enterprise - Phase I," Prepared by: Baptiste François, Alexa Bruce, Khanh Nguyen, Dong Kwan Park, and David Rheinheimer **University of Massachusetts, Amherst** Umit Taner **University of Massachusetts, Amherst**; **and Deltares** Sungwook Wi and Hassaan Khan **University of Massachusetts, Amherst** Alexis Dufour and David Behar **San Francisco Public Utilities Commission** David Yates and Caspar Ammann **National Center for Atmospheric Research** Marjolijn Haasnoot **Deltares** Casey **Brown University of Massachusetts, Amherst,** 2021**,** page 235. Underlining and red coloring provided by Dave Warner.

projections and have seen demand declining rather than slowly ascending to the lower bounds of their demand projections. **The LTVA foresaw the climbing water rates that we're struggling with today.**

5) **The capital plan is financed primarily by debt.** Funding investments through debt typically doubles or more the cost of a project as debt service costs exceed the cost of the original investment, particularly with debt repayment periods of 30 years or more. Today's high water rates are due in part because the SFPUC already has a large amount of debt, before taking into account this 10 year capital plan. **Half of our water payments to the SFPUC go to debt service.**

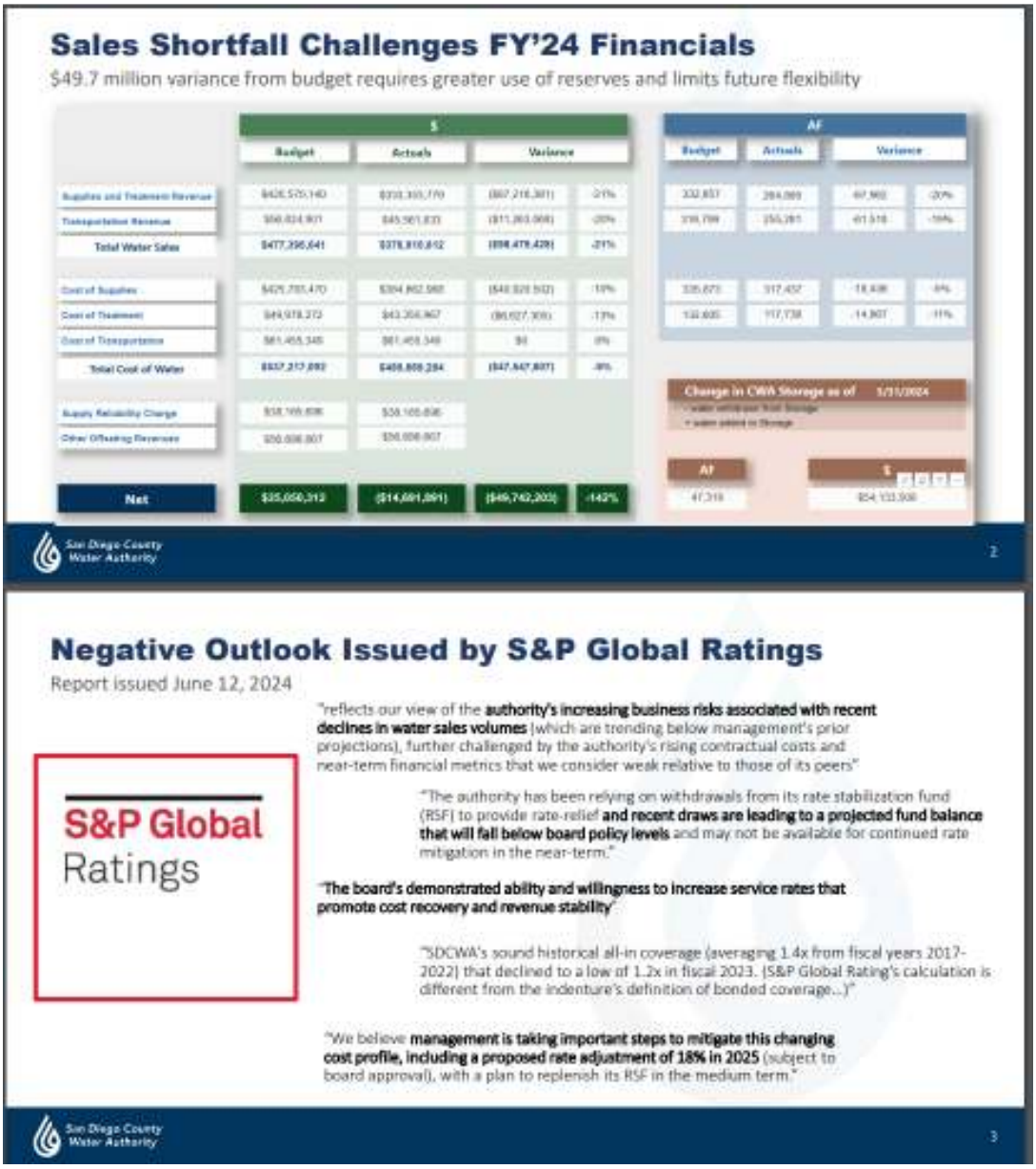


6) **The SFPUC doesn't have any stated infrastructure replacement cost reserves.** Prudent management/best practices would call for building up reserves for the replacement of aging infrastructure. Not having such reserves means that the SFPUC will likely have to add yet more debt to pay for the replacement cost of aging infrastructure. **The result will be more debt and no relief on exceptionally high and growing water rates for generations.**

7) **The SFPUC has an unusually conservative drought planning model, tying up an unneeded 25 mgd or more per year in supply.** At the time the SFPUC established the model, robust risk analyses weren't available, but with the availability of watershed tree ring data in the last 10 years and now with the addition of robust statistical models, the SFPUC's drought planning model is estimated to occur once in 25,000 years, including when taking into account climate change.[2] If the SFPUC were to make a modest reduction to its drought model to move risk to the range of once in 1,000 years, 25 mgd per year or more of supply would be freed up, offsetting potential AWS needs.

[2] Ibid. page xxii: "According to climate projections and expert elicitations, there is a central tendency of warming of +2°C and +4°C by 2040 and 2070 (Representative Concentration Pathway [RCP] 8.5), respectively, with no clear direction of change in mean annual precipitation over the planning horizon.

Let's Learn from San Diego's Mistakes



Slides taken from San Diego County Water Authority's June 27, 2024 Board Meeting

The San Diego County Water Authority (SDCWA), even with lower water rates and debt service costs, is facing significant financial challenges. Demand has declined below forecasts, they've had to scale back the use of their Carlsbad desalination plant, sell water, and see its credit rating drop, and propose an 18% one year jump in water rates.[3]

The SFPUC hasn't Acknowledged the 7 Concerns

Step 1 is problem recognition, which the SFPUC has not acknowledged in any significant way. There's been no mention of scaling back their 10 year financial plan. The latest Alternative Water

[3] "VOICE OF SAN DIEGO: San Diego's water prices face doomsday increase,"Voice of San Diego News June 27, 2024.

Supply Report emphasized that there's a 92 mgd supply shortfall despite the LTVA's warning. There's been no mention of any concern with 50% of our rates going to cover debt service and no mention of a need to set aside funds for replacing aging infrastructure. And worst of all, there's been no acknowledgement that the projected large rate increases could be even worse.

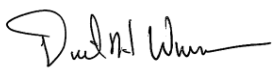
Actions to Consider

Step 1 is problem recognition, which has not yet occurred. Please ask the SFPUC to conduct an operational audit by a reputable third party acceptable to BAWSCA. The operational audit should review, amongst other things, the seven items raised here.

Or at a minimum, as a Board please take steps to better understand the issues raised here. The better the problem is understood and the sooner it is understood, the easier it is to address. We're not yet where the SDCWA is.

Please band together as a Board and take action. Your ratepayers depend on you.

Kind regards,



Dave Warner

PS. Apologies that I will not be participating in your July 18th Board meeting.

cc: SFPUC Commissioners
Dennis Herrera, SFPUC General Manager
Steven Ritchie, SFPUC Assistant General Manager, Water Enterprise
Nancy Hom, SFPUC Chief Financial Officer
Laura Busch, SFPUC Deputy Chief Financial Officer
Erin Corvinova, SFPUC Financial Planning Director

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Restoring the Tuolumne River

TID, MID and SF Public Utilities unveil project to help native fish habitat

Turlock Journal | September 14, 2024 | Joe Cortez

Gravel that was removed from the river during the Gold Rush days is being put back into the Tuolumne to help add complexity to the river, creating the fast-moving current in which salmon thrive (Photo courtesy of TID).

LA GRANGE — Turlock Irrigation District's partnership in a restoration project on the lower Tuolumne River is expected to revitalize and better protect native fish species in their natural habitat.

TID, along with Modesto Irrigation District and the San Francisco Public Utilities Commission, on Friday unveiled the project into which they're sinking a combined $80 million over the next eight years.

An agreement between the three utilities and the U.S. Fish and Wildlife Service was forged in February of 2021, with the project getting under way just weeks ago and should be completed by the summer of 2026.

“The overarching goal of this project is to restore the river channel to provide spawning and rearing habitat that increases the productivity of chinook salmon and rainbow trout,” said Michael Cooke, TID’s director of water resources and regulatory affairs. “This project will also help with the increase of downstream gravel augmentations. We’re stockpiling gravel in the river so that during high-flow events that gravel will move downstream and replenish gravel that gets washed (further) downstream.”

The project — about 1.5 miles down river from the La Grange Dam — has a price tag of $7.5 million, which was bolstered by a $5 million grant from the California Department of Fish and Wildlife. The remaining $2.5 million was handled by the three utilities. It features 7.5 acres of in-stream habitat restoration, 2.5 acres of floodplain habitat, and more than 50,000 cubic yards of spawning-friendly gravel that will go into the river.

The project — about 1.5 miles down river from the La Grange Dam — has a price tag of $7.5 million, which was bolstered by a $5 million grant from the California Department of Fish and Wildlife. The remaining $2.5 million was handled by the three utilities (Photo courtesy of TID).

All of this has increased spawning habitat more than five times from Old La Grange Bridge and above.

Gravel that was removed from the river during the Gold Rush days is being put back into the Tuolumne to help add complexity to the river, creating the fast-moving current in which salmon thrive.

“This section of river was basically like a shoebox. It’s got vertical sidewalls, and a flat bottom that moves at about a half a mile an hour. It’s not conducive to rearing or spawning. It’s a terrible habitat,” said Pat Maloney, aquatic biologist for TID. “When those fish come back out of the ocean to spawn, they go as high up as they can for the most part. Some years we see them spawning as far downstream as Waterford, but for the most part they’re going to the coldest, hyper-oxygenated water, which is coming out of the dam. So, the majority of the adults that want to come here to spawn are moving up past this location where it’s been just a trap for them.”

Salmon lay their eggs in gravel, and now there are multiple locations where they can do so with the right velocity and depth of water, gravel that is accommodating.

Juvenile salmon will also benefit.

“We’re placing over 60 almond trees and six big cottonwoods and some oaks into some of these bars,” said Maloney. “You can imagine the top of a tree, all those branches sticking out of a gravel bar, will provide refuge for all these juvenile fish hatching up out of the gravel.”

The invertebrates that juvenile fish seek for their food source will graze on the roots and bark of those trees.

“I’m really hopeful … I’m not even hopeful … I know it’s going to work,” said Maloney. “I’ve been out every day since the beginning, and to see the transformation of the river from a shoebox to a riffle-run pool is just phenomenal.”

Modesto Irrigation District board member and cattle rancher Larry Byrd said the project is an example of how the ag community can work alongside environmentalists.

“I want the river enhanced, I want to see those salmon like I used to see 40 years ago, I want to see them in groves like they came up this river,” said Byrd. “I know (Maloney) was very optimistic, and I wish I had his optimism, but it’s not going to happen this year. But it will. I think in three or four years, we’re going to see a difference up here.”

Over the next 12 months, River Partners will design a series of restoration projects — along the river and its floodplain from Don Pedro Reservoir downstream to the San Joaquin River — that will improve conditions for salmon and fish species. By 2030, the goal is to develop 77 acres of suitable salmon-rearing and floodplain habitat and add approximately 100,000 tons of gravel in specific areas of the river for optimal salmon spawning and rearing.

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San Francisco is trying to restore the river it drinks from — but environmentalists say it's not enough

San Francisco Chronicle | September 13, 2024 | Kurtis Alexander

The city of San Francisco is partnering with the Turlock and Modesto irrigation districts to restore salmon spawning habitat in the lower Tuolumne River. Courtesy of Turlock Irrigation District

Beneath the warm sun of the San Joaquin Valley, crews with heavy machinery have spent the past two months moving heaps of gravel into the cool waters of the Tuolumne River.

The work, in rural Stanislaus County, marks an unlikely partnership between the city of San Francisco and two large irrigation districts to try to revive the river's struggling salmon population. The gravel bars and riffles being fashioned in the lower reaches of the waterway are expected to help the renowned fish spawn.

San Francisco and the Turlock and Modesto irrigation districts have long relied on the Tuolumne for water supplies, and they've often fought over who gets what. But now the three parties are working in tandem to save the fish that are close to being wiped out in large part because of the water draws.

The restoration of 7.5 acres of historical spawning grounds is the first of many fish projects that the water suppliers have committed to. The parties expect to spend $80 million on the river through the end of the decade. The effort will include restoration of flood plains to expand salmon rearing habitat and possibly the removal of nonnative striped bass, which prey on the young fish and have been partly blamed for their decline.

“Frankly, what we’re seeing is a new era of working together on (fish) habitat restoration,” said Steve Ritchie, an assistant general manager at the San Francisco Public Utilities Commission, which provides the city’s water. “The fact that we’re doing something real and very beneficial in cooperation with the irrigation districts is a tremendous achievement.”

The collaborative work comes not only at a fraught moment for salmon but also for the three water suppliers. State water regulators are amidst a years-long process of figuring out how much water should be taken from California’s rivers — and how much should be left there — to protect watersheds. San Francisco and its Central Valley counterparts are eager to demonstrate that they have things under control on the Tuolumne.

Water managers for the three parties have been urging the state to drop strict limits on water diversions that have been proposed under what’s known as the Bay-Delta Plan. The water managers, instead, want the state to adopt “voluntary agreements” that would allow them to draw more water from the river in turn for more fish restoration.

The nearly $8 million project now underway near the community of La Grange is not officially part of any state deal, but it’s clearly meant to signal that the parties are serious about future river improvements.

“It’s one (project) where we feel we can start to get into the habitat restoration business,” Ritchie said.

The 150-mile Tuolumne River feeds San Francisco’s Hetch Hetchy Reservoir, where water is piped 160 miles from Yosemite National Park to the Bay Area. Lower on the river, Don Pedro Reservoir provides water to the Turlock and Modesto irrigation districts.

Environmentalists, who have long criticized San Francisco and its partners for taking too much water from the river at the expense of fish, are giving the new project lukewarm reviews.

“Obviously, we think habitat restoration is important,” said Peter Drekmeier, policy director for the Tuolumne River Trust. “The problem is that… gravel (for spawning) is not the limiting factor. There are other critical factors.”

Foremost, say Drekmeier and others, is the need to keep more water in the river for salmon, which are born in the waterway, migrate to the ocean for about three years and then return to the river to lay eggs. Higher, faster river flows help with the migration as well and lower water temperatures, flush out toxic algal blooms and submerge flood plains for safe fish rearing.

As it stands, more than 80% of the river water is diverted by the suppliers in an average year.

The spring run of Chinook salmon in the Tuolumne no longer exists, and the fall run has averaged only thousands of fish a year, down from tens and even hundreds of thousands historically.

The initial restoration project by the water suppliers is expected to wrap up at the end of next year. In addition to creating gravel beds for fish eggs to nest, the work is scheduled to include construction of 2.5 acres of floodplain habitat. Rainbow trout are also expected to benefit from the undertaking.

The work is being paid for mostly with grant money from the California Department of Fish and Wildlife. Future work on the river, which is scheduled to bring the total amount of restored habitat to 77 acres, is expected to be funded primarily by the water suppliers.

Chico-based River Partners, a nonprofit that works on river restoration, is planning and designing the work.

“We’re excited,” said Michael Cooke, director of water resources and regulatory affairs for the Turlock Irrigation District. “This definitely gives the fish a much better opportunity than they had before.”

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