Terrie Gillen

From: Shelley Kramer <shelley.kramer78@gmail.com>
Sent: Saturday, August 28, 2021 1:09 PM
To: Jack Gibson
Subject: Water use

Dear Mr. Gibson,

There are plenty of things to be cranky about, but as a long term resident of San Anselmo, having lived through drought before, I am appalled that in 2021, the only option available for us seems to be shorter showers and a rain dance.

I understand that desalination was rejected by voters 16 years ago. What have you done since? That measure should be updated and on the ballot every single year. San Diego and El Paso Texas managed to get desalination, certainly we can figure it out. If pumping oil from Alaska is feasible, why not water from the northwest?

And we can afford it, with recent soaring home prices, compared to the prospect of losing it all as lawns and yards die, and there's not enough water to drink. How will we fight fires without water?

We are already discussing our options if home prices in Marin collapse because the water problems are not solved. People will leave, and if you can't sell your house, you're screwed.

In my humble opinion, what we are experiencing is not an ordinary or transient drought. This is climate change. It will only get worse. And if rains ever return, they will be torrential, not at all what we're used to -- what are you doing to capture that water?

This is not a time to be complacent. You don't want to look back and say "if only we'd done then..."
--
Shelley

Shelley Kramer
Attorney at law
Tel. (415) 298-5664
Shelley.kramer78@gmail.com

Terrie Gillen

From: M <robtcasper@aol.com>
Sent: Saturday, August 28, 2021 10:10 AM
To: opinion@marinij.com; dallen@marinij.com; Jack Gibson; Monty Schmitt; ksears@marincounty.org
Subject: WATER

Roy Taylor of Mill Valley wants us to use water from Oregon and Washington and call it a water freeway. I've heard this before. But we are not anywhere near the drought of 1976-1977. We need another year or two to top that. But it ended and in the 1980s we had severe rains and floods in Marin. No one said either were caused by climate change. Every normal event is now caused by climate change. Today we have the 9th named hurricane yet no one mentions the first 8 that did no damage. No the 9th one is a category 4 and caused by climate change.

I did read with the doomsday of empty reservoirs the other day. It said one reservoirs was at 17% capacity and in 2017 it was 98%. Well, in 2016 and 2017, we had record snows in the Sierra with over 70 feet in both years. So was that snow caused by climate change. But the notion of this lie of climate change does effect reasoning which is bad for the average taxpayer. For instance, the water board climate phoebes have "shelved" desalination because that is taking water from the ocean that is sacred to these climate phoebes. They hate taking oyster from water and hate cows. So why would we assume they are really trying to solve the water problem.

But this will pass as it did in 1978. We will again have plenty of water and the climate phoebes will pray for more droughts to continue their immoral agenda. I am sure the overwhelming number of Marinites wants desalination. It matter little. Those handful of climate phoebes run the county and our lives. We are at the mercy of this paranoid bunch.
Robert A. Casper, SR
San Rafael, CA

Terrie Gillen

From: Karen B Polivy <kbpolivy@att.net>
Sent: Sunday, August 29, 2021 3:31 PM
To: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: Please start the Desalination plants immediately. Delay the pipeline

Importance: High

To the MMWD Board,
I read with dismay today's Marin IJ front page article on the vote tomorrow morning to start the pipeline project with an estimated cost of $65 million excluding the cost of water contracts. Why would you not start the desalination plants immediately to delay the draining of the Marin reservoirs? The sooner the desal plants come on board, the longer our currently available water resources will last. Spending $30-37 million for two temporary desal plants that will supply 25% of our water supply **now** seems like a much wiser decision than spending $90 million (including the water contracts) for **potentially** getting water from inland counties. Climate change and lack of water is not just occurring in Marin. There is a drought across the whole western United States and water is a scarce resource. That Sonoma will continue to provide 25% of our water supply into the future is questionable since they have already reduced our allocation by 20%. Why would you not implement "the back-up plan" immediately? If you want to pursue the pipeline, you should not be pre-purchasing $15 million of materials before you have any water sources guaranteed.

Please reconsider your direction and immediately move forward with the temporary desalination plants.

Karen Polivy
5 Eagle Rock Road
Mill Valley, CA 94941

From: Karen B Polivy <kbpolivy@att.net>
Sent: Tuesday, August 24, 2021 5:10 PM
To: 'jgibson@marinwater.org' <jgibson@marinwater.org>; 'mschmitt@marinwater.org' <mschmitt@marinwater.org>; 'LBragman@MarinWater.org' <LBragman@MarinWater.org>; 'CKoehler@MarinWater.org' <CKoehler@MarinWater.org>; 'LRussell@MarinWater.org' <LRussell@MarinWater.org>
Subject: Wasting Money: Desal, pipeline, ineffective bill redesign and no reduction goals

To the MMWD Board,
Please see my opinion below regarding the pipeline versus desalination which was sent to the IJ Reader's Forum section.

Also, I hope that you will not continue to waste my money on your poorly implemented conservation measures and goals. I recently received my latest water bill. I have been diligently reducing my water usage to meet the requested goal of 40% reduction (reduction over what? not clear! I have heard average of last few years, prior year, nobody knows…). I looked forward to receiving my bill to see my progress on that goal.

Imagine my shock and dismay to find a redesigned bill that had ABSOLUTELY NO INFORMATION about either my reduction goal amount, past usage (other than the prior 12 months) or any quick reference as to how I was doing on meeting the requested water reduction goal. **THERE WAS NOTHING**! And yet you wasted my money on redesigning the bill?????? Why?

I hope you will start using our resources more effectively, both water resources and money.

Thank you for reading this.

Karen Polivy
5 Eagle Rock Road
Mill Valley, CA 94941

From: Karen B Polivy <kbpolivy@att.net>
Sent: Tuesday, August 24, 2021 4:21 PM
To: 'opinion@marinij.com' <opinion@marinij.com>
Subject: For Reader's Forum: MMWD Needs To Start Desal Now!

Hi,

I hope you will print this in the Marin IJ Reader's Forum section

MMWD Needs To Start Desalination Now!

I hope the public will email the five MMWD Board Members ASAP to let them know that Marin residents do not want their money wasted on an $88 million permanent pipeline across the Richmond-San Rafael bridge that will do nothing to relieve our water shortage and will most likely not bring any water to Marin. That money could be better spent obtaining desalination plants for Marin as soon as possible which is the quickest solution to sourcing a permanent addition to Marin's water supplies. Other Reader's Forum letters have far more eloquently enumerated reasons that MMWD's proposed pipeline across the RSR bridge to supposed East Bay and Central Valley sourced water is folly and just wastes time and money on an ineffective expensive short term solution to a long term problem. The Marin IJ quoted the cost of renting TWO desalination plants as $37 million. That is less than half the pipeline cost with more positive definitive results. One would hope the next step would be a permanent desalination plant.

The MMWD Board needs to start implementing a desalination plant now before Marin runs out of water. I hope the community will send that message to the MMWD Board loud and clear. There is no time to waste.

Karen Polivy
5 Eagle Rock Road
Mill Valley, CA 94941
Land-line 415-388-4544

Terrie Gillen

From: Maureen Uribe <maureen_dancer@yahoo.com>
Sent: Sunday, August 29, 2021 7:09 PM
To: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: Desalination plants needed IMMEDIATELY!!

I read with dismay today's Marin IJ front page article on the vote tomorrow morning to start the pipeline project with an estimated cost of $65 million excluding the cost of water contracts. Why would you not start the desalination plants immediately to delay the draining of the Marin reservoirs? The sooner the desal plants come on board, the longer our currently available water resources will last. Spending $30-37 million for two temporary desal plants that will supply 25% of our water supply **now** seems like a much wiser decision than spending $90 million (including the water contracts) for **potentially** getting water from inland counties. Climate change and lack of water is not just occurring in Marin. There is a drought across the whole western United States and water is a scarce resource. That Sonoma will continue to provide 25% of our water supply into the future is questionable since they have already reduced our allocation by 20%. Why would you not implement "the back-up plan" immediately? If you want to pursue the pipeline, you should not be pre-purchasing $15 million of materials before you have any water sources guaranteed.

Please reconsider your direction and immediately move forward with the temporary desalination plants.

Maureen Uribe
47 Jewell Street
San Rafael, Ca. 94901

Terrie Gillen

From: attjosen@att.net
Sent: Sunday, August 29, 2021 4:33 PM
To: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: Water

Never know what climate change will bring..... However there is going to be lots of salt water..... Let's get our water from the bay! Jose

Terrie Gillen

From: Roy Falk <royfalk@icloud.com>
Sent: Sunday, August 29, 2021 10:20 AM
To: Roy Falk
Subject: Put Desalination On The Ballot

Hey,

I just started the petition "Put Desalination On The Ballot" and wanted to see if you could help by adding your name.

My goal is to reach 10,000 signatures and I need more support. You can read more and sign the petition here:

https://link.edgepilot.com/s/3e4be311/KGn9bhoikEKn1tgup7_CXw?u=https://chng.it/d7GqN4dP

Thanks!
Roy Falk

Terrie Gillen

From: jeff abend <boxxorain@hotmail.com>
Sent: Sunday, August 29, 2021 11:41 AM
To: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: Too little, too late

Hello,
Now the dire projections are that we'll run out of water by next June and pools surrounded by lush lawns are still being fully watered?? What's the matter with you guys? Shame on all of you. Our water storage situation could have been much less dire if you had taken the necessary steps at the beginning of summer to limit excessive water use.

You still seem more concerned with selling water than conserving it.

Now you're looking, once again, at putting the pipeline across the bridge that just a while ago, Caltrans said needs to be rebuilt. Brilliant.

Time to flush this Board down the toilet. (with non-potable water, of course.)

Jeff Abend
San Anselmo

Terrie Gillen

From: Priscilla Bull <priscillahbull@gmail.com>
Sent: Sunday, August 29, 2021 3:59 PM
To: Cynthia Koehler
Subject: water supply

Hi Cynthis,

I support the staff's recommendation to proceed immediately with plans for the bridge pipeline as the best immediate approach. Let's hope it can be achieved before next summer.

In the meantime, I believe that the current conservation requirements and enforcement can be tightened. For example, I checked the District's website and could not find any mention of swimming pools; maybe I missed something?

The North Marin Water District prohibits re-filling or filling pools after 7/1/21.

Thanks for all the work you are doing trying to address the many complications of the drought.

Best,
Priscilla

From: Kevin
To: Jack Gibson
Subject: Demand more from our Water Board
Date: Monday, August 30, 2021 10:40:43 AM

Mr. Gibson,

I've been on several zooms this Summer while MMWD discussed our 'historic' drought. I'm not at all happy with this Water Board, the only thing I hear from you all is to conserve more. It seems the MMWD Board thinks your job is to not provide water, your job is to provide the water needed - period.

I just heard the Board President say again during the public meeting, that we (your customers) need to stop watering gardens and landscapes. That we (your customers) need to just take what you give us. Let me be clear, your job is to provide water. You're not doing it because evidently, no one there has prepared for a drought of this magnitude. If water costs more, then it costs more. You should be looking at Desal now. We want more supply, not less.

I also just heard someone on your board or staff say if we collected anymore water, we have to release it all to Lagunitas Creek due to state law. While that may be true, we are in an emergency and so MMWD should be contacting the State to get that changed - NOW.

If I want to grow a garden to provide fresh food for my family and be self-sustainable, my water agency should be increasing supply. NOT just conserve. I'm tired of hearing conserve more or Cynthia pontificating how we, the customers, just need to get over it and use less. We already cut our drip back to one day a week, we collect water in 5 gal buckets in the showers, we installed a flume, but I'm at the end of hearing Water Board continue to talk about how to not to provide water - by just conserving more.

Kevin
Lucas Valley Resident

Terrie Gillen

From: pidgeons@comcast.net
Sent: Monday, August 30, 2021 6:56 AM
To: Martin Coyne
Cc: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: Re: MMWD - Desalination is the right path

Long term solution, not a short term band aid

Sent from my iPhone

> On Aug 30, 2021, at 6:22 AM, Martin Coyne <martincoyne55@gmail.com> wrote:
>
> Ladies & Gentlemen
>
> **Please do not waste more of our tax $$$ on a temp pipeline for an unknown water. Do not vote for this $2M pipeline study today**.
>
> We are in a new world of climate change and must find sustainable solutions. Relying on water sources from other counties and farming communities is "pie in the sky". The entire region is facing water shortages - why would Sonoma County grant additional water to North Marin? Drive down Interstate 5 and witness farmer's signs shouting out for water as well as seeing the dried up fallow orchards - a clear indicator that water is scarce across the State.
>
> Investigate in a Desal program now; spending $35M to create a partial solution makes much better sense than $90M pipeline for ever dwindling water supplies from across the Bay.
>
> I understand the pressures to create an immediate solution, but this new climate we are experiencing is here to stay. Think hard before you vote today.
>
> Kindest Regards
>
> Martin Coyne
> 66 Fair Drive
> San Rafael, 94901
> (415) 517 9539

From:	Jeanne Santangelo
To:	Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject:	desalinization better long-term than pipeline
Date:	Monday, August 30, 2021 11:18:22 AM

Dear MMWD water board directors,
Though I live in Novato, I am concerned about your decision to pursue a pipeline over investing in desalination.

There is limited water available throughout much of the American West already suffering through historic drought. Competition for water rights, dried up reservoirs, river diversion and underground aquifer depletion is already happening.

Due to the effects of continued drought and climate change the situation will worsen. It will become more challenging and critical to Marin County to have secure water sources in the future.

Wherever additional water is sourced, It is inevitable that expanding desalinization will become necessary.

Please revisit your plans - the pipeline you are pursuing may be a solution in the short term but it will turn out to be an expensive boondoggle without a long-term future.

Desalinization is the wiser choice for the long-term. It may cost more up front but would be a wise investment that will serve generations into the future with limitless capacity.

--
Jeanne Santangelo
(415) 300-7466
jfsantangelo@gmail.com

From: Mike Maguire
To: Cynthia Koehler
Subject: Desalinization
Date: Monday, August 30, 2021 10:07:34 AM

Desalinization
For any MMWD candidate that is for a permanent desalinization plant on the coast is one for witch I would vote I am 78 years old and carrying 3 gallon buckets of water up and down stairs from the kitchen sink and bathtub to flush the toilets. I live on a 40° slope so I don't see how gray water would help. I would sign a recall petition for any board member that thinks we should conserve more. MMWD should supply water not ration it
Mike Maguire
Mill Valley

Sent from my iPhone

From:	Bryce Armbruster
To:	Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject:	Marin Water District - Desalination vs. Pipeline
Date:	Monday, August 30, 2021 9:07:00 AM

Hello Water Board,

I can appreciate the desire to take a simplistic solution to our region's current water predicament.

Water conservation is clearly a piece of the puzzle; however, we need a long term infrastructure-solution as soon as possible and not a bandaid such as the pipeline. The nation and the whole of the West are in a water crisis and we can't increase dependency on external and upstream sources.

I understand there are unknowns and concerns, notably with energy consumption, for desalination plants; **however, the time is now to investigate and act on a desalination solution**; ideally a permanent one considering the level of investment. There will never be a perfect 1-size fits all solution and there will be some drawbacks, but to truly avoid a scenario of zero-water, we need to act now and think long-term.

Thank you for your consideration in today's upcoming vote.

--
Bryce Armbruster
armbruba@gmail.com
64 Sunny Cove Dr
Novato, CA, 94949

Terrie Gillen

From: Martin Coyne <martincoyne55@gmail.com>
Sent: Monday, August 30, 2021 6:27 AM
To: Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject: MMWD - Desalination is the right path

Ladies & Gentlemen

Please do not waste more of our tax $$$ on a temp pipeline for an unknown water. Do not vote for this $2M pipeline study today.

We are in a new world of climate change and must find sustainable solutions. Relying on water sources from other counties and farming communities is "pie in the sky". The entire region is facing water shortages - why would Sonoma County grant additional water to North Marin? Drive down Interstate 5 and witness farmer's signs shouting out for water as well as seeing the dried up fallow orchards - a clear indicator that water is scarce across the State.

Investigate in a Desal program now; spending $35M to create a partial solution makes much better sense than $90M pipeline for ever dwindling water supplies from across the Bay.

I understand the pressures to create an immediate solution, but this new climate we are experiencing is here to stay. Think hard before you vote today.

Kindest Regards

Martin Coyne
66 Fair Drive
San Rafael, 94901
(415) 517 9539

From:	lisaschmier@yahoo.com
To:	Terrie Gillen; Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject:	Please distribute to the Board for today's meeting
Date:	Monday, August 30, 2021 9:03:44 AM

To the MMWD Board,

I read Marin IJ front page article on the vote to start the water pipeline project with an estimated cost of $65 million excluding the cost of water contracts. Why would you not start the desalination plants immediately to delay the draining of the Marin reservoirs? The sooner the desal plants come on board, the longer our currently available water resources will last.

Spending $30-37 million for two temporary desal plants that will supply 25% of our water **now** seems like a wiser decision than spending $90 million (including the water contracts) for potentially getting water from inland counties. Climate change and lack of water is not just occurring in Marin. There is a drought across the whole western United States and water is a scarce resource. That Sonoma will continue to provide 25% of our water supply into the future is questionable since they have already reduced our allocation by 20%. Why would you not implement "the back-up plan" immediately? If you want to pursue the pipeline, you should not be pre-purchasing $15 million of materials before you have any water sources guaranteed.

Please reconsider your direction and immediately move forward with the temporary desalination plants. Marin needs to be more water-independent than just building a pipeline and then begging for scarce spare water from jurisdictions to our east!

Lisa Schmier
53 Corte del Coronado
Larkspur

From:	gulickjohn@gmail.com
To:	Martin Coyne
Cc:	Jack Gibson; Monty Schmitt; Larry Bragman; Cynthia Koehler; Larry Russell
Subject:	Re: MMWD - Desalination is the right path
Date:	Monday, August 30, 2021 8:16:46 AM

I agree completely.

John Gulick
875 S Eliseo Drive, Apt 2
Greenbrae, CA 94904
(415) 385-8734

Sent from my iPhone

> On Aug 30, 2021, at 6:22 AM, Martin Coyne <martincoyne55@gmail.com> wrote:
>
> Ladies & Gentlemen
>
> **Please do not waste more of our tax $$$ on a temp pipeline for an unknown water. Do not vote for this $2M pipeline study today**.
>
> We are in a new world of climate change and must find sustainable solutions. Relying on water sources from other counties and farming communities is "pie in the sky". The entire region is facing water shortages - why would Sonoma County grant additional water to North Marin? Drive down Interstate 5 and witness farmer's signs shouting out for water as well as seeing the dried up fallow orchards - a clear indicator that water is scarce across the State.
>
> Investigate in a Desal program now; spending $35M to create a partial solution makes much better sense than $90M pipeline for ever dwindling water supplies from across the Bay.
>
> I understand the pressures to create an immediate solution, but this new climate we are experiencing is here to stay. Think hard before you vote today.
>
> Kindest Regards
>
> Martin Coyne
> 66 Fair Drive
> San Rafael, 94901
> (415) 517 9539

From:	M
To:	Monty Schmitt; Cynthia Koehler; opinion@marinij.com
Subject:	Water
Date:	Monday, August 30, 2021 10:16:19 AM

Did anyone feel more secure about the water problem after reading the article by water district directors, Cynthia Koehler and Monty Schmitt. Not me. The entire article was flap and fluff with no insight to get more water just conjecture and nonsense. The two even admit this article did not represent all the views on the board which tells me they are divided. But they mentioned climate resilience and water future. Yea, guy you tell us climate change has been going on for 100 years so why didn't you address the problem 50 years ago. If water shortage is due to climate change why didn't you act years ago.

But listen up you guys. You have one mission at work and that is get us the needed water for the customers. We pay you to do that but now you will charge us more for less use. There is not one concrete statement about getting us water just speculation and fluff. In 1976 - 1977, we had a worse drought yet nothing was done since 1978 to avoid the problem we have in 2021. These guys philosophy is to stall like they are doing and wait for rain. They can stall, their salaries will never decrease due to the drought. Like in 1978 when it rained, the drought was forgotten. This will happen again.

These guys never mentioned why they tabled desalination and again, stall long enough the problem will go away. What I think should be done to get them moving is to reduce their salaries in proportion to our rates being raise. If our rates are raised 25% for less water, their salaries should be decrease by 25%. I bet they would move them. Without a consequence for them, nothing will change but our bills.
Robert A. Casper, SR
San Rafael, CA

Save Our Seashore

A 501(c)(3) Charitable Organization (EIN 94-3221625)
Founded in 1993 to Protect Marin County's Ocean, Coasts, Estuaries, Watersheds and Creeks
40 Sunnyside Dr, Inverness CA 94956 gbatmuirb@aol.com 415-663-1881

August 23, 2021

To: Marin Water Board of Directors:

Re: Proposed Temporary Urgency Change Petition (TUCP)

From: Save Our Seashore, member Lagunitas Technical Advisory Flow Sub Committee (TAC)

The staff's 8/20/21 TUCP proposal (based on the ESA Study) consists of two parts: the first part is a pulse flow delay…the second part is a winter baseflow reduction. The pulse flow delay is consistent with staff's 4/6/21 proposal to the Board, which states:

> "*Staff proposes undertaking an objective, data driven, technical analysis to determine if the required flow releases are* ***functioning as intended****… The analysis will assist in exploring potential options for temporarily reducing the releases* ***without significantly affecting*** *the aquatic species residing in Lagunitas Creek."*

Unfortunately, the second part of the TUCP proposal (winter baseflow reduction) is inconsistent with the 4/6/21 proposal and represents a "mission creep" that significantly impacts aquatic species in Lagunitas Creek.

ANALYSIS OF PULSE FLOW DELAY PROPOSAL:

First, the good news: the proposed pulse flow delay from WR 95-17's mandated November to December (with adaptive management mitigations for any November trigger flow) seems to be reasonably supported by quantitative data and in concert with staff's original 4/6/21 proposal.

However, in the TAC meetings there was disagreement expressed regarding the timing for the adaptive management and the question asked if there is a November trigger flow and (as staff stated) the District wants to discourage spawning, then why adaptive manage at all and why initiate only a partial winter base flow if spawning is found?

Instead, Save our Seashore urges that if there is an (unlikely) November minimum 25 cfs trigger event, the District should its initiate its required 35 cfs pulse flow, begin adaptive management and release the full winter baseflow (not 10 cfs) if salmon are found spawning.

Assuming the ESA analysis is correct that the first 25 cfs trigger event now comes in December, this one-month delay in the mandatory dry year ramp up from 6 cfs to 20 cfs plus the elimination of one pulse would save the District about 900 Acre Feet (AF). Conversely, if there is an unforeseen trigger event this next November, that savings would be reduced, but offset by welcome early rainfall flows into Kent Lake.

Thus, the ESA Study indicates that the WR 95-17's mandated November pulse flow is likely <u>not</u> *"functioning as intended"* and the proposed delay to December (with adaptive management mitigations for any November trigger flow) could occur "*without significantly affecting the aquatic species residing in Lagunitas Creek."*

ANALYSIS OF DRY-YEAR WINTER BASEFLOW REDUCTION PROPOSAL:

Now the bad news: The ESA graphs that support the TUPC proposal make it difficult to see the significant impact on coho spawning habitat and the 8/20/21 Draft doesn't mention any impact.

ESA worked hard to complete its scope of work, but the compressed timeframe created several problems. First, as requested in the TAC meetings (but not provided), the Study's baseline should be the 25 cfs normal year flow (not the 20 cfs dry year flow shown as the start of the "Y" axis on the Study's graphs). Otherwise, the Study is piecemealing the proposal. By focusing only on the impact on spawning habitat from the 20 to 16 cfs reduction, the Study is ignoring that this reduction is additive to WR 95-17's already-existing dry year 25 to 20 cfs reduction. The existing WR 95-17 reduction, per MMWD's own study (Bratovich & Kelley 1988, Figure 5-1), was estimated to cause a 19% reduction in redds. The TUPC reduction is an added impact.

Second, because the Study's graphs compressed "X" axis ("area of channel") and elongated the "Y" axis ("cfs"), it is difficult to quantify this added impact. Quantitative data (in addition to the graphs) was requested in the TAC meetings, but not provided because ESA felt it would be "misleading." Regardless, ruler applied to the graph ("Coho spawning suitability – all sites combined") indicates that combined high and low suitability habitat is ~9000 sq ft at 20 cfs and ~7500 sq ft at 16 cfs, which represents a 17% decline for the 4 sites studied. This is consistent with Bratovich & Kelley, which showed a 18% decline from 20 to 16 cfs for their sites combined

Third, the "X" axis of the Study's graphs is defined as "area of channel," which is an abstract metric not meaningful to most. Both ESA and Bratovich & Kelley use 128 sq ft per redd to translate "area of channel" into "number of redds," which is the common metric used. In the TAC meetings, it was requested that data be presented in terms of "redds" vs "area of channel," but this simple division by 128 and re-titling of the "X" axis was not done.

Adjusting for the above, WR 95-17's dry year 20 cfs flow results in a 19% reduction of 79 redds to which is added the TUPC's 17% decline of 63 redds. **Thus, the TUPC proposal roughly doubles the coho spawning impact of WR 95-17's current dry year reduction.**

ESA also added the 2020 spawning count to its graphs, however, as noted in the TAC meetings, the key issue is coho spawning viability, not spawning counts. Further 2020 is only one data point that is non-representative because was a low-spawning year and the only dry year since implementation of WR 95-17. ESA had 25 years of data, but stated that since the streambed changes, using 25 years would also be non-representative. There is middle ground between 1 and 25, but no further data was provided. ESA also explained their failure to provide quantitative data by stating that providing such data could be "misleading." But such quantitative data was provided in Bratovich & Kelley and used in the WR 95-17 proceeding, where it was not deemed misleading. Lack of quantitative data creates a lack of clarity on the TUPC's most critical aspect: the significant impact on the spawning of an endangered species.

Further, the baseflow reduction for 3.5 months (less 3 x 3 days of pulse flow) only saves 770 AF, which needs the context of conservation savings. In the TAC meetings, staff stated that the District assumed a 15-25% annual conservation savings on 25,880 AF with a 10% indoor savings and a spreadsheet calculated 25% to 55% reduction outdoor (summer) use, the midpoint of which (40%) is the low end of the District's Water Savings Tracker's 40% - 50% goal. In North Marin's West Marin service area, summer savings have already reached 38%, so a 40% - 50% goal is not unreasonable. But in the District's area, savings as of August 19 are only 30%. Thus, the District can and should do more to reduce outdoor use (i.e., move to hand-watering only).

Moving from the low end (40%) to the high end (50%) of the District's existing summer conservation goal would save 860 AF, which is more than would be saved by the TUPCs proposed winter baseflow reduction (770 AF)…but without impacting endangered species. Nor would a 50% summer target impact District customers' health or sanitation…instead raising the summer conservation target would impact non-native landscaping (that never should have been planted so extensively in the first place). The TUPC proposes extensive monitoring for the 3+ months of winter baseflow reductions, but if similar efforts were applied to education and compliance with new water restriction for the next 3+ months, it should be possible to avoid impacts to endangered species beyond those already occurring under WR 95-17's dry year winter baseflow reduction from 25 to 20 cfs.

But roughly doubling the impact to endangered coho spawning habitat to instead water non-native landscaping is not reasonable. No amount of monitoring, even if enhanced (as recommend by the resource agencies in the TAC meetings) and even if triggering mitigation in increments of 1-2 cfs for a week (as the TUPC proposal suggests) can balance the significant risk to endangered species with the 770 AF that could be saved through conservation. Thus WR 95-17's dry year winter baseflow reduction from 25 cfs to 20 cfs is indeed *"functioning as intended"* and that portion of TUPC proposal that reduces the dry-year winter baseflow from 20 cfs to 16 cfs should be eliminated as inconsistent with the 4/6/21 proposal that states that the TUPC would occur *"without significantly affecting the aquatic species residing in Lagunitas Creek."*

TO BE ADDED TO THE TUPC PROPOSAL:

We now know that the 2020 USGS data contradicts the WR 95-17 assumption that flows downstream from the Park gage are always augmented by tributaries. In the 2020 dry year (the first since WR 95-17), 6 cfs at the Park gage was 20-30% less at Gallagher (regularly less than 6 cfs, often below 5 cfs and occasionally below 4 cfs). The 2021 data shows similar reductions.

Thus, WR 95-17 should be amended…not just for this TUPC "drought" year but for every "dry" year. The State Board should require measurement of its mandatory flows (trigger flows as well as summer and winter flows) at the Gallagher gage (as well as at the Park gage) to ensure adequate flows in "dry" years. For example, WR 95-17's 25 cfs trigger flow at the Park gage may not attract salmon when the Gallagher flow may be 20-30% less… nor might a winter baseflow measured at the Park gage reduced by 20-30% at Gallagher ensure no downstream riffle migration barriers…nor a summer flow reduced by 20-30% ensure no isolated overheated pools.

Lastly, in the TAC meetings, both TAC members and resource agencies have requested greater overlap of meetings to reduce staff time. Currently the TUPC proposes weekly meetings with (only) resource agencies and a monthly meeting with the TAC, which requires resource agencies to attend 5 meetings each month. Save Our Seashore suggests that meetings combined to the extent possible would improve communication and reduce pressure on resource agency staff.

IN SUM

The TUPC's proposed pulse flow delay (if properly mitigated) could be supported because it is consistent with the intent of the 4/6/21 proposal that it function "*without significantly affecting the aquatic species residing in Lagunitas Creek*" … in contrast, the TUPC's proposed reduction to a 16 cfs winter baseflow should not be supported because it risks a significant impact to endangered species that is inconsistent with the intent of the 4/6/21 proposal.

Jordan Gennett President

Terrie Gillen

From: Morgan Patton <morgan@eacmarin.org>
Sent: Friday, August 27, 2021 5:14 PM
To: Cynthia Koehler
Cc: Larry Russell; Larry Bragman; Monty Schmitt; Jack Gibson
Subject: Comments: Agenda Item 4 Proposed Temporary Usage Change Petition
Attachments: 2021.08.27. Marin Water_Agenda Item 4_TUCP_Comments.pdf

Dear President Koehler,

Please find the attached comments regarding the August 30, 2021 Marin Water Board Meeting Agenda Item 4 from the Environmental Action Committee of West Marin, The River Otter Ecology Project, SPAWN / Turtle Island Restoration Network, Watershed Alliance of Marin, Surfrider Marin Chapter, Save our Seashore, and Wildcare.

If you have any issues accessing the PDF please let me know.

Thank you,

Morgan

--
Morgan Patton | Executive Director
Environmental Action Committee of West Marin (EAC)
PO Box 609 | Point Reyes Station, CA | 94956
Office: (415) 663-9312
Cell: (415) 912-8188
Email: morgan@eacmarin.org
Availability: Tuesday - Saturday

Protecting and Sustaining the Lands, Waters, and Biodiversity of West Marin since 1971!

August 27, 2021

Marin Water
District Operations Committee
220 Nellen Avenue
Corte Madera, CA 94925
Submitted via email: *CKoehler@MarinWater.org*

RE: Agenda Item 4. Oppose Proposed Temporary Usage Change Petition

Dear Chair Koehler,

The undersigned organizations submit this letter in strong opposition to Marin Water staff's request that your Board approve submission of a Temporary Urgency Change Petition (TUCP) for California State Water Resources Control Board Order WR 95-17 for Lagunitas Creek.

Lagunitas Creek supports the southernmost remaining population of Coho salmon in California. The currently required flow releases are essential to maintaining a stable population and genetic diversity of this unique and irreplaceable wild salmon population. Reducing flows that support the survival of endangered salmonids in Lagunitas Creek is likely to have unforeseen consequences for these species, while the same savings of water can be achieved through modestly increased conservation by Marin Water customers, or the district's identified conservation target.

Water releases mandated by WR 95-17 are critical to maintaining the survival of this population. In addition, WR 95-17 already provides for reduced minimum instream flows in a "dry year," as defined by the Order, which Marin Water has already instituted. Reductions in natural creek flows from lack of rainfall have already resulted in negative impacts to salmonids such as diminished suitable spawning habitat, loss of access to tributary spawning areas, and superimposition of redds by successive spawning fish. As detailed in the ESA habitat suitability modeling, these negative impacts will be

exacerbated under the terms of the TUCP. For example, ESA's analysis shows a 30% reduction of redd habitat in the modeled reaches.

In contrast, according to data provided by Marin Water staff, an additional 10% of conservation by Marin Water customers, over what has already been realized, would save as much water as the flow reduction requested in the TUCP. As of August 20th, realized conservation by Marin Water customers was 30% of average weekly use. Your Board's stated goal is 40% conservation.

We understand the circumstances that Marin Water is facing in this historic drought and that water storage is rapidly dwindling. Nevertheless, We urge you, therefore, to reject staff's request to approve submission of the TUCP, and to instead focus Marin Water's efforts on increasing conservation by water users, whether through voluntary or mandatory measures.

Thank you for the opportunity to comment and protect this valuable, irreplaceable species and its ecosystem.

Respectfully,

Morgan Patton
Executive Director
Environmental Action Committee of West Marin

Megan Isadore
Executive Director
River Otter Ecology Project

Preston Brown
Director of Watershed Conservation
Turtle Island Restoration Network
Salmon Protection And Watershed Network (SPAWN)

Gordon Bennett
President
Save our Seashore

Alison Hermance
Director of Communications
Wildcare

Laura Chariton
President
Watershed Alliance of Marin

Scott Tye
Vice-Chair
Marin Surfrider

CC: Larry Rusell, Jack Gibson, Monty Schmitt, and Larry Bragman

Terrie Gillen

From: Jodi Charrier - NOAA Federal <jodi.charrier@noaa.gov>
Sent: Friday, August 27, 2021 8:51 AM
To: Board Comment
Cc: Jonathan Koehler; Eric Ettlinger; Elysha Irish; Shaun Horne; Ferguson, Leslie@Waterboards; Gard, Mark@Wildlife; Maxfield, Jessica(Jessie)@Wildlife; Ryan Watanabe; Fairley, Nicole@Waterboards; Fernandez, Xavier@Waterboards; Bob Coey - NOAA Federal; Mike Napolitano
Subject: NMFS Comments to Marin Water Board
Attachments: 2021-08-27 NMFS comments to MWB_Lagunitas.pdf

Dear Board Members,

Attached is NMFS' comment letter regarding the proposed TUCP for Lagunitas Creek for your consideration.

Thank you for the opportunity to provide our comments,
Jodi

--
Jodi Charrier
Natural Resource Management Specialist
NOAA Fisheries /*West Coast Region*
Santa Rosa, CA
(707) 575-6069
https://link.edgepilot.com/s/ad83a6f3/73uldkcflE_fAIGshh2hQQ?u=http://www.fisheries.noaa.gov/

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

August 27, 2021

Board of Directors
Marin Water
220 Nellen Avenue
Corte Madera, California 94925

Re: NOAA's National Marine Fisheries Service's Comments on Marin Water's Proposed Winter 2021-2022 Flow Reduction within the Lagunitas Creek Watershed in Marin County

Dear Board Members:

This letter represents NOAA's National Marine Fisheries Service's (NMFS) comments to the Marin Water Board regarding the pending Temporary Urgent Change Petition (TUCP) for their Kent Lake reservoir operations and instream flow requirements in Lagunitas Creek. In response to this year's drought and low reservoir storage conditions, we understand Marin Water's proposed TUCP will request changes to the State Water Resources Control Board's (SWRCB) 95-17 Order, which established instream flow requirements to protect fishery resources in Lagunitas Creek. Marin Water's analysis indicates that as of August 15, 2021, storage from its seven available reservoirs was critically low (*i.e.,* 39.3 percent of capacity and 51.2 percent of the average storage for this date) due to record low rainfall last winter. Thank you for considering our comments as you prepare to submit the TUCP during the week of September 6, 2021 for approval by SWRCB.

As you are aware, the Lagunitas Creek Watershed supports populations of federally endangered Central California Coast (CCC) coho salmon (*Oncorhynchus. kisutch*), and threatened CCC steelhead (*O. mykiss*) and California Coastal (CC) Chinook salmon (*O. tshawytscha*) listed under the Endangered Species Act of 1973 (ESA)(16 U.S.C. 1531 et seq.). The Lagunitas Creek Watershed is identified as a core recovery area or essential population for coho salmon and steelhead in our recovery plans (NMFS 2012 and 2016). Records show that coho salmon historically occurred in at least 31 small coastal streams in Marin County, and have recently only been observed in 17 (55 percent) of these streams, most of which are tributaries to Lagunitas Creek (Moyle et al. 2008). The watershed today supports approximately 10 percent of the remaining CCC coho salmon along the Pacific Coast, is the southernmost wild independent population and, therefore, is considered to be critical to the survival and recovery of the species. In drought conditions, the natural streamflow in tributaries is largely absent, therefore, we expect that the majority of ESA-listed salmonids will spawn and rear in the mainstem Lagunitas Creek and will depend mainly on flow releases from Kent Lake for survival and spawning this fall and winter.

Marin Water is preparing to submit a TUCP to SWRCB, which includes requesting the following changes to the SWRCB 95-17 Order:

1. Delaying the timeframe (from November 1-15 until December 1-15) in which the summer baseflow would be increased to the winter baseflow regime.
2. Decreasing the regular 'dry-year' winter baseflow from 20 cubic feet per second (cfs) to 16 cfs.
3. Eliminating the first (early November) migration pulse flow of 35 cfs.
4. Adaptively managing the initiation of the second migration pulse flow (from November 15 to December 1) to coincide with the timing of natural storm and spawning migration events.

The timeframe of these changes spans a large portion of the CCC coho salmon spawning season. Consequently, in April 2021, Marin Water began developing a PHABSIM hydraulic model to study the potential effects of the proposed changes to salmonid habitat requirements in Lagunitas Creek. The study area included four reaches (modeled at 20, 15, and 10 cfs) that in sum, represent 25 percent of the coho salmon spawning habitat in the mainstem of Lagunitas Creek. Although the model was performed for several life stages of coho salmon and steelhead, the study was focused on habitat availability for spawning coho salmon.

Since April 2021, NMFS staff have worked with Marin Water staff, and other resource agencies to refine the model, review the results of the study, and develop a monitoring plan with adaptive management actions to minimize and avoid impacts to listed salmonids (*i.e., The Lagunitas TUCP Monitoring and Adaptive Management Plan* (AMP)). Our comments on the habitat suitability study and potential impacts to ESA-listed salmonids that may occur as a result of implementing the proposed flow regime, and recommendations for the AMP are as follows:

1. The current fall-spring flow regime in Lagunitas Creek, as mandated by Order 95-17, is significantly lower than the historical unimpaired flows that would have occurred before dams were built in the watershed. These regulated flows are also much lower than the flow recommendations provided by California Department of Fish and Game to SWRCB in 1986 and again in 2008 (DFG 1986, 2008). Given that it is likely that federally-listed fish and their habitats in the watershed are already compromised due to the current regulated flow regime, it is critical that the AMP incorporate actions to avoid substantial impacts to listed salmonids, particularly during this unprecedented drought.

2. We appreciate Marin Water's efforts to assess the effects of the reduced flows associated with the proposed TUCP and AMP. The results from the current habitat suitability model show that reducing streamflow may significantly reduce the area of suitable spawning substrate and potentially decrease redd viability (*i.e.*, unsuitable depths and velocity on redds). This may adversely affect coho salmon and steelhead by increasing the likelihood of redd superimposition and decreased incubation survival. The model showed that a reduction of flows from 20 cfs to 15 cfs will result in approximately a 30 percent reduction of high suitability habitat for coho salmon and steelhead at the four study sites combined. These results are further validated by a

previous study which indicated a 40 percent reduction in spawning habitat suitability for coho salmon when flows were decreased from 25-15 cfs (Bratovich and Kelley 1988).

The PHABSIM hydraulic model was limited to habitat criteria, including depth, velocity and spawning substrate suitability. NMFS recommends that Marin Water also consider the results from previous flow studies in the watershed, as well as findings from their upcoming monitoring efforts to develop a California Environmental Flows Framework (ceff.ucdavis.edu) when making adaptive management decisions. CEFF is a hydrologically based method that uses the functional flows approach and provides ecological-flow criteria for all streams in the State of California.[1]

3. Based on recent monitoring results by Marin Water's fisheries staff, redd superimposition (resulting from competition for insufficient spawning habitat), which can reduce egg survival, occurs in the mainstem Lagunitas Creek at 20 cfs (the SWRCRB Order 95-17 dry-year winter baseflow). NMFS expects these impacts to increase with the proposed decrease in baseflows to 16 cfs, thus the implications of reduced flows on redd superimposition should be studied further.

4. The AMP should include thresholds triggers and provisions for adjusting flow conditions to minimize impacts to salmonids. We recommend that these triggers for temperature, DO, velocity, water surface level over redds, critical riffle depth to maintain passage for spawners, and migration pulse flow (spawning activity) be finalized in coordination with the resource agencies. We would propose that once thresholds are reached, flows should be increased within 24 hours to levels agreed upon in the AMP to avoid or minimize potential impacts to listed fish. For example, critical riffle depths are a major concern which should be monitored. Bratovich and Kelley (1998) used three methods for evaluating flows needed over critical riffles in Lagunitas Creek during the 1982-83 water year and concluded that a minimum flow of 35 cfs was needed for the passage of adult salmon through critical riffles.[2] Therefore, flow should be adaptively managed if critical riffle depths are not met to ensure that no adult migration or smolt outmigration barriers exist during the TUCP period.

5. We request weekly reports on reservoir storage and river flow conditions, and monitoring results be provided to the resource agencies and the Lagunitas TAC to inform and validate the success of management actions, or the need to adjust them adaptively. Additionally, if winter storms materialize and Marin County reservoirs accumulate storage through normal or extreme precipitation events during the winter of 2021-2022, the agencies should reconvene to determine at what capacity the TUCP

[1] This functional flows approach preserves key aspects of the natural hydrograph and establishes flow-ecology relationships through development of a conceptual model of various flow components and subsequent selection of flow metrics that represent those relationships (*i.e.,* the interaction of different life history stages of listed fish with the condition of riparian vegetation, food production, bench inundation, deposition process, nutrient transport, migration cues, and floodplain connectivity)(Yarnell et al. 2015, 2020).

[2] This study noted that "lack of flows sufficient for passage may have contributed to the decline of the salmon runs in Lagunitas Creek."

flow regime is discontinued and regular dry-year or normal-year reservoir flow releases resume.

To conserve storage and extend and preserve river flows, Marin Water adopted mandatory water use restrictions for its service area on April 20, 2021, with the goal of a 40 percent reduction in water use. We applaud these efforts and understand a 30 percent savings was reported for the week of August 13 through August 19. Marin Water has obligations under the ESA to ensure that no "take" (defined as:" harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct") of federally listed species occurs as a result of their reservoir operations (including Lagunitas and Walker creeks). Moving forward, we are available to discuss options and assist you in fulfilling your obligations under the ESA. Meanwhile, NMFS supports the development of the AMP to utilize water storage savings for the implementation of adaptive management actions as we have identified, in minimizing impacts to salmonid resources in Lagunitas Creek.

Thank you for considering our input to ensure all beneficial uses of winter water resources be utilized to the fullest extent possible. We appreciate your collaborative efforts during all phases of this process and expect the County will continue water conservation efforts as a priority to balance water storage and fisheries concerns in the development of this proposed order. Should you have questions regarding this letter, please contact me at the letterhead address above, or at bob.coey@noaa.gov or 707-575-6090, or Jodi Charrier of my staff at jodi.charrier@noaa.gov or 707-575-6069.

Sincerely,

RMCoey

Robert Coey
North Coast Branch Chief
North Central Coastal Office

cc: Ryan Watanabe, Manfred Kittel, Jessie Maxfield, Mark Gard - CDFW
Leslie Ferguson, Mike Napolitano, Nicole Fairly, Xavier Fernandez – RWQCB

Literature Cited

Bratovich, P.M. and D.W. Kelley. 1988. Investigations of salmon and steelhead in Lagunitas Creek, Marin County, California: Volume I. Migration, Spawning, Embryo Incubation and Emergence, Juvenile Rearing, Emigration. Prepared for the Marin Municipal Water District, Corte Madera, California.

Department of Fish and Game (DFG). April 1986. Instream Flow Requirements Anadromous Salmonids Spawning and Rearing, Lagunitas Creek, Marin County. Stream Evaluation Report. 86-2. 40 pp.

DFG. May 2008. Flow Recommendations to the State Water Resources Control Board. Prepared by the California Department of Fish and Game Water Branch. May 22, 2008. 30pp.

Moyle, P., J.A. Israel, and S.E. Purdy. 2008. Salmon, Steelhead, and Trout in California. Status of an Emblematic Fauna. 316 pp.

Yarnell, S.M., G.E. Petts, J.C. Schmidt, A.A. Whipple, E E. Beller, C.N. Dahm, P. Goodwin, and J.H. Viers. 2015. Functional Flows in Modified Riverscapes: Hydrographs, Habitats and Opportunities. BioScience. 65:963-972.

Yarnell, S.M., E.D. Stein, J.A. Webb, T. Granthan, R.A. Lusardi, J. Zimmerman, R.A. Peek, B.A. Lane, J. Howard, S. Sandoval-Solis. 2020. Functional Flows Approach to Selecting Ecologically Relevant Flow Metrics for Environmental Flow Applications. River Research and Applications. 2020:1-7.

Terrie Gillen

From: Napolitano, Michael@Waterboards <Michael.Napolitano@waterboards.ca.gov>
Sent: Friday, August 27, 2021 11:43 AM
To: Board Comment
Cc: Shaun Horne
Subject: San Francisco Bay Water Quality Board comments on Item #4: temporary urgency change petition per Water Rights Order 95-17
Attachments: MarinWaterTUCPCmntsFinal.pdf

Honorable Board Members (CC: Shaun Horne)

Attached find staff comments from the San Francisco Bay Regional Water Quality Board regarding Item #4 on your agenda for the August 30 meeting of the Operations Committee/Board of Directors.

Thank you for your time and consideration,

Mike Napolitano
Engineering Geologist
San Francisco Bay Water Quality Board

San Francisco Bay Regional Water Quality Control Board

August 20, 2021

Board of Directors
Marin Municipal Water District
220 Nellen Ave.
Corte Madera, CA 94925

Subject: Comments on Proposed Temporary Urgency Change Petition

Honorable Marin Municipal Water District Board Members:

Thank you for the opportunity to comment on the proposed temporary urgency change petition (Petition), and for the opportunity to work with your staff to provide input to the model and study prepared to support the Petition. We appreciate the challenges that Marin Water faces in trying to maintain water supplies for people and fish. We commend your staff for working closely with the California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), the Lagunitas Technical Advisory Committee and our agency through regular meetings and joint field reconnaissance, and for a willingness to address our concerns and input in designing the study. We appreciate Marin Water staff's refinements to the scope and resolution of the model prepared in response to input from our agency, and others as listed above, to the extent feasible given constraints of schedule and summer baseflow conditions.

Overarching Context

It is important first to frame our comments in the proper context. Lagunitas Creek supports the only stable population of Coho salmon south of Mendocino County, and one of the most important remaining populations in California. Flow releases required under Water Rights Order 95-17 together with significant habitat restoration have been essential to maintaining a stable population. We applaud Marin Water's commitment in both arenas, and trust that you will be judicious and precautious in your Petition.

Summary of Modeling Results

The model prepared for Marin Water infers a linear relationship between baseflow and the amount spawning habitat in Lagunitas Creek. The relationship was modelled at three values of baseflow: 20, 15, and 10 cubic feet per second (CFS). The model predicts that if winter baseflow is reduced from 20 to 15 CFS, there will be about a 20 percent reduction in the amount of spawning habitat for Coho salmon. These results are nearly identical to earlier studies in Lagunitas Creek (Bratovich and Kelley 1988) that informed Water Rights Order 95-17. In summary, Bratovich and Kelley also inferred a linear relationship between baseflow and the amount of spawning habitat in Lagunitas Creek, with an approximately 20 percent reduction in total habitat also forecast to occur if baseflow is reduced from 20 to 15 CFS, and a 40 percent

reduction in the amount of spawning habitat for Coho salmon if baseflow is reduced from 25 to 15 CFS.

Specific Comments

We are encouraged by Marin Water staff's efforts to minimize reductions in winter baseflow as proposed under the Petition in response to the extreme drought conditions. Accordingly, we support Marin Water staff's recommendation to limit the requested reduction in winter baseflow to 16 CFS. Additional considerations in support of limiting the reduction to 16 CFS are as follows:

1. In evaluating potential impacts to Coho salmon, the appropriate benchmark for comparison is the baseflow that is required under a "Normal Year." Specifically, the amount of spawning habitat available when baseflow is 25 CFS (Water Rights Order 95-17). Based on the information summarized above, we infer that there would be at least a 40 percent reduction in the amount of spawning habitat for Coho salmon at 15 CFS as compared to a "Normal Year." Conditions under a "Normal Year" are the appropriate benchmark for comparison in considering potential impacts to Coho salmon spawning.
2. The potential magnitude of this impact (of winter baseflow being reduced from 25 to 15 CFS) is likely even greater than what would be inferred solely from a 40 percent overall reduction in habitat area in Lagunitas Creek, because in a "Normal Year" a large proportion of the Coho salmon run has access to and spawns in the tributaries; on average half-or-more of the total run. Similarly, in a "Normal Year" most steelhead spawn in the tributaries. If runoff conditions this winter are like Water Year 2021, only a few Coho salmon and steelhead will gain access to the tributaries, and most of the spawning of both populations will be in Lagunitas Creek.
3. Under such a scenario, we would expect a much greater amount of superimposition - where some of the nests prepared by female salmon that spawned earlier in the season are excavated/partially excavated by a female salmon or steelhead that spawn later - further reducing overall spawning success of Coho salmon beyond what would be expected alone from a 40 percent reduction in habitat area.
4. Also, in recent years there has been a modest run of Chinook salmon in Lagunitas Creek that also compete with Coho salmon to establish nests at suitable spawning sites. The Chinook salmon run was not documented at the time that releases were established under Water Rights Order 95-17. As such, under the scenario of a dry start to Water Year 2022, it is plausible that three species of spawning adult salmonids would be confined largely to Lagunitas Creek and be competing to spawn within a suitable habitat area that has been reduced by approximately 40 percent.
5. Available habitat suitability models for Lagunitas Creek, define suitable spawning habitat as being simply the overlap of suitable gravel sizes, flow depth, and velocity for spawning. It's clear that other habitat attributes influence selection by the fish of spawning sites including cover, and likely a recognition of streambed areas where hyporheic flow is accentuated (Geist and Dauble 1998). These are important limitations of the models for Lagunitas Creek that lend additional credence to a precautionary approach.

Also, we note a motivation stated by Marin Water staff for considering potential reductions in releases to support winter baseflow is to ensure that reservoir storage will be sufficient to maintain adequate summer baseflows in Lagunitas Creek. We urge Marin Water to predicate the proposed reduction in winter baseflow to 16 CFS on a commitment to maintain dry season baseflows at 6 CFS throughout Water Year 2022. Thank you for your time and consideration.

Sincerely,

Digitally signed by Xavier Fernandez
Date: 2021.08.23 11:54:10 -07'00'

Water Boards

Xavier Fernandez
Planning Division Manager