

Zimbra**carrie@durangowater.com**

Dolores Project Drought Contingency Plan

From : Carolyn Landes <clandes60@gmail.com>

Fri, Jul 21, 2017 10:25 AM

Subject : Dolores Project Drought Contingency Plan**To :** comments@durangowater.com**Cc :** lsuckla@co.montezuma.co.us, kertel@co.montezuma.co.us,
jlambert@co.montezuma.co.us

As a small shareholder in the Montezuma Valley Irrigation Company and a Large shareholder in the health and quality of life in Montezuma County, I am writing to express my concern about the Contingency Plan's potential negative impacts on the historically strong and significant agricultural base in McElmo Canyon. In addressing the important needs for water conservation in our region and beyond, it is vital that we remember our local community as a whole. To potentially shut off the agricultural life of any of our families, friends, and neighbors in McElmo Canyon (a truly unique growing area which supplies/supports ALL of us) is NOT the way to conserve.

Leaving out the McElmo agricultural area in your initial planning may have been "legal"??, but it certainly was not in the best interests of our community as a whole. I am sure there are comprehensive and inclusive answers for drought contingency planning in our region and hopeful that you will identify them in the next draft.

Thank you for extending the comment period.

Sincerely,

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970-882-2602
clandes60@gmail.com

Zimbra**carrie@durangowater.com**

FW: Drought Plan Typos

From : Ken Curtis <kcurtis@frontier.net>
Subject : FW: Drought Plan Typos
To : 'Carrie Lile' <carrie@durangowater.com>

Thu, May 18, 2017 08:35 AM

From: Ed Millard [mailto:ed.millard@gmail.com]
Sent: Wednesday, May 17, 2017 7:18 PM
To: Ken Curtis
Subject: Re: Drought Plan Typos

Fortunately the others parts of the plan I've read are less bad than the executive summary. Probably would have been a good idea to proof read the one part of the plan that everyone is most likely to read and read first, it gets off on the wrong foot like it is.

A couple questions. There are sections 2.4 and 2.5 on stakeholder involvement and public comment, are you going to put all, some or no public comments there in full? What exactly is "involvement" and why is that part empty? If you are including public comments in the plan in full you probably should've mentioned that in the letter.

Who exactly is determining which public comments get included in the plan and when, Harris Engineering, the drought committee, DWCD board, MVI board, Ute Farms? Comments wont be integrated until after the public meeting right, if any are integrated?

On Wed, May 17, 2017 at 4:19 PM Ken Curtis <kcurtis@frontier.net> wrote:

Ed,

I don't know if anyone has proofed the document. It may generate redundant comments on typo's . You can comment or ignore and we will hopefully catch on the next round. If you want a trackable version you can ask Carrie.

I'll forward your second email too, but will not take any more emails on this. Send them to the comment email.

Ken

From: Ed Millard [mailto:ed.millard@gmail.com]
Sent: Wednesday, May 17, 2017 11:15 AM
To: Ken Curtis
Subject: Drought Plan Typos

Has someone already read the drought plan and sent typos so me doing so would be redundant?

On page 7 I assume this "a" is supposed to be "as":

Mitigation actions proposed are categorized by structural and non-structural actions **a** implemented prior to a drought.

From: Ed Millard [<mailto:ed.millard@gmail.com>]
Sent: Wednesday, May 17, 2017 11:51 AM
To: Ken Curtis
Subject: Drought Plan Typos

It would've probably been better to have someone just proof read this before it was released rather than have multiple people take the time to send all these typos to you...

Two pages in, the executive summary looks hastily written and was probably never proof read.

On page 8 this is so mangled it probably needs a do over:

For all irrigations, implementation needs financial backings. Signification opportunities exist if funding becomes available.

I'm guessing it means:

All irrigation improvements need financial backing. Significant opportunities exist if funding becomes available.

Page 8 no comma after are:

While some actions **are**, applicable no matter the severity or type of drought, others are only applicable during one type of drought.

Zimbra**carrie@durangowater.com**

Comments on DWCD Drought Contingency Plan

From : Ed Millard <ed.millard@gmail.com>

Wed, Jul 19, 2017 06:09 PM

Subject : Comments on DWCD Drought Contingency Plan 2 attachments**To :** Carrie Lile <carrie@durangowater.com>**Cc :** Ken Curtis <kcurtis@frontier.net>, Greg Black (farmerblack@Gmail.com) <farmerblack@gmail.com>, Larry Don Suckla <lsuckla@gmail.com>, dysch@frontier.net, <keenanertel@sisna.com> <keenanertel@sisna.com>, glenfish788@yahoo.com, Logan- Gafford Ranch & Farms, Inc. <milkeyway@centurytel.net>, "celene.hawkins@tnc.org" <celene.hawkins@tnc.org>

Attached is a PDF with my comments on the drought plan. The second PDF is a write up on DWCD's release of MVI call water to the lower Dolores during the ramp down which is integrally involved in some of my drought plan comments.

I didn't spend much time on this, three hours, but I did have a few things to say :)

-- Ed

 **DroughtPlanComments.pdf**
913 KB

 **CallWaterSpill.pdf**
725 KB

Comments on DWCD Draft Drought Contingency Plan

Ed Millard, June 18, 2017

Introduction

When this Drought Contingency Plan was first proposed at a DWCD board meeting right after the 2013 drought Walt Hennis, then a DWCD board member, offered probably the most insightful comment on this process I've heard to date, I paraphrase:

"If all this is going to do is provoke controversy, it's not worth it"

Walt made a successful motion to kill it, but unfortunately it came back from the dead a year later, in total secrecy (which was extremely inappropriate for a public entity like DWCD) and with an intense effort by DWCD staff to suppress public comment to the point it appeared even the DWCD and MVI board members hadn't actually read the proposal before they made motions to submit it to BOR.

The Drought Plan Process

Building on the abnormal secrecy in the proposal process, the actual planning process has occurred **entirely in a secret planning committee**, not open to the public in any form and attended only by DWCD, MVI and Ute Farms representatives. This was not appropriate for a public entity like DWCD seeking to set policy that will have wide spread impact on many elements of this community. The public should at least have been allowed to sit and listen if not participate. Any remaining committee meetings should be open to the public. All MVI board meetings on this should be in open monthly board meetings, or shareholder meetings, not secret executive sessions as is the MVI board's way lately.

MVI's board continues to refuse to hold a **shareholder meeting for MVI shareholders** to explain what they are doing in this plan, why and what impact it will have on our property rights in both water and equity. I am at a loss to know why they're reluctant to explain this plan to their own shareholders.

Public meetings have generally been severely and intentionally limited.

The only positive thing this drought committee seems to have done. In terms of public outreach, in two years was **the public meeting** on July 17, 2017 when a standing room only group of deeply concerned **McElmo water users** finally got a last minute chance to ask questions, speak their minds, and seek to correct the record on some of the deep flaws in this plan and process. In particular one person questioned the proposals assertion there is 30,000 AF of water crossing the state line in McElmo which can be targeted by the Dolores Project. He asserted much of that water is from rain and snow in McElmo's large natural watershed and any water engineer doing their job should have corrected their numbers for that.

DWCD should have done public meeting two years ago instead of letting backlash to the overreach of the proposal fester. The McElmo users offered a lot of useful insights.

On the Right Way to Solve Water Issues in the Dolores and McElmo Basin

There are right ways and wrong ways to solve the problems in the Dolores Project; I will briefly describe one right way and two wrong ways.

The 2013-2017 MVI Golden Era, the Right Way

My dad and I are some of the strongest advocates among MVI shareholders for MVI to:

- Properly manage its water in line with state statute, decrees, DWCD contracts, MVI articles and bylaws
- Setting an appropriate water allocation for MVI shares and enforcing it to insure pro rata distribution (equal to all) of MVI's water, with none being given extra water that might be wasted, and none being shorted to the benefit of others. It has stressed many MVI shareholders who were getting more water than they should have prior to 2013 but those stresses had to happen and be worked through. Those stresses have no doubt accelerated on farm efficiency improvements which is mostly desirable.
- Improve MVI's efficiency when it is financially, technically and socially appropriate
- Provide its shareholders with an efficient, quality delivery system with pressurized water but only when those systems are properly selected, engineered, can be safely financed by a small, private, nonprofit company, and operated by MVI's limited staff.
- To maximize MVI's beneficial use of its water on as many acres as is possible

Since 2013 MVI has acted strongly on many of those fronts, and along with recent strong monsoon seasons, there has been a **golden era in MVI water management** gifting McPhee with large carryovers the last 3 years. This era has benefited MVI shareholders, the Dolores Project and the DRD as it's:

- Dramatically accelerated McPhee's recovery by refilling it from empty after the 2013 drought
- Helped insure the **Dolores project can ride out a one year drought by starting each water year reservoir with significant carry over**, water derived from the efficiency of the last. That is what reservoirs are supposed to be for, store water in good years for bad.
- Without MVI carryover **2016 wouldn't have had a managed release for rafting, native fish and river health at all**
- **Added significantly to the size of the 2017 managed releases to the lower Dolores.**

Many of the **problems being identified and targeted in this Drought plan were already being unilaterally worked by MVI and its shareholders** with improved water management and breakneck implementation of on farm efficiency improvements with the help of NRCS.

At the McElmo public meeting, it was obvious that MVI's efficiency improvements are moving so fast they are starting to severely stress the many people who depend on MVI's waste water to irrigate their land in McElmo and elsewhere.

All this was occurring without begging the Federal government for grant money (other than the excellent NRCS program), without secret committee meetings, and without the misguided bureaucratic excess which is the hallmark of this drought plan so far.

On the Wrong Ways to Solve Water Issues in the Dolores and McElmo Basin 2015-2017 Drought Contingency Plan Era, a Wrong way

There is an old saying **"No good deed goes unpunished"**.

The major advances MVI has made have been met by a string of new attacks on us which seem to be accelerating from DWCD and the environmental and rafting community. Not content with all the great strides MVI has been making on its own, DWCD seems to feel compelled to grab MVI by the throat and try to force even more ill-advised change with this drought plan and other onerous tactics. In the process they risk destroying the golden era described above.

This wrong era is marked by:

- Secret meetings which have been the hallmark of DWCD and DRD in the Mike Preston era. The NCA was done in the same secrecy and it paid for it in the end.
- Open attacks on MVI, the Montezuma Valley and McElmo, in effect biting the hand of the people giving you most of your carry over.
- Front page article after article in the local paper attacking the Dolores Project and the farmers and ranchers in this community. They usually seem to be written with extensive help and quotes from DWCD's general manager, another of the DRD's most fanatic advocates (just like Jim Siscoe). Every time one of these appears in this Durango owned paper this community's anger and antipathy towards the DRD, DWCD and the environmental and recreational community's increases. In the wake of one of the best rafting years on the Dolores ever, was it really necessary to punctuate it with the headline **"Dolores River is Given D- Grade"**. The overwhelming perception in this community is every time the Lower Dolores is given something, they just come back and demand more.
- **Attempts to redirect MVI water to the Lower Dolores by DWCD using two consecutive years of water accounting "mistakes"** which have misappropriated MVI's Call Water during and after managed releases. Last years "mistake" was over 12,000 AF, though it was fixed in a timely manner in July when I called them on it. This year DWCD released 3,600 AF of MVI's call water to the lower Dolores once McPhee was no longer full which is clearly prohibited by McPhee contracts. My detailed analysis of this last incident is attached. It appears DWCD has begun a pattern of misappropriating MVI's water for the lower Dolores because MVI won't sell it there
- These water accounting "mistakes" seem to be designed to exploit the inability of MVI's current board and staff to check the water accounting, and MVI's desire to be "friends" with DWCD. They seem designed to push MVI in to artificially created shortages by wiping out MVI's call water, to push MVI in to dependency on DWCD project water and dependency on DWCD return of Class B water to MVI as outlined in this drought plan. Correlation is not causation but these

tactics seem tailor made to push MVI in to some of the Drought Response and Mitigation Actions outlined in this drought plan when they probably shouldn't, and don't need to.

- I personally oppose MVI entering any new contracts or revising existing contracts as part of this plan until DWCD correct this year's call water accounting and prove they are willing to honor the existing project contracts.
- Constant pounding on how good Full Service and Ute Farms are and how bad MVI is, is not productive. Those systems are relatively new and have benefitted from massive Federal subsidies. MVI's is a 130 years old and been limited in its use of Federal funds. It is a subject of debate if Full Service could even survive if it lost its Federal subsidies, constant pump upgrades, and especially WAPA power at one third of market rates.

If these attacks on MVI and the Montezuma Valley continue it will almost certainly have the opposite effect of that sought by DWCD and the DRD. They will most probably lead to heightened opposition to the agenda DWCD and the DRD are pushing.

I am starting to regret the efforts I've made to encourage MVI to operate as a modern, well managed irrigation coming taking proper care of its water. Why should MVI make the hard choices that they've made, which put carry over water in McPhee, if it's just going to accelerate attacks on MVI by DWCD and the DRD?

The 2006-2012 Siscoe Era, a Wrong Way

The person who probably did more damage to many of the goals raised in this drought plan, the Dolores Project, MVI and its shareholders and the DRD's cause was in the 2006-2012 time frame, and set the stage for some of the tragedy of the 2013 drought. It was a man named Jim Siscoe who is a case study in the wrong way to solve the problems in MVI and the Dolores Project. Ironically **he hailed from the DRD** and was one of its most fanatical advocates; the current DRD members need to reflect long and hard on that fact and that **"the road to hell is paved with good intentions"**. He did a lot of good in building some valuable MVI pipelines, but:

- He demolished MVI's ability to manage its water by not maintaining or reading existing meters, not even installing meters on his new pipelines
- He made no effort to enforce pro rata and correctly deliver MVI's water, he couldn't once all the meters stopped working or were missing. When Jim built new pipelines MVI's water usage actually went up, instead of down
- His breakneck pipeline construction plan, misappropriation and mishandling of funds, and misguided law suit against DWCD pushed MVI to the brink of bankruptcy by the end of 2010, when he finally fled, putting a prolonged end to MVI's pipeline building.
- When I and many others think DRD, we still think Jim Siscoe.
- MVI's out of control water management significantly impacted carryover levels in McPhee going in to the 2013 drought and helped set the stage for that tragedy.
- In 2011 Siscoe's replacement Don Magnuson, who had the unenviable job of picking up the pieces after a manger gone rogue, attempted to lease some of MVI's water to the CWCB and

DRD to repair its dire financial situation. To MVI's shareholders it looked like extortion, that Siscoe had intentionally bankrupted MVI to force MVI shareholders to sell. It infuriated them and left MVI's attitude toward the DRD permanently damaged, something the DRD and DWCD are still paying for today.

- Magnuson also sponsored Water Institute moderated meetings which ended in furor when they suggested MVI shareholders might want to consider switching to raising sunflowers to free up their water.

Specific Comments

The following are comments on specific sections of the Mitigation and Response Actions especially concerning MVI

6.3.1 Class B Shares

“a potential exists for DWCD to lease Class B shares to MVIC”

If DWCD chooses to not take delivery of the Class B water in a spill year, or any other year, that is their prerogative and it would be beneficial to MVIC by increasing its available supply. However Class B shares and water should operate under the same rules as Class A shares:

- Shareholders are required to pay their assessments in full whether they use their water or not
- Water not used should revert to MVI without expectation of payment or any other concessions on MVIC's part so it can be used to fulfill other shareholder obligations, put it in carry over or lease it, the same as water not used by Class A.
- It seems very improbable MVIC would pay to lease its own water back from DWCD, my dad used the term “crazy” when I told him about this idea. With improvements in MVIC efficiency and water management in recent years its unlikely MVI will have an acute water shortage in a spill year unless there is an acute drought later in the season.
- MVIC simply isn't financially structured to lease water at the rates DWCD normally charges for water.

Last year DWCD returned its class B water to MVI, probably didn't pay their assessments as a result, MVI ran large surpluses and didn't use it so it ended up in carry over and was returned to DWCD. It was a win-win for DWCD and lose-lose for MVI.

There is a high correlation between the times DWCD won't need their Class B water and when MVI won't need it back. The monsoons will be running and late season water use will be down. In a hot, windy late season DWCD will need the class B water and so will MVI and they won't get it back.

I think the MVI board is placing a lot more value on this exchange than is actually there most years.

“Class B water that is only shorted in drought years to the same degree as MVIC Class A shares, may provide the basis for a tradeoff that is beneficial to both organizations”

The change would, with high certainty, injure Class A shareholders by reducing their water supply in drought years and result in fewer irrigating days for them and more for Class B Full Service farmers. I can see no reason MVI shareholders would or should approve this change.

MVIC shareholders sold the Class B shares to DWCD in 2002 with the explicit understanding that they **would** be inferior to Class A shares in drought years and shorted based on the Full Service allocation to reduce their impact on Class A shareholders in those years. I've seen the power point presentations from shareholder meetings when it was presented.

This proposed change would be an enormous change to the intent of the Class B shares. Not only would it **require an amendment to the Class B contract** these changes would almost certainly **require shareholder approval, by ballot at a regular or special meeting**, which is unlikely to happen.

The Class B shares were sold to DWCD at a relatively low cost per share, \$1,500 per share, or \$375/AF precisely because they were inferior to class A shares. By comparison DWCD sold 4,000 AF to BOR to a much larger sum a few years earlier. If the Class B shares had been at parity with Class A shares in 2002 they should have fetched a much higher price. If MVI shareholders were to approve this change it would almost certainly call for a large payment from DWCD on the order of \$4 million dollars.

6.4 Narraguinnep Reservoir Re-Operations

It would be nice if this could be done but all indications are BOR will require onerous storage fees from MVI to do it. There is almost no reason for MVI to do this if it requires large payments to the BOR for something that is mutually beneficial to MVI, DWCD and BOR.

I suspect the main reason this is in the plan is it was used by DWCD as bait designed to lure MVI in to this planning process when it had no chance of actually happening, so they could lure MVI in to the parts of the plan they do fully intend to implement like the Class B changes and the Groundhog drought reserve.

6.5 Increase MVI Early Direct Flow Diversions in Years of Managed Spills

I'm the one who proposed this earlier in the year. I don't think it really belongs in this plan. I raised it at a board to board meeting, discussing the managed release as a motivational tool to encourage DWCD and BOR to come up with a way to stop spilling MVI's call water. If DWCD keeps aggressively spilling our call water in creatively managed releases both under the terms of the contract and in contradiction to the contracts as was done this year, MVI may actually need to start more aggressively using its water early purely as a form of self-defense against DWCD misappropriation of our call water.

If March and April continue to warm due to climate change, MVI may need to more aggressively use its water earlier purely out of need of crops.

5.2.1.1 Drought Reserve using Groundhog Reservoir

There are some merits to this proposal but it is simply not worked out in enough detail that I would recommend any MVI shareholder or board member actually support it at present. It should be removed unless DWCD is willing to work it out in more detail.

At a minimum this section must include a sentence that this is NOT happening without a lengthy discussion with MVI shareholders and a shareholder vote.

If this reserve is operated in an informal manner when it is beneficial to all parties it is fine.

If it is going to result in arbitrary restrictions on MVI use of its own reservoir and water it is completely unacceptable. That water is governed by MVI's decrees, not DWCD contracts, especially based on recent experience with DWCD failure to adhere to existing contract governing call water spills.

As an example, if MVI ends up short on water in a spill year due to loss of our call water, we lose an additional 3,000 AF of water in the project water exchange to maintain this reserve, it could result in MVI Class A shareholders getting shut off early and will injure them which is unacceptable.

“5.2.2.2 Potential to lease MVIC water to other Project users or lands within existing service area”

MVI can already do this; there is little value in putting this in the plan like it's something new. If this is going to be in here it needs to be accompanied by the terms in MVI's Articles of Incorporation which strictly control such leases:

no such contracts may be entered into by the Board for the lease or sale of any of this corporation's water except that which is in excess of shareholder needs for the relevant water year during which said lease or sale is contemplated. Further provided however that no such contract may be entered into by the Board of Directors for a period exceeding one year without the approval of a majority of the shares voted thereon at a special meeting of shareholders called for that purpose or at the regular annual meeting of shareholders. No lease of Company water shall occur prior to August 1st of each year or when the Board of Directors deems excess water over and above what is needed to provide all stockholders their full supply, and no such lease shall cause injury to any stockholder's water supply. In the event the Board determines that injuries may occur, all leases shall terminate, with a refund to lessee, based on unused water. Company water leases shall be beneficially applied in Montezuma Valley Irrigation Company's service area at no less than fair market value. (Amended December 10, 2005)

Also note, MVIC is a share based company chartered with the IRS as a 501 (c) 12 nonprofit. By IRS law 85% of MVIC's income must come from shareholder assessments and fees. This severely limits the compensation MVIC can receive for leased water. As a shared based nonprofit, shares are the more appropriate way to distribute MVIC's water. The MVIC board researched this issue extensively in the 90's which is why the Class B water sale to DWCD was done as a share sale, not a lease as was originally proposed.

5.1.2.4 Piping Improvements for Existing Infrastructure

While there are obvious benefits to the construction of more pipelines in the MVIC service area several concerns.

The rationale for choosing these three or four pipeline projects, out of nearly a dozen candidates in the MVIC system, is opaque. More work is needed to insure these projects are indeed the best candidates and not the result of arbitrary decisions made by MVI staff or board as has occurred in the past. MVI needs to provide full details on all the viable projects to MVI shareholders and prove that the best projects are being funded. A shareholder meeting should be briefed on proposed pipelines before they are preselected for BOR funding by this plan. In particular other candidates:

- Garrett (tail water is lost, is teed of an existing canal, and has massive erosion problems due to steep slopes)
- Upper Arickaree (tail water isn't lost, is teed of a canal)
- Big Corkscrew (tail water isn't lost, is teed of a canal)
- Little Corkscrew (teed off an existing canal)
- U (very expensive, large number of shareholders, flat and would have to be pressured by the Great Cut)
- East lateral (very expensive, water lost at Ritter spill, high seep losses, not many shareholders, flat)
- West lateral (very expensive, very high seepage losses, not many shareholder, flat, can't get easement from land owner to short canyon segments). This project would massively impact adjudicated water in Hartman Draw and McElmo.
- Hermana (very expensive, tail water is not lost, high seepage, not many shareholders, Narraguinnep canyon is a natural stream and probably couldn't be piped)
- Upper Lone Pine (prohibitively expensive, tail water is lost, difficult to manage due to canal to pipeline interface).

Moonlight - Spending nearly one million dollars on the Moonlight seems to be misguided at best. At nearly \$30,000 per AF of water saved the cost/benefit here is horrible. A key benefit to MVI shareholders to justify funding these is to provide pressurized water to shareholder turnouts. The moonlight will apparently do this for a total of one shareholder and that requires a lengthy, dedicated pipeline to serve only one shareholder. It sounds as though the primary problem with this pipeline is a badly designed screen on the private pipeline on the tail of the moonlight. This could be fixed for much less than one million dollars. The tail water spilled on this ditch ends up in Narraguinnep so it isn't lost. Priority should be placed on canals where the tail water is completely lost and a pipeline will solve the problem.

Goodland – Putting this in a pipeline isn't going to solve the lost tail water problem, it's just going to move the spill to where the East lateral will have to be forced in to the new Goodland pipeline. Without an extensive surge pond and automated controls this interface will be very problematic, much like the Lone Pine and Garrett where these ill-advised interfaces also occur.

There is a vague line item for \$11,000 for the interface to the East Lateral. It is unlikely this will cover the surge pond, gates and screen required for this interface.

Building an expensive pipeline just to steal the Goodland tail water from DWCD and Totten and put it in the Towaoc Highline also seems like a serious waste of resources.

Lower Arickaree – This is probably a good candidate project since it tees off an existing canal, tail water now being lost will be saved in its entirety, it will make water management easier and it will provide pressurized turnouts to a significant number of MVI shareholders.

Miscellaneous pipeline concerns:

- There is some risk of a zebra mussel infestation in MVIC and DWCD reservoirs. In the event of such an infestation, having extensive pipeline infrastructure may prove to be both an operational and financial nightmare and a net liability compared to open canals and ditches. This risk has to be factored in to any decision to build more pipelines.
- Hopefully HDPE pipelines will have a very long lifetime but data is not definitive on how long they will last. If MVIC is planning to last in the long term a time may come where replacement of its extensive and growing pipeline infrastructure could become very expensive.
- If MVIC shareholders will be required to cost match or fund outright these pipeline projects they place a substantial burden on all shareholders while a relatively small number of shareholders reap the benefits
- MVIC staff, of late, has had significant problems operating the pipelines they already have. There have been multiple instance in the last several years of over pressuring and damaging both MVI and shareholder pipelines. Until and unless MVI staff can establish training, oversight, operational guidelines and procedures to identify the cause of catastrophic failures and prevent their recurrence, it seems ill advised to continue to expand MVI's use of pressurized pipelines.

Appendix B - DPR table is out of date

The DPR Table in Appendix is woefully out of date. While some of the data may still be valid there have been a large number of improvements which have been made since this table was created which make it difficult to determine which parts of the data are valid and which are not.

This table should have been updated as part of this planning process, for example:

- Moonlight has been partially lined with concrete
- Moonlight and Garrett tails have been pipelined
- Lone Pine tail has been pipelined
- Cortez, May, Ute Duncan have been pipelined in full
- Towaoc, Highline and Rocky Ford were rebuilt in the project

Flows and carriage loss should be computed using recent data by a water engineer working for MVI in years when water is being carefully managed, which was actually called for in the original proposal. It just shouldn't be done by DWCD or Harris since the process and data should remain under MVI's control.

Climate Change

A section is needed to cover the risks of climate change that are becoming near term apparent risks. In particular temperatures appear to be much higher in recent years from March through October with some obvious concerns:

- Dolores Project contracts and the state decrees are heavily predicated on an April-June runoff season and it now appears it may be possible that much more runoff may be occurring in March which will unbalance a lot of carefully designed contracts and water management plans.
- Irrigation season may be much longer than in the past which could severely stretch water management, supplies and bump in to contract and decree constraints.
- High mid-summer temperatures may result in significant increases in water use by a Ag and increased evaporation losses in reservoirs.

These risks speak loudly against any parties in the Dolores project from permanently relinquishing water they may need in the future to adjust to these new demands.

Water Management

Narraguinnep lake elevation as well as Narraguinnep outlet, Lone Pine clock, East, West, Hermana tail Towaoc power plant daily flows should be logged in the DWCD inflow/outflow sheet. In particular the complex interactions where the Hermana and Big Corkscrew enter the Towaoc Highline are not properly recorded so there is no long term water management record of critical parts of DWCD and MVI operations.

Narraguinnep fills are a critical component of reservoir management in McPhee and it is currently difficult to tell what is happening in the current year since the data is not posted by Division 7 until January of the following year. The data is never integrated with the DWCD Inflow/Outflow data making it difficult to study or visualize the system as a whole.

Not having this data in one place is a devastatingly bad handicap to proper water management, engineering and historical perspective.

Plateau Creek

There are multiple different versions of Plateau Creek projects, it's inappropriate to list this as a potential action without even describing the intent of the project. Apparently the project referenced here is only the reservoir to hold fish pool water. This project should be driven by CPW, not DWCD, assuming they have the water rights and money to do it. Any plan to place the burden of building this project, borrowing money to build or to operate and maintain it on the backs of tax payers, farmers and ranchers in DWCD's district is inappropriate to put it mildly. DWCD already has serious problems with cost controls and high assessments for Full Service and Ute Farms. Adding to that burden building and operating an environmental reservoir is unacceptable. If it is built ironclad assurances are required that it will not hold back water that should go in to the project pool especially in prolonged drought.

McElmo Creek

McElmo Pumpback

Please remove this project in its entirety, its water engineering gone mad. My guess is it's in there just to draw fire from people, especially McElmo Canyon water users, and when they open fire you are given a chance to say you have no plans to build it as proof that nothing in this plan is a hard commitment. It's

most probably a red herring to distract from the actions you have every intent to ram through, the parts of this plan you really want, in particular the Mitigation and Response actions involving MVI.

McElmo Pipeline

If you want a big water project in McElmo you should instead do some minimal engineering estimates on what it would take to build a pipeline from the Towaoc Highline to McElmo. Ideally it should be in multiple segments that could be built in stages.

The goal would be to get clean, pressurized water to McElmo to save their community as MVI's waste water continues to disappear. Each segment would get water closer to the water users before putting it in the creek and reduce carriage loss and reduce mud and debris. Long term, hopefully they would have a pipeline to their land.

Chances are multiple uses of the same water for flood irrigation in McElmo is significantly increasing its salt load. Estimates of salt load would be interesting. If it is adding a lot of salt load hopefully NRCS will help fund this pipeline.

This pipeline would probably carry MVI Class A shares or possibly DWCD surplus water. DWCD has a large block of MVI Class A shares they don't take delivery on, they lease them, and should divest of them or put them to use on land. They should consider using these to provide reliable, clean water to McElmo.

McElmo Reservoir

It may be out of scope for this plan but preliminary engineering on a reservoir for McElmo might really be a good idea. Jim Fisher also raised it at an MVI board meeting recently. There is a lot of water being lost in the winter and early spring. They also suffer frequent, devastating floods a reservoir might abate.

MVI Call Water Spill Controversy (Draft as of July 16, 2017) by Ed Millard

During the June managed release from McPhee Reservoir DWCD overdrew the reservoir when they got behind rapidly changing temperatures and flows in the Dolores. DWCD is required to ramp down releases at a certain rate by BOR and DRD to avoid stranding rafters or surprising native fish. As a result they overdrew McPhee as the ramp down was slower than the rapid decline in the upper Dolores.

Disclaimer: I am not a lawyer, nor do I represent MVIC in any official capacity. I am an MVIC shareholder trying to protect my family's property rights and water. If the following is wrong I sincerely apologize, it needs to be checked by the people who are paid to do this work.

It's my contention DWCD released around 3,605 AF of MVI call water, when the McPhee reservoir was no longer full in June, contrary to a project contract. By my reading this puts DWCD technically in breach of that contract. This is not a problem as long as DWCD corrects the error and restores the call water to MVI in a timely manner as has been done in the past when errors occurred in water accounting.

But, Ken Curtis, DWCD, is currently suggesting that I am reading something "new" in to the contract implying they are allowed to release MVI call water in these circumstances. He is saying this may require a DWCD analysis and board to board meetings to decide if MVI's water should be restored which could easily take months and run past the end of the water year so the error can't be corrected. He is also not placing much priority on this review, because A) it's a "small" amount of water and B) he and Mike Preston need to prepare for a Rafting Post Mortem meeting August 16 which apparently takes priority over correctly managing MVI's water delivery.

By my analysis, the only "new" thing here is **this is the first time I can find DWCD has released MVI call water when the reservoir wasn't full** at least this century. I have looked at every spill I can find and in every case they kept the reservoir full during the ramp down up until last year, and were entitled to spill MVI call water. Last year there was also an overdrawn reservoir and also an accounting error by DWCD in MVI's call water, another long story, but they fixed it in a timely manner and MVI got its full 72,000 AF of water for April-June.

If DWCD doesn't resolve this in a timely manner they are setting a **dangerous precedent**. If they can release MVI call water from a less than full reservoir they can release MVI call water nearly at will and can wipe out MVI's call water with creative management of managed releases. It is my opinion this cannot be allowed to stand and if necessary the conflict resolution terms in the law suit settlement should be triggered by MVI's GM notifying DWCD GM of the dispute. The two GM's then have 15 days to resolve the dispute or the boards are required to step in. If they fail to resolve it this it would escalate to the BOR or a new law suit which would be bad and is completely unnecessary.

At the July DWCD board meeting Greg Black, who does represent MVI, made a simple statement that they think MVI can't spill MVI's call water when the reservoir is not full but are otherwise unlike to push

this issue. Ken Curtis likened this to the 2008 spill issues that ended in the law suit. It is not, MVI didn't have any contractual basis then. By my reading the contract is on MVI's side this time.

The Contract

This excerpt is from the 1989 McPhee Adjustment of Water Rights Contract between MVI and DWCD. This stipulates when MVI's call water can be spilled:

limitations of the District-Company contract. This stored water, exclusive of the 2300 acre-feet stored pursuant to subarticle (b) herein, will be considered **the first water spilled during wet years when McPhee Reservoir spills, or when McPhee Reservoir is full and downstream releases are increased to prevent McPhee Reservoir from spilling.** As river flows decrease during the

The key to understanding this, and why it's often misunderstood, is that they are using the term "spill" here only for the case where McPhee is overflowing and water is spilled through the spillway. This case is now avoided at all costs due to risk of invasive species introduction in the Lower Dolores. The Smallmouth Bass were introduced in the Lower Dolores the one time DWCD did an actual "spill" testing the spillway. Today DWCD uses the term "spill" for "managed releases to prevent McPhee from spilling" and that causes people to misunderstand this paragraph.

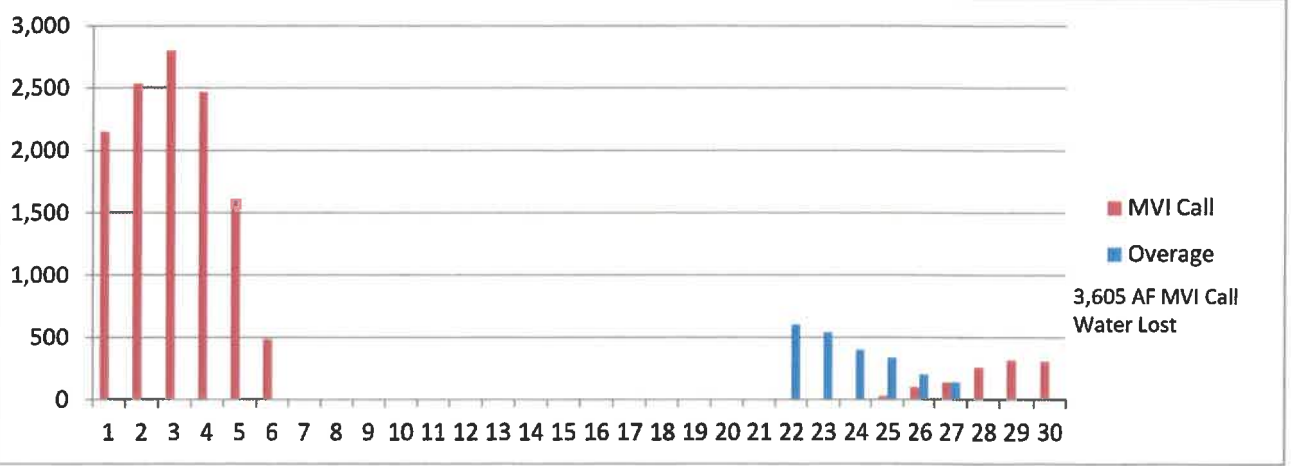
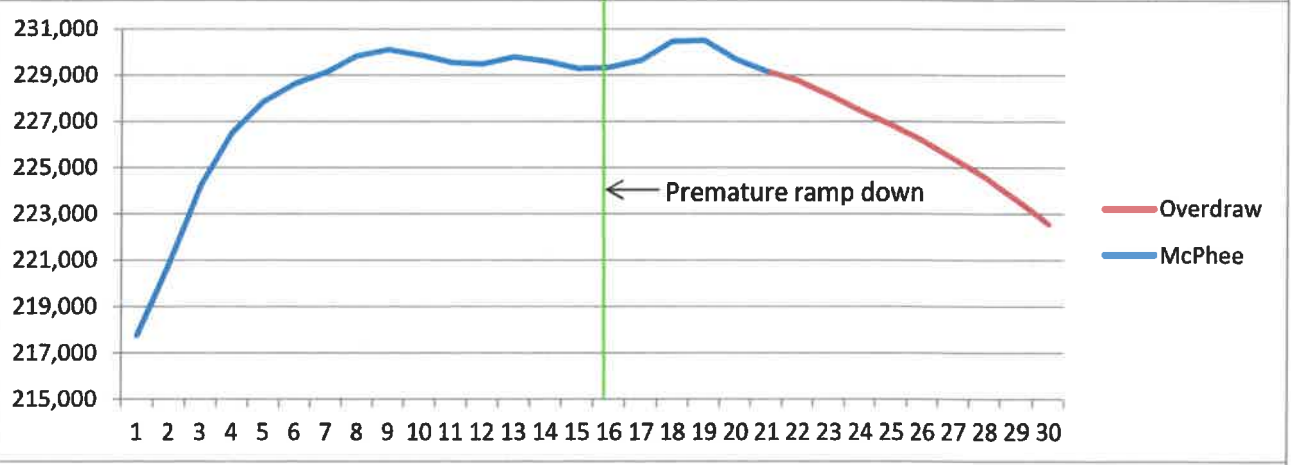
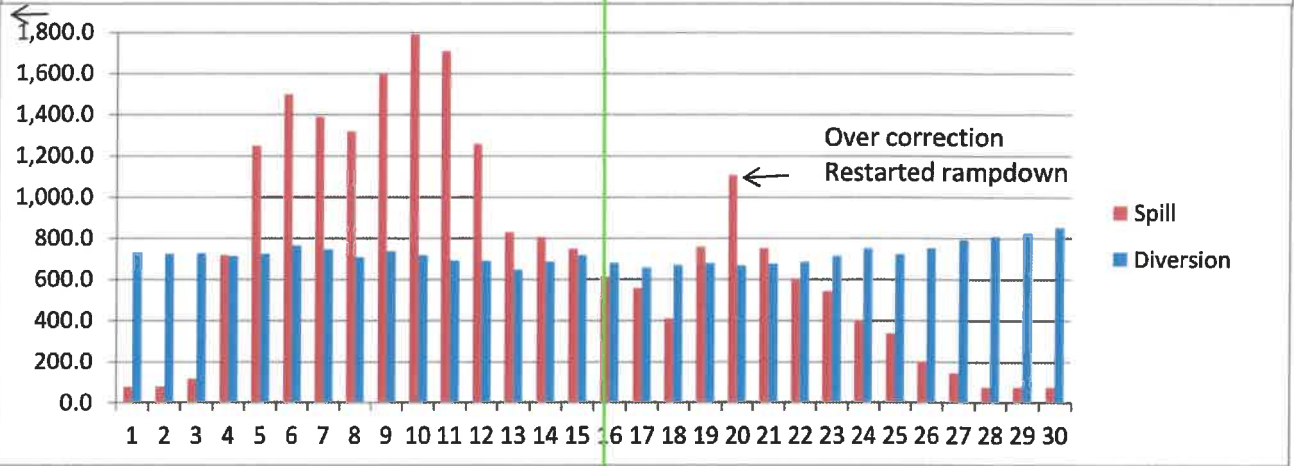
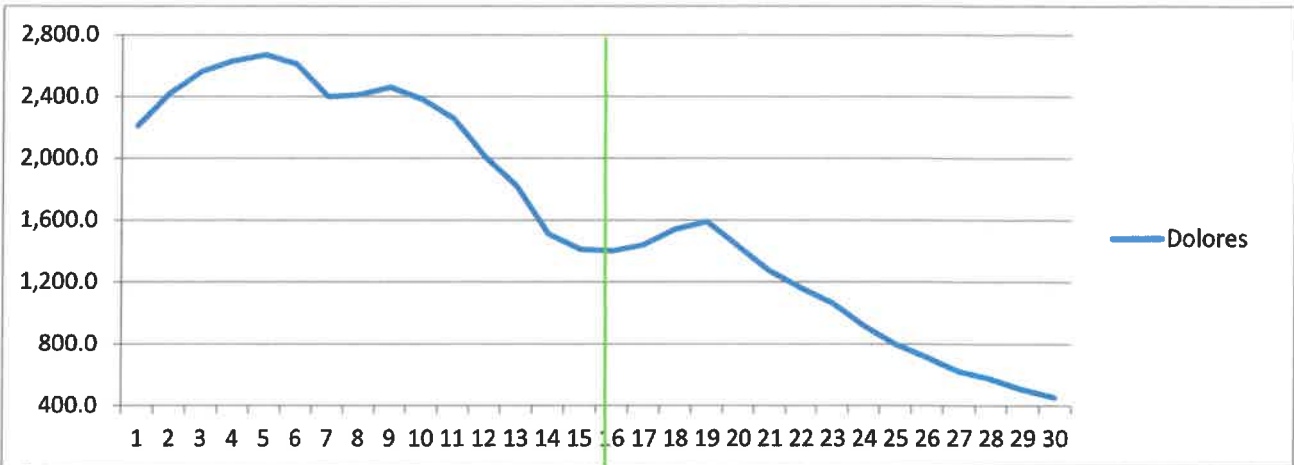
The first clause in green authorizes spilling MVI's call water any time an unmanaged spill is underway. This make sense since the lake must be full, it's overflowing after all. That was not the case this year.

The clause that matters here is the second one in orange where a managed release is being done to preclude a spill. It clearly states "**when McPhee Reservoir is full**". As soon as the reservoir fell below 229,000 AF active capacity the reservoir was no longer full and they should've stopped charging MVI's call water for their ramp down.

If DWCD is going to release water when the reservoir is not full it has to come out of project water or the fish pool, they can't do it on the backs of MVI shareholders.

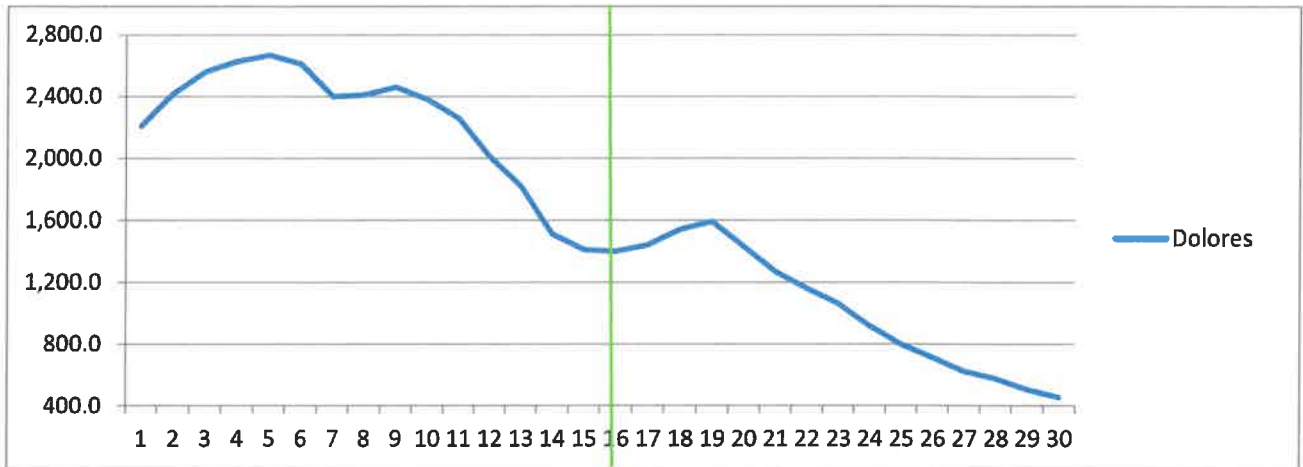
MVI doesn't have a Colorado state storage decree in McPhee; DWCD does, so the whole purpose of this clause was to insure that DWCD's storage decree isn't injured by storing MVI's call water. If the lake is full MVI's call water does have to be spilled. As soon as the reservoir is not full they have absolutely no basis for releasing MVI's call water to the lower Dolores.

The following page has the graphs I presented to MVI at their board meeting the second Tuesday in July. It covers the entire month of June when the call water spill controversy occurred. Detailed analysis follows.



The Dolores River in June

This is the Dolores River gauge in Dolores in June in CFS. The river was rapidly declining from June 12-14 due to cooler temperatures so DWCD decided they need to start ramping down the spill probably June 14 or 15. Its key to note June 15 was a Thursday; DWCD doesn't work Friday so most of the problem here occurred over their long weekend from June 16-18. I don't know if Ken Curtis or Eric Sprague actively monitors the reservoir over the weekend. The control room does but I doubt they are authorized to change a ramp down once it starts.



On June 16 the temperature spiked back up to 94 degrees measured at the Great Cut and the Dolores began to spike too. Temperatures peaked at 97 on June 20 and 22. But by then the high snow which was driving this second release collapsed and so did the Dolores. The high temps probably made the collapse worse. The river peaked at 1,590 CFS on June 19.

McPhee Reservoir in June

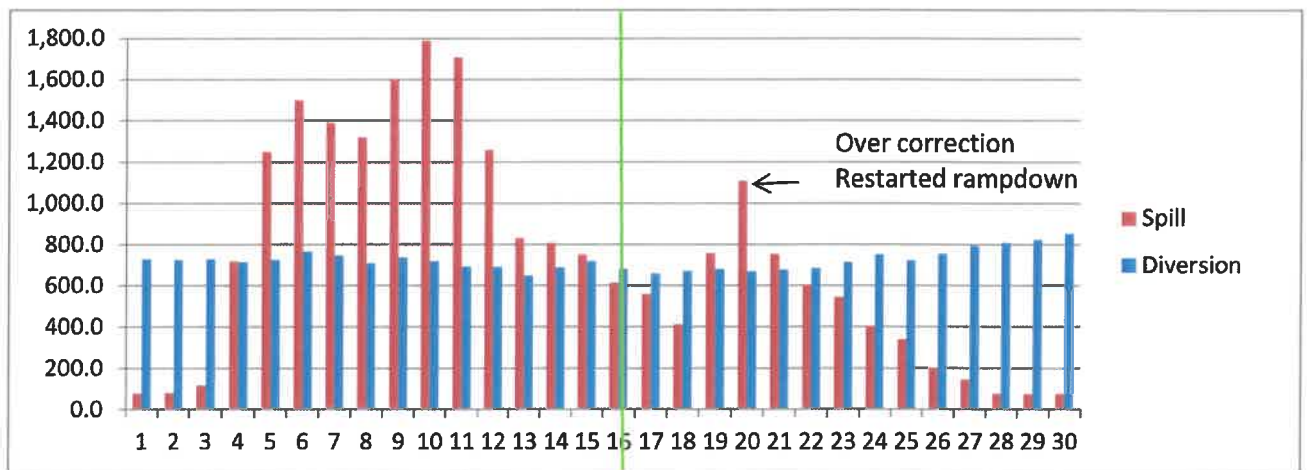
This is McPhee Reservoir Active Capacity with 229,000 AF being listed as full on DWCD's web site.



The reservoir hit full on June 7 and was running somewhat over full until June 22 when it dropped to 228,759 which is when the red line begins. That is the point at which DWCD should have stopped charging MVI's call water for the release by my reading of the contract. It's also the point at which the managed release started overdrawing the reservoir. McPhee finished June at 222,545, or 6,455 AF below full though it would have finished the month several thousand AF below full even if they had stopped the ramp down because of the crashing Dolores and high diversions for irrigation.

Managed Release and Diversions in June

The red bars are the important ones here. They are the Dolores flows below McPhee and show the DWCD managed release in CFS. The blue bars are diversions from McPhee by MVI, Full Service and Ute Farms. The two combined are more or less the total outflows from McPhee.

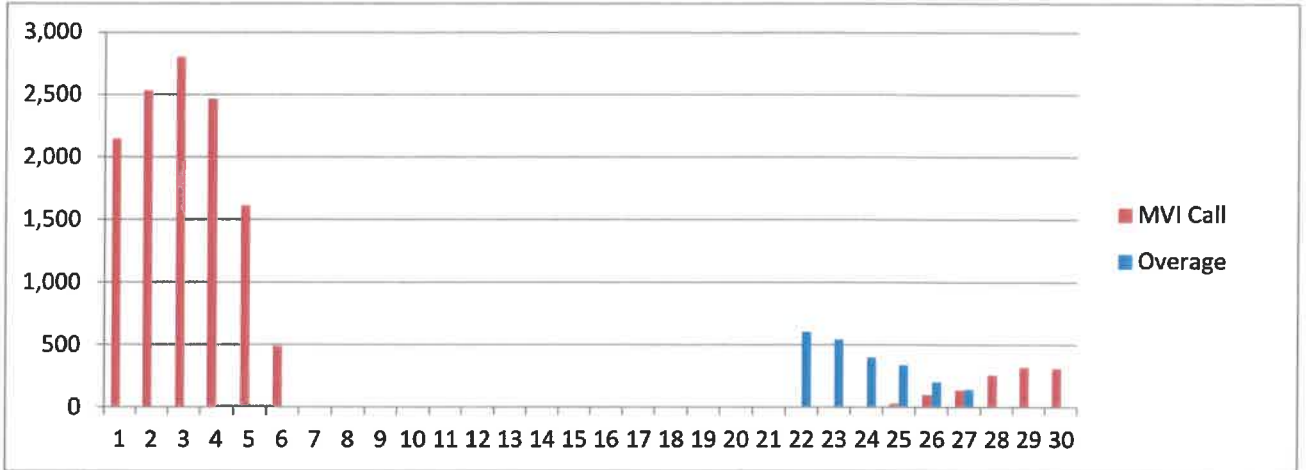


You can see DWCD starting the ramp down going in to the weekend. On June 19th they realized they were going to overfill McPhee and potentially spill, which you will remember they are not allowed to do, so they upped the release to 760 CFS on Monday and 1,110 CFS on Tuesday.

They then resumed the BOR stipulated ramp down, more or less; it was something like 140 CFS steps down per day. But the river was crashing faster than that so they started overdrawing the reservoir.

MVI's Call Water

The red bars here show MVI Call water stored in McPhee. We built some call water when DWCD prematurely stopped the first release before Memorial Day and then spilled it again when high temps started bringing down the voluminous high elevation snow pack. We did build a small amount of call water the last few days of June, 616 AF.



The important bars are the blue ones, those are the MVI call water that was being spilled once the reservoir was no longer full. This water should be in the red bars instead and we would have finished June with a little over 4,000 AF of call water instead of 600 AF.

This is the second year in a row DWCD has miscalculated MVI's call water. MVI's GM has flagged the problems neither time, I did. The error last year was much larger but was corrected immediately.

Conclusion

It is extremely important:

- A. DWCD remedies this contract breach in a timely and appropriate manner.
- B. DWCD do their best to insure MVI's water accounting, especially its call water, is correct every year. It is a hard task, it is complicated and the challenges are different each year. When it's not they need to fix it and not come up with reasons not to fix it.
- C. If the accounting is not correct MVI needs to detect it, report it and compel DWCD to correct it instead of completely missing and the responsibility falling to me, an ordinary MVI shareholder who is not being paid to wade through all these spreadsheets and contracts.

Zimbra**carrie@durangowater.com**

DWCD Drought Plan Comments

From : RUSSELL <RKMONTGOMERY8@msn.com>

Tue, May 23, 2017 12:35 PM

Subject : DWCD Drought Plan Comments**To :** comments@durangowater.com

Comments,

Regarding the Moonlight ditch improvements, I do not see any mention of or costs associated with obtaining easements across private property for the realignment, or even if the private property owners have been advised.

While I completely understand the efficiencies gained by piping the Moonlight ditch, will there be a required EPA review to address the loss of wetlands that have been created by the spillage of water across our property at the current beginning of the piped section, as well as other seepage areas? The potential remediation costs/alternatives should be considered in your analysis.

Our property is located adjacent to Narraguinnep reservoir and the Moonlight Ditch, at the junction of concrete ditch to pipeline.

Thank you for the opportunity to comment.

Russ & Kim Montgomery
215 E Serapio Dr
Telluride, CO 81435
970-729-1376 cell

Zimbra**carrie@durangowater.com**

Proposed drought plan

From : jean behr <jeanbehr@gmail.com>

Fri, Jul 14, 2017 01:44 PM

Subject : Proposed drought plan**To :** comments@durangowater.com

I have adjudicated water rights that are junior to the diversion point on our system (Dawson draw) but equal with the other shareholder on our portion of what is called the McAfee ditch. We have different size shares but equal priority rights. I have owned my property in Lewis for 15 years. When I purchased the property it had a large full running ditch cutting across the property at the top of a long slope. I have trees on the property that date back to the original settlers in the area. My rights are dated 1889, I believe. My property was part of the original Lewis farm and ranch and settlement. Since the purchase over a period of years we saw the ditch continually drying up, more and more. My neighbors and fellow shareholders, the McCombs who have the lion's share of the rights had brown fields most of the time. They make their living from cattle. About 2008, they asked me if they could construct a pipeline to carry the water from the diversion point to their property line. They believed that multiple non-shareholders were diverting the water before our properties. They did a cost-share with NRCS for the project. I, at the time, was doing contract work in Washington state but was amenable to it as long as I could still get my share of the water. I also confirmed that with the NRCS representative at the time who visited the property. It's a long story but I got less and less water until last year I got none. Other considerations prevented me from pursuing this issue until this year. I have spent many hours studying water systems, my legal papers, water terminology and visiting with the Water commissioner, and talking with and visiting the NRCS director and have determined what happened (at least part of it). The short story is that in an attempt to "make the delivery more efficient" the engineering group was "misinformed" regarding the actual legal status and volume of my rights. I have traced this back to the now deceased husband of my fellow-shareholder, Mary McComb, who in turn perpetuated it to her children who are actually actively managing her irrigation. It was not intentional just a lack of understanding of water volume definitions. I am facing expensive correction costs. There was apparently no "due diligence" on the part of the engineering group. I bring this to you as an example of the kind of things that can happen and drastically affect people and properties dependent on the flows off the higher ground. I paid a premium for my property based on water that has been available to the land for at least 100 years based on the house and trees. I had planned to make a small diversified farm there when I retired, (which I recently did). I am rightfully suspect of plans that will make systems "more efficient" depriving others of livelihood and property values. Water engineering is complex as well you know. It is also political.

Zimbra**carrie@durangowater.com**

Drought plan comments

From : Win Wright <wgwright@frontier.net>

Thu, Jun 15, 2017 12:11 PM

Subject : Drought plan comments**To :** comments@durangowater.com, info@doloreswater.com**Cc :** wgwright@frontier.net

Dear DWCD,

I am submitting comments regarding your Drought Contingency Plan. I am not a resident of the DWCD service area; however, as a USGS hydrologist for 22 years, I worked on the Dept of Interior Dolores Project irrigation water-quality investigations with David Butler during 1989-91 (based in Grand Junction at the time). I have lived in the Durango area since 1994, and I am very interested in the hydrology and water quality of the DWCD service area. Therefore, my comments are submitted as a citizen of the Four Corners Region.

From my perspective (someone who has worked on these plans), your Drought Contingency Plan is not really a contingency plan, rather it appears to be a system modernization plan. System modernization plans are being implemented all over the western US for the purposes of salinity/selenium seepage prevention and water conservation, which includes canal piping and lining, SCADA installation, and on-farm modifications (sprinkler systems etc). While it is a good thing to accomplish these modernization plans, these are viewed as long-term improvements with long-term goals. To me, a contingency plan means, "looks like a drought year, what's our backup plan, we need water now."

Comments are as follows:

(1) Rain barrels and roof-collection systems should be included as possible sources of drought contingency water for residents of the DWCD service area. Maybe DWCD could provide a quick set of instructions to guide water users through the rain barrel application process? Maybe DWCD could purchase bulk materials at contract prices for installation of rain barrels at DWCD service member facilities?

(2) With climate change (supposedly) affecting our snowmelt runoff timing, there will be an increased need to store water during winter (remember recent rainfall events during December and January). Whether it's stock ponds or larger storage facilities, the water rights for storage are usually limited by the time of year. We should begin discussions with the Division of Water Resources regarding: (a) change of existing storage rights for more flexible "paper fill" dates, and (b) hydrological and biological studies of the availability of winter water and the environmental impacts of winter water storage. Maybe DWCD could

provide legal advice (or direct legal assistance) to help water users with changes in the timing of water storage rights. Along with winter water storage would possibly be a need for freeze-resistant diversion structures and freeze-proof conveyance canals or pipelines (typically a design consideration for deeper intakes and covered canals).

(3) In combination with the above change in timing for water storage, there are numerous site locations where new ponds or reservoirs could be sited within the DWCD service area. The Simon Draw area of upper McElmo Creek would provide a great place for small reservoirs, and the upper reaches of Yellowjacket, Dawson, and Cross Creeks also would be great places for new storage. Might DWCD be able to acquire land, construct, and operate small storage facilities for the benefit of all DWCD water users? Think about Grand Junction's public water supply (Ute Water), where they have dozens of interconnected ponds and lakes on the Grand Mesa that provide a consistent and reliable source of water.

(4) Groundwater was not mentioned as a possible source of drought contingency water. Whether owned by private water users or DWCD, wells might be able to provide enough water to prevent a farmer's entire crop from being destroyed. However, there has not been an assessment of groundwater resources in the DWCD service area. How much groundwater is out there? Where is the groundwater available? Is the groundwater of sufficient quality for irrigation or livestock?

(5) An emergency contingency to save a farmer's crops might involve water hauled-in by trucks, and stored in temporary (or permanent) water tanks. For example, a vineyard could experience a total loss without an emergency contingency water source. Loss of the vineyard (or anyone else's farm) would be an economic blow to the DWCD service area and Montezuma County (not to mention BOR repayment contracts). Hauled-in water would be expensive up-front; however, there could be possible reimbursements for disaster relief at a later time-- if a process was set up for such an event. It seems like a good responsibility for DWCD to have an emergency contingency plan, which would include on-call trucking contractors, priorities for the most sensitive crops and farms, and water tanks strategically placed around the DWCD service area. Of course, on-farm water conservation measures (e.g. drip irrigation) would need to be installed prior to such a water-scrimping endeavor. I'm not sure about the water rights of trucking and hauling water, but this should be within the realm of knowledge and expertise of DWCD.

(6) Do you have documentation of transit losses down McElmo Creek? Given the steep gradients and decades of irrigation, I'd imagine that the stream is gaining flows through much of the upper reaches. But, indeed, delivering irrigation water to farms near the State line could be a challenge. There are a few existing data points on McElmo Creek from our 1990 study that might be used as a quick check. However, a transit loss study of the entire McElmo reach would be an exciting project. Please call if there is a need for help!

Respectfully submitted, thank you for the opportunity to comment.

Win Wright
Durango, Colorado

--

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Zimbra**carrie@durangowater.com**

drought contingency plan comments

From : Don <dysch@frontier.net> Fri, Jun 30, 2017 11:37 AM
Subject : drought contingency plan comments 📎 1 attachment
To : 'Carrie Lile' <carrie@durangowater.com>, 'Ken Curtis' <kcurtis@frontier.net>, 'Steve Harris' <steve@durangowater.com>

Hi all

Here are some shot gunned thoughts to provide context as you review.

I appreciate your work on the draft plan. It reflects a positive change from the original proposal that you generated in response to concerns expressed at that time. In spite of the length of my comments, I tried to limit them to what I considered high priority concerns.

I bring a little different mind set foundation to the effort. I think some tone change will make the plan much more acceptable. Many of the word choices and most of the additional history are provided to try and reduce the perception of threat generated by the plan as drafted.

In addition to offering a few scattered specific word changes, I provided two sets of more significant suggestions: 1) concepts that I think are valuable that I left for you to wordsmith, and 2) in quotation marks, are words that I thought should specifically be used and that I spent time and effort to formulate. The comments are designed in a format for you to incorporate into a redline draft from me for your easier review. I expect it will be easier to understand if I talk my way through that format.

I am expecting the process we are in will require an additional set of comments to the draft that you generate from all comments, before we have a final draft completed.

The response from McElmo users is no surprise, these concerns have been around for a long time, and have percolated to the level of much more conscious concern and discussion from folks on both sides of the impacts in recent years.

Thanks for the chance to share my comments on Monday.

Don

 **Dwcd drought plan dws revisions-6-30-17.doc**
51 KB

Dwcd drought plan dws revisions-6-30-17
Scattered typo's need fixed

Page 7: "non-excess" to "unused"

Page 11: expand Section 1.1 significantly after the final draft is near completion to reflect the changes that have been made after the comment period. At this point I would suggest including:

"The primary purpose of this plan is to describe ways 1) to increase carryover storage in McPhee Reservoir, through 2) a variety of actions that could be utilized for that purpose, while acknowledging the (sometimes controversial and significant) processes that will be necessary for some of these actions to move to implementation. All Dolores River water users will benefit from having increased storage in McPhee during drought periods.

"Any changes to present use described as plan actions are expected to go through all appropriate discussion, process, and any necessary negotiation before being implemented." This sentence should probably be expanded to articulate some examples, such as: MVIC shareholder involvement, public outreach, contractual negotiation, etc.

It might help explain the purpose to describe the evolution of the plan 1) from its conception, 2) through the changes that were incorporated into the application, 3) then the change in approach following how the application was received by the funding boards, 4) to the draft that was presented to the boards and the public, and 5) the final draft after receiving board and public comments.

I decided that I would prefer to see all of the comments from stakeholders before I could design this section.

Page 12: insert another paragraph describing the San Juan Basin service area that receives the MVIC and Dolores Project water from the Dolores River.

Page 19: expand 1.3.1 Trans-Basin Diversions and Montezuma Valley

"MVIC's direct flow water rights have an appropriation date of 1885 with an adjudication date of 1892. The first McElmo water rights filing were made in 1888, before the water was diverted to the San Juan basin in 1890. The history of use of trans-basin water in this previously dry valley has been driven by its unique geography. MVIC's surface water delivery and application has resulted in numerous tributaries to McElmo Creek gaining both riparian environments and water. This water has been available for diversion to be reused on additional lands, including many included in MVIC's decree, as McElmo adjudicated water rights. These tributaries reach all the way to the Dolores River rim. Actual lands irrigated with MVIC shares and/or adjudicated rights have moved around the lands served based on economics and other ownership motivations during the entire history of the valley from the 1880's to the present. The types of lands served, coupled with an insecure water supply, helped shape the types of

agriculture that developed in the area. The livestock industry has always been a strong part of the valley's foundation because of these factors. It is not uncommon for landowners to hold both shares in MVIC as well as adjudicated water rights. There was little significant water available to adjudicate in Montezuma Valley until Dolores River water was diverted into the San Juan Basin.

“In Colorado, any water diverted from a stream “belongs” to that stream except to the extent that it is lawfully appropriated: a diverter takes water from the river, makes the decreed beneficial use, and returns any excess to the river of origin. Any water diverted, but not consumed by beneficial use, is owed back to the river. These return flows may seep slowly through the ground or run back to the river, but will be available for other appropriators (i.e., one person's return flow is another's supply). However, Colorado's water rights administration of trans-basin diversion is different. Under Colorado's trans-basin water law, water that is imported into a completely different river basin does not belong to the receiving basin. The importer of water, diverted from the stream of origin in priority, has the right to use and reuse to extinction the imported water, regardless of priorities in the receiving stream, as long as the importer maintains dominion and control over the imported water. Although water rights can be obtained for return flows of imported water when available, such appropriations have no right to the continued importation or to the water use practices that initially made that water available. This law was developed on the front range in response to the use of Colorado River water being imported across the continental divide into basins with an already existing water supply, but it has also been applied to MVIC's diversions of water from the Dolores River to the Montezuma Valley.

“MVIC and DWCD have a long history of working together for the improvement of the trans-basin area able to be served by Dolores River water. The history began because MVIC's conditional water rights needed additional infrastructure, including storage, to become perfected. Work on what resulted in the Dolores Project was part of the diligence used to maintain those conditional rights. The negotiation of the 1977 contract “For the Adjustment of Water Rights and Sale of the Use of Irrigation Water” was the foundation stone that allowed the development of the Dolores Project. During the construction and the initial operation of the project from the early 1980's to the early 2000's, DWCD's policies were based on finding ways to ensure that existing water uses of the Dolores River would continue. The water supply described by the BOR in the definite plan report that shaped the 1977 contract was based on the expectation of those uses continuing. So even if strict administration of water rights had potential to reduce those uses, DWCD worked to find innovative ways to keep existing uses from being negatively impacted while it brought the Dolores Project into full use. Those efforts have resulted in such things as: 1) the implementation of the junior water user agreement upstream of Dolores, initiated by the desire to make sure the town of Rico retained a water supply, 2) the Groundhog exchange agreement that allowed for new development of water in the upper Dolores, 3) the inclusion in the Towaoc Highline Canal Contract of the right for MVIC to use any water saved “ for any use, including, but not limited to, fish and wildlife enhancement and maintenance of cottonwood habitat,” 4) the design and implementation of a “water bank” for delivery of full service water allocations, and 5) the

sale of Class B stock by MVIC to DWCD to supply an expansion of full service acres. This sale included Totten Reservoir for DWCD to utilize to meet future community needs. The community is continuing to work together based on this foundation to maximize the benefits associated with Montezuma Valley's trans-basin existing water uses and rights."

Page 20: insert language in the last paragraph:

... Because MVIC's water rights were senior, the Project could not have been constructed without MVIC's participation. "The early DWCD board was comprised of seven members representing specific local constituencies. Two represented the MVIC shareholders, two represented the full service area, one from Montezuma County and one from Dolores County, and two represented the municipalities of Dove Creek and Cortez. These areas all would have a contracted allocation for project water supply. The last member represented the town of Dolores because it was expected to benefit from the expected flat water recreation. The DWCD board worked with the MVIC board and the BOR to shape the Dolores Project to provide the significant additional Dolores River water benefits that the residents of the Montezuma Valley had been working to achieve since the early years of settlement." Complex and ...

Page 21: add a paragraph that includes these facts

"The Towaoc Canal Contract of 1989 was negotiated with the same spirit of partnership to build on the foundation of the 1977 contract. It was explicitly negotiated to allow MVIC to retain the use of any saved water generated by the new salinity features that had become part of the Dolores Project infrastructure. Exhibit A to the Stipulated Settlement that ended the lawsuit of 2009 added additional clarity to the amount of non-project water that is available for MVIC use from the 1977 contract."

Page 22: add "estimates of"

Page 23: add "Beginning...has been allocating"

Page 24: add "forecast"

Page 25: add a concluding paragraph

"When irrigation allocations were made from the Project water supply, the defining criteria was described as: a shortage "for any one season is limited to 50%, the total for two consecutive seasons is limited to 75%, and the total shortage for 10 consecutive seasons is limited to 100%." Since these criteria have been exceeded several times in recent years, this plan has elements that are designed to increase carryover storage. This plan includes finding ways for users to not fully use their allocations or rights as a tool to reach the goal of increasing carryover storage. It is interesting to note as we look at the total use patterns of both the full service irrigators and MVIC shareholders in recent years, we see that total uses reflect individual users incorporating their own drought

plans. These plans have utilized, from the different tools available to them, ways to maintain a viable agricultural business that leave some of their water supply unused in some years of full supply. That unused water has helped build carryover storage. The understanding of these different “tools” will help shape this “Drought Contingency Plan”. There is no intention to reduce rights or allocations by the encouragement of under utilizing them in order to build this carryover storage that will benefit all users of McPhee water.” (Some of these thoughts may have value to add to the section about plan purpose.)

Page 35: change sentence to say some irrigators were still damaged by late knowledge of the full supply.

Page 38: remove a phrase

Page 42: add “most” and remove phrase

Page 43: add “appear to be” and “have surveyed”

Page 44: add “or more” and “sometimes even more years to replace lost income and loss of markets”

Page 47: add a paragraph that more completely describes the complexity of the process needed to implement the Mitigation Actions that are being described in Section 5. It should include something about potential appropriate process, players, needed additional information, time to complete, negotiations etc. There could be value in different paragraphs for the structural section and the non-structural sections.

Page 64: add a summary paragraph to 5.1.2.5 about some of the complexities of responding to increased efficiencies of water delivery and application (both to farm and on farm): i.e. loss of “free” water table being lost so need for increased application to get to same consumptive use, time needed for economic adaptations (replace “free” with purchase of expensive shares), time lag for water table dry up, same issues for loss of adjudicated water, concern about loss of water driven environmental benefits that increase land values. In other words, describe the potential need for time, water and/or money to measure and respond and possibly mitigate to these efficiency improvements. These consequences impact both MVIC shareholders and adjudicated water users. Here is a possible draft:

“Both delivery and on-farm efficiency improvements that are designed to save water have complex consequences to both MVIC shareholders and adjudicated water users that are difficult to measure and fully anticipate. Both run-off water and water table water are reduced, which can result in the need to replace some of that water to just maintain the beneficial consumptive use of some acres after the efficiency action. There is often a significant time lag before the reduced water availability can be understood. There can be a significant cost to users in replacing the lost water supply. “Free” water, whether adjudicated or utilized from the water table, may need to be replaced with expensive

MVIC share purchases. Environmental benefits (extra vegetation that can increase the variety of wildlife) that have economic and lifestyle advantages deserve to be factored into any mitigation adaptation. Landowners need to have time to develop their strategies to these kinds of changes as they become evident. Both water and money may be part of new solutions.”

We could consider adding more language describing some needed process that would include water gauging for loss and gain, contract issues, and designs for mitigation of loss where necessary. There is significant complexity to all of these issues, and a need for public outreach and communication.

Page 73: add to the last paragraph

“Significant shareholder communication and discussion would have to occur for there to be serious consideration of this alternative.”

Page 76: add “If all of the” Class B stock “water is not needed on allocated acres, the balance”

Page 76: Need to describe the water bank that we have been using for years. This should be the tool we utilize to address our drought strategy. It has provided flexibility for different purposes in the past, and could potentially provide drought protection in the future if operated differently. John Porter generated a number of presentations (both written and power point) that described the benefits and innovation associated with the water bank that he may still have access to. Purposes included:

- 1) save water by only requiring payment for water used (as opposed to the old “use it or lose it” mantra with its outsider perceived bad water management philosophy)
 - 2) allow demand to let some water move around the system as some operators had different crop needs and patterns from year to year. (There was also some concern by some landowners as water came on line that some of the good crop land was classed as class 6w for being in a draw that was not going to sub-irrigate out of production)
 - 3) keep the payment off the tax roles (which required prepayment for a firm allocation) which also allowed landowners to use water to generate income to pay after the fact instead of up front, so a means to help users cash flow problems
 - 4) provide flexibility to adapt to changing conditions as landowners and project operators (the board and staff) became familiar with changing needs over time
- As we describe the bank we need to provide some explanation that its existence generates final water use numbers that are the sum of a number of differing operational decisions being made to react to changing circumstances (in other words each individual is creating his own unique drought resistance plan) as opposed to the single operator of FRE that actually makes FRE more efficient in using its total water allocation.

The Board “forcing” irrigators to be more efficient would not be well received by me as a board member or by many of the full service farmers. This potential action needs to be framed as a tool to utilize with our existing water bank after a dialogue between the board and the irrigators.

Page 80: may need some similar process additions to Section 6 that I suggested for Section 5.

Page 85: add a sentence to the second to last paragraph; add and delete to the last paragraph

...as early as April 1st. “the south system is seeing earlier start times in recent years, while the north system has still started significantly later.”

(delete the first sentence) Before the Project, MVIC made these early diversions “and used water when it was available in the river by right as beneficially as they could in their water short late season area. With the benefit of added storage in McPhee, users have learned to change their water management to utilize late season water deliveries from storage.” While stock water runs occur in the early spring, the delivery system has not been fully charged or operationally for early diversions to begin. “If shareholder discussion of this potential changed practice resulted in a demand for beneficial use of earlier water, this proposed action may deserve further evaluation. We should then consider moving it from a low to a medium priority.”

If MVIC class c stock becomes a way to serve McElmo water needs, an April delivery may be its highest priority. This concept may need discussed in the plan, depending on the substance of other comments that we may receive.

Page 86: The last sentence of the intro paragraph may need revised to match what finally occurs.

Page 88: Somewhere (is section 8 the best place?) we should discuss using the priority tables on pages 92 and 93 as a tool to help the community move certain plan elements to the level of implementation. I do not have this idea well formulated yet, but wanted to flag it for discussion.



SAN JUAN BASIN FARM BUREAU
19727 County Road U
Cortez, Colorado 81321

July 20, 2017
Cortez, Colorado

DWCD DROUGHT MANAGEMENT PLAN COMMENTS FROM SAN JUAN BASIN FARM BUREAU BOARD OF DIRECTORS:

The current draft of the drought management plan for the Montezuma Valley and Montezuma and Dolores County water rights owners and water users fails to address the impact of drought to the community as a whole and does not in fact address any actions that would keep the community whole but does in fact separate out all the different water users and pit them against each other.

The single goal of keeping McPhee Reservoir full to benefit the DWCD users and other outside interests on the Dolores River does in fact completely ignore the adjudicated and return use flow water users that connect this communities agriculture operations. The plan addresses efficiencies for those users that already have the most recent up to date improvements built into their delivery system for the full service farmers. The plan alludes to the older Montezuma Valley Irrigation system as being the “waster” of water that could be left in the reservoir for other users in short water supply year. And then the plan addresses the unrealistic proposals of pumping back water in certain drainages to feed the DWCD system again, reusing that water for the same irrigators that had it the first release and drying up those acres outside the DWCD delivery area. There is a lot of proof already in the system that shows a need for more water occurs when “improvements” are made in the delivery system, so the theory that efficiency will lead to less consumption and more supply doesn’t pencil out.

This plan is not a positive proposal for addressing water shortages that will keep our community alive and vital but will create further divisions among water users. The goal of a community plan should address what is best for the whole, preserving the historical system of use and reuse that this community has been built on, and setting a priority to address real water shortage supply by everyone sharing in the shortage and trying to not totally eliminate anyone.

There are so many demands for water from the Dolores River that are from outside our community and helping those outside demands to reach their goals by dividing the water rights owners and users and pitting them against each other will continue to erode the protection of our water supply for continued historical uses within our community. Understanding the strengths and limitations of each of the different water entities/users groups and using the strengths to build community compatible plans should be used in any and all plans that continue to be drafted instead of using the limitations and weaknesses to drive further incompatibility into the system, setting the water supply up for loss to outside and additional uses to diminish the already limited water supply, leaving our rural remote community vulnerable to money, resources, and regulations that will take that water supply outside this community.

Our recommendation to the drafting committee is to take another look at the goal of this plan, address the real issues of having a community of different water users and systems that need to be compatible with each other, and put the strengths that make up our community together to have a shared plan to address

various water shortage scenarios. This is a plan that impacts peoples lives, their livelihoods, and the future agriculture in the community as a whole. It should not be written as a plan to only numerically address a small portion of the community irrigation system and leave out the human factors or we will lose our water to outside uses that are given higher priorities because we did not fight to keep our priorities strong and together.

The plan should also address when the water supply shortage is due to true adverse weather conditions that will continue to present issues as nature moves through the seasons which we humans cannot control, and also what happens when the supply shortage is due to other use impacts that are putting additional strains on the supply. There should be a priority of uses that are of critical need for the agriculture communities and those that are uses that are outside the community that are not vital and not part of the historical uses of the water. M&I water supplies could fall into this and maybe some other water uses that have been carved out. In other words there needs to be all this addressed in a complete plan that doesn't just carve out an entity as being the priority and leave the rest of the community to struggle with the outcomes of this plan were it ever to be implemented. We have a complicated water project and we need to band together to keep it whole and protect it.

Sincerely,

Linda Odell, President
San Juan Basin Farm Bureau
19727 County Road U
Cortez, CO 81321

Government Affairs / Natural Resources



San Miguel County • PO Box 1170 Telluride CO 81435
Lynn Padgett • 970-369-5441 • lynnp@sanmiguelcountyco.gov

July 23, 2017

VIA EMAIL

Harris Water Engineering, Inc. (HWE)
email: comments@durangowater.com

RE: Request for Public Comment on the draft Dolores Project Drought Contingency Plan

Dear HWE,

San Miguel County, Colorado (hereafter, "SMC") appreciates the opportunity to provide comments on the on the draft Drought Contingency Plan¹ (Plan) for the Dolores Project. Thank you for extending the comment deadline so that we and others could offer more informed and carefully thought out comments. Where the San Miguel River is the only significant tributary to the Dolores River downstream of the McPhee Dam, San Miguel County desires to be a collaborative partner and resource for the Dolores Project on improving drought forecasting, enhancing the native fish population, and strengthening opportunities for outdoor recreation associated with the Dolores River downstream of McPhee Dam. Like the Dolores Project, our economy relies on snow pack for recreation and having adequate water for agriculture, M&I, habitat, and recreation. We also are very interested in expanding economic opportunities for agriculture through growing higher value and less thirsty crops to maximize income for our farmers and ranchers and economic benefits for the region.

We understand that a Bureau of Reclamation WaterSMART grant was received by the Dolores Water Conservancy District (DWCD) to fund the creation of the Plan and that this grant required that six specific elements be addressed:

- Drought Monitoring
- Vulnerability Assessment
- Mitigation Actions
- Response Actions
- Operational and Administrative Framework
- Plan Update Process

We further understand that Plan drafting process involved a Planning Task Force meets regularly to discuss and develop the content. The Planning Task Force included the DWCD, Montezuma Valley Irrigation Company (MVIC), and Ute Mountain Ute Farm and Ranch Enterprise (FRE), along with representatives from the Bureau of Reclamation (BOR) and

¹<http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

Division of Water Resources (DWR)². The draft plan is designed to be a comprehensive evaluation of potential mitigation and response actions to reduce water shortages and provide greater drought resiliency for Dolores Project water users. The Executive Summary describes the Project water users as “primarily the irrigators and fishery downstream of the Project.”³ Our comments will use the abbreviations and definitions found in the Plan.⁴

Comment 1: Planning Task Force Diversity Needs to Be Increased and Include Native Fish and Boating Representatives.

San Miguel County supports the spirit and intent of the Drought Contingency Plan. We are aware of the number of stakeholders involved in the Dolores Dialogue overall and have reviewed which parties were on the Planning Task Force. It appears that even though the “fishery downstream of the Project” is recognized as a water user in the Executive Summary, it is our understanding that Colorado Parks and Wildlife were not included in the Planning Task Force or process. McElmo Creek irrigators also appear to have been left out of the planning process, and DWCD has scheduled an additional public meeting on the Plan with McElmo on July 21, 2017, two days before the draft plan comment deadline. It appears that while very well-intentioned, the planning process did not include key stakeholders or environmental and recreational representatives as required by the BOR Drought Response Program Drought Contingency Planning Framework manual in Section II.D.6 which must be followed when there is a financial assistance agreement related to BOR financial assistance being provided for planning:

*“ the Following finalization of the financial assistance agreement, the following steps are required before development of the plan or plan update can begin • Establishment of a Drought Planning Task Force. – At the outset of the planning process, the planning lead will develop the Task Force, made up of interested stakeholders within the planning area that wants to actively participate in developing the drought contingency plan (individual members of the Task Force are referred to as Task Force member). This Task Force could include: tribes; Federal, State, local government agencies; representatives from different sectors, including water purveyors and water users; representatives of environment, power, recreation, agriculture, energy, fire; universities; non-governmental entities; any small business owner adversely affected by drought; a trained facilitator; and communications staff. **Planning leads are required to develop a Task Force with a diverse membership representing multiple interests in the planning area.** The planning lead may also establish working groups to support the Task Force in developing different aspects of the plan. Reclamation will review and provide feedback on the inclusiveness of the task force.”⁵ [Emphasis added]*

We recognize that the number of stakeholders involved in a planning process can lead to an increased level of effort or expanded timeline in order to provide opportunities for meaningful input and consensus building. The Plan should remain in draft form until wildlife (especially native fish), environmental and recreational (especially boating) stakeholder representatives are brought onto the Planning Task Force. These stakeholder representatives should be given a chance to provide meaningful input, which may result in refining or reshaping certain recommendations, mitigation actions, and reordering of priorities. Native fish and boating are recognized in the Plan as being impacted by drought in the Plan⁶ which is why expert representatives of these interests should have participated in assisting in identifying and evaluating potential mitigation and response actions. Vulnerabilities to drought differ from stakeholder to stakeholder. Vulnerabilities, as described in the Executive Summary, are:

- FRE – vulnerable to actual and April 1st projected hydrologic shortages
- Full-Service Area (FSA) irrigators – vulnerable to May 1st runoff projections and actual droughts
- MVIC – senior water rights limit vulnerability to extreme droughts, and when McPhee Reservoir spills

²Note: DWR is not listed as a Planning Task Force member on Page 6 of Plan, but is listed as such in the cover letter–
<http://doloreswater.com/wp-content/uploads/2017/05/Letter-Requesting-Public-Comment.pdf>

³Page 6; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

⁴Page 5; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

⁵Page 22; <https://www.usbr.gov/drought/docs/FY16DroughtResponseProgramFramework.pdf>

⁶Page 7; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

- Downstream native fish – most vulnerable to long term, multi-year shortages; less vulnerable to single year shortages
- Boating – vulnerable to non-spill years which are “below average runoff” years, which tend to occur “half of the years.”

The vulnerability summary shows that some stakeholders are considered most vulnerable (to drought or projected drought) under different scenarios, which could mean that mitigation actions that provide drought resiliency for one stakeholder or user group could affect negatively another stakeholder in either or both normal or drought years. We appreciate the complexity of this situation, which is why a very diverse Planning Task Force needs to be involved in revisions and final drafting of the Plan. The ultimate success of the Plan requires finding a balance between stakeholders so that all interests together can be made more resilient to drought, not just a few.

From the revised Completion Schedule⁷ posted for the Plan, it appears that in July 2017 HRE will be presenting the current limited stakeholder Planning Task Force with public comments; and that in August 2017 a comments matrix with Planning Task Force recommendations will be presented for direction and decision by DWCD and MVIC Boards alone. San Miguel County strongly recommends that the makeup of the Planning Task Force be expanded to include representatives of all of the potentially affected stakeholders identified as vulnerable to drought prior to beginning the review of comments.

Comment 2: Improved Drought Monitoring and Forecasting Needed.

The Plan states that during drought conditions “all allocations except M&I water share *pro rata* in the shortage.” Inflows and water volumes in the Dolores River and tributaries feeding McPhee Reservoir are highly variable with water volumes resulting from spring snowmelt ranging from 60,000 to 500,000-acre feet (AF) per year. Section 1.1.2.3 of the draft Plan indicates that the Dolores River Basin above McPhee Reservoir produces most of its runoff from snowmelt.⁸ Most peak flows occur in May, with runoff season occurring between April and June. Monsoonal spike flows are also highly variable, localized, and tend to occur between July-October.

FRE is vulnerable to any projected (which are not necessarily actual) shortages projected by April 1st. Therefore, it is extremely important for all users, including native fish and boaters, to have the most accurate predictions possible by April 1st. FRE irrigates lower elevation areas and has different growing plans than higher elevation areas in the FSA. Water allocated to MVIC spills first out of the McPhee Reservoir, which has an active storage pool of 229,000 AF.

From the draft plan, it is unclear why MVIC is considered to be vulnerable to drought if there are spills due to projected snowmelt volumes exceeding reservoir capacity. For a spill to occur, the reservoir must be full.

The plan proposes that DWCD will be the lead agency in drought monitoring and notifying Project users of potential shortages and their projected severity. This appears to be different than the current monitoring process which involves projections being made by DWCD and BOR using projections from NOAA's Colorado Basin River Forecast Center (CBRFC); NRCS SNOWTEL data for higher elevation sites; manual monitoring of snowpack at lower elevation sites; and DWCD inflow/outflow spreadsheet tabulations.⁹ The DWCD "inflow/outflow" spreadsheet tracks water availability and water usage for each project user versus their allocation and is updated daily during the April - October irrigation season or weekly outside of irrigation season.¹⁰ The spreadsheet satisfies settlement of a 2009 lawsuit where a procedure was agreed to for calculating MVIC's annual allocation of project water.

⁷<http://doloreswater.com/category/news-and-announcements/>

⁸Page 6; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

⁹Page 7; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁰Page 23; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

In order to balance drought resiliency and needs by all Project users, including native fish and boating, it appears that an improved snowmelt runoff prediction system is needed, to better align the April 1st predictions which appear to cause rationing and determinations of spill/no spill years with what is accepted to be the more suitable May 1st prediction based on the four highest¹¹ SNOWTEL gages. It would be helpful if these gages were described by name and location in the text and in Figure 4 (page 17).

The Executive Summary states that below average runoff years occur for half of the years. This conflicts with Section 1.1.2.3 Precipitation, which states "Since 2000, there are only five years of the 16 years where precipitation was above average."¹² In drought contingency planning, more weight should be placed on recent trends as more extreme weather conditions continue to smash historic records, year after year in the current decade. Figure 4 shows that only ten of the last thirty years (1986-2016) have had above average snow packs on May 1st of that year, which is the date used for runoff predictions by the Dolores Project.¹³ Furthermore, in the three recent years, 2013-2015, there were projected shortages with drought rationing implemented. When full supply was realized in June, it was too late for the FRE irrigators who suffered negative impacts to production, income, and tribal employment.¹⁴ However, 2004, 2014 and 2015, ended up having a full supply of water, even though drought was predicted on April 1st and May 1st.¹⁵ Actual significant drought shortage years occurred in 2002, 2003 and 2013. Figure 8 shows that 2002, 2003, 2004, 2006, 2013, 2014, and 2015 had less than 100 percent of full allocation available to project users, again emphasizing that there are real impacts to users when drought predictions are inaccurate.¹⁶ A drought curtailment can take 2 or more years to recover, such as with FRE where alfalfa stands take 2 years to be re-established.

We appreciate the discussion in the plan explaining the challenges with forecasting, however, due to the critical management and spill implications riding on early season projections, we recommend that drought forecasting methods be examined to include the best scientific methods. The timing of runoff flows to be examined, as they now tend to be starting earlier in the year. Forecasting has been off previously, and it is very important not to miss timely opportunities to allow spills that benefit project users, forecast droughts that do not materialize or miss timely opportunities to implement drought mitigation measures in the plan.

The plan mentions that DWCD has an agreement with BOR to provide 700 AF of Project Water to replace or augment water injected by the BOR Paradox Valley Unit for salinity control of the Dolores River.¹⁷ Is this augmentation subject to sharing *pro rata* in an actual or projected drought shortage?

"Improve Water Supply Projections and Timing" is discussed in the Plan in section 6.2, under drought response actions. We recommend this is a paramount drought mitigation action that is not a response to a drought, but a best practice, and at least should be moved to section 5.¹⁸ While there is a timeline provided for when DWCD is examining information, we recommend analysis of opportunities to incorporate better climate and water supply projection information into forecasting.

Comment 3: Additional Storage and Peak Flows.

Additional storage should be the last option, not a preferred or early option for drought mitigation. Additional storage structures that lessen peak releases which become peak flows in the Dolores River will harm native fish and recreation

¹¹Page 6; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹²Page 13 & Figure 4; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹³Page 17-Figure 4; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁴Page 24; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁵Page 24; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁶Figure 8; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁷Page 23-Figure 4; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

¹⁸Pages 79-81; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

users. We strongly believe peak releases should not be further curtailed. The current length of time between spills has allowed gravel bars to become anchored by willows, stifling dynamic channel processes in the river. Besides storing water that would take away McPhee Dam spill potential, additional storage projects have the risk of creating shortages to base flows that will sustain slow velocity and warmer water temperatures, which small mouth bass love. Colder water pouring from outlets of storage structures harms fish spawns. Mitigation actions in the plan that would reduce peak flows will further impair native fish and produce socioeconomic drought conditions for stakeholders such as recreation. McPhee has had only two years with significant spills and five years with minimal spills from 1986-2016. 2017 was an additional spill year.¹⁹ There has been below average carry-over in McPhee for 10 of the last 16 years.²⁰ Building additional storage that would have a junior water right and only be able to store water in years that McPhee spills at a significant cost that might preclude other mitigation projects producing system-wide benefits seems like it should be rated at the lowest priority or be considered as a last resort. There appear to be questions and concerns by biologists on if water storage projects that increase base flows but decrease peak flows on the Dolores River below McPhee Dam are actually beneficial to the native fish population.

We recommend making proposed actions (summarized in Tables 14-16²¹ and discussed in sections 5 and 6) the lowest priority and subject to additional study for native fish impacts, as they appear to intentionally or unintentionally reduce peak flows:

- 5.1.2.2
- 5.1.4.1
- 5.1.4.5
- 5.2.2.2
- 5.2.2.4
- 6.5

Comment 4: Structural Mitigation.

We appreciate the detailed analysis of structural improvements included in the draft Plan. We recommend discussion of what the water saved is going to be allocated to so that there can be additional funding sources such as impact investors which fund on-farm efficiency improvements, or other sources, utilized to more rapidly accomplish the mitigation projects. With the exception of the Lower Arickaree Canal improvements, which would create 1,151 AF of water to be stored in Narraguinnep Reservoir²², we did not find where there was mention of where the saved water would go. Priority projects should not pit one user or stakeholder group against another and should have collective benefit for all. Actions that bolster carry-over storage and capitalize on creating peak flows which benefit native fish, habitat, and recreation are best and will provide positive economic impact to the Project area and region, as discussed in numerous areas of the plan.

The structural mitigation section 5.1.4.6²³ discusses hydropower development opportunities being evaluated by DWCD. There is no presentation of an amount of water that would be conserved as part of drought mitigation with the development of hydropower, specifically by installing a turbine and generator at the discharge end of a certain pipe segment. Would revenues from hydropower be used as direct investment dollars to fund drought mitigation?

¹⁹Pages 25-Figure 7 and 84; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

²⁰Page 25-Figure 7; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

²¹Pages 90-92-Tables 14-16; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

²²Page 53; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

²³Page 71; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

Structural mitigation should include a new medium priority action that would be a new analysis of best management practices for increasing the McPhee outlet water temperature to optimize conditions for native fish, while not introducing invasive species or non-native eggs into pure populations downstream.

Comment 5: Non-Structural Mitigation.

Where non-structural mitigation is generally accepted as what people can do on a personal level that is not structurally or physically evident as a protective defense, the primary non-structural mitigation in this Plan should be deploying less-thirsty crops by providing research, development and deployment assistance in growing less-thirsty crops that maximize income for the Project users, which will have positive economic impacts for the region. Less thirsty/drought-resistant crop replacement aka "crop shifting" does not seem to be discussed in the frame of drought mitigation in the Plan. This should be one of the highest High Priority actions in section 5.2 and Table 15.

Sections 5.2.2.1-3²⁴ which discuss leasing opportunities under the heading of non-structural drought mitigation should be clear that such leasing is being done as a pre-drought mitigation measure and how these actions will create drought resiliency among existing acreages irrigated with Dolores Project water, existing Project users, or provide drought resiliency in meeting existing M&I needs. New Project water users and new unirrigated lands should not be encouraged or enabled through the creation of new shares or otherwise, to use Project water at the expense of allowing for maximizing carry-over storage, peak flows and allowing for native fish, habitat and recreational needs. Creating new users, new lands, and new shares do not appear to qualify as "drought mitigation," and is more of a business plan action along with the development of hydropower opportunities.

Therefore, MVIC leasing opportunities described as "potential to lease MVIC water to other Project users or lands..." should be clarified in 5.2.2.2. We support flexibility in leasing, but leasing should not reduce peak flows and conservation, recreation and native fish stakeholders should be considered project users who would be qualified for such leasing opportunities. Actions 5.2.2.1, 5.2.2.2 and 5.2.2.3 seem to be different than water exchange between FSA users discussed in Section 6.3.2²⁵ under the "Response Actions to a Drought." There is merit for having a leasing program that is triggered as a response to a drought year.

Comment 6: Drought Response Action Comments.

We recommend moving action 6.2, Improving Water Supply Projections and Timing to a high priority within the Non-Structural Drought Mitigation actions. Please see Comment 2 for more detail.

Action 6.4 should be done in a manner as to increase carry-over storage.

Action 6.5 would divert water to other basins and reduce peak flows. This action, even though rated as low priority, should be deleted entirely.

Comment 7: Mitigation Project Scoring Recommended.

Given the potential for a mitigation measure to positively impact some stakeholders and be neutral or negatively impact other stakeholders, we recommend creating a fair scoring system to score potential projects so that the most multi-beneficial projects stand out for prioritization and seeking to fund.

Comment 8: Awkward Text Identified.

- The second sentence of the 1st paragraph on page 5 appears to have a typo: "9,00 feet" should be "9,000" feet?

²⁴Pages 72-73; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

²⁵Page 83; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

- Sentence beginning on line 8 of the 3rd paragraph on page 7 is awkward and unclear as drafted: “MVIC is vulnerable in runoff years when McPhee spills because its water stored in McPhee in April, May and June also spills.” The last sentence of the 3rd paragraph could use more description of which historical year period is being analyzed. It is unclear what “half of the years” actually is defined by.²⁶
- On page 13, last paragraph: It is unclear what “highest” refers to. Is it a reference of highest snow water equivalent (SWE) or elevation or? Also, the last sentence on page 13 is awkward and unclear as drafted: “...a lesser the low amount of accumulates annually with four years with no snow left on May first.”
- The Executive Summary (pages 11 and 12) and Figure 1 (page 14; box lower left) differ in a number of allocated acreages/acres served by the Dolores Project.
- First sentence of 3rd paragraph on page 42: suggest qualifying the word "drought" with "short-term" or "single-year" drought to differentiate the discussion of short-term drought affecting non-native trout more dramatically than native fish with the follow-up discussion of native fish being most vulnerable to long term, year after year, shortages vs. one-year shortages.

We really appreciate the opportunity to provide comments on the on this draft Drought Contingency Plan for the Dolores Project. Thank you for taking a proactive stance on drought and identifying opportunities for efficiencies and actions that will have positive economic and environmental benefits to the Dolores Project users and the Dolores River downstream.

Sincerely,

Lynn Padgett
 Director, Government Affairs/Natural Resources

²⁶Page 7; <http://doloreswater.com/wp-content/uploads/2017/05/Draft-Dolores-Project-Drought-Contingency-Plan-.pdf>

Zimbra

carrie@durangowater.com

The Nature Conservancy's Comments on the Dolores DCP

From : Celene Hawkins <celene.hawkins@TNC.ORG> Fri, Jul 21, 2017 01:13 PM
Subject : The Nature Conservancy's Comments on the Dolores DCP 📎 3 attachments
To : comments@durangowater.com

Dear Carrie,

Attached are The Nature Conservancy's comments on the Dolores DCP. As stated in the letter, please feel free to contact me at any time during the review of these comments if there is any way I can be helpful in HWE's process of finalizing the plan.

Best,
Celene

Please consider the environment before printing this email.

Celene Hawkins
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The Nature
Conservancy 

nature.org/colorado

 **image003.png**
13 KB

 **The Nature Conservancy's Comments on Dolores DCP.pdf**
198 KB

 **Attachment A. Suggested Replacement for Section 4.1.4 (Fishery Downstream of McPhee Reservoir) of the Dolores Project Drought Contingency Plan .pdf**
341 KB

July 21, 2017

Harris Water Engineering, Inc.
954 East Second Avenue, #202
Durango, CO 81301
comments@durangowater.com

Dear Steve, Carrie, and the Dolores Water Conservancy District:

The Nature Conservancy appreciates the opportunity to comment on the draft Drought Contingency Plan for the Dolores Project (Dolores DCP) to Harris Water Engineering (HWE) and to the Dolores Water Conservancy District (DWCD).

The Nature Conservancy is a global 501(c)(3) non-profit organization founded in 1951 with a mission to conserve the lands and waters on which all life depends. The Nature Conservancy has worked hard over the past three decades to collaboratively protect and restore the Dolores River and its tributaries for the benefit of people and nature. This work has included a significant investment in riparian restoration work on nearly 200 miles of the Dolores River through the successful Dolores River Restoration Partnership, owning and managing preserves in tributary basins to the Dolores River, and stakeholder work on federal land management issues in the San Miguel and Dolores River Basins.

The Nature Conservancy has committed significant resources to more than a decade of collaborative work in the Dolores River Dialogue to improve the ecological conditions downstream of McPhee Reservoir while honoring water rights, protecting agricultural and municipal water supplies, and the continued enjoyment of rafting and fishing. This work has included active participation in the Lower Dolores Working Group and the Legislative Subcommittee, as well as co-chairing the Dolores River Native Fish Monitoring & Recommendation Team. The Nature Conservancy made significant contributions to the *A Way Forward* process and the development of the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014), and we helped to provide collaboratively-developed and robust scientific information about the needs of the three species of sensitive warm-water native fish in the Dolores River below McPhee Reservoir. In 2017, The Nature Conservancy coordinated ecological monitoring for the managed release from McPhee Reservoir and provided input during the managed release to help reservoir managers set and achieve several important ecological and recreational targets for the water year.

The Nature Conservancy has organized its comments on the Dolores DCP into five main sections. In Section 1, we describe The Nature Conservancy's support for consideration of drought mitigation and response actions that will increase carry-over storage in McPhee Reservoir, allow more flexible management of water supplies for all project users and stakeholders, and allow for the implementation of collaboratively-developed management opportunities on the Dolores River. In Section 2, we provide comments on the Planning Task

Force and stakeholder process. In Section 3, we provide comments on the Dolores DCP sections addressing the sensitive warm-water native fishery below McPhee Dam and we include Attachment A to assist HWE and DWCD in improving the Dolores DCP vulnerability assessment section on the fisheries below McPhee Dam. In Section 4, we comment on drought monitoring and potential future improvements, emphasizing the need for improved April 1 and May 1 forecasting in the Dolores River Basin. In Section 5, we provide input on financing and implementing drought mitigation and response actions for the Dolores River.

1. Support for Consideration of Drought Mitigation and Response Actions

The Nature Conservancy commends DWCD and the other members of the Planning Task Force for undertaking the drought contingency plan process and for identifying structural and non-structural opportunities for drought mitigation and response actions. Shortages and projected shortage conditions on the Dolores River and the Dolores Project negatively affect Dolores Project, Tribal, and Montezuma Valley Irrigation Company (MVIC) irrigators, the fisheries and ecology downstream of McPhee Reservoir, and recreational users of the Dolores River, and it can be difficult to accomplish collaboratively-developed management opportunities in drought or shortage conditions. Drought mitigation and response actions that increase carry-over storage in McPhee Reservoir or that allow for more flexible management of water supplies for all project users and stakeholders in preparation or response to drought will make irrigators, the fisheries and ecology downstream of McPhee Reservoir, and recreational users more resilient to drought. Accordingly, The Nature Conservancy strongly supports planning efforts and the implementation of drought mitigation and response actions that will increase carry-over storage in McPhee Reservoir, allow more flexible management of water supplies for all project users and stakeholders in preparation or response to drought, and allow for the implementation of collaboratively-developed management opportunities identified in the *A Way Forward* process and the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014).

2. Planning Task Force and Stakeholder Process

The Nature Conservancy has been engaged in collaborative, science-based work on the Dolores River and the Dolores Project for more than a decade. The Nature Conservancy has extensive knowledge of the needs of the sensitive warm-water native fishes downstream of McPhee Reservoir, as well as significant capacity to assist with the development of drought mitigation and response actions that could benefit the fisheries and ecology downstream of McPhee Reservoir and make irrigation and Dolores Project operations more resilient to drought.

Due to this capacity and The Nature Conservancy's history of working collaboratively in the Dolores River Basin, The Nature Conservancy would have preferred to participate in the Drought Contingency Plan process as a member of the drought planning task force. *See FY15 Drought Response Program Framework: WaterSMART Program* at II.D.4, "Drought contingency plans will be developed through a collaborative process that is inclusive of interested stakeholders within the planning area. Collaboration with multiple stakeholders representing diverse interests in water resources is required."; II.D.6 (requiring planning leads to develop a task force with diverse membership representing multiple interests in the planning area and specifically naming representatives of the environment and non-governmental entities as appropriate members of the task force). The Nature Conservancy was not offered the

opportunity to participate in the Planning Task Force, despite being named in DWCD's application as a potential stakeholder under an evaluation criterion worth 35 percent of the possible points under Reclamation's scoring system. *See Application for Federal Assistance* pp. 17-18 (listing The Nature Conservancy as a potential stakeholder and stating, "The schedule for submitting the WaterSMART grant did not allow contact and commitment with all the potential stakeholders listed above. It is assumed that since the development of the Plan may provide additional water to the fishery downstream of McPhee, the 20 plus Dolores River Dialogue participants may want to be involved in the process."). The stakeholder process offered in the summer of 2017 is not our preferred format for working collaboratively and productively with stakeholders in the Dolores River Basin to help design plans and projects that benefit all users and stakeholders in the system.

The Nature Conservancy is also concerned that the Dolores DCP was drafted without any representative on the Planning Task Force to represent the interests of the fisheries downstream of McPhee Reservoir. DWCD's application for the Dolores DCP funding listed reductions in the fishery release as a critical resource to consider during the Dolores DCP and indicated that the significant data developed through the Dolores River Native Fish Monitoring and Recommendation Team would be utilized to assess the resource. *Application for Federal Assistance* p. 8. The current draft of the Dolores DCP does not adequately assess the vulnerability of the fisheries downstream of McPhee Reservoir or address how mitigation and response actions could address the vulnerability of the fisheries as a critical resource.

The Nature Conservancy offers these comments, according to the stakeholder/public comment process announced by DWCD in the summer of 2017, to strengthen the Dolores DCP and to provide HWE and DWCD with better information on how the Dolores DCP might assess the vulnerability of the downstream fisheries and to develop mitigation and response actions that benefit multiple interests in the Dolores River and the Dolores Project. The Nature Conservancy also offers our interest and expertise in developing and funding conservation and multi-purpose projects that could provide drought resiliency for diverse water user and other stakeholder interests in the Dolores River.

3. Dolores DCP Sections Addressing the Sensitive Warm-Water Native Fishery Below McPhee Dam

The Nature Conservancy's understanding—based on our review of the Dolores DCP and participation in the June 7, 2017 public meeting on the Dolores DCP—is that HWE and the Planning Task Force did not perform work under the Dolores DCP WaterSMART grant to use the collaboratively-developed *A Way Forward* science or the significant data on the fishery developed by the Dolores River Native Fish Monitoring and Recommendation Team. Statements made by DWCD staff at the June 7, 2017 meeting also indicated that HWE and the Planning Task Force did not undertake a thorough evaluation of drought mitigation and response actions that could make the fisheries below McPhee Dam more resilient to drought.

Conducting a thorough vulnerability assessment for the fishery and evaluating drought mitigation and response actions that could make the downstream fisheries more resilient is warranted in the Dolores DCP for two reasons: first, DWCD's application for funding under the Reclamation WaterSMART program for the Dolores DCP identifies drought impacts on the fishery as a critical resource and states that DWCD will use the Native Fish Monitoring &

Recommendation Team data on the fishery to undertake a vulnerability assessment for the fishery and develop mitigation and response actions. *See Application for Federal Assistance* p. 8. Second, developing and evaluating mitigation and response actions to understand how those actions could enhance or harm the resilience of the downstream fisheries will help DWCD and other stakeholders identify which projects have incidental environmental benefits or serve multiple purposes and interests in the Dolores River (as that may make partners and funding available for the design and implementation of such actions). Accordingly, the Nature Conservancy offers comments in this section to provide input to HWE and DWCD, based on the collaborative science developed by the Dolores River Dialogue, on the vulnerability assessment for the sensitive warm-water native fishery and on mitigation and response actions that could affect that fishery.

3.1 EXECUTIVE SUMMARY

The Executive Summary contains inaccurate statements regarding the fishery below McPhee Dam.

3.1.1. Dolores DCP p. 6—“Peak flows result from spring snowmelt in the headwaters of the San Juan Mountains, usually occurring in May and averaging 2,000 cubic feet per second (cfs), but reaching 5,000 cfs in some years.” This statement is inaccurate. Analyzing peak flow data from USGS 09166500 DOLORES RIVER AT DOLORES, CO shows that over 105 years, average peak flow was 3,018 cfs, with two years above 8,000 cfs and 18 years above 5,000 cfs. That analysis does not include a 1911 value of 10,000 cfs that appears to be unreliable. Please note that this inaccurate statement is also repeated in Section 1.2.2, Hydrology, on page 12 of the Dolores DCP.

3.1.2 Dolores DCP p. 7--“The native fish downstream of McPhee are most vulnerable to long term, year after year, shortages and less so to one year shortages.” This statement is accurate only if the native fish population is relatively healthy going into the drought and if there is a low non-native fish population. Those conditions do not exist on the Dolores River.

3.2 VULNERABILITY ASSESSMENT

DWCD’s application for the Reclamation WaterSMART funding for the Dolores DCP recognizes that the fisheries below McPhee Dam have experienced negative impacts from water shortages on the Dolores Project. *See Application for Federal Assistance* p. 8, “The reduction in fishery release causes greater stress on the trout fishery near McPhee and the sensitive native fishery lower in the Dolores River.” Section 4.1.4 of the Dolores DCP does not appear to utilize the existing collaboratively-developed science and data on those fisheries, it does not adequately assess those fisheries’ vulnerability to drought, and it contains many inaccurate statements.

3.2.1 Vulnerability Assessment Section 4.1.4, Fishery Downstream of McPhee Reservoir

To assist HWE and DWCD in representing the interest of the fisheries downstream of McPhee Dam, The Nature Conservancy has re-reviewed the *A Way Forward* science and other fishery data developed through collaborative processes (including surveys conducted in 2017) on the Dolores River to better characterize the vulnerability of the sensitive warm-water native fishery to drought. We have included Attachment A to provide additional information and

citations to assist DWCD in correcting significant inaccuracies in the current Section 4.1.4 of the vulnerability assessment. The suggested revision to Section 4.1.4 of the vulnerability assessment highlights that the sensitive warm-water native fisheries have already been impacted by water depletions and management and are further vulnerable to: (a) reductions in the magnitude, duration, and frequency of peak flow events; (b) low base flows (and particularly to shortages in the base flow pool); and (c) drought conditions favoring the reproduction of non-native fishes.

3.2.2 Vulnerability Assessment Section 4.3, Summary of Past and Future Risk of Social and Environmental Losses

Section 4.3 of the Vulnerability Assessment, “Summary of Past and Future Risk of Social and Environmental Losses,” does not address the past and future risk of social and environmental losses associated with the fisheries downstream of McPhee Dam or with reduced recreational use of the Dolores River. In its description of existing or potential drought risks to the environment, DWCD’s application for the Reclamation WaterSMART funding for the Dolores DCP acknowledged, “The risk to the fishery is significant to the native sensitive species (bluehead sucker, flannelmouth sucker, and roundtail chub) downstream in the Dolores River canyon and the non-native trout population immediately downstream of McPhee.” *See Application for Federal Assistance* p. 14. Section 4.3 of the Dolores DCP vulnerability assessment should reflect that the three sensitive warm-water native species (bluehead sucker, flannelmouth sucker, and roundtail chub) are managed under the Range-Wide Conservation Agreement and Strategy for Roundtail Chub (*Gila robusta*), Bluehead Sucker (*Castomus discobulus*), and Flannelmouth Sucker (*Castomus latipinnis*) (Three Species Agreement) and that there are significant risks of future social and environmental losses if any of these species is listed under the Endangered Species Act. *See Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* p. 3 (2014).

3.3 MITIGATION AND RESPONSE ACTIONS

In Attachment A, The Nature Conservancy has provided HWE and DWCD with a suggested revision to the vulnerability assessment for the sensitive warm-water native fishery that highlights that this fishery has already been impacted by water depletions and management and is further vulnerable to: (a) reductions in the magnitude, duration, and frequency of peak flow events; (b) low base flows (and particularly to shortages in the base flow pool); and (c) drought conditions favoring the reproduction of non-native fishes. In the *A Way Forward* process and the development of the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014), there is a robust, collaborative, and scientific evaluation of opportunities for population improvement in this fishery. Several of those opportunities are appropriate for consideration as drought mitigation and response actions for the Dolores DCP.

3.3.1 Increased Carry-Over Storage Resulting in More Regular Managed Releases

The magnitude, duration, and timing of peak flows (managed releases) could be improved through mitigation and response actions that increase carry-over storage and the likelihood of managed releases from McPhee Dam. The managed release of 2017, which was managed to achieve several important ecological targets set forth in the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014), deposited 4 inches or more of sediment in some floodplains and indicated substantial sediment movement from

foraging and spawning habitats and from pools where fish retreat during low-flow periods. Although the full extent of the habitat improvement will not be known until later in 2017 or in future monitoring years, improved habitat conditions should improve the resiliency of the sensitive warm-water native fish populations in the long term. Mitigation and response actions that increase carry-over storage in McPhee Reservoir will make it more likely that managed releases and habitat improvement downstream of McPhee Dam will occur. Improved forecasting will also allow for better management of managed releases by reducing the water supply risk of releasing water from McPhee Dam.

3.3.2 A More Natural Thermal Regime

The *A Way Forward* science and the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014) identified that, in many years, low streamflow prior to peak snowmelt leads to prematurely warm stream temperatures, causing the sensitive warm-water native fish to begin the spawning process. When releases move suddenly from low flow (less than 100 cfs) to high flows (800 cfs or higher), stream temperatures drop precipitously. See Figure 2. This sudden drop limits reproductive potential of the sensitive warm-water native fish. Mitigation and response actions that increase carry-over storage and maintain base pool water (either by preventing shortages or allowing for flexibility for compensated, voluntary transactions to meet the fish pool needs) would allow for a slow ramp-up of releases in the spring to maintain low stream temperatures until after peak flows have occurred (which is the usual time for fish spawning to begin).

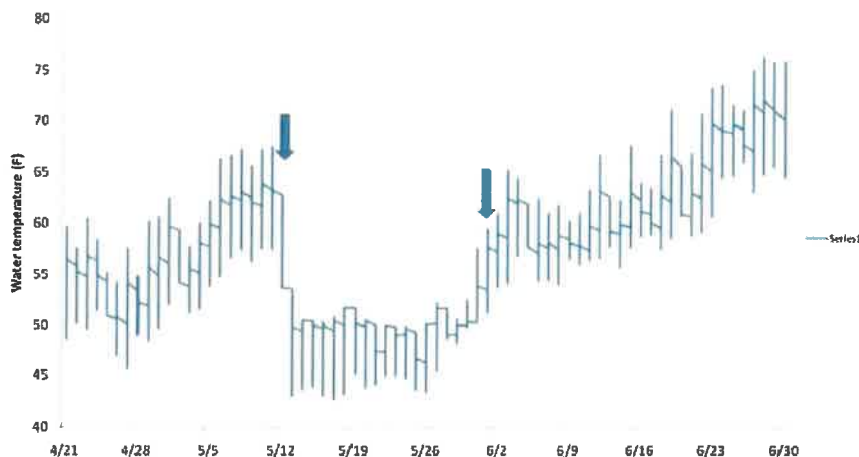


Figure 2. Rapid water temperature depression in the Dolores River 2009 downstream of McPhee Reservoir (just upstream of Disappointment Creek, Colorado Division of Wildlife data) caused by peak flow release (duration of spill denoted by arrows).

3.3.3 Higher Summer Base Flows

Higher base flows in the summer aid fish reproduction and growth and survival of early life stages in the sensitive warm-water native fishery. Mitigation and response actions that maintain carry-over storage, reduce shortages to the base flow pool, and supplement the base

flow pool will help to maintain critical summer base flows to support the resiliency of the sensitive warm-water native fishery.

3.3.4 Suppression of Non-Native Fish Populations

Suppression of non-native fish populations can occur during managed releases (like the release of 2017). Larger, more natural peak flows tilt the survival advantage to native fish. Avoiding long stretches of extremely low, slow, warm water will avoid giving an advantage to non-native fishes such as smallmouth bass. Mitigation and response actions that maintain carry-over storage, increase the likelihood of managed releases, and reduce the likelihood of shortage to the base flow pool will all support the resiliency of the sensitive warm-water native fishery.

3.3.5 Dolores DCP Mitigation and Response Actions—Sensitive Warm-Water Native Fishery

The current draft of the Dolores DCP does not assess which drought mitigation and response actions could affect the downstream sensitive warm-water native fishery. As described earlier in this section, mitigation and response actions that are designed to bolster carry-over storage in McPhee Reservoir are likely to make the fishery more resilient to drought, as those actions should increase the potential for managed releases and for temperature suppression water and reduce the risk of shortage to the base flow pool. Several of the Dolores DCP mitigation actions, such as MVIC General System Improvements, MVIC Piping Improvements for Existing Infrastructure, MVIC Service Area On-Farm Efficiency Improvements, DWCD General System Improvements, and DWCD Full Service Allocation Area On-Farm Efficiency Improvements, could also make the sensitive warm-water native fishery more resilient if those mitigation actions are implemented in a manner that results in the bolstering of carry-over storage in McPhee Reservoir. In addition, some mitigation and response actions identified in DWCD's funding application but not evaluated in the Dolores DCP (such as shifting to lower-water use crops in drought years) could be implemented to bolster carry-over storage and improve the resiliency of the sensitive warm-water native fishery. Mitigation and response actions designed to allow for flexibility in management of water supplies, including many of the non-structural mitigation actions in Section 5.2 and response actions in 6.3, could potentially make the sensitive warm-water native fish more resilient to drought if new management tools are developed in ways that all project users (including the base flow pool) have the same access and flexibility as irrigation interests.

Conversely, some of the Dolores DCP mitigation and response actions could be implemented to make the fisheries below McPhee Reservoir *less resilient* to drought. Mitigation and response actions that reduce the magnitude, frequency, and duration of peak flow events may further exacerbate the loss of fish habitat below McPhee Dam. Mitigation actions like the New Plateau Reservoir and Pump Storage Project and the Groundhog Reservoir Enlargement/Increased Capacity, as well as response actions like the Increase MVIC Early Direct Flow Diversions in Years of Managed Spills, appear to be projects that could reduce the magnitude, frequency, or duration of peak flow events from McPhee Reservoir. Although The Nature Conservancy does not have sufficient information on any of those potential actions to determine the magnitude of the potential impact on the peak flow events, we are concerned that the prioritization and implementation of projects that reduce peak flow events will have negative effects on the sensitive warm-water native fishery below McPhee Dam and may hinder efforts to balance the recreational and fishery needs below McPhee Dam.

The Nature Conservancy is also concerned about the potential for some of the mitigation and response actions to be implemented in a way that simply reallocates water from a system or on-farm efficiency project to new lands or crops in the San Juan River Basin. *See, e.g.*, Dolores DCP Section 5.2.2.2 (suggesting the creation of Class C shares with the conserved water saved by system-wide efficiency improvements with the potential to supply Redlands, McElmo Creek and/or Goodman Point irrigators) and Section 5.1 of these comments. If conserved water is reallocated to new lands or crops in the San Juan River Basin, there is potential for drought mitigation and response actions to actually *increase* drought risk (as the same water supplies are further stretched between competing interests in the basin) and to make management of the downstream sensitive warm-water native fishery even more challenging in years of shortage. The Nature Conservancy is interested in helping to evaluate opportunities to meet water needs identified in the Dolores DCP (including water needs in McElmo Creek) without exposing project users, the downstream fishery, and recreational users to additional drought risk.

4. Drought Monitoring and Potential Future Improvements

Drought monitoring, and especially the forecasting tools used to predict water supplies on the Dolores River and to plan irrigation operations and base flow and managed releases from McPhee Reservoir, is critical to the Dolores River water users and to the fisheries downstream of McPhee Reservoir. *See, e.g.*, Dolores DCP at 36 (describing the impact of inaccurate April 1 and May 1 forecasts in 2015 on the FRE crop production). The ability to implement many of the management opportunities identified in the *A Way Forward* science and the *Lower Dolores River Implementation, Monitoring and Evaluation Plan for Native Fish* (2014) will depend on the ability to improve forecasting tools, and especially the April 1 and May 1 forecasts as we approach runoff on the Dolores River. The Nature Conservancy strongly encourages HWE and DWCD to include improvements in the forecasting tools in Section 3.3 of the Dolores DCP as DWCD evaluates potential future improvements on drought monitoring. The Nature Conservancy is interested in helping with projects to improve forecasting (such as projects to improve SWE estimates in the Dolores River Basin) to allow all project stakeholders to better understand the potential for drought or for managed releases from McPhee Reservoir.

The Nature Conservancy notes that there appears to be some confusion in Section 3 of the Dolores DCP between drought monitoring and changes in precipitation. For example, on page 34, the statement, “Scientists don’t know how to predict drought a month or more in advance for most locations,” appears to refer to changes in precipitation, and not drought predictions. That sentence is not consistent with the definitions of drought in Section 3.1, and some definitions of drought can be monitored in advance using tools like the April 1 and May 1 forecasts. *See also* Dolores DCP p. 35 (discussing the reliability of forecasts a season or more in advance, which also appears to refer to precipitation and not drought monitoring).

5. Financing and Implementing Multi-Purpose Mitigation and Response Actions or Mitigation and Response Actions with Incidental Environmental Benefits

Planning work like the Dolores DCP is an excellent platform for identifying projects (both mitigation and response actions) that can be funded with public (state and federal) funds, private grants, and private investment dollars. However, the Dolores DCP currently does not contain sufficient information on the specific purposes, benefits, and beneficiaries of the

mitigation and response actions for The Nature Conservancy to evaluate which actions we could partner on to help finance and implement. While it is possible that many of the mitigation and response actions will be structured to provide benefits to multiple users and stakeholders in the basin or to have incidental environmental benefits (e.g., projects structured to maintain or bolster carry-over storage), it is also possible that many of these projects could be implemented in a manner that benefits some users and harms some interests (e.g., projects that reduce the duration, magnitude, and frequency of peak flows below McPhee Dam or projects that allocate conserved water to new lands or crops in the San Juan River Basin). The Nature Conservancy recommends that HWE and DWCD evaluate which projects have multiple benefits and can mitigate drought risk and increase the resiliency of irrigation users, municipal/industrial users, and the downstream ecological, fishery, and recreational interests on the Dolores River and revisit the prioritization of the mitigation and response actions to elevate multi-purpose projects or projects with incidental environmental benefits where conservation and recreational stakeholders could assist in the financing and implementation of projects.

5.1 AVAILABILITY OF PUBLIC FUNDING FOR MULTI-PURPOSE PROJECTS OR PROJECTS WITH INCIDENTAL ENVIRONMENTAL BENEFITS

At the June 7, 2017 public meeting, DWCD staff indicated that one reason for undertaking the Dolores DCP work was to identify projects that could be funded with public dollars (with sources like the Reclamation WaterSMART Drought Response Program: Resiliency Projects funding). The Nature Conservancy agrees that some of the drought mitigation and response actions identified in the Dolores DCP could be funded by public dollars. However, there are some restrictions on the use of public dollars for both on and off farm efficiency and conservation and drought resiliency projects, such as restrictions on expansion of acreage using conserved water from a federally-funded project, that could make implementation of some of the drought mitigation and response actions identified in the Dolores DCP ineligible for federal funding through some grant programs. *See, e.g.*, recent funding announcements for the WaterSMART Water and Energy Efficiency Grants, WaterSMART Cooperative Watershed Management Program Phase II Grants, and WaterSMART Drought Response Program: Resiliency Projects (all limiting acreage expansion and increases in consumptive use for efficiency and drought resiliency projects); Environmental Quality Incentives Program (USDA must give preference to applications that reduce water use or to applicants that agree not to use the water savings to increase irrigated acreage).

In both state and federal programs, there are requirements or incentives (such as opportunities to score a significant number of points) for projects to serve multiple purposes or to address environmental and flow benefits. For federal grants, *see, e.g.*, the recent funding announcement for WaterSMART Water and Energy Efficiency Grants, Criterion B (totaling 25/100 points, only projects resulting in water sustainability benefits that include committing conserved water to instream flows can score the full 25 points allocated under this criteria); the recent funding announcement for WaterSMART Cooperative Watershed Management Program Phase II Grants (two different criteria totaling 60/100 points addressing multiple benefits and ecological resilience of the watershed, as well as a criterion measuring demonstrated support from a diverse array of stakeholders and complementarity with other ongoing efforts in the watershed totaling an additional 15 points); recent funding announcement for WaterSMART Drought Response Program: Resiliency Projects (two criteria where environmental and multi-purpose projects bolster project ranking by providing additional points); Basinwide Salinity

Control Program (including additional environmental benefits including selenium-loading reduction in the project risk criteria); Environmental Quality Incentives Program (funding available to applicants meeting national and state goals including conservation of ground and surface water resources, addressing water quality and quantity issues through improvements to irrigation systems and water management, enhancement of wildlife habitat, and protection of the habitat of at-risk species); Regional Conservation Partnership Program (using funding from EQIP and the Watershed and Flood Prevention Program, 35% of funding goes to projects in Critical Conservation Areas, including the Colorado River Basin where projects must improve water quality and quantity, specifically issues of water quality degradation, insufficient water due to inefficient use, soil quality, and inadequate habitat for fish and wildlife. The balance of funding is accessible to projects that meet the goals of EQIP as noted above or other authorized conservation programs). For state grants, *see, e.g.*, the Colorado Water Conservation Board Water Supply Reserve Fund (prioritizing multiple purpose projects), the Southwest Basin Roundtable WSRF Grant Criteria Requirements (encouraging multiple purpose projects for major funding requests); the Colorado Water Plan “State Support for Projects Aligned with Colorado’s Water Values (including criteria looking at a commitment to collaboration and addressing multiple needs and purposes and sustainability criteria to avoid adverse effects to environmental and recreational interests); and the new 2017 Colorado Water Plan implementation funding (adopting the Colorado Water Plan criteria, among others, for the evaluation of projects).

Because opportunities to seek public funding for drought mitigation and response actions will be significantly enhanced by the participation of stakeholders like The Nature Conservancy and inclusion of multi-purpose or environmental benefits from proposed projects, The Nature Conservancy suggests that HWE and DWCD evaluate which projects have multiple benefits and can mitigate drought risk and increase the resiliency of irrigation users, municipal/industrial users, and the downstream ecological, fishery, and recreational interests on the Dolores River and revisit the prioritization of the mitigation and response actions to elevate multi-purpose projects or projects with incidental environmental benefits where conservation and recreational stakeholders could assist in the financing and implementation of projects. The Nature Conservancy is interested in having further discussions about opportunities to use our significant public financing and project support and management capacity to support multi-purpose drought mitigation and response action financing and implementation work on the Dolores River.

5.2 AVAILABILITY OF PRIVATE FUNDING FOR MULTI-PURPOSE PROJECTS OR PROJECTS WITH INCIDENTAL ENVIRONMENTAL BENEFITS

The Nature Conservancy has significant experience helping to acquire both private grant funding and private investment funding for multi-purpose water projects and water projects with incidental environmental benefits. Within the Colorado River Basin, The Nature Conservancy has been working with agricultural and municipal partners for the last nine years to improve flows on the Verde River in Arizona through projects that benefit both agricultural producers and the environment. Because the Verde River projects have multiple purposes and beneficiaries, The Nature Conservancy has been able to leverage \$4.3 million of private and corporate funding, in addition to \$3 million of federal funding, for actual on-the-ground projects over the last five years. These figures do not include the funding The Nature Conservancy has helped raise to complete project planning and project design (e.g., engineering, legal analysis, and economic valuations). In the Colorado River Delta, The Nature Conservancy has worked with other

conservation partners to raise over \$10 million to implement on-the-ground projects to improve ecosystem health and function.

In Colorado, The Nature Conservancy, in partnership with the State of Colorado and water managers, has contributed private grant funding to pay for pilot projects associated with the Water Bank Working Group in Colorado to support discussions about the role of water banking and demand management as a tool to address the potential negative consequences associated with ongoing drought and the declining levels in Lake Powell. Locally, The Nature Conservancy has provided private grant funding for match or cost-share on critical infrastructure projects on the Dolores River (such as the Wines Ditch project on the Dolores River near Gateway, Colorado). The Nature Conservancy believes there are many other multi-purpose projects in the Dolores Basin, and we are interested in working with HWE and DWCD to leverage private grant funding to implement projects with multiple purposes or with incidental environmental or recreational benefits.

The Nature Conservancy is also working in the Colorado River Basin (and on the western slope of Colorado) to evaluate the potential to switch to higher-value, low-water crops as a strategy to address the supply-demand imbalance and improve stream flows. In this work, The Nature Conservancy is investigating the market and demand side for alternative crops and designing market or supply chain interventions to enable the production and sale of alternative crops, as well as mechanisms to ensure the water savings benefit stream flows. These interventions could be structured to incentivize private investment, unlocking another type of capital for drought mitigation in the Dolores River Basin.

Some of the drought mitigation and response actions identified in the Dolores DCP (and especially mitigation and response actions that serve multiple purposes or have environmental benefits) have the potential to attract private grant and private investment funding. The Nature Conservancy is interested in having further discussions about how we can use our significant private funding capacity to support multi-purpose and environmental drought mitigation and response action financing and implementation work on the Dolores River.

6. Conclusion

Thank you for your time and consideration of The Nature Conservancy's comments on the Dolores DCP. Please do not hesitate to contact me at (970) 739-8624 or celene.hawkins@tnc.org with any questions about these comments or if The Nature Conservancy can provide additional information and input to enhance the Dolores DCP.

Sincerely,



Celene Hawkins
Western Colorado Water Project Director
The Nature Conservancy

Attachment A.

Suggested Replacement for Section 4.1.4 (Fishery Downstream of McPhee Reservoir) of the Dolores Project Drought Contingency Plan

Numerous studies have been done since the 1970s that have documented the status of native and non-native fish in the Dolores River. Substantial information about potential short- and long-term vulnerability to drought can be summarized from these studies. Perhaps the most useful of these studies is the *A Way Forward* report¹ produced by three experts in trout and native fisheries who together have decades of experience with fish on western rivers. These three experts were given direction and governed by a joint advisory committee consisting of representatives from the DWCD, MVIC, Reclamation, The Nature Conservancy, Colorado Parks and Wildlife, and other stakeholders. The *A Way Forward* report clearly describes that sensitive warm-water native fisheries have already been impacted by the water depletions and management. On page 21 of the report, the authors give their conclusion on the reason for the decline of native fish in the Dolores River below McPhee Dam:

“Declines of native fishes can be attributed to two main factors, loss of habitat due to flow and thermal alterations and negative effects of non-native fishes. Specifically, reduced peak and base flows limit habitat quantity and quality for most life stages of native fishes.”

The fishery below McPhee consists of both native and non-native fish populations. The non-native population is trout and is located within approximately the first 12 miles below McPhee to the Bradfield Bridge. The native fish of concern, or “three-species,” are roundtail chub *Gila robusta*, flannelmouth sucker *Catostomus latipinnis*, and bluehead sucker *Catostomus discobolus*. The range of these species has decreased by 50% or more in recent decades², so remaining populations need to be well managed. In addition, the flannelmouth and bluehead sucker population in the Dolores is particularly valued for its genetic purity; across much of the range of the flannelmouth, the native fish has been diminished through hybridizing with the non-native white sucker.

There is suitable habitat for these three native species along the entire length of the Dolores River below McPhee, although coldwater habitat along with predation by brown trout above Bradfield Bridge limits native fish populations in that reach. All three native species were caught during the 2017 electrofishing survey through Slickrock Canyon. During this survey, 94% of the 591 fish caught were natives, which is a very high percentage of natives compared to most rivers in the Colorado River Basin. Three species abundance (measured in fish caught per minute of electrofishing) doubled since the 2007 survey from 0.22 fish/min to 0.43 fish/min. Although the 2017 results indicate an improvement over 2007, it still indicates an unhealthy population compared to the San Miguel River just above the Dolores confluence, where a 2008 survey of these species returned 3.1 fish/min.

Changes and associated impacts described in the *A Way Forward* report and the literature it cites include:

¹ Bestgen KR, Budy P, and Miller WJ. 2011. Status and trends of flannelmouth sucker *Catostomus latipinnis*, bluehead sucker *Catostomus discobolus*, and roundtail chub *Gila robusta*, in the Dolores River, Colorado, and opportunities for population improvement: Phase II report.

<http://ocs.fortlewis.edu/drd/pdf/DoloresRiverPhaseIIFinalAugust2011-appendices.pdf>

² Bezzerides, N., and K. Bestgen. 2002. Status review of roundtail chub *Gila robusta*, flannelmouth sucker *Catostomus latipinnis*, and bluehead sucker *Catostomus discobolus*. Colorado State University, Larval Fish Lab Contribution 118, Fort Collins.

- Reductions in the magnitude, duration, and frequency of peak flow events—without peak flows, important river channel characteristics are not maintained.
- Adverse spill-related temperature dynamics—warm pre-spill temperatures followed by cold releases disrupt reproduction.
- Extended low base flows—less available habitat; lower water quality.
- Extended warm, still conditions, also resulting from low base flow—favors reproduction of non-native fishes (e.g., smallmouth bass) that prey on native fishes.

The causes and consequences of each of these changes is described below.

Reductions in the magnitude, duration, and frequency of peak flow events—without effective and consistent peak flows, important river channel characteristics are not maintained.

The native fishes present in the Dolores River are highly adapted to the extreme natural hydrologic variability described earlier in this Plan. This variability has been changed in several ways by water development. The river's hydrologic conditions first changed in the late 1800s when MVIC began its major diversions. These diversions essentially dried the river for many decades in late summer, but peak flows remained relatively intact. The main impact of a dried-up river in late summer was a severe reduction in habitat. Native fishes—which are adapted to harsh conditions—may have survived these stressful periods by finding refuge in deep pools along the river, but most of the adult population likely evacuated the dewatered reaches and occupied habitat below the San Miguel confluence.

When McPhee Dam was constructed in the 1980s, the reservoir provided improved late-summer baseflows, but peak flows dropped by half, and in approximately 50 percent of years, peak flows have been eliminated altogether. As a result, much less channel maintenance has occurred. Without channel maintenance, numerous changes take place on the river that degrade native fish habitat, including:

- Important fish habitat for foraging and reproduction is lost, e.g., without “flushing flows,” cobble beds that serve as spawning grounds become clogged with fine sediment.
- Refuge habitat for different life stages of fish is reduced, e.g., deep pools that allow fish to survive extreme low flows for short periods of time become filled with sediment and eliminated.
- The channel becomes narrower, leading to reduced total habitat.
- Backchannel and side channel habitat required by newly emerged young fish has been lost or has become inaccessible.

Extended low base flows—less available habitat; lower water quality.

The total fishery water is 31,798 AF in a full supply year, which represents just over 10% of the pre-diversion flow on the Dolores (see Figure 2 for average total yield at Dolores). The 31,800 AF includes 29,824 AF of project water and 1,974 AF of non-project water. Since the 1996 Environmental Assessment, a base flow pool target of 36,500 AF has been recognized as a biological and water supply goal. Project water for the fishery is subject to the same pro-rata shortage based on supplies as other users, and in 2013 only 6,000 AF (20%) of project water was available for the fishery (see Table 7 in the draft Plan, also copied below).

Table 7. Downstream Fishery Water Supply

Year	AF Supply	% of Average Supply
Normal	29,500	100%
2002	7,200	24%
2003	9,960	34%
2013	6,000	20%
2015	29,500	100%

This small amount of fishery water has significant adverse consequences for native fishes. For example, the very low abundance of riffle-dwelling bluehead sucker may reflect low availability of that habitat, because riffles dry or become uninhabitable when base flows are low (*A Way Forward*). Anderson and Stewart³ showed that at present low baseflow levels (e.g., 30 cfs or less), less than 5% of bluehead sucker habitat was available compared to higher flows. Native fishes have the capacity to endure drought conditions and persist in dewatered environments, but flow limited systems that consist mainly of disconnected pools do not represent viable habitat for native fishes over the long-term, especially in the presence of deleterious non-native fishes (*A Way Forward*).

Acute low flows have a particularly negative effect. Extended extreme low flows around 1990 and again in the early 2000s have a strong negative impact on native fishes (Figure 4.1.4-1), and the fish populations have not recovered since the relative highs around 1990.

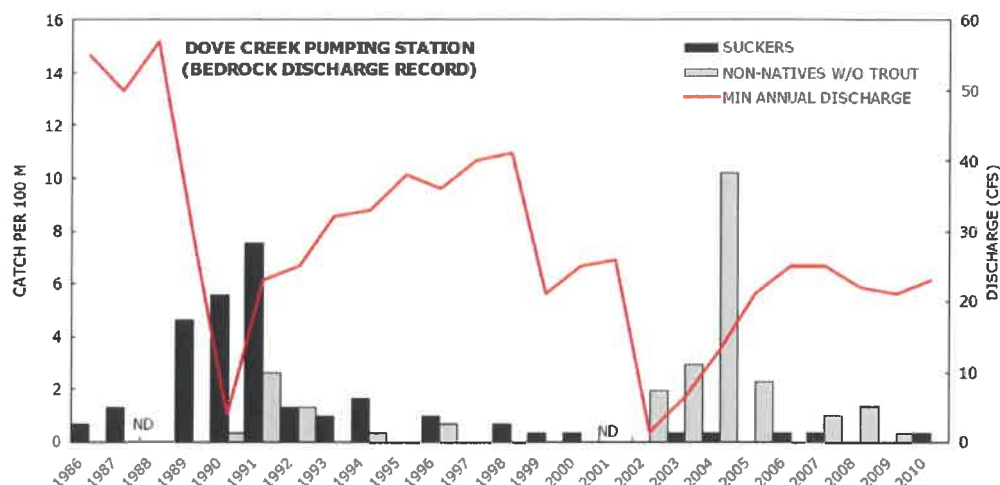


Figure 4.1.4-1 Time series of sucker and non-native populations at Dove Creek Pumping Station plotted with the minimum annual discharge of the Dolores River at the USGS Bedrock gage station. Note the decline in native fish following the extreme low flows around 1990; native fish have not recovered since then.

³ Anderson, R. and G. Stewart. 2007. Impacts of stream flow alterations on the native fish assemblage and their habitat availability as determined by 2d modeling and the use of fish population data to support instream flow recommendations for the sections of the Yampa, Colorado, Gunnison and Dolores Rivers in Colorado. Colorado Division of Wildlife. Denver, Colorado. <http://wildlife.state.co.us/NR/rdonlyres/778159B8-1EA2-443C-A0AFA8DAB3F41473/0/SpecialReportpart2.pdf>

Low flows can also have strong, immediate impacts on the trout, which are adapted to cold water. During low flows, the lower volume of water is easily heated by the air to temperatures above the thermal tolerance of trout (about 20 degrees C), and as a result trout biomass drops during low flows (Figure 4.1.4-2). An example of the acute impact drought can have on trout occurred between 2012 and 2013, when the density of trout (fish per mile) dropped by 65% and the biomass (lbs of trout per surface acre of river) dropped by 79% (24 lbs per AF in 2012 to 5 lbs per AF in 2013 (79% drop) after the 2013 low water year (these data are collected from 3 historic sites spanning from just below McPhee to about 3 miles above Bradfield Bridge). Both the 2012 and 2013 numbers are well below the 60 lbs per acre required for Gold Medal status.

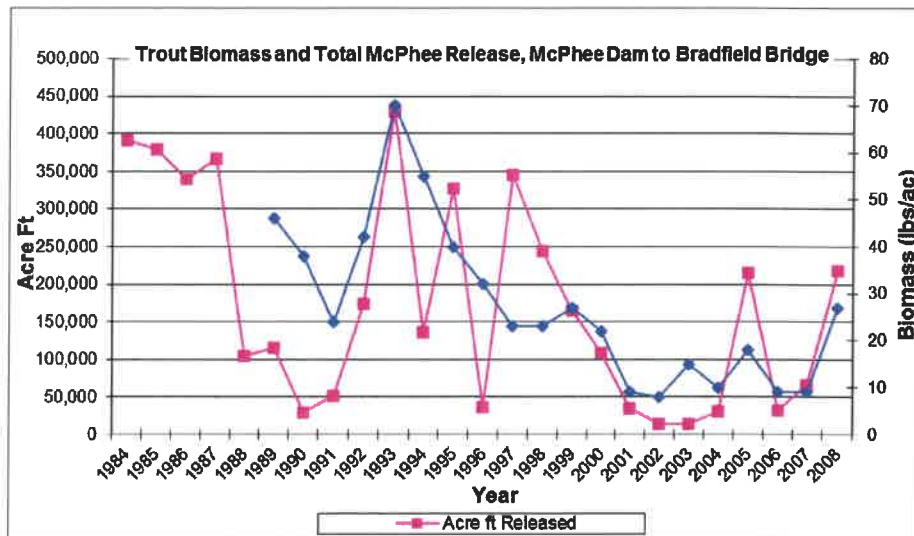


Figure 4.1.4-2. Total downstream release from McPhee Reservoir and trout biomass. Note that biomass closely tracks releases, with biomass dropping to low levels during low release years (e.g., 2001-2004). Source: Colorado Parks and Wildlife.

Adverse spill-related temperature dynamics—warm pre-spill temperatures followed by cold releases disrupt reproduction

Spill management from McPhee Dam affects thermal regimes in the river, with adverse consequences for native fish. In many years with a spill, unnaturally low streamflow prior to peak snowmelt leads to prematurely warm stream temperatures, causing fish to begin the spawning process. When releases move suddenly from low flows (<100 cfs) to high flows (800 cfs or higher), stream temperatures drop precipitously (Figure 4.1.4-3). These temperature patterns may affect reproductive cues and readiness of native fishes. Also, if embryos or larvae are present, these temperature patterns may result in thermal shock and high mortality of early life stages.

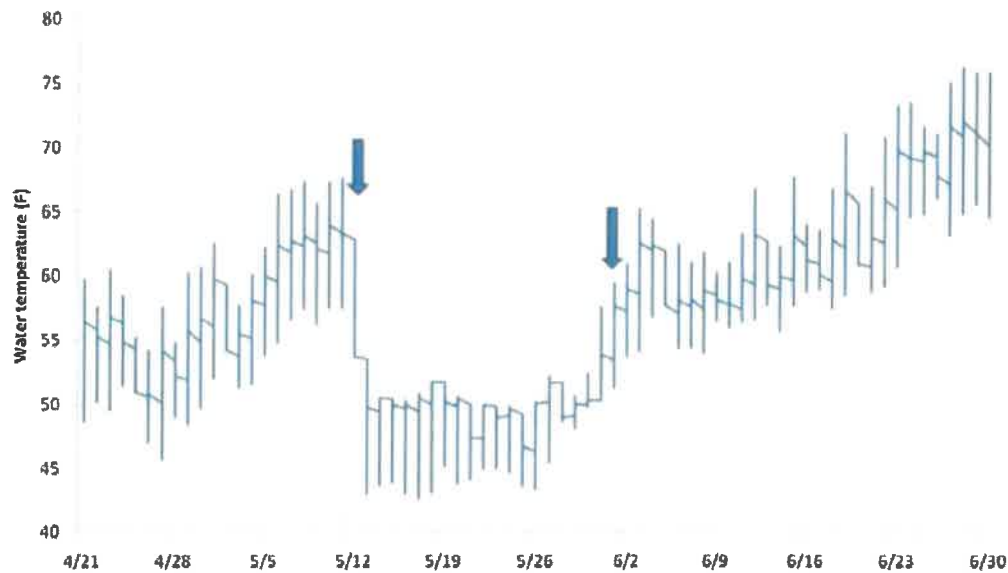


Figure 4.1.4-3. Rapid water temperature depression in the Dolores River in 2009 downstream of McPhee Reservoir (just upstream of Disappointment Creek) caused by peak flow releases. Duration of spill denoted by arrows. Data are from CPW. From the A Way Forward report.

Extended warm, still conditions, resulting from low base flow favors reproduction of non-native fishes that prey on native fishes.

One of the biggest concerns for native fish with respect to drought is the potential for low, slow, warm water conditions to favor reproduction of non-native species that prey on the young of native fishes, particularly when there is no peak flow to cool the water and disrupt spawning non-natives. This dynamic can be seen clearly in the proportion of green sunfish at Dove Creek Pumps during the extreme drought of the early 2000s (see Figure 4.1.4-4). Green sunfish as a proportion of the catch exploded in 2004 and 2005, following good reproductive conditions in 2000-2004. A similar dynamic has been well documented for highly predacious smallmouth bass in the Yampa River. Fortunately, non-natives are still a small percentage of the fish in most of the Dolores (representing 6% of the catch in the Slickrock reach in 2017, with no smallmouth bass at this site), so the combination of reasonable low flows in all but exceptional years, strong peak flows when possible, and removal of non-natives during fish sampling can probably maintain the population of non-natives at low levels.

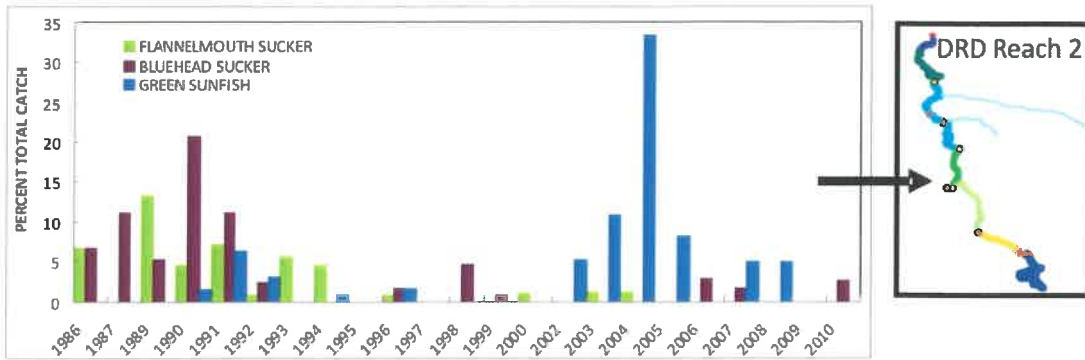


Figure 4.1.4-4. Proportion of suckers and non-native species at the Dove Creek Pumping Station. Note the jump in non-native sunfish following the low flows around 1990, followed by a much larger increase in non-native sunfish following the low flows that occurred during 2001-2004.

Zimbra

carrie@durangowater.com

Draft Dolores Project Drought Contingency Plan Comments

From : Taryn Finnessey <taryn.finnessey@state.co.us>
Subject : Draft Dolores Project Drought Contingency Plan
Comments
To : comments@durangowater.com

Tue, Jun 20, 2017 07:05 PM

 1 attachment

The Colorado Water Conservation Board has reviewed the draft Dolores Project Drought Contingency Plan and commends the Dolores Water Conservancy District and the Bureau of Reclamation, as well as members of the Planning Task Force for their efforts. Studies have shown that for every dollar invested in natural hazard preparedness saves four dollars in response, making this undertaking not only good for the project participants but also for the economic health. While this is an admirable draft, there are still a few areas for improvement within the plan, and we greatly appreciate the opportunity to provide our comments, please see attached.

Taryn Finnessey
Senior Climate Change Specialist



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 **CWCB Dolores Drought Plan Comments.pdf**
57 KB



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Colorado Water
Conservation Board

Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

Harris Water Engineering INC
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Durango, Co 81301

June 15, 2017

RE: Public Comment on the draft Dolores Project Drought Contingency Plan

The Colorado Water Conservation Board has reviewed the draft Dolores Project Drought Contingency Plan and commends the Dolores Water Conservancy District (DWCD) and the Bureau of Reclamation, as well as members of the Planning Task Force for their efforts. Studies have shown that for every dollar invested in natural hazard preparedness saves four dollars in response, making this undertaking not only good for the project participants but also for the economic health. While this is an admirable draft, there are still a few areas for improvement within the plan, and we greatly appreciate the opportunity to provide our comments, outlined below.

1. Points of Clarification

These comments reflect minor revisions that should be made to improve to overall accuracy of the plan.

- 1.1. Section 3.1 identifies the US Drought Monitor as a product of the National Integrated Drought Information System, however the USDM is a product that was developed by the National Drought Mitigation Center and is supported by federal partners, including NIDIS.
- 1.2. Page 45 refers to “predictions” made as part of the Colorado River Water Availability Study. A prediction is typically a probabilistic statement of what will likely happen in the future based on a set of initial conditions that are unlikely to change. Predictions tend to have a high degree of confidence in a specific outcome. Where as a “projection” allows for changing conditions and often provides a range of possible outcomes dependant on how those conditions change. Given that one cannot place a probability on future climate



scenarios as all are equally plausible and are highly dependent upon drivers such as GHG emissions it is inappropriate to use the term prediction in this context and the text should be changed to say “projection.”

- 1.3. It is unclear if all mitigation options will be pursued and implemented or if only those identified as high priority. Please clarify.
- 1.4. No clear schedule for updating or reevaluating the plan is identified, but rather the plan states it will be updated “as needed,” based on the experience of CWCB, plans that do not have specific schedules for updates or reevaluation are often not updated until the onset of an event, at which time it is difficult to properly evaluate and modify a plan.

2. Substantive Comments

These comments highlight concerns regarding the usability and validity of the drought contingency plan and may require additional discussion or analysis to fully address.

- 2.1. The climate analysis draws on the conclusions of the Colorado River Water Availability Study and states that future precipitation cannot be projected for Colorado with any degree of confidence. While we agree with this statement, we think that it is also important to provide a discussion of temperature, which has a much higher degree of confidence. Colorado, as a state has warmed two degrees Fahrenheit in the last 30 years and is projected to warm an additional 2.5-5 degrees by mid-century. One of the overarching conclusions of the Colorado River Water Availability Study, as well as other subsequent studies, is that temperature increase alone may result in decreased water availability, even if precipitation stays the same or even slightly increases. This is due, in part, to the effect temperature has on evaporation, evapotranspiration, and soil moisture. Therefore, examining precipitation alone does not provide an accurate or complete picture of how the Dolores Project may be affected under future climate conditions.

Additionally, the Climate Change in Colorado Report identifies that Colorado is already seeing a trend of more frequent drought and that is projected to continue into the future. Given more frequent and persistent drought conditions under a changing climate it would be prudent to further examine how climate change may impact the project as a whole.

- 2.2. The draft drought contingency plan states that drought response is “triggered” during stages of drought but exactly what those indices, thresholds, drought stages and subsequent actions are does not seem to be clearly identified. Using specific indices, such as reservoir levels or snow pack, to determine triggers or thresholds at which actions should be taken provides guidance to decision makers during the onset of an event. However, selecting the proper indices is only part of the process. Establishing appropriate and justifiable triggers for each index is critical for guiding and streamlining action during a drought event. Thresholds for action can be both qualitative and quantitative as both provide value.

Because a drought can develop slowly and last for years, or even decades, a multi-stage response is also important, as you want your response to reflect whether conditions are improving or deteriorating. Having multiple stages, and thus multiple trigger points for each index, enables mitigation and response actions to be phased in and out. This structure also provides a mechanism to guide decision makers during an event, enabling hard decisions to be made objectively by simply following the plan. Actions associated with each trigger point should also be pre-determined and should have multiple phases or stages. True, there will always be unanticipated issues that come up that will need to be addressed, but fleshing out the who, what, and how beforehand helps create clarity when a drought crisis begins to develop and provides a roadmap for immediate, but gradual, action. It also helps to identify key actors as people move from position to position; and as long periods of time can pass between drought events, individuals may not have had to respond to a drought during their tenure, or even know that such a response falls under their purview.

Pre-determined triggers and responses tied to those triggers can also help to depoliticize decision making since there is a clear, phased, data-driven framework for action that addresses a wide array of potential impacts and sectors. Examining possible actions to be taken at each stage of drought and who should be the lead on those actions can eliminate the lag period in which decision makers are trying to determine “what to do” and can also reduce hasty, uninformed decisions that may not be the most beneficial use of resources. In short, including drought triggers in the drought preparedness planning efforts will likely reduce impacts and response time to an event.

Given this we recommend that the Dolores Project Drought Contingency Plan determine specific indices, trigger points or thresholds associated with those indices and actions that may result when each of those thresholds are reached. Actions and thresholds should also be part of a staged drought response to enable earlier, but gradual response to an event.

Thank you for your time and consideration of these comments. We feel that fully addressing these comments will greatly enhance the Plan as whole and will help to ensure that the Dolores Project remains resilient in the face of future drought events. We are happy to discuss these comments with you further or provide technical assistance as you move forward in addressing them.

Respectfully,

Taryn Finnessey

Taryn Finnessey
Sr. Climate Change Specialist
Colorado Water Conservation Board



COLORADO

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July 21, 2017

Mr. Michael Preston
Dolores Water Conservancy District
P.O. Box 1150
60 South Cactus
Cortez, CO 81321

Dear Mr. Preston:

Mike

Colorado Parks and Wildlife (CPW) reviewed the **DOLORES PROJECT DROUGHT CONTINGENCY PLAN** (Plan) prepared by the Dolores Water Conservancy District (DWCD), with a WaterSMART grant from the U.S. Bureau of Reclamation (BOR). The intent of the Plan is to evaluate potential mitigation and response actions to reduce water shortages and provide greater drought resiliency for Dolores Project users. CPW supports drought contingency planning as it provides multiple benefits for all water users.

The BOR's requires six elements in a WaterSMART grant including: Drought monitoring, Vulnerability Assessment, Mitigation Actions, Response Actions, Operation and Administrative Framework, and Plan Update Process. Projects identified in a drought contingency plan as "mitigation" or "response" actions are eligible for future funding from BOR, as long as the project results in long-term benefits that will build future drought resiliency.

DWCD, Montezuma Valley Irrigation Company (MVIC) and the Ute Mountain Ute Tribe Farm and Ranch Enterprise (FRE), collectively comprised the Drought Planning Task Force to put the Plan together. The Dolores Project is complex with many diverse stakeholders. The Drought Plan would have benefited from robust discussions with all interested stakeholders and by including collaborative strategies for fishery improvements summarized in *A Way Forward*¹ (2011) and the Dolores River Native Fish Implementation, Monitoring and Evaluation Plan (2014).

The Plan identifies Dolores Project users as farmers serviced by the Dove Creek Canal, FRE, MVIC, municipal and industrial users, i.e., City of Cortez, Town of Dove Creek, and the Ute Mountain Ute Tribe, and downstream fish and wildlife. The downstream 'fishery pool' is the second largest Dolores Project allocation and along with other Project users, is subject to pro-rata shortages based on supplies. CPW is the primary entity responsible for managing the downstream fishery pool, and was not included on the team developing this plan, nor consulted about mitigation strategies for the downstream fishery. Similarly, the Dolores Biology Committee was established to provide this expertise to the Dolores Project, and was excluded in the development of the Plan.

We appreciate this opportunity to comment on the draft Plan and encourage the DWCD and MVIC to continue to work toward modernizing system deliveries, emphasizing carry-over storage and implementing a drought plan for all the water users on the Dolores River. CPW recommends: Engaging multiple stakeholders, reflecting the history of base pool management along with the history of all other water users in the Dolores Project; Prioritizing actions that emphasize carryover storage; Updating the response actions to include those proposed in the BOR WaterSMART grant application; Engaging the Dolores Biology Committee; Providing additional information in the Plan to allow all stakeholders the opportunity to carefully evaluate the triggers, benefits and impacts used to prioritize the mitigation and response actions that have multiple benefits; and Broadening the concepts of market-based water leasing to include downstream uses. Our detailed comments follow.

Carry-over Storage

Carry-over storage benefits all water users and stakeholders by reducing the risk of drought conditions in the following year, increases the potential for a managed release, which supports boating and recreation on the lower Dolores River. Carryover storage should be emphasized as the key component in the Plan to address drought resilience for all water users of the Dolores Project.

The Plan does not advocate using the annual savings from efficiencies to improve carryover storage in McPhee Reservoir. Instead it promotes the creation of Class C shares to increase irrigable lands (Section 5.2.2.2). Expanding irrigable lands that rely on Class C shares creates additional dependence on scarce water resources, potentially exposing more land to drought. The formation of Class C shares seems to deplete water savings realized from efficiencies in a given water year rather than reduce vulnerability to and/or mitigate drought.

Fishery Pool and the Downstream Fishery

Drought contingency planning should provide mitigation and response actions, responsibilities and procedures that provide tools for all water users, including downstream fish and wildlife to offset impacts to downstream fish during drought conditions. The vulnerability assessment, mitigation and response actions, and operation and framework identified in the Plan do not include measures to effectively respond to drought conditions to protect downstream fish and wildlife. The frequency and magnitude of spill years are important for the fishery habitat quality maintenance (riffle productivity, pool scour, habitat diversity) and overall ecological health of the system. Years without a spill, even when there is a full allocation, still impact fish habitat and ecological potential of the stream corridor. One mechanism to improve the opportunity for a spill is to firm carry-over storage at the beginning of each water year, using many of the suggestions included in the Draft Plan.

The total Base Flow Pool currently available for downstream uses, including senior irrigation water and water to offset depletions at the BOR's Paradox Salinity Control Unit, is 31,798 Acre Feet (AF), of which 29,824 AF (94%) is considered Dolores Project Water (Note: Table 7 should be amended to correctly reflect allocations). In a full allocation year, the downstream fishery pool is approximately 4,700 AF short of the 36,500 AF commitment in the 1996 'flow to pool' Environmental Assessment and the 2000 McPhee Dam Reservoir Operating Agreement. The downstream fishery is extremely vulnerable to drought as Project water, including the fishery pool is subject to shared shortages with other project users. Firming existing water supplies within the basin to provide operational flexibility will help meet important downstream aquatic needs.

Section 4.1.4 Fishery Downstream of McPhee

This section of the plan discounts habitat for sucker species between McPhee Dam and the San Miguel River confluence. Managed releases during spring runoff and releases from the fishery pool support 122 miles of the Dolores River downstream of McPhee Reservoir (from McPhee Dam to the confluence of the San Miguel River). The first 12 miles are managed as a cold water sport fishery that transitions to a warm water native fishery managed for the benefit of warm water native fish (Note: Section 4.1.4 should be amended to correctly identify current management of these reaches). In Section 1.3, CPW recommends including additional sections in the Plan that describe or summarize the history and challenges of base flow management (or referencing Section IV of the IM&E Plan) and municipal and industrial uses from the Project.

On-going collaboration between water users and stakeholders, scientific data collection and analyses have resulted in a shared understanding of the current status of the downstream fishery. During spring 2016/2017, roundtail chubs, flannelmouth suckers and bluehead suckers were found between Bradfield Bridge and the Dove Creek pumps and in Slickrock Canyon, 75 miles below the dam. Flannelmouth suckers and roundtail chubs were found in the Pyramid section.

The Plan recognizes the potential for native fish to become listed under the ESA. The State of Colorado, through a multi-party, range-wide 3-species management agreement, and through collaborative efforts like the 'A Way Forward' process, is working toward preventing a listing and/or minimizing the risk that listing under the ESA could occur. Carry-over storage should be emphasized in the plan along with other strategies that provide additional drought resiliency for native fish.

5.14 Storage Actions -Plateau Creek

A new dam and reservoir are proposed on Plateau Creek upstream of McPhee to provide greater water certainty for Dolores Project water users, and in particular the downstream fishery. This proposal includes a 125 foot dam (Plateau Dam) resulting in 710 surface acres and approximately 20,500 acre-feet of storage. The water would inundate portions of Lone Mesa State Park. CPW concerns remain consistent with our previously identified issues. (Attachment 1.)

The Plan details that approximately 3,000 AF of water may be available to the fishery annually from additional storage associated with Plateau Creek. This water is at best uncertain, as the reservoir has a very junior water right, could only store water when McPhee spills, and would take multiple years to fill because there is insufficient annual yield. 'Operations' as described in the Plan would entail filling Plateau Creek Reservoir early during years when a spill is expected; if a managed spill does not occur, the water would be released to McPhee and accounted for as Project storage.

The plan states that storage in Plateau Creek Reservoir would not affect managed releases from McPhee Reservoir. It is unclear if this is in reference to the frequency and/or magnitude of a managed release. Based on the Colorado's Prior Appropriations doctrine, it is uncertain how that might be the case. When McPhee (Dolores Project) is full, Plateau Creek Reservoir would begin filling, taking what might be a 'managed release' from the reservoir. If Plateau Creek Reservoir were only in priority when the Project's secondary fill rights on McPhee¹ were satisfied, the infrequency with which this would occur would represent a high cost to benefit

¹ 94CW44 awarded a total of 750,000 AF of storage to McPhee Reservoir (250,000 annual first fill + 100,000 annual second fill

ratio. We agree that when non-spill water stored in Plateau Creek Reservoir were released, it may take multiple years before the reservoir re-fills to capacity.

Operating a State Park on this degree of water uncertainty is undesirable and not consistent with providing a quality recreational experience. CPW and Great Outdoors Colorado (GOCO) have invested significantly in the plant, wildlife, and recreation uses of Lone Mesa State Park. The Park was purchased by CPW with \$6,337,500 GOCO Legacy Project Funds as part of CPW's "Crown Jewels" initiative. The Crown Jewels initiative was an effort to find park properties with significant resource values, trails opportunity, and other outdoor recreation potential unique to Colorado's state parks portfolio.

CPW's management of Lone Mesa State Park focuses on maintaining existing rare plants and contiguous rare plant habitat², maintaining existing wildlife populations and improving wildlife habitat, maintaining cultural resource and aesthetic values, maintaining and improving Plateau Creek watershed, and providing outstanding and unique remote foot and horseback outdoor recreational opportunities. These remote outdoor recreation opportunities include a unique, tightly managed, permit-only access for big game hunting. This access program is an important revenue source for CPW and our State Parks system. We have spent considerable resources to inventory and plan future activities at Lone Mesa. We anticipate significant conflicts between construction and development of water storage and recreational activities at the Park, including the inundation of Dolores County Roads R and 30 (the only current vehicle access to the Park and several private ranches along park's western boundary).

Plateau Creek is currently occupied by flannelmouth sucker, roundtail chub, and speckled dace. These native species depend largely on the habitats created by flowing water. The proposed reservoir footprint would eliminate occupied "three-species" habitat, modify flows in Plateau Creek below the reservoir, and disconnect the genetic exchange between fishes in the lower and upper reaches of Plateau Creek. (New reservoirs commonly attract illegally stocked non-native invasive fish, another threat to the downstream native fishery.)

5.2.2 - Water Users Leasing Water to Other Water Users

In addition to structural improvements, the Plan asserts that leasing water between water users (both Project and non-Project users) is a viable means of mitigating impacts from drought (5.2.2). However, lease markets for downstream uses are not mentioned. CPW supports broadening the concept of market-based water leasing to include downstream uses and welcomes further conversation about the details of how this could be accomplished.

Section 6.5 – Increase MVIC Early Direct Flow Diversions in Years of Managed Spills

The response action identified in Section 6.5 calls for an increase in MVIC early direct flow diversions in years of managed spills. CPW agrees with the conclusions drawn from this evaluation, e.g., water diverted in April

+ 400,000 AF initial fill). This doesn't leave a lot of room for new storage in the basin unless it's by agreement with DWCD or operated by DWCD.

² The mapped shale barrens within Lone Mesa State Park support populations of two globally critically imperiled (G1/S1) plant species, Cushion bladderpod (*Physaria pulvinata*) and Lone Mesa snakeweed (*Gutierrezia elegans*). Multiple individuals and significant habitat for these species would be inundated by water storage.

and May, may not be beneficially used by the crop and may not be needed to fill the soil profile, and that early, direct-flow diversions in the past just flowed down to McElmo Creek. Since early direct flow diversions yield no benefit to its water users, CPW suggests removing this concept as a response action. Further, this action does not equal or exceed the benefit realized by all water users when water produced in April and May is stored in McPhee Reservoir, building carryover storage and/or leading to a managed release, key tools to mitigate the potential for drought conditions from year to year.

WaterSMART Grant Components

CPW encourages the Drought Planning Task Force to revisit their commitment to involve other stakeholders in the planning process, as described in Evaluation Criterion B in the original WaterSMART application to the BOR. The grant proposal also included modeling to assess existing and future drought scenarios and test actions that may mitigate the effects of drought. It appears that little modeling was completed to address the multitude of constraints: potential reservoir operations, develop water balances, model the efficiency of water delivered versus consumption, and allow for various adjustments under various scenarios to account for climate variability.

The original WaterSMART application to BOR also indicated the Plan would “tease out” additional response actions that could be made by DWCD and the individual users to better utilize the available water. Types of evaluations were to include the following:

- Is water delivered in the most efficient pattern during a drought to minimize losses?
- Are there crops that can be grown during a drought that use less water and be marketed?
- Potential ways to address multi-year crops like alfalfa that is not conducive to crop pattern changes during a drought.
- Are the on-farm sprinkler systems as efficient as possible and if not what can be done to improve them? Possibly make comparisons of consumptive use versus deliveries.
- Can water be transferred between Project users in order to use water for the “highest and best” use? How is the highest and best use determined?
- Even though M&I users will have a full supply, can conservation measures be implemented to reduce their usage.

CPW agrees that the items listed above would help inform drought planning for the Dolores Project. Yet, many of the items listed were not evaluated or presented in the current Plan. CPW recommends future drafts revisit the evaluations presented in the WaterSMART application, and identify the triggers, benefits and impacts used to prioritize the mitigation and response actions that have multiple benefits.

Summary of Recommendations

Drought affects all water users in the Dolores Project, including the downstream fishery. The Plan should include mitigation actions (Section 5), response actions (Section 6), and an operation and administrative framework (Section 7) that represent all interests. All water users in the Dolores Project should be afforded tools and be assigned responsibilities to respond to drought to protect their interests and the interests of other water users and the community.

In closing, the final Drought Contingency Plan could be improved by:

- Engaging multiple stakeholders.
- Reflecting the history of base pool management in the Plan, along with the history of all other water users in the Dolores Project.
- Prioritizing actions that emphasize carryover storage.
- Updating the response actions to include those proposed in the original WaterSMART grant application to BOR.
- Engaging the Dolores Biology Committee to evaluate the vulnerabilities of the downstream fishery to drought and provide input to the Plan.
- Providing additional information in the Plan to allow all stakeholders the opportunity to carefully evaluate the triggers, benefits and impacts used to prioritize the mitigation and response actions that have multiple benefits.
- Revisiting the response actions and other commitments identified in the original WaterSMART application to BOR to afford all stakeholders from farmers to municipalities to recreation users to the downstream environment a complete picture of all available tools to respond to or protect all interests from drought.
- Broadening the concepts of market-based water leasing to include downstream uses.

Thank you for the opportunity to comment on the Plan. We look forward to continuing to work collaboratively on the Dolores Project water management. CPW is hopeful that aspects of the Plan will be modified with input from other stakeholders. We firmly believe the collaborative process will aid in the development of an effective and comprehensive drought resiliency plan that works for everyone.

Sincerely,



Patricia D. Dorsey
SW Region Manager
Colorado Parks and Wildlife

xc: CPW (Kehm, Unterreiner, Graf, Alves, Thorpe, White, Magee, SWR File) DNR (Moyer) U.S. Bureau of Reclamation (Warner)

Literature Cited

¹ Bestgen, K.R., P. Budy, and W.J. Miller, August 2011. Status and trends of Flannelmouth Sucker *Catostomus Latipinnis*, Bluehead Sucker *Catostomus Discobolus*, and Roundtail Chub *Gila Robusta*, in the Dolores River, Colorado, and Opportunities for Population Improvement: Phase II Report. Final report submitted to the Lower Dolores Working Group - Legislative Subcommittee. Larval Fish Laboratory Contribution 166 and Intermountain Center for River Rehabilitation and Restoration 2011(2): 1-55, + appendices.

Zimbra**carrie@durangowater.com**

Dolores Drought Contingency Plan comments

From : Mark Pearson <mark@sanjuancitizens.org>
Subject : Dolores Drought Contingency Plan comments
To : comments@durangowater.com

Sun, Jul 23, 2017 09:13 PM

 1 attachment

Please find our comments attached.

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Mark Pearson
Executive Director
San Juan Citizens Alliance
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 **SJCA comments Dolores Drought Plan.pdf**
438 KB



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July 21, 2017

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P.O. Box 1150
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Re: Dolores Project Drought Contingency Plan

Dear Friends:

We appreciate the opportunity to offer these brief comments on the draft Dolores Project Drought Contingency Plan. We would like to commend DWCD for taking a proactive approach to thinking about how to mitigate responses to drought in advance of another dry year. It seems unlikely we will continue to enjoy this past winter's bountiful snowpack in future years.

The high priority structural mitigation actions are a good start to tackling the most obvious opportunities to improve efficiency. As the plan notes, MVIC in particular has abundant opportunities to upgrade infrastructure. Individual water users also have ample opportunities to improve efficiency by converting from flood irrigation to side rolls or center pivots. These appropriately are identified in the plan as high priority potential mitigation actions that can be taken in advance of future dry years.

The plan also notes the considerations that the Ute Mountain Ute Tribe's Farm and Ranch Enterprise must undertake to match forecasted water delivery in selecting crops. This suggests there is a larger opportunity for other water users to similarly shift to less water intensive crops as a drought response. We recommend an evaluation in the drought contingency plan of the benefits to water conservation from different crops, and the feasibility of shifting crop patterns as a drought response.

Finally, we would suggest that increased storage at Plateau Creek is not a viable structural mitigation response without thorough consideration of all stakeholder concerns. When Plateau Creek reservoir was suggested some years ago as a benefit for the fishery, it was primarily concerned with the tail water introduced trout fishery below the dam. Whether decreasing the likelihood of future spills with more storage at Plateau Creek is a benefit to native fish is a question that deserves more robust scrutiny. There are also potential negative impacts to the already tenuous downstream recreation opportunities from more storage at Plateau Creek. We want to register our concerns about more storage in a system where storage already constrains

downstream recreation and fishery management, and suggest the DWCD's Drought Contingency Plan acknowledge the likely contentious discussion that would entail from any serious evaluation of a Plateau Creek reservoir.

Thank you for the opportunity to review and comment on the draft Dolores Project Drought Contingency Plan. We look forward to participating in implementation of the plan.

Sincerely yours,

A handwritten signature in black ink that reads "Mark Pearson". The signature is written in a cursive, flowing style.

Mark Pearson
Executive Director