MINUTES
of the
WATER QUALITY COMMITTEE
Holiday Inn at Buffalo Bill Village
Cody, Wyoming
June 24, 2021

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MEMBERS AND ALTERNATES PRESENT *(*via zoom*)

ALASKA	
ARIZONA	*Trevor Baggiore* Tom Buschatzke Amanda Long-Rodriquez
CALIFORNIA	*Jeanine Jones*
COLORADO	*Jeremy Neustifter*
IDAHO	John Simpson Jerry Rigby
KANSAS	*Kenneth Titus* Connie Owen Cara Hendricks
MONTANA	
NEBRASKA	Jim Macy Tom Riley
NEVADA	Micheline Fairbank Jennifer Carr
NEW MEXICO	*John D'Antonio* *Greg Ridgley*
NORTH DAKOTA	Jennifer Verleger
OKLAHOMA	Sara Gibson
OREGON	
SOUTH DAKOTA	Nakaila Steen

TEXAS	Jon Niermann
UTAH	*Erica Gaddis* Todd Stonely
WASHINGTON	*Buck Smith* *Mary Verner*
WYOMING	Chris Brown Jennifer Zygmunt

GUESTS

Norman Semanko, Parsons Behle and Latimer
Sheila Murphy, Water Resources Mission Area
Greg Johnson, Colorado Water Conservation Board
Jeff Collins, Nevada Division of Environmental Protection
Jeryl Gardner, Nevada Division of Environmental Protection
Mary Ann Nelson, Idaho Department of Environmental Quality
Kathy Alexander, Texas Commission on Environmental Quality
Amy Steinmetz, Montana Department of Environmental Quality
John-Cody Stalsby, Texas Commission on Environmental Quality
David Waterstreet, Wyoming Department of Environmental Quality
Laura Rennick, Montana Department of Natural Resources and Conservation
Carmen Horne-McIntyre, Powell Clarks Fork and Cody Conservation Districts

WESTFAST

Heather Hofman, USDA/NRCS
Mike Eberle, USDA Forest Service
Travis Yonts, Bureau of Reclamation
Christopher Carlson, USDA Forest Service
Roger Gorke, Environmental Protection Agency

STAFF

Tony Willardson
Michelle Bushman
Cheryl Redding
Jessica Reimer

Adel Abdallah
James Ryan

WELCOME AND INTRODUCTIONS

Committee Chair Erica Gaddis called the meeting to order and welcomed everyone. Introductions were made for those not previously introduced yesterday.

APPROVAL OF MINUTES

The minutes of the meeting held virtually and hosted by the State of Texas on March 24, 2021, were moved for approval by Jon Niermann and second by Jim Macy. The minutes were unanimously approved.

SUNSETTING POSTIONS

Position No. 424, regarding Water Transfers and National Pollutant Discharge Elimination System (NPDES) Discharge Permits. The Executive Committee reviewed the position and agreed it should be renewed with the revisions in the redline copy included in the briefing materials. Jennifer Verleger made a motion to recommend this position to the Full Council with changes. Jennifer Carr seconded the motion. The motion carried.

EPA UPDATE

WOTUS Rule Withdrawal Announcement

Whitney Beck, EPA Office of Wetlands, Oceans and Watersheds OWOW went into more detail on EPA's plans to review the Navigable Waters Protection Rule (NWPR) and develop a "durable definition of "waters of the United States" (WOTUS). EPA and the Army announced a joint effort in early June 2021 to develop a new definition of WOTUS after input and data showed the NWPR "resulted in significant changes in jurisdiction," especially regarding ephemeral waters. They will have two upcoming rulemakings – one to repeal the NWPR and one to develop a new WOTUS definition. Listening sessions will begin in July or August 2021.

Section 401 Certification Rule

Lauren Kasparek, EPA Office of Wetlands, Oceans and Watersheds (OWOW) gave an overview of the process to review and revise the 2020 Section 401 Certification Rule. She mentioned that EPA had completed its review in May 2021 and was currently soliciting public feedback. There are 10 factors that EPA is considering under review, and any revisions will be as consistent with public input as possible. EPA is focused on ensuring the principles of cooperative federalism are adhered to within the rule revision and are looking to empower states to protect their water quality.

Per- and Polyfluoroalkyl Substances (PFAS)

Roger Gorke, Policy Advisor for the Office of Water at the Environmental Protection Agency (EPA) provided an update on EPA efforts regarding per- and polyfluoroalkyl substances (PFAS), environmental justice, and the development of factsheets on using the State Revolving Funds (SRFs) for purposes that have not traditionally been funded by this program.

Regarding PFAS, Gorke mentioned President Biden's commitment to PFAS issues, evidenced by money within the American Jobs Plan to mediate problems associated with PFAS. In April, EPA Administrator Michael Regan announced the creation of the EPA Council on PFAS to coordinate efforts across the agency to better understand and reduce risks caused by PFAS chemicals. This will build upon the 2019 PFAS Action Plan. EPA is also working to develop a National Primary Drinking Water regulation for two PFAS chemicals.

Regarding environmental justice efforts, Gorke said EPA is focusing on pulling together data on specific impacts to communities to get a better understanding of the scope. He mentioned that with the Council's expertise in working with communities that deal with the impacts of climate, drought, and water quality, if states have any input or data on specific impacts related to environmental justice and equity, EPA would appreciate the information. Rebecca Roose from New Mexico brought up the growing links between equity and climate change, and Jeremy Neustifter from Colorado questioned whether EPA was working on a definition of "disproportionately impacted" communities. Colorado's legislature came up with definition that doesn't take in disproportionate pollution impacts. Gorke said that EPA is not working on a specific definition, but that as a whole EPA is struggling how to define which communities to engage with. This is important feedback to bring back to the agency.

Use of SRF Funds Factsheets

Regarding factsheets on the use of SRF funds, Gorke mentioned three were in development: (1) how to use SRF funds to respond to disaster and develop resilience; (2) addressing drought and drought resilience; and (3) using SRF funds for wildfire resilience and recovery. Jim Macy of Nebraska mentioned that they were able to work with the previous Administration after experiencing heavy flooding in 2019 to issue zero-percent loans from SRF funds to bridge the time until the Federal Emergency Management Agency (FEMA) was able to deploy their funding. Gorke responded that he anticipates the factsheets will highlight opportunities like that.

If you have examples for either SRF use for disaster or drought, please forward it to me.

Questions

Jim Macy: During the 2019 floods, the "bomb cyclone" Nebraska experienced, we worked with the previous Administration between FEMA and EPA. It takes so long for FEMA to get money to communities. We have a zero percent "bridge" loans using SRF dollars to get communities stood back up until the FEMA dollars come through. That is a really good program. I hope this Administration would not take that program back.

Roger: Those are the examples of how to use programs to leverage the funds. I think these fact sheets will highlight that. Another piece is a fact sheet on wildfire and SRF funds. Wildfire resilience and recovering from wildfire.

Rebecca Roose: Are the SRF folks reaching out to us?

Roger: They are working through the state programs to ensure adequate and robust input during the planning stages.

Erica Gaddis: Regarding the funding coming to states under recent legislation, it would be helpful to have EPA and Treasury working together. Who should we direct those questions to?

Roger: Michael Dean is the Branch Chief for SRFs. You can also send it to me, and I can forward it.

Roger thanked Lauren and Whitney for their participation today, as well as yesterday during the listening session.

ABANDONED HARDROCK MINES

Erica Gaddis, Utah Department of Environmental Quality said we may be interested in pursuing a new WSWC position. You will likely all remember the Aug 2015 Gold King Mine release. I learned from this experience that there 5 million gallons of mine-contaminated water are released every day. A subsequent event in Utah occurred at Tibble Fork reservoir with a fish kill due to sediment release. Abandoned mine management in Utah is done through multiple agencies. We have implemented BMPs primarily for safety.

The purpose of this discussion is to learn best practices, how states are prioritizing abandoned mines, how to go about leveraging federal resources, and how the federal government can assist us as states.

She suggested some ideas for WSWC position. WGA has a resolution on Good Samaritan protections. We could support the new EPA Office of Mountains, Deserts, and Plains. We could renew commitment and dedication of resources from federal land management agencies. Sediment standards would be helpful. There are American Jobs Plan funds that could be used toward this effort. Please think about these elements as you listen to other state presentations.

Trevor Baggiore, Arizona Department of Environmental Quality shared Arizona's experiences. In Arizona, mining boom began in mid-1800s. Most of our mines are copper mines, with a few others. The number of claims filed for mines is over 1 million. There is a wide variety of ownership and each ownership requires a different solution.

Arizona has a management system with some metrics to determine where we are and where we want to get to. Monitoring of impaired waters showed that we had 106 impairments. We shifted away from an impaired-waters driven approach and started to focus on a watershed approach, and

became aware of specific sites that are unauthorized and are impacting the environment. We track drinking water systems in the same way. Major priority is on the known sites. We use voluntary and regulatory approaches.

Priorities include impacts to human health, the environment, perennial waters, continuous discharges, and the distance from the mine to the receiving water. In order to develop prioritization tools, we are using real-time assessment tools, XRF field application, Tableau analytics, and game cameras. These are run regularly once a week. The challenge becomes data. It is the limiting factor. Funding is another problem. We have a Performance Partnership Grant. Also use a Water Quality Assurance Revolving Fund, and CWA 319(h). External funding comes through US Forest Service and 319 grantee match.

Baggiore shared some examples. The Hillside Mine water is nearly ready to be delisted by the work. Work is also being done on the Lead Queen Mine, the Storm Cloud Mine, and the 3R Mine. They estimate there are 20-40 sites that are now impacting water quality. TMDLs that were completed years ago are going to be revisited and put into usable data. We are learning from our neighboring states and other agencies. We will be exploring and developing alternative remedial actions. We are continuing to build community support, and hope to get some financial support from them as well. We estimate we need $20-$30M to remediate our 20-40 sites.

We are doing a western state comparison on remediation. (See chart on final slide.) What outcomes have been achieved? We will be happy to share this report with you all. Nobody else is doing this work, so this has become our role.

Pat Lambert: You mentioned the XRF code application . How does the state stream data into that?

Trevor: Good question. All of the data goes to EPA. We pull from the EPA database. That is what we use in our calculator. We don't do as much ambient surface water monitoring as I would like. Perennial waters are the priority.

Jennifer Carr, Nevada Division of Environmental Protection (NDEP), shared Nevada's experiences with abandoned hardrock mine management. Nevada's Abandoned Mine Lands (AML) include all abandoned hardrock mining or milling operations before 1989 when mining regulations were enacted with stricter closure and bonding requirements, as well as post-1989 operations that declared bankruptcy where bonding was insufficient to cover reclamation or closure costs. It may include mine shafts, adits, tunnels, mills, mill tailings, acid mine drainage, waste rock dumps, heap leach pads and ponds, pit lakes, chemical hazards, and associated structures and loads.

We created a new program branch in 2013, building on prior inventory work from 1999-2008, and there are two state agencies that deal with AML (NDEP and the Nevada Division of Minerals). The branch objectives are to (1) identify, characterize and prioritize AML sites in Nevada, (2) communicate with landowners and state/federal agencies that are conducting investigation and remediation work, and to maintain a current geospatial database of AML sites, and (3) to remediate sites with known environmental hazards or potential risks, and where viable funding sources are identified or likely to be secured. The hazard ranking, site investigations, and

remediation are modeled after the CERCLA processes to standardize vocabulary for the public and the government agencies.

Carr shared the site investigation and remediation decisionmaking process that they go through, from site discovery and characterization to monitoring or feasibility investigations that lead to responsible parties or securing funding. Their geospatial database contains 209 known sites, but there are potentially thousands of AML sites, though we anticipate that they have limited risk. This database is not publicly available for safety purposes.

There are a number of site characterization and remediation field methods (see slides for more information), and Carr provided an example of remediation methods used at the Birthday Mine. The mine pool was causing cow deaths. A pumping well was installed to drain mine pool and test mine pool water quality. Bench-scale tests were used to determine effectiveness of an active treatment system.

Partners include the Nevada Department of Wildlife, the Desert Research Institute, the Nevada Bureau of Mines and Geology, the federal Bureau of Land Management, U.S. Forest Service, Army Corps of Engineers, EPA, USGS, Fish and Wildlife Service, as well as various associations and NGOs. Funding for site characterization comes through the Nevada Hazardous Waste Fund and a previous EPA PA/SI grant. Database funding comes through the Corps' RAMS funding. Remediation projects are funding by the responsible parties, voluntary contributions, in-kind services, and various state and federal agency partners. Water quality improvement projects are funded by BWQP 319(h) grant funds, voluntary contributions, and NGOs. Other AML reclamation work is funded by alternative energy development, The Nature Conservancy, the Mining the Sun Initiative. Future funding options might be more creative, including enforcement settlements, supplemental environmental projects, and a Nevada Environmental Quality Improvement Account.

We do need to figure out how to deal with Good Sam. The liability concerns are very concerning. One of our questions has been what states can provide to federal partner agencies during the appropriations and budgeting process to get more money we can leverage to address these problems. Where water quality degradation is of concern (a small percentage in Nevada due to the lack of water) and multi-million dollar cleanups are needed, can we start with pilot or demonstration projects well-funded with federal funds (e.g., RAMS 2021 authority?) We are finding success by getting "out of the box" and away from the strict regulatory mindset.

Chris Carlson: I was actually going to respond to the discussion point and so maybe I'm jumping the gun. But, one of the discussion questions that was just up on the screen involved partnering with federal agencies. I just wanted to jump in there and say, the BLM and the Forest Service have recognized that there are tens of thousands of legacy mining sites on federal land in the West. In the past, the funding to those two agencies have been limited to safety-related work on those projects, except when a project qualifies for CERCLA. Then there's an opportunity to tap into other funds. What I wanted to point out is the President's FY2022 budget has a specific call out for the Forest Service, and I believe also separately for BLM, to devote a new stream of funding towards addressing both abandoned oil and gas wells, and abandoned mines. Something for the states to be aware of and potentially engage in as the conversations continue on the hill.

Office of Mountains, Deserts and Plains

Roger Gorke, Environmental Protection Agency Office of Water, provided an overview of the relatively new Office of Mountains, Deserts and Plains (OMDP), which was announced about nine months ago. Its office is in Colorado, just south of Denver. It's focused on abandoned hardrock mine sites in Regions 6 through 10. A memo was sent out focusing on areas that includes working with specifically region 6 and 9 and the Navajo Nation to expedite the clean-up of embedded uranium mines on the nation. We're looking also at streamlining procedures and processes for Good Samaritan clean-ups and promote Good Samaritan cleanup projects across the West. There have been about 10 Good Samaritan clean-up sites since we developed our tools in 2007. EPA published a memo in December of 2012 dealing with Clean Water Act liability. Most of those Good Samaritan sites have been in Colorado. They're tracking and assisting with NPL hardrock mining cleanup sites in Regions 6-10. We talk about hardrock mines, but coal can be included. Another aspect is identifying advanced technology and revitalization solution for historic mining sites in the West. One of the things too, is kind of related to what you were talking about, Jennifer and Chris is an attempt to serve as a central point of contact for federal agencies, states, tribes and others with responsibility for or impacted by abandoned hardrock mines. We say hardrock mines, but we understand that coal can be included.

Finally, the fate of the office hasn't been determined by the new Administration. We don't have an Assistant Administrator . Be that it may, they're still working with regions and others to advocate the clean-up and reuse of abandoned hardrock mines. Roger spoke to Jennifer Carr about a work around for funding and EPA tools. Also related, EPA has an informal Good Samaritan Working Group across the agency. Roger represents the Officer of Water and there are folks from the Office of Mountains, Deserts and Plains that actually lead the group. There is representation from Congressional Office, Office of Policy, and then regional colleagues as well. To me, that's where the real information and value is.

The experience that Region 3 has, which is the Mid-Atlantic, on Good Samaritan cleanups in coal country, could be valuable for the western regions. That continues to be pretty functional within the internal group that we have working.

Roundtable Discussion

Erica asked for opinions as to whether or not a position should be drafted for the Fall meeting and then what would be included. Since the Good Samaritan issues seem to be front and center, any concerns with us broadly adopting the position that WGA already adopted with respect to Good Samaritan and liability issues? Are there other elements related to liability that are absent from that position that you would like us to include in a new position? Jennifer says thumbs up for the WGA's position. Roger, it sounds like this is a topic that you're pretty well versed in. I realize you can't tell us what our position should be, but are there any elements that you think that we should consider that are maybe not captured in what's out there already? I think it's really more of a long-term solution.

Roger Gorke: There's probably a difference of opinion. If you look at our EPA 2012 memo that talked about not viewing someone that came in as a Good Samaritan and created, or left a point source, that entity would be required to get an NPDES permit once they leave the site. We compare it to our general construction permit for stormwater. If you have a construction company that gets a stormwater permit to build a Walmart, and then they leave the site after they build it, they're not responsible for the Walmart site when they leave. That's what we based our argument on. The other part, is that everyone focuses on the 1992 East Bay MUD (East Bay Municipal Utility District) case. Justice Scalia says all the important stuff is in footnotes. So we put our footnote in that EPA doesn't view East Bay mud a Good Samaritan case. It's not a Good Samaritan case, because East Bay MUD owned and operated the discharges and the land around it. I understand the concern, because we're not taking on the liability of somebody going on site, but that doesn't seem like a real case to look at in terms of the liability for a Good Samaritan. I think part of it is continuing to engage us as early and often as possible, so that we can help think through some of these things. Some people bring situations that are Good Samaritan cases, but as we review it we may see other opportunities to address liability and cleanup concerns. Sometimes we do have a liable party we can track down to clean up what they did. I think a piece of it is something that Trevor brought up was, who else is going to do this? That's what we're responsible for as well - protecting public health and the environment in partnership with you all. We have to look at this as a partnership. Having robust discussion and continued discussion on this would be, I think, the most valuable on how we could use tools to get these sites cleaned up.

Erica: Maybe a fact sheet or something similar could be compiled to put all that information in one place for people. What about our support for the OMDP? I would propose that we recommend that office be retained and supported, especially working directly with states, as a single point of contact for all of the federal agencies with related responsibilities. Any thoughts or concerns with including that in our policy position?

Rebecca Roose: I think it makes sense to start with that in the draft. I remain pretty unsure how to feel about the OMDP because of the ambiguity and Andrew Wheeler's articulation of its purpose. I think keep it in the draft, but we need to learn a little bit more about OMDP before we lock it in. There are so many tribal issues tied up with abandoned mine lands in the West and so I would be really interested to know how our tribal government partners feel about OMDP. I've heard that the Navajo Nation was really encouraged by the creation, but they've also had some change in leadership at Navajo EPA. I haven't heard from any other tribal leaders about their thoughts on it. If they're really in support of it, and other western states are in support of it, then I would not go against the OMDP being included, but I'm just not convinced yet that it's something we should spend our energy on.

Erica: Absent clarification of that Office, we could include what we would like to see the OMDP doing.

Rebecca: Yeah, and even have something in there, depending on our timing as the new leadership gets on board, and before they make any decisions that they engage with the Council, ask us to be at the table and have that opportunity to help inform it.

Roger: Rebecca, is the concern not necessarily the substance of what the office would be working on based on the three or four or five things that I articulated or is it just kind of the politics or swirling around how and when it was created?

Rebecca: It's the politics rolling around and how and when it was created that pertains to roles and responsibilities. We've got the existing bureaucracy of EPA and so adding in another entity to work specifically with the regions where they have to go through that entity before they can make decisions on top of the state and tribal engagement and stakeholder engagement that's so essential, particularly on the NPL sites and other sites. My questions are: What are the roles and responsibilities under new political leadership at EPA, if they keep it? How do those roles and responsibilities impact us in the work that we're trying to do together - states, tribes, EPA and locals?

Erica asked for thoughts on funding and volunteers for the drafting group for the position.

MANAGING SEDIMENT AT WILLWOOD DAM

David Waterstreet, Section Manager, Watershed Protection Program, Wyoming Department of Environmental Quality (WY DEQ), presented on the efforts and challenges to manage sediment behind Willwood Dam on the Shoshone River. Willwood Dam was built in 1924. The dam is 476 feet long and 70 feet high. It has three sluice gates for releasing water and two canal gates which deliver the water. The service area is about 11,500 acres. There are about 25 main canal miles. This has been operated and maintained since 1949 by the Willwood Irrigation District (WID).

The dam was upgraded in 1982 to increase the turbidity criteria. However, due to uncontrolled sediment releases which resulted in significant fish kill events, the dam had to start changing operations as this is a popular fishery for brown trout. The WY DEQ created three workgroups that brought together directors of agencies to address the challenges associated with managing sediment at the dam. The workgroups focused on: (1) fixing the initial problems and determining the flow required to carry the sediment as far downstream as needed; (2) studying the long-term sediment dynamics of the region; and (3) addressing inputs and nonpoint sources to the river in an effort to keep out additional sediment.

David chairs the second workgroup, and went into detail on their efforts. Work Group 2 was pulled together to understand sediment dynamics. It is comprised of WY DEQ, WID, Wyoming Game and Fish Department (WG&F), Wyoming Water Development Office (WWDO), Wyoming State Engineer's Office (SEO), U.S. Geological Survey (USGS), U.S. Bureau of Reclamation (USBR), also CDs & TU. They have put instruments upstream and downstream. Evaluating scientific literature for protective turbidity (sediment) limits/recommendations. They have done bathymetric studies upstream of the dam and within the dam pool. Sediment release experiments have been performed in both spring and fall. Several observations and requirements for mobilization of the sediment are listed on the slide.

Many of these smaller dams exist across the west. We will wrap up our studies and tie things into a study report this Fall. USGS may be able to share the studies so others can address similar problems with sediment. All of the sediment that pushes past this dam then moves into the larger reservoirs. They will also need to tackle these problems.

WATER QUALITY AND WILDFIRES

Chris Carlson, U.S. Forest Service gave a presentation on the intersection between wildfire and water quality. Chris mentioned that the New York Times actually had an article today on this very topic focused on Front Range of Colorado and the impacts from last year's fires. A number of other entities have become focused on this very issue as well, following last year's fires, including the Western Governors' Association.

Wildfire risks have been growing as the climate has warmed and I think we can all agree that wildfire is a major threat to water supplies in the West. From my perspective, the scale of the challenge will necessitate an all-of-the-above approach to make a tangible difference in more than a few select locations. It will take all levels of government and the private sector to bring the necessary resources to address the challenge across all land ownerships.

Potential water quality impacts from wildfire can begin with the burning itself. Between ash and other vegetation combustion byproducts, and the burning of anthropogenic stuff, if you will, there's a lot of toxics out on the landscape, particularly when the wildland urban interface burns, lots of vehicles, lots of structures, other built infrastructure that can contain lots of stuff that's not particularly healthy to end up in our water. In addition, firefighting itself can result in some water quality challenges. The construction of fire lines, the sourcing, and then delivery of suppression water, and the spraying of retardant.

Many of the challenges that we're facing now are the post-fire challenges of: landslides; debris flows; runoff and erosion; increased storm flows; soil/sediment; lots of woody debris; road fill failures; changes in chemistry due to retarding liberated nutrients, metals and combustion byproducts and then there's anthropogenic toxics if they aren't cleaned up quickly afterwards.

In order to address the water quality impacts, proactive action must be taken to reduce the fuel loading in source watershed and thereby reduce fire risk. If fire does come into the landscape, we can reduce the severity of the fire that occurs. There are opportunities for reinforcing water supply collection and transport infrastructure to survive those fires and not cut off the water supply.

During emergency response there are two phases: the emergency firefighting phase and the immediate post-fire phase. The firefighting phase includes identifying source waters and infrastructure for protection; and avoiding water bodies and intakes during retardant drops. Immediately post fire emergency response involves stabilizing slopes, rehabilitating those fire lines, and a number of other activities to try to ameliorate the long-term post fire response. Then we have the post-fire/post-emergency phase to reconstruct the needed infrastructure to address the long-term water quality, which is primarily sediment, then rehabilitate and restore those watersheds. From the federal land management agencies perspective, the vast amount of resources that gets put into

wildfire goes into the pre fire and then during fire response. Historically, there is much less focus and investment in the post-fire/post-emergency effort.

Some of the programs that are available for addressing problems in the pre-fire phase: USFS Shared Stewardship Joint Chiefs Partnership, Collaborative Forest Landscape Restoration, Watershed Investment Partnerships. EPA has Section 319 Non-Point Source Funds, State Revolving Funds (SRFs). NRCS the Joint Chiefs Partnership, Environmental Quality Incentives Program Forest Management Plans. From the fire response, the National Interagency Fire Center brings together all the federal land management agencies, along with the National Association of State foresters, tribal entities, the Department of Homeland Security and a lot of others in developing response procedures. Then post-fire programs include both the USFS/BLM Burned Area Emergency Response (BAER), which those efforts are really focused on protecting due to the authorities that we have protecting federal resources. Post-fire, NRCS has the Emergency Watershed Protection Program that is available to focus on non-federal resources post fire Then of course, there is FEMA. If the fire gets declared an emergency, FEMA can engage and bring a whole raft of additional resources including EPA, and lots of other agencies. For rehabilitation and recovery, we have the BLM Burned Area Rehabilitation, and EPA SRFs.

On the research and information side, the joint fire science program assesses fuel treatment effects and effectiveness. EPA looks at erosion effects on water quality. NOAA is looking at improving how it can provide detailed severe weather prediction during fire and post-fire. NASA leverages its capabilities to help identify wildfires and track impacts. The USFS has research going on assessing burn severity, post-fire treatment design and effectiveness and post-fire water quality. USGS has lots of work going on and post-fire slope stability, how wildfires change watersheds, improving the prediction of wildfire impacts on water availability.

Sheila Murphy, Water Resources Mission Area, USGS spoke about USGS efforts. As you heard from Chris, there are a number of impacts fire can have on water supplies, largely because of what fire does to the existing landscape. What we need to get at is why does that happen? And how does it vary in different areas so that we can improve prediction. USGS has a visualization tool they have that describes some of the impacts on hydrology and water quality.

USGS is trying to assess and predict the impacts of fire. USGS is doing some strategic water quality sampling after post-fire. We've instrumented in collaboration with stakeholders in the various states to do post-fire collection in all the same manner so that we can get a better understanding of the critical drivers of post-fire water availability, including quality and quantity. We're also looking at, once you move sediment and other constituents into water supplies, what happens then? Because you're really changing that water body, and what can we learn so that we can tell water providers what to expect? We're doing remote sensing with the eventual goal of being able to say to a water provider, should your watershed burn, these are the water quality impacts that we expect.

Jeremy Neustifter, Colorado Department of Public Health and Environment, talked about Colorado wildfires and water quality. Wildfire impacts know no boundaries, whether we're talking about land, air or water. He showed a map of wildfires that occurred in 2020, which was a

particularly impactful year. There were three of the largest wildfires in Colorado's recorded history. The Cameron Peak Fire in the northern part of the state near Wyoming was the largest, burning 208,000 acres. It primarily affected the Poudre River watershed, and roughly 469 structures were impacted by the fire. Southwest of that was the East Troublesome fire, which was the second largest in Colorado history, burning around 192,000 acres. That destroyed roughly 300+ structures and came quite close to Estes Park. It was literally hundreds of feet from burning down the town of Grand Lake. The first responders did an incredible job and the community really came together. The Pine Gulch fire, just north of Grand Junction, burning 139,000 acres was the third largest in state history.

The Colorado Department of Public Health and Environment's first concern is public health. When it comes to wildfire impacts on water systems, in the Water Quality Control Division (WQCD) we have an Acute Team. It is on call 24-7 to respond to emergencies where drinking water may be contaminated. In terms of natural disasters like wildfire, the primary concern is loss of water system pressure, which of course could contaminate drinking water systems. This could be due to power interruptions, destruction of water infrastructures, etc. The Acute Team exists to evaluate the issue; assess the data, e.g. water quality and treatment; assess the risk to public health; determine the appropriate response; boil water advisories and then follow up testing and address acute concerns (rescind boil water advisories).

Once the fire is out and people are safe, and they know that they have safe drinking water, what happens next? It is an ongoing complex issue to deal with post-fire concerns. Post-fire response really starts with engaging with the Burned Area Emergency Response (BAER) Team that Chris just talked about. BAER is a group of federal employees comprised of geologists, hydrologist, soil scientists and biologists that evaluate the burn severity and talk with our WQCD to coordinate very closely to provide source water data and other information to their team that might help them to evaluate the burn scar area and try to predict how the fire is going to impact a water system, which I believe is somewhat of an educated guessing game. We also maintain lots of geospatial data layers that provide information on watershed priority prioritization areas, based largely on the significant presence of drinking water resources in the watershed. The WQCD also created a post-wildfire playbook to give municipalities an idea of what to do, how to coordinate, how to go to local recovery group, how to seek funding sources for restoration, and it also provides some of the technical resources that are pertinent to wildfire response. The goal here is to help water treatment providers get the resources that they need to get through the difficult times that post wildfire presents.

Most of the challenges associated with water quality that stem from wildfires occurs within the first three years after the fire. Depending on the burn severity and soil composition in the watersheds, we can see much longer effects from nutrients and sediment. An example of that would be the Haman and Buffalo Creek fires that occurred roughly 20 years ago in Colorado. We're still dealing with significant sediment issues—these are some really important watersheds that have historically been really important fisheries as well. Drinking water utilities strive to provide safe drinking water for their communities. Unfortunately, the unpredictable nature of wildfire makes it challenging to develop specific strategies for treating source water created by the effects of wildfire. High intensity rainfall events in steep, burned watersheds are likely to move large amounts of suspended and dissolved material into downstream water supplies. Potential effects of wildfire on

municipal water supplies and downstream ecosystems include: erosion/sedimentation; increased metals; increased total organic carbon; disinfection byproducts issues; nutrient loading (harmful algal blooms); low dissolved oxygen; increased pathogen/bacteria contamination risks; and water treatment challenges (ex: coagulant, chlorine demand).

The WQCD and its Nonpoint Source Program work in coordination with local watershed groups to support local response and recovery groups. We also have a newly formed and funded public private partnership with the Colorado Water Conservation Board, headed by Chris Sturm that looks at technical analysis and design for post wildfire restoration products. We also work collaboratively with the Coalition of the South Platte (CUSP) and Coalitions and Collaboratives (COCO). These groups have been involved in nearly every response to major wildfires in Colorado in recent history, and they have a lot of experience and knowledge when it comes to what works and what doesn't for erosion and sediment. We also work closely with the Watershed Wildfire Protection Group, which is a multi-agency partnership involving folks from the U.S. Forest Service, USGS, private consultants, and public water systems. Data products are being developed to identify critical infrastructure components, which include, reservoirs, treatment facilities, pump houses, storage tanks, springs, and ponds, those types of things.

STAFF UPDATE

Jessica referenced the Administrative update in Tab T, along with the Legislative and Litigation updates. She flagged CWA 401, WOTUS, and PFAS regulations and recent actions, as well as Congressional activities on drinking water and wastewater infrastructure.

We also recently published on our website the WSWC Water Reuse Report with our state experiences, I know that's been about a year-and-a-half in the making, and want to just thank all of our states for the contributions you made to that.

One addition for the Legislation update is S. 1761 on water quality certifications.

FY2021-22 WATER QUALITY COMMITTEE WORK PLAN

Erica mentioned that this is in the briefing materials under Tab I. We talked about this little bit during our Spring meeting and didn't receive a lot of comments or feedback. However, it is a living document and updates may need to be made. Jennifer Verleger moved to adopt the Committee work plan for FY2022. Jennifer Carr second and the workplan was adopted for this fiscal year.

SUNSETTING POSTIONS FOR THE FALL 2021 MEETINGS

Erica recommended members review Position No. 426, supporting State Clean Water Act Section 401 Certification Authority and Position No. 427, regarding Clean Water Act Jurisdiction, which will be discussed during the fall meetings.

OTHER MATTERS

There being no other matters, the Water Quality Committee was adjourned.