Albert E. Utton Memorial Water Lecture

Michael L. Connor, former U.S. Deputy Secretary of the Interior, Wilmer Hale LLP

Michael L. Connor is a partner in the law firm of Wilmer Cutler Pickering Hale and Dorr LLP. His practice focuses on strategic advice and legal services to clients in matters involving water resources, public lands, energy development, environmental compliance, and Native American law. Previously, he held several leadership positions at the federal level. The most recent was deputy secretary of the U.S. Department of the Interior from 2014 until 2017, where he was the department's second-highest ranking official and a key leader in implementing the Obama-Biden administration's priorities related to climate change, water resources, science-based landscape-level management of public lands, expanding renewable energy development, and improving the federal government's fulfillment of its trust responsibility to Native Americans. Prior to this position, Connor served as the commissioner of the Bureau of Reclamation from 2009 to 2014, where he led efforts to address challenges associated with water supply and hydropower generation in the West. Connor received his JD from the University of Colorado and a BS in chemical engineering from New Mexico State University. A native of New Mexico, he is an enrolled member of the Taos Pueblo.

Editor's Note: This paper transcribes the speaker's remarks from the conference. No follow-up paper was submitted, and the remarks were edited for publication by the editor. The speaker did not review this version, and the editor assumes responsibility for any transcription or editing errors.

Sam Fernald: Before I introduce Michael Connor, I have a brief note on the Albert E. Utton Memorial Water Lecture. Albert E. Utton served New Mexico as a member of The University of New Mexico (UNM) School of Law and the Interstate Stream Commission, while advising the New Mexico Water Resources Research Institute (NM WRRI) on water issues. Teaching administrative law, environmental law, and international law, he was heavily vested in water issues. Having served on NM WRRI's Water Conference Advisory Committee for twenty years, and in recognition of his service to the New Mexico water community, the NM WRRI established the Albert E. Utton Memorial Water Lecture Fund, which provides support to speakers who are selected to give this lecture.

This year, we have Mike Connor, who has quite an impressive resume himself. He's now a partner in the law firm of Wilmer Cutler Pickering Hale and Dorr, and, as he put it, knows a thing or two about water. Mike was Deputy Secretary of the Department of the Interior from 2014 until 2017, responsible for many water-related issues and managing public lands and resources in the nation. He was also Commissioner of the Bureau of Reclamation and has been heavily involved in water in the western U.S. and is a native of New Mexico. I learned at our 2012 New Mexico Water Conference that he went to the same junior high as my kids. He is also an Aggie, and we really respect him for his water expertise.

Michael Connor: Thanks, Sam. I appreciate the introduction, and particularly you making sure that folks know that I have some New Mexico bona fides, which makes it doubly a pleasure to be part of this conference. As you mentioned, I don't think I've spoken at the conference since 2012. At that point in time, I believe the State of New Mexico was initiating an action that soon became known as New Mexico v. Connor, regarding operations of the Rio Grande Project, but let bygones be bygones. It all got usurped by Texas v. New Mexico anyway, so I appreciate the opportunity. It would only be better if we were all together in New Mexico.

I haven't been able to tune in for as much of the conference as I would have liked, given the agenda that you've put together, which is terrific. But I did get a chance to take in Senator Udall's comments on Tuesday, and my comments today will be an extension of his comments delivered about climate change in particular and the urgency of the moment that exists.

New Mexico has, needless to say, been blessed with wonderful, visionary political leadership in recent years, as demonstrated by Senator Udall. I think everybody saw the short clips from Senator Heinrich and the rest of the delegation on Tuesday. It has been terrific to watch the leadership and the focus on these issues of concern. I had a chance to work for Jeff Bingaman for eight years when he was leading the Senate Energy and Natural Resources Committee. Jeff always had a laser-like focus on water issues in particular. We moved a lot of water resource legislation through the committee, everything from Indian water rights settlements to programmatic initiatives for New Mexico, as well as the country overall, science-

related bills, aquifer studies, and building rural water projects in New Mexico.

Particularly for today, given the subject I'm going to talk about, the one that stands out the most is the SECURE Water Act, which I believe was the first climate-focused legislation that was enacted by Congress. It was enacted back in 2009 right after Barack Obama took office in March of that year. I remember Jeff calling me into his office the day after we held the first ever climate change water hearing in the Water and Power Subcommittee. Based on what he had heard and what he was seeing on the ground, he wanted to introduce and move forward with a piece of legislation that addressed the implications of climate change on water. This was the start of the SECURE Water Act, introduced in October 2007 and finally getting enacted a little less than two years later, which is pretty good for moving legislation through Congress. This is just a long-winded way to say that I've been involved in climate and water issues for many years now.

I've given lots and lots of speeches, especially during my years in the Obama administration running Reclamation and as Deputy Secretary of the Interior, but never have I felt the urgency and the need to act as I do today. I want to focus my discussion on the implications of climate change, and therefore, the title of my presentation is simply "Drastic Times…"

Figure 1 was put together by NOAA and identifies the climate- and weather-related disasters that have occurred in the country with losses in excess of $1 billion as a result of those activities. At a very high level it talks about the nature and breadth of the far-reaching effects of climate change across the country as a whole. Climate change manifests itself in many different ways. There are 16 different weather and climate disasters that are identified on this chart, as of October 7, 2020: one drought across the West; 11 severe storms, derechos, and other tornado events that have occurred; three hurricanes and one wildfire event or series of events in Northern California and Oregon that occurred. That ties the record of $1 billion of disasters that have occurred and have been attributed to weather- and climate-related activities. There were also 16 events in 2011 and 2017. In Colorado, this last week wildfires really took off. The East Troublesome Fire grew from a small 10,000-acre fire to almost 100,000 acres within a couple of days. I just heard on the radio this morning that it took out at least 100 homes in the area of Grand Lake, Colorado. When you combine this with the other Colorado wildfires in the area, it's likely to be added as a billion-dollar weather and climate event. Furthermore, Hurricane Zeta hit the Louisiana and Mississippi coast late yesterday afternoon. We'll have to see what the implications of that event are, but more likely than not, we're headed toward a record year with respect to weather and climate disasters, and the financial impacts of those are very significant, as you can see.

Of course, the western United States is acutely sensitive to climate change and its implications overall. Some years more than others but this is one of those years that certainly makes clear the related nature of climate change, drought, and wildfire, as they do go hand in hand. But this year in particular is downright scary for a lot of different

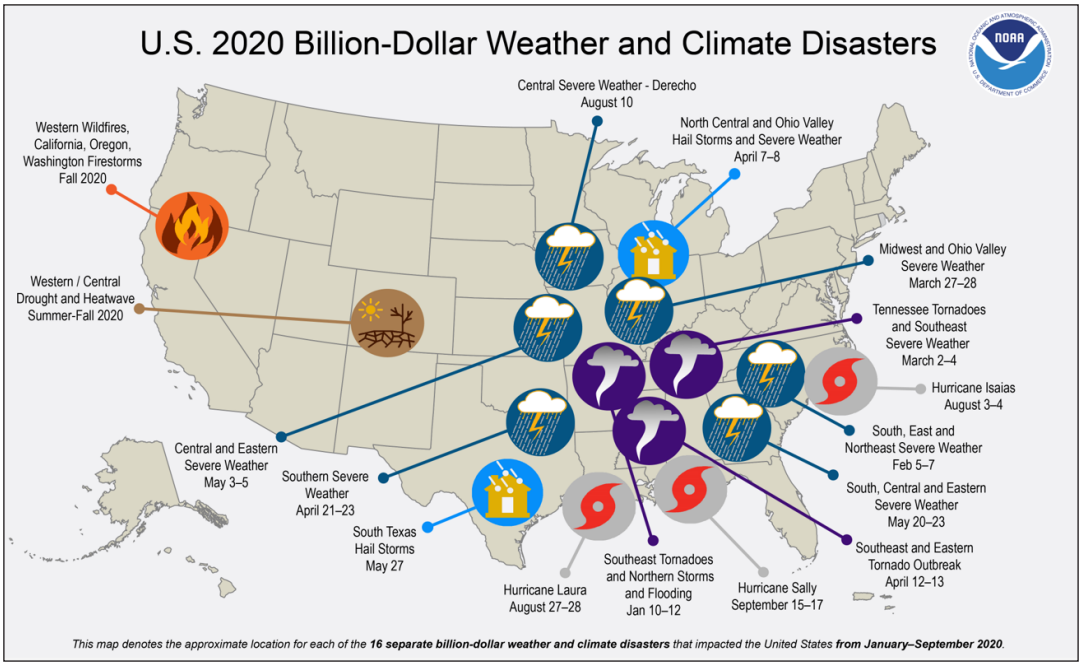

Figure 1. Billion-dollar weather and climate disasters in the United States, 2020.

reasons. The map on the left of Figure 2 is an identification of all the current wildfires that are moving through the West. Of course, California has been severely impacted by a record number of fires and a record size of fires this year. Colorado has had three record fires this year each exceeding 200,000 acres, which had never occurred before within the state. Overall, from a fire perspective, as of October 2020 there have been about 8.5 million acres that have burned across the nation this year. The 25-year average, year-to-date, is 6.2 million acres, and the 10-year average is 6.85 million acres. This means we're way ahead of the pace for an average year, and we still have several months to go. California itself has had 4.15 million acres burnt this year and it is still wildfire season for the state. However, these days the wildfire season is year-round.

Historically, fire seasons of more than 10 million acres across the landscape were unheard of prior to the last decade, and we had two of them when I was at the Department of the Interior during the Obama administration. I believe there has been one in the last four years, and we'll see where this year ends up. Interestingly, I would note that the actual number of fires is significantly reduced from what it has been historically. The increased acreage indicates that the fires are larger on the ground and they're more unpredictable. Overall, I would say that with respect to the West-wide drought and wildfires, I don't think scientists are really focused these days on the issue of whether climate change is occurring. I think there's so much overwhelming evidence that it's not really being discussed, except in the U.S. Congress at times, but that is simply politicizing an issue that has no factual basis. I think scientists are more focused these days on connecting warming temperatures to activity and actions on the ground. There are more and more reports and analyses highlighting the connection of climate change to the increased nature of wildfires and to extreme drought situations. Interestingly enough, I just read about some scientists no longer calling it drought. Rather, they're calling it the advancement of aridification of our western United States.

The last thing I'll say about this, particularly from a western U.S. perspective, is that these impacts and these effects of climate change as they manifest in drought or aridification and wildfires really take their toll on rural communities as opposed to cities. They take their toll from the standpoint of simply the lack of water available for agriculture in the West and the implications of that. From a municipal supply perspective, rural communities do not typically have as diverse a number of supplies as larger municipalities that conjunctively use groundwater and several surface water sources. Obviously, cities experience impacts from wildfires, particularly health impacts from smoke. We certainly experienced that all along the Front Range this year, but it's the communities closest to these wildfires that experience it worse. There were evacuations, home loss, all sorts of devastation that wildfires can bring, which seriously impact rural communities as opposed to those of us who reside in cities.

Focusing on little old New Mexico, the headline of Figure 3 says it all. This was from an Albuquerque Journal story during the first week of October 2020. You can see the extent of drought: 100 percent of the state is in at least moderate drought, greater than 85 percent of the state is in extreme drought, and 2.1 million people, the entire population of the state, are affected by drought in 2020. Unfortunately, if the climatologists and meteorologists are accurate in their predictions, of which I have no doubt, a La Niña pattern is developing in the oceans, and the expectation for winter is that there will be above-normal temperatures and continued below-normal precipitation at least for the next several months and into early 2021.

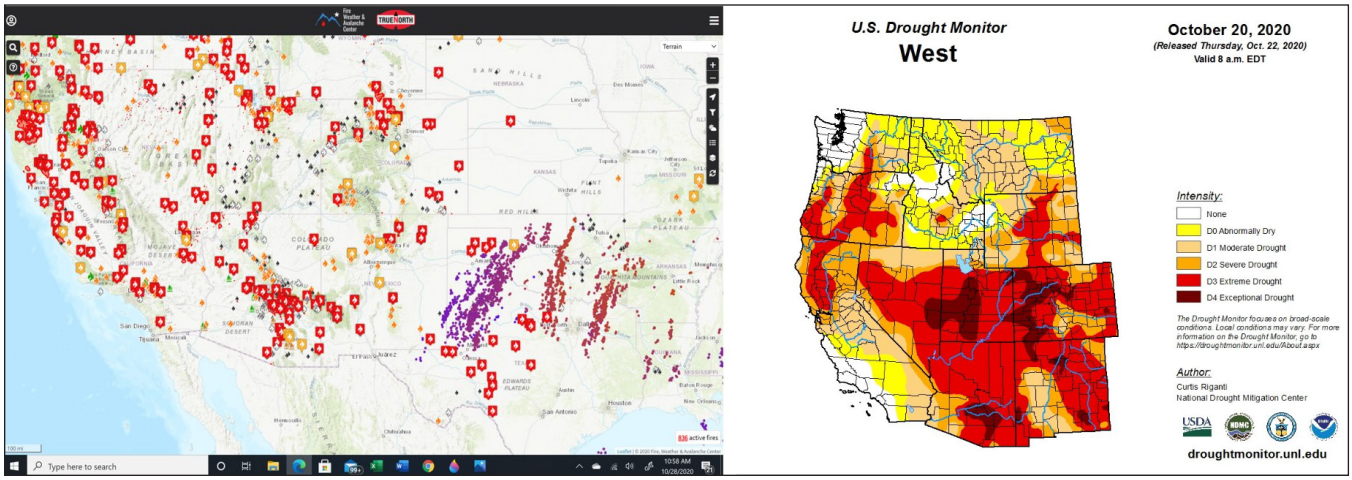

Figure 2. Fires in the western United States as of October 2020.

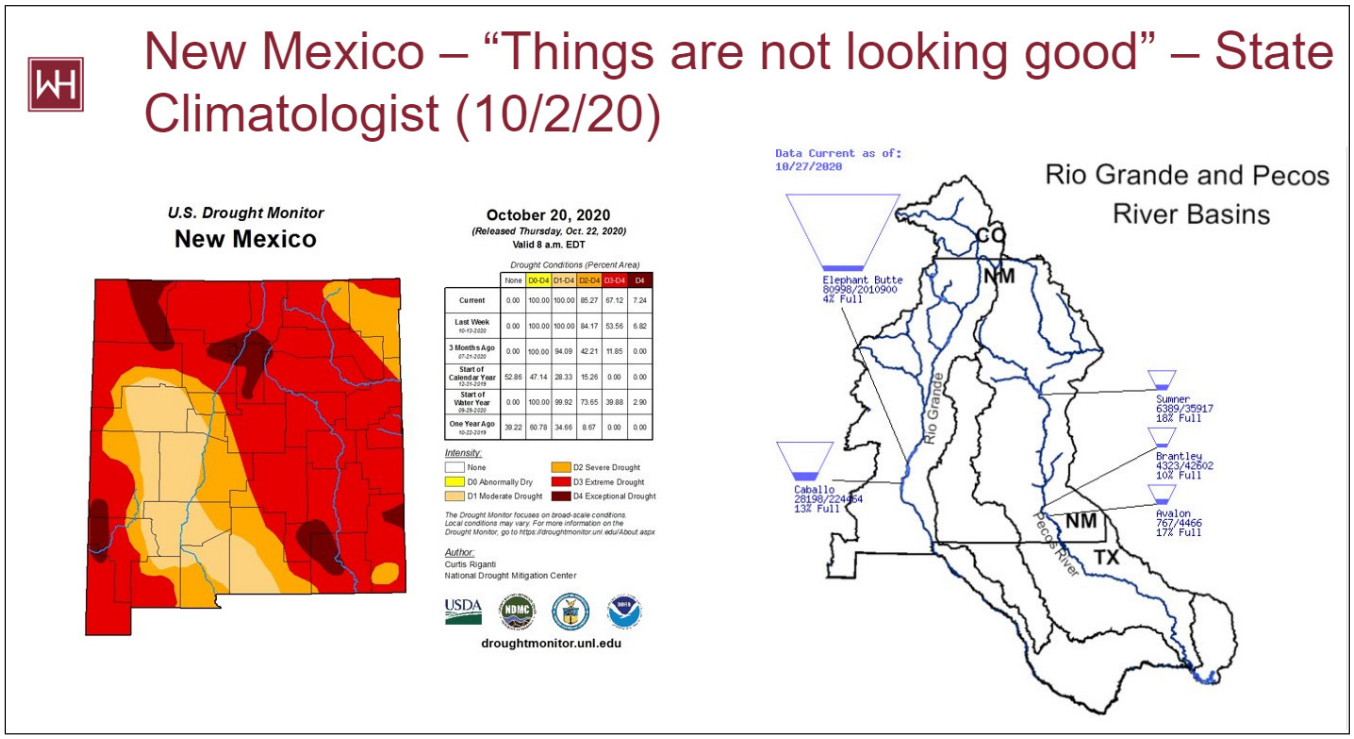

Figure 3. New Mexico drought status and reservoir capacities.

The reservoir capacities that exist in the Rio Grande and the Pecos River Basins are shown on the right of Figure 3. It's not hard to see that those reservoir levels are not going to sustain water use in New Mexico's river systems going forward through 2021 unless there is a dramatic change in precipitation levels. Of course, the implication is that groundwater mining will continue. Access to groundwater will be hit hard in 2021. There is no doubt that this will heighten tensions in the lower Rio Grande situation, which has been the primary issue between Texas and New Mexico, and has resulted in the ongoing Supreme Court case. We'll talk more about that in a minute. In addition to the water supply impacts, this will have extreme implications for fish and wildlife in the state, as well as recreational resources, and each of these have economic impacts on communities. So, it's serious from all kinds of stakeholder perspectives.

Looking more long-term, I just read a summary of a presentation given by Dave Gutzler, a well-known UNM professor and climate scientist in the state. Looking ahead, we can expect average temperatures will continue to increase. To date, New Mexico has had an increase—I think Senator Udall mentioned this—of 2.7°F, which is equivalent to 1.5°C. Interestingly, it was the objective of the Paris Agreement to keep temperatures from exceeding that 1.5°C increase worldwide. We're not quite there yet worldwide, but we are well on the way. In New Mexico, we're already there. The significant implications of this for water supplies include snowpack decline, increased evapotranspiration, reduced streamflow, and reduced groundwater recharge. There are two other long-term implications, according to Gutzler. One is that the atmosphere will continue to have more energy in it and there will be more variability with respect to weather events and precipitation, which most likely means more extreme events. The other conclusion is that the winter storm track will move permanently north, adding another adverse effect to New Mexico. Drastic times indeed.

What do we do about that? Apparently, some think that the best thing to do is to fight about that, through litigation such as the following:

- Texas v. New Mexico, No. 65 Original (S.Ct) – Pecos River
- Texas v. New Mexico, No. 141 Original (S.Ct) – Rio Grande
- United States v. Abousleman, 2020 WL 5792100 (10th Cir.)

If you look at the top two bullets, there are good friends in Texas who have taken that approach with respect to our state. There are currently four active interstate water disputes that are pending before the U.S. Supreme Court. There are obviously the two cases that had a significant amount of activity over the last year or two. There was also Florida v. Georgia, which is an equitable apportionment case on the Apalachicola, Chattahoochee, and Flint River systems, involving not just Florida and Georgia but also the state of Alabama. The other case is an interstate allocation case between Mississippi and Tennessee, which

is a first-of-its-kind groundwater pumping case involving a shared aquifer along the border of those two states.

To give you context with respect to this litigation, Florida v. Georgia has been 30 years of litigation in various forms. A little bit like Texas v. New Mexico and the Rio Grande, it has not all been in the Supreme Court. It's been in other court systems. But Florida v. Georgia has been 30 years without any kind of decision that has nailed down the allocation issues. In 2018, there was a decision by the Supreme Court that got into resolving the standard of proof involved in seeking a remedy for equitable apportionment. A tiny fraction of the issues at play, but that was the nature of the 2018 decision. So, stay tuned. There's probably a lot of litigation left in that particular case. Mississippi v. Tennessee has been before a special master for over five years now. It's unclear when this might lend itself to being elevated to the Supreme Court, but it's probably going to take some time. Florida v. Georgia is likely to have a decision that's teed up for argument in the next term of the Supreme Court.

Getting back to our neck of the woods with Texas v. New Mexico. The original action identified as number 65, the Pecos River case, was the first case to be heard in the Supreme Court term. It was argued on October 4, 2020, after being dormant for a while. Apparently, an extreme weather or flooding event back in 2018 yielded a dispute over the river master's decision. The Pecos River is one of two river systems that has a river master appointed under the Supreme Court's original jurisdiction. The river master is in charge of determining the counting under the compact. There was an issue associated with flood flows and the evaporation from Brantley Reservoir. The State of Texas has disputed the river master's decision in that particular situation, and that was the nature of the argument that occurred the first week of October. It's an arcane issue that came up before the court. It has no precedential value for anyone else in trying to determine how to resolve disputes among the states. From my perspective, it has been mostly a waste of judicial resources to bring this before the Supreme Court. Given the reports that were written in the aftermath about the proceedings, I think the justices also may have been a little irked to have this case before them, but we'll see what happens with the decision. It is a complex accounting case, and it wasn't one that was easily addressed, as noted by some of the justices during the hearing.

Texas v. New Mexico on the Rio Grande, number 141, has a lot more at stake regarding the effect on groundwater and surface water use in the lower Rio Grande. Nonetheless, this case was filed by Texas in 2013. I think it's unfortunate that it has gone on this long. I believe the case has always had a framework in place that could be the basis for a negotiated resolution. One that is based on a better, more thorough, and joint understanding of the interaction of surface water and groundwater below Elephant Butte through the State Line into Texas. If there had been that joint work done, better technical analysis could have led to a better model and a better negotiated resolution of how surface water should be allocated in light of groundwater use in New Mexico. There are other accounting issues associated with the Rio Grande Compact, but if you can get to that fundamental issue from a technical standpoint, I think the other issues could have been negotiated. But that has not been the case, and that has not been the parties' choice.

Here we are now in 2020. Hopefully, there is still the prospect of a negotiated resolution. The parties are going to begin mediation in mid-December 2020 with an appointed mediator. We'll see if Judge Wanger, a retired judge from California, can work some magic with the parties and bring them together. If not, I think the trial phase before the special master, not before the court itself, is scheduled to begin in July or August of 2021. The last count I saw was that the parties had identified 130 witnesses between them. Therefore, the special master will essentially be watching a lot of paint dry in July and August of next year if there is no negotiated resolution. We'll see what happens in Texas v. New Mexico (the Rio Grande case) and whether the wars will ultimately give way for the scientists and engineers to design a sustainable approach to conjunctive water use that can be the foundation for a negotiated resolution. As noted by our good friend Honest Abe, "lawyers should take heart in the fact that even in negotiated resolutions, there will still be business enough to keep them employed for the long term." And that's of interest to me, too.

Finally, I would just quickly highlight the United States v. Abousleman case. This is the Jemez River adjudication. In September 2020, the 10th Circuit Court decided on a very specific, narrow issue focused on whether the Pueblos and the Jemez River system possessed aboriginal water rights and whether those rights have been modified or were extinguished by Spain, prior to the lands being taken under United States control. The District Court had decided that they had been extinguished under Spain's rule; the 10th Circuit Court reversed that decision. It's a very arcane, specific issue that will not resolve the allocation issues in the Jemez River system. Maybe the decision will be a springboard to negotiations, which have been ongoing for some 20 years. We'll see what happens there.

These are novel cases that have novel legal issues, which are interesting from a lawyer's perspective, but they do not appear at this point to be leading to novel solutions for difficult water resource and management issues. From that standpoint, I think my takeaway is that litigation, if that is the approach, does not reflect the urgency needed to resolve the critical issues that we just talked about, which are all exacerbated by a warming climate. I would point to

the words of Justice Oliver Wendell Holmes, who in 1931 first introduced the doctrine of equitable apportionment, in New Jersey v. New York. In introducing this concept, his words were: "A river is more than an amenity, it is a treasure. It offers the necessity of life that must be rationed among those who have power over it." Those are words that all water managers should consider when deciding how to move forward in resolving issues among different water users or different states.

If it's not litigation, what are the better measures to take to address the water resource challenges facing every state, particularly in the West, and every set of water users? These are drastic measures not in the sense that they are individually drastic, but in the sense that these measures, which have been ongoing in New Mexico, need to be amped up. We need to be doing these same types of strategies exponentially all across the state and all across the West. These strategies are to invest in water resources, study, plan, and design long-term solutions even while we implement actions in the short term; to engage the different stakeholders in the system in ways that we haven't before, to be part of the problem-solving mechanisms that we need to have in place; and then finally to negotiate and resolve these disputes, rather than resorting to 30-plus years of litigation.

With respect to investing, I just identified a few recent examples of things that are ongoing that reflect good strategies that need to be highlighted and that seem to be gaining traction. Although they've been pending for quite a while, we need to continue similar actions as we move forward. The Water Resources Development Act, which is currently pending on Capitol Hill, includes the Bernalillo to Belen flood control project. The Middle Rio Grande Conservancy District (MRGCD) has been the local sponsor for that $300 million project, which is long overdue in the basin. It encompasses 48 miles of engineered levees and 266 acres of riparian habitat restoration. Within the engineered levees portion, hopefully there is room for natural infrastructure solutions, which are increasingly a high priority for a lot of folks in water management and the public policy arena in DC. There is also the Rio Grande ecosystem restoration project for the Sandia Pueblo to Isleta Pueblo reach of the river. This is $25 million focused on river conductivity between the mainstem Rio Grande and the floodplain that exists, as well as a lot of restoration of native habitat. Lastly, MRGCD is working with a number of partners in the system to make use of the Regional Conservation Partnership Program at the U.S. Department of Agriculture. This is to take a whole lot of tools from Farm Bill programs—the Environmental Quality Incentives Program water conservation activities, the Wetlands Improvement Program, and the Conservation Reserve Program—and apply them in different ways to conserve water in order to more efficiently restore certain critical areas of habitat. This is an ongoing program that has had success in a lot of different areas. We need to bring that to New Mexico, not just in the middle Rio Grande, but elsewhere.

I'm sure you're all aware of the Bureau of Reclamation's Middle Rio Grande Basin Study. A memorandum of understanding was established between Reclamation and other parties in September 2020. This study program is an outgrowth of the SECURE Water Act that Senator Bingaman and Congressman Udall sponsored in 2007. It has led, in many situations, to a very aggressive set of actions in other river basins like the Colorado River Basin, which had finalized a study in 2012. Also, the Yakima River Basin, which has an integrated plan that has been implemented for several years now, and was the subject of congressional authorization just in the last year. Part of the basin study will be to look at how the existing infrastructure will perform over time and whether it should be modified in any way, shape, or form. This is a model for another provision that is in the Water Resources Development Act in the House, which is the reauthorization for Abiquiu Reservoir to increase storage capacity, to add the flexibility of storing native Rio Grande flows there, and to do so in a way that protects landowners around Abiquiu while providing much needed flexibility from an existing reservoir at little or no cost to the government. There may be costs obtaining additional easements around the reservoir, but that is the subject of the water users. So, what we really need there is authority. Revisiting these existing risk scores is key. We also need to engage in different ways; the legislature just funded a Lower Rio Grande Groundwater Conservation Pilot Program that is hopefully moving forward quickly in implementation. I think this pilot program can be part of the solution that is necessary in the lower Rio Grande. I'm not quite sure if that's exactly why it was designed and moved forward, but I sense that it was. We need to bring in stakeholders different from the traditional ones and bring resources to the party to address ongoing issues. Audubon New Mexico has done two things. They have acquired a water right in the tributary to the Rio Chama and applied to change that right's use from an agricultural one to an instream flow—the first one in New Mexico that was just in the last year approved and recognized. That's one tool Audubon has brought to the table and moved forward through the process. They also acquired storage on their own and added themselves as well as other folks like MRGCD, Bureau of Reclamation, and the Interstate Stream Commission, who have long been supplementing flows in the middle Rio Grande to address endangered species and other fish and wildlife needs in the basin. This is a great sign that we've got more stakeholders and new players coming in bringing resources and solutions.

Finally, negotiate, negotiate. I talked at length about the lower Rio Grande and the need for resolution of those issues outside of litigation. There are also the Indian water rights settlements. New Mexico has four settlements, involving Navajo Nation in the San Juan Basin, Jicarilla Apache Nation in the San Juan and Rio Grande Basins, Taos Pueblo, and the four Pueblos in the Aamodt litigation settlement along the Rio Grande. At this point in time, The Nature Conservancy is working with Jicarilla Apache Nation to see if they might strike an arrangement to create the first strategic water reserve application in the San Juan River Basin, and if they can be part of that demand management program or analysis ongoing in the Colorado River Basin. Some of the other Pueblos and Jicarilla have also been involved historically in supplementing flows in the Rio Grande system to avoid Endangered Species Act conflicts. Negotiated settlements about the rights of Indian Tribes and Pueblos not only address their needs, from an equitable standpoint, but also bring Tribes and Pueblos to the table as players who can be part of the aggressive set of solutions that we need in the future.

I'll end on the note that in addition to taking these actions at the state and local level, we need a strong federal partner. The question is, where is the federal government going to be in the coming years when climate change is becoming such an urgent and pressing issue? We have drastically different options before us coming up in the November 2020 election. The question is, are we going to be governing on climate change, or are we going to be reacting to climate change? I'll start with the good news in Congress. At least since the first SECURE Water Act legislation, Congress has shown more willingness on both sides of the aisle to address climate adaptation and the development of technologies to reduce emissions, and to create options to help begin to address the emissions aspect of climate change for adaptation and resilience. The two Senate bills, a Senate water bill and a Senate energy bill, from a water perspective have strong bipartisan support and have provisions that are specifically related to climate change. So, Congress is moving, though not rapidly. HR2 moves on the House side to address climate change, and it's still indicative of tension with respect to mitigating greenhouse gas emissions and the source of climate change. We are much more likely to build larger support in Congress as it is made up today by focusing on adaptation. In the executive branch, we'll see. On the Democratic side, Vice President Biden got a commitment for $2 trillion of investment over four years for clean energy, infrastructure resilience, and a goal of net-zero emissions by 2050. There's much more to the plan than that, but the bottom line is that Vice President Biden is running on climate change. It threads through every piece of his agenda, whether it's jobs, economy, public health, foreign relations. You name it, it has a climate element in it. If he's elected, he intends to govern from that perspective. If President Trump is re-elected, we'll have more of the same with respect to regulatory reform and an energy-dominance agenda that exacerbates the root cause of climate change. Perhaps there will be infrastructure investments. They've long been promised but have yet to manifest themselves. So, stay tuned for the role of the federal government in helping us address the urgency of climate change.

I think I've left at least a couple of minutes, but I'll defer to Sam on whether I actually have time for questions.

Fernald: You do have three minutes for questions. There are three questions in the Q&A.

Connor: Katherine Ottmers asked, "Can you speak to any pre-disaster mitigation planning or funding?" My sense is that pre-disaster mitigation planning or funding is all about the planning in the studies being conducted, for example, under the basin studies programs. I think looking at supply and demand and the implications of climate and extreme events is all part of that planning process that is really intended to mitigate disasters. Once you're in a disaster, you're completely reacting unless you've analyzed and put in place the resources and strategies beforehand either to react immediately or to avoid some of the implications. With that being said, I think that planning is incredibly important. I know that FEMA is doing more and more in the area of pre-disaster mitigation, but I don't have the specifics.

Mark Murphy asks, "Back when we were all working on funding the Ute pipeline project, the Rural Water Projects Completion Act was introduced in the Senate and would have applied to Ute. Whatever happened to that commitment?" Well, the Rural Water Completion Act bill was a reauthorization of the Rural Water Program, if I remember right, for Reclamation, which never got fully done. But quite frankly, it hasn't stopped Congress from continuing to appropriate dollars for rural water projects. In fact, I think they've gotten pretty good support, but not from a budget standpoint. They're never very well-funded in the Reclamation budget. Congress has written in additional funding to continue to construct those projects. Unfortunately, the Ute pipeline (the Eastern New Mexico Water Supply Project) has been in the queue behind other larger projects that were funded or authorized earlier. Hopefully, it is in line to get increasing funds to continue moving forward.

Finally, Norm Gaume has a question: "The State Engineer is urged by MRGCD. We waste and consume water that the Rio Grande Compact requires to be stored in post-compact reservoirs in the amount of the current 39,000 acre-feet of accrued debit. The State Engineer noted yesterday that the forecasted accrued debit through the middle Rio Grande to Elephant Butte will reach 85,000 to 100,000 acre-feet this year, making a compact

violation too close. New Mexico does not have a plan to avoid a compact violation. What would you advise regarding our duty to ration water in the middle Rio Grande in 2021 to avoid violation of the explicit water delivery requirements?"

Well, I would say a couple of things. In addition to a conservation pilot project, it's time to see, not just from an economic standpoint, but also from a compact-compliance and long-term perspective, whether we should act aggressively in asking whether farmers have interest in forgoing more water use this year to address compact delivery, if it works from their economic perspective. Do we have the infrastructure in place to effectively marshal that water down the river, even while we try and take care of some of the real environmental needs? I don't know the specifics to the question, Norm. I do know that it sounds like the type of urgent water issue that needs immediate attention and an approach that throws many options out there. But at the end of the day, it requires significant investment if we're going to work through these issues and avoid a crisis.

Bridgette asked, "When water is transferred from agricultural use to instream flow use, are the agricultural lands more susceptible to wildfire?" That's a great question. Unless there are conditions or parameters that formerly irrigated land needs to adhere to or that the entity doing the transferring needs to provide, there is a chance that they would be more susceptible to wildfires. The reality is that even being followed they could still result in water consumption. I know that was something looked at very closely in the system conservation pilot project that the Bureau of Reclamation initiated in the Colorado River Basin. Particularly in the upper basin to identify the conditions necessary on any land that was fallowed in order to ensure full credit could be attained. There's not a credit system right now, but they wanted to ensure that you were maximizing the conservation of water from the system and addressing the issues, such as whether there would be invasive plants or other issues on those fallowed lands that can affect neighboring landowners. So, it's a great question that needs to be worked through.

Fernald: Unfortunately, we are going to have to stop there. I want to thank you for a great talk, Mike. Hopefully we'll see you back here in the future to hear more about the great things you're doing for water resources.

Connor: I appreciate it, and this was a lot of fun. Thank you for having me.