



NEVADA LEGISLATURE JOINT INTERIM STANDING COMMITTEE ON NATURAL RESOURCES

(Section 6 of [Assembly Bill 443](#), Chapter 392, *Statutes of Nevada 2021*
at page 2505)

MINUTES

March 21, 2022

The third meeting of the Joint Interim Standing Committee on Natural Resources for the 2021–2022 Interim was held on Monday, March 21, 2022, at 9:30 a.m. in Room 4401, Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada. The meeting was videoconferenced to Room 3138, Legislative Building, 401 South Carson Street, Carson City, Nevada.

The agenda, minutes, meeting materials, and audio or video recording of the meeting are available on the Joint Interim Standing Committee's [meeting page](#). The audio or video recording may also be found at <https://www.leg.state.nv.us/Video/>. Copies of the audio or video record can be obtained through the Publications Office of the Legislative Counsel Bureau (LCB) (publications@lcb.state.nv.us or 775/684-6835).

COMMITTEE MEMBERS PRESENT IN LAS VEGAS:

Assemblyman Howard Watts III, Chair
Senator Melanie Scheible
Assemblywoman Shannon Bilbray-Axelrod (Alternate for Assemblywoman Sarah Peters)
Assemblywoman Maggie Carlton

COMMITTEE MEMBERS PRESENT IN CARSON CITY:

Senator Pete Goicoechea
Assemblyman John C. Ellison
Assemblywoman Alexis Hansen

COMMITTEE MEMBER ATTENDING REMOTELY:

Senator Fabian Doñate, Vice Chair

COMMITTEE MEMBER ABSENT:

Assemblywoman Sarah Peters

LEGISLATIVE COUNSEL BUREAU STAFF PRESENT:

Jann Stinnesbeck, Senior Policy Analyst, Research Division
Steven Jamieson, Research Policy Assistant, Research Division
Allan Amburn, Senior Deputy Legislative Counsel, Legal Division
Kimbra Ellsworth, Senior Program Analyst, Fiscal Analysis Division
Justin Luna, Program Analyst, Fiscal Analysis Division

Items taken out of sequence during the meeting have been placed in agenda order.
[Indicate a summary of comments.]

AGENDA ITEM I—OPENING REMARKS

Chair Watts:

Good morning, everyone. For sportsmen, happy first day to look at big game applications.

I would like to note that we are convening this meeting from the ancestral and unceded homelands of the Nuwu or Southern Paiute people. We are also teleconferencing and have members joining from the ancestral homelands of the Nuwu, Newe or Western Shoshone, Numu or Northern Paiute, and Wa She Shu or Washoe peoples, currently represented by 27 sovereign tribes located wholly or partially within the state. I recognize the stewardship they have provided to our lands and waters since time immemorial.

[Chair Watts reviewed housekeeping items.]

I am glad to announce that on the recommendation of the Inter-Tribal Council of Nevada, Clifford Banuelos, the Tribal-State Environmental Liaison of the Inter-Tribal Council, will be joining the Subcommittee on Public Lands.

AGENDA ITEM II—PUBLIC COMMENT

[Chair Watts reviewed public comment guidelines.]

Chair Watts:

Do we have anyone wishing to provide public comment either in Las Vegas or in Carson City? Seeing no one in Las Vegas or in Carson City, we will now take any public comment by phone. To our Broadcast and Production Services (BPS) staff, can we see if we have anyone wishing to provide public comment by phone?

Kyle Roerink, Executive Director, Great Basin Water Network:

Thank you for having us here today and for focusing on this important subject matter. I do not need to tell you we are experiencing the worst drought in 1,200 years; nor do I need to remind you that our cities are among the fastest growing places in the arid West.

When I am out in the field with farmers, tribal members, conservationists, and others, there is one consistent thing I hear—things are not what they once were. I am here to say that the decision you all make between now and the end of next session—or in some cases, do not make—will have lasting impacts long after we are gone from this arena.

I have some general comments focusing on two areas: (1) the State of Nevada and its management of our 256 groundwater basins; and (2) the water management in urban areas as it relates to the state.

The water-focused efforts in this body during the last five or ten years have been acrimonious at times. That is because the efforts to revise water law have not always been done in good faith; they have been done in order to legitimize taking water from existing users and the environment so powerful and entrenched interests can access it without consequence. Water banking, water marketing, monitoring, management, and mitigation all sound like swell ideas, but, as we know, the devil is in the details. Legislators sometimes get presentations that portray certain proposals as silver bullets that will solve all our

problems. But really, some of the past legislative attempts to change water law have been contrived efforts to consolidate water, money, and power among a select few interests.

However, when we focus on community-based efforts, like the useless turf bill last session, we set a national and global example. I believe there is hope and I think the best thing we can do for the state is to ensure the Division of Water Resources (DWR), State Department of Conservation and Natural Resources (DCNR), has the financial means to do the job already outlined in the statutes and regulations. The current team at DWR inherited the problems we all face, in many cases, and with more financial tools at their disposal, they will have the ability to help fix some of the problems as they relate to our urban areas.

What is the margin of error? What are the limitations? Paper water does not make wet water. Look at the Colorado River, Humboldt River, Walker River, Carson River, and Truckee River. To some extent, the signs of change are everywhere. You can show reports and make promises about the future, but Mother Nature is the only one who holds the answers. Do not be fooled into believing that the "all growth is good growth model" will come without costs to the environment, ratepayers, and taxpayers in the future. Again, the decisions we all make for the Nevada of today will have ripple effects for the Nevada of tomorrow. Thank you so much. I look forward to working with you all.

Chair Watts:

Thank you for your comments, Mr. Roerink. Broadcast and Production Services, can we see if we have anyone else wishing to provide public comment?

BPS:

Chair, the public line is open and working, but there are no more callers.

Chair Watts:

We will move on to the next item on our agenda, which is the approval of the minutes from our February 28 meeting.

AGENDA ITEM III—APPROVAL OF THE MINUTES FOR THE MEETING ON FEBRUARY 28, 2022

Chair Watts:

Everyone should have the minutes in front of them. Are there any questions, concerns, or corrections from the Committee? Hearing none, I would accept a motion.

ASSEMBLYWOMAN CARLTON MOVED TO APPROVE THE MINUTES FOR THE MEETING HELD ON FEBRUARY 28, 2022.

SENATOR GOICOECHEA SECONDED THE MOTION.

THE MOTION WAS APPROVED (SENATOR SCHEIBLE WAS ABSENT FOR THE VOTE. ASSEMBLYWOMAN BILBRAY-AXELROD ABSTAINED).

AGENDA ITEM IV—PRESENTATION ON WATER ISSUES IN SOUTHERN NEVADA

Chair Watts:

We will have a presentation from the Southern Nevada Water Authority (SNWA). Welcome Mr. Entsminger and Ms. Pellegrino. You may proceed whenever you are ready.

John J. Entsminger, General Manager, SNWA:

Thank you, Chair Watts. With me today is Deputy Manager of Resources, Colby Pellegrino. I am going to launch right into our presentation, but I am happy to answer any questions from members of the Committee as we go ([Agenda Item IV](#)).

I think most members of the Committee are familiar with where southern Nevada gets the bulk of its water—we get 90 percent of our water from the Colorado River, which serves approximately 76 percent of the state's population. How we use water in southern Nevada is very important because we only actually deplete water from the Colorado River system in three ways: (1) when we use water outdoors—such as for lawns, pools, and water features; (2) in the thousands of septic systems in the valley; and (3) in evaporative cooling. Together those three uses comprise the known universe of what we can do in conservation to lower our overall water demands because indoor use simply does not matter for our overall water resource picture.

Flows on the Colorado River—looking at the twenty-first century to date, you can see it is not a pretty picture. We had 5 years out of 22 over average, but 2002 was the driest year in recorded history. Years 2012 and 2013 were the driest back-to-back years in recorded history, right up until 2020 and 2021, which have now supplanted 2012 and 2013 as the driest back-to-back years in recorded history. If a picture is worth a thousand words, three pictures of Lake Mead are probably worth several thousand words because they really show where we have come to in the in the twenty-first century, going from almost completely full to where we are now. When Lake Mead is completely full, the surface sits at 1,220 feet above sea level. Today, at 34 percent full, we are at about 1,064 feet above sea level. The bad news is we can expect to fall into the 1,050s or possibly even the 1,040s by this summer.

The probabilities produced by the United States Bureau of Reclamation show the minimum probable is actually the 10th percent hydrology. So, while that is very bad and shows the possibility of going below 1,025 as early as next year, that is not a worst-case scenario—you still have a 9 percent chance that it will be even worse than that.

All of that led the federal government to declare the first ever water shortage on the Colorado River back in August. That garnered an enormous amount of national and international press. I think we should briefly explain the meaning of *shortage*, because it is a legal term. When people hear shortage, they think, “We are out of water today. There is going to be water rationing—today.” But legally, what it means is your legal entitlement to the Colorado River is reduced, not the amount of water you are actually using. Nevada has a legal entitlement to 300,000 acre-feet of water. Between 1,050 and 1,075, that is reduced by 21,000 acre-feet. Our legal entitlement this year is 279,000. Last year, we used 242,000. So, a shortage for southern Nevada means we have less “extra” water this year, which does not mean it should be taken lightly, but it is also not a crisis for us in the way it might be for some other water users.

The first side of the problem is 90 percent of our water supply is coming from an imperiled source. The second part of our challenge is there are a lot of people moving to southern Nevada. The service territory of the Las Vegas Valley Water District (LVVWD) includes the City of Las Vegas and unincorporated Clark County; it does not include North Las Vegas and Henderson. Just for LVVWD, we added over 9,300 new connections in 2021, well above the recent past and in excess of anything we have seen since before the Recession. The other half of this, though, is that Henderson and North Las Vegas combined also had over 9,000 connections. So, we had over 18,000 new connections in the Las Vegas Valley just in 2021.

Our Board of Directors approved a new 50-year resource plan in December of last year. We have now taken the step. In previous resource plans, our climate change scenario projected an annual flow into the river of 12.9 million acre-feet. For context, if you add up the Compact—the treaty with Mexico—system losses, there are 17.5 million acre-feet in legal rights to the Colorado River. Before this year, we were using 12.9 million as our worst-case scenario; given what we have seen hydrologically over the last two years, we decided that was not bad enough to assume for a worst-case scenario. We talked to a number of leading climate scientists in the Basin and settled on using an 11 million-acre-foot hydrology. If you forecast that over the next 50 years, you see Lake Mead quickly plummets even further than it has to date and then we basically spend the next 50 years bouncing around between elevations 900 and 950. The flat parts you see in the graph beginning in the early 2040s and then for quite a stretch in the 2040s and 2050s is “dead pool”—the only reason the lake stays at 900 is because the Bureau of Reclamation cannot physically release water downstream to California, Arizona, and the country of Mexico.

We have three problems: (1) our water supply is imperiled; (2) our economy is growing very quickly—which is not necessarily a problem, but for a water planner, accommodating that growth is a challenge; and (3) our gallons per capita per day (GPCD) over the last four or five years has really stagnated. We have what, to date, has been, in my opinion, the most successful urban water conservation program in the world, but we have not continued the trajectory we need to stay on in order to accommodate everything that is going on. We project an increase in GPCD solely from increased local temperatures. We expect our GPCD to go up by nine gallons per person per day by 2035 just because it is getting warmer locally. We saw this in November. On November 1, everybody was supposed to go to one day per week watering, and in large part they did, but it was so warm in November that by the middle of November we could see a big chunk of our customers had gone back to watering three days per week. This increase in GPCD because of warmer temperatures is real and measurable.

The good news is, despite our population increasing by over 850,000 new residents since 2002, we have reduced our overall consumption of Colorado River water by 26 percent. That is fantastic. I am unaware of any community elsewhere that can show those types of numbers. But the bad news is we have done the easy stuff and we essentially need to do this again over the next 15 to 20 years to accommodate the economic diversification the community wants to have.

I am not going to go through every single one of our conservation goals, but I will summarize them. Basically, you just need to know we are doing everything we can possibly think of to drive down demands.

That starts, as this Committee is well aware, with [Assembly Bill 356](#) (2021), which is the first of its kind, that I am aware of anywhere in the world, of a community taking the step of saying, “We do not have the luxury to invest our precious water resources in

nonfunctional turf, turf that only gets walked on when somebody mows it.” That bill was passed and signed by the governor. Our Board approved the definitions of *nonfunctional turf* that were approved by the citizens’ committee in January. There are some big projects going on right now in the community as people begin to comply with this new law. However, getting the bad stuff out is one step—stopping the bleeding is another step. We are now taking the step at the local level to prohibit installation of new turf anywhere except in schools, parks, and cemeteries.

Evaporative cooling—I would not be surprised if some of you have heard some about this. The business community is, I think, legitimately concerned with some of the costs that would be associated with construction and operation. But again, the known universe of what we can do to conserve water is only three things; having more efficient cooling systems in our new construction is imperative as we move forward. We are working with the business community; none of this is final yet. We are trying very hard to come up with a solution that will work for the development community as well as for our water resources. We have local funding that helps offset the conversion of existing systems. I believe we are going to get there; it is just not something we can flick on a switch and have it happen overnight.

We have quantified every conservation action we can think of and translated them into savings and GPCD. We go from 112 GPCD up to 123 GPCD because of climate change and system aging, and then from 123 GPCD step down to 86 GPCD if we can implement every one of these hard things. For every hard thing we do not want to do, that will at some point have an impact on our ability to continue economic diversification.

Our resource plan contains a graph describing water inflow scenarios. The dark blue is our permanent Colorado River supply. The light blue is 25,000 acre-feet from our partnership with the Metropolitan Water District of Southern California. The green is our temporary banked supplies. When the brown creeps in, that is where we would need new supplies that are not currently within our resource plan. In the first two, if we hit that 86 GPCD by 2035 in our lower growth scenario, we do not need any new supplies. We do not even tap into our temporary supplies. In our upper demand scenario where we inflate even over the population currently projected by the Center for Business and Economic Research (CBER), University of Nevada, Las Vegas, you see us beginning to tap into our temporary supplies in the mid-2040s or so, but we do not need new supplies until well into the late-2060s. But, if we can only get to 98 or 92 GPCD, you see us accessing our banked supplies this decade and needing new water supplies much sooner. So again, everything we are trying to accomplish for water management in southern Nevada is really driven by demand management and conservation.

I would be happy to answer any questions.

Chair Watts:

We will open it up to questions. Assemblywoman Carlton.

Assemblywoman Carlton:

You were talking about 18,000 new connections in 2021. What was that overall impact? Where are we going to have to draw the line on new connections?

Mr. Entsminger:

We added 18,000 new connections, and we used 14,000 acre-feet less. Our usage in 2020 was 256,000 acre-feet; we drove that down to 242,000 acre-feet in 2021. So, at least in a one-year snapshot, we continue to be able to accommodate this economic diversification while at the same time using less water. But we are kind of on a razor's edge where we must keep making those gains every year in order to be able to accommodate it. If we stop making gains in conservation, we will not be able to keep up.

Assemblywoman Carlton:

That is the point. You can only conserve up to a certain level, then it would be irresponsible to build something and not be able to hook it up. We have had these conversations since the "ring around the valley" conversation back in the mid-1990s.

Going back to the septic systems, that is something I had never really thought about. What is that impact? How many of them are there? What does it take to convert it? With all those septs, we are losing all the return flow credits; septs are basically outdoor use, and the water does not come back. Where are we with that?

Mr. Entsminger:

To put it into context, we estimate a new home in 2022 that is hooked into the potable water system but is on a septic system will use 6.5 times more water than a new home that is hooked into the sanitary sewer system. We think at least 15,000 homes and businesses, but mostly homes, hooked into the potable water are on septic.

If those could all be converted, our estimate is that we could save over 10,000 acre-feet, probably about 12,000 acre-feet. To put that into context, in our partnership with Metropolitan, we are going to get between 25,000 and 30,000 acre-feet at a cost of at least \$750 million. You do the math, 12,000 acre-feet does not sound like a lot, but it is worth hundreds of millions of dollars to our community.

In terms of what it takes, it is not a one-size-fits-all thing. There are neighborhoods in the Valley where there is sewer in the street and dozens of homes on septic are 30 or 40 feet away. So, there is some low-hanging fruit where you can go in and probably get some of those conversions for a relatively decent price. But there are other places where homes are 1,700 feet away from the sewer and it would probably be cost prohibitive to go after those.

As with turf, the first front in the battle for us is to stop the bleeding. The LVVWD has taken the step of not hooking anyone into the retail water delivery system unless they also hook into the sanitary sewer. A vocal minority has not been happy about that, but we cannot continue to devote 6.5 times the amount of water for those lots versus the others, or else we are simply not going to be able to accommodate everyone.

Assemblywoman Carlton:

I remember having these exact same conversations about domestic wells years ago, trying to deal with the well issue and moving forward from there.

You talked a lot about the use and the levels. The thing that concerns me, which I started with the Water Authority on in 1997 or 1998, is the quality of the water. We are talking about the level, but when it hits dead pool, what is the actual quality of the water that will be delivered to peoples' homes? It cannot be getting better.

Mr. Entsminger:

That is our biggest challenge. In terms of quality, such as any sort of contaminants or things of that nature, we have some of the most advanced water treatment systems in the world. We both chlorinate and oxygenate the water. We are going to continue to be able to meet all the requirements of the Safe Drinking Water Act (42 U.S.C. § 300f et seq. [1974]). That is not going to come into question.

Operational challenges will include temperature, because as the lake falls, the top 30 feet is far warmer than the rest of it. We saw this before we brought our third intake online. We started seeing this more. Because we chlorinate, we have disinfection byproducts that, as the water gets warmer, the formation of trihalomethanes accelerates, so we had to install aeration systems on all our retail reservoirs. If you roll the water over, it prolongs the formation of those trihalomethanes.

Along with temperature, we will have to deal with turbidity—the amount of solids per liter of water. You are essentially going from a nice cold, deep lake, operating a water system like the city of Chicago, Illinois, to a warm, tepid river with water treatment like St. Louis, Missouri. That water can be treated, but we are plumbed to do it one way and we are going to have significant capital costs to be able to do it the other way.

Chair Watts:

Next, we are going to go to Assemblyman Ellison and then to Assemblywoman Bilbray-Axelrod.

Assemblyman Ellison:

I appreciate Assemblywoman Carlton bringing up those questions because I had similar ones. I do not know much about swimming pools—we do not have a lot of them in rural Nevada—but how often do people change their swimming pool water? Do they change it every year? Do they do it just by chemicals? Have you considered allowing pools to be built for new homes but not filled until the water table comes back up?

Mr. Entsminger:

I believe it is recommended to empty a pool at least every two years, acid wash it, and start with fresh water, because it does harden over time. An existing law requires the emptying of a pool to go into the sanitary sewer. You cannot just run a hose out into the street and let it go down the gutter. So, when a pool is emptied, the water is recaptured, treated, and put back into Lake Mead so we can take it back out. The loss from pools is essentially the same as the loss from turf—evaporation. We incentivize pool covers.

One step we are proposing to be put into all the local codes this year, but which has not yet been put into code, is to limit new pool size construction to no more than 600 square feet. That is one of the items on the step-down chart in my presentation. It is not a huge water savings, but—in my frank opinion—we have seen some pretty offensive construction in some of the luxury home markets of 4,000 and 5,000 square foot water features at private homes. We want to limit those; we have not reached the step where we are not allowing pools to be built, but we do think limiting the size is prudent at this point.

Assemblyman Ellison:

The session before last we heard about an effort to drop the level of the conduits and draw more from the bottom, instead of at mid-level, because of the water temperatures. They were working on it for a long time. They showed quite a bit of digging to lower the conduits that were going back into the city. Did they ever finish running that pipeline?

Chair Watts:

Thank you for that question. I believe you are talking about the third intake. Mr. Entsminger, can you give a brief update on where we are with our intakes and pumps?

Mr. Entsminger:

We finished the third intake; it has been operational, and we have been pulling 100 percent of our water from it since 2015 because we wanted to access the colder water from deeper in the lake. In early 2020, we brought the low lake level pumping station online. The combination of the third intake and the low lake level pumping station puts us at \$1.5 billion in local capital investments. We built those capital facilities without any money from the state or the federal government.

Fortunately, now that we have those facilities online, that gives us the most secure water delivery system in the Desert Southwest because our intake is located at elevation 860 feet, and the dead pool that I discussed earlier is at about elevation 900 feet. So, under any hydrologic condition, we are pretty much guaranteed to have 40 feet of water over our intakes. At that elevation, places like Phoenix, Los Angeles, Sonora, and Baja can no longer access water from the Colorado River.

As concerning as everything I showed you is, our physical ability to pump water is not in question, which obviously is a real benefit for our community.

Chair Watts:

It shows the importance of some of these investments in resilient infrastructure. Things have taken a turn for the worse on the Colorado River system relatively quickly, and it is good that we are not scrambling to make sure our infrastructure can adapt to those changes.

We will take questions from Assemblywoman Bilbray-Axelrod.

Assemblywoman Bilbray-Axelrod:

I love talking about this subject and I am glad the presenters are here. I was a child in 1983 when Lake Mead was overflowing, the spillways were going over, and we watched the carp go over the side. It is so crazy to think how things have changed in in that amount of time.

I know we have the 300,000 acre-feet, but how are you working with California and Arizona? Are they recognizing the great things we have done, such as reclaiming indoor water? Are they recognizing that these are best practices? Are you having a dialogue with them? I know California was overusing what they were allowed to have. I do not know if that trend still stands, but it feels like—once again—Las Vegas and southern Nevada are leading the way, but we only have a very small percentage of Lake Mead. Are those best practices being shared and embraced?

Mr. Entsminger:

There are communities that are beginning to follow our lead. The Colorado Legislature just passed a bill—although not as aggressive as our AB 356—citing our example and copying our efforts going forward. Other communities are beginning to view turf very much like we view it.

It is not a one-size-fits-all thing. In California, the Metropolitan Water District of Southern California—which has 19 million customers from Santa Barbara to San Diego—is doing some pretty amazing things. They are investing heavily in conservation. They are our partner in the regional recycling program that is going to take all the wastewater currently being discharged into the Pacific Ocean, treat it, inject it into the aquifers in southern California, and generate up to 130,000 acre-feet of new water supply. We are investing in this so they will leave a portion of their water in Lake Mead for our use, but there are irrigation districts in California that are not doing a whole lot. They have the senior rights on the river and thus far seem to feel relatively bulletproof and have not taken a lot of steps.

Arizona has taken huge hits because in 1968, in order to get Congressional funding for the Central Arizona Project, they agreed to take California's share of shortages. They are taking hundreds of thousands of acre-feet in shortages. Unlike us, that does not mean they have less "extra" water; that means they have to cut existing uses. You are seeing a lot of agricultural in [inaudible] County not getting Colorado River water now and switching back to ground water.

It is not a one-size-fits-all. Albuquerque is doing tremendous things in conservation, as are Denver, southern California, and Las Vegas. But there are big parts of the basin that are still acting like they do not have a problem.

Assemblywoman Bilbray-Axelrod:

California is obviously a big state with a lot of different politics, kind of like ours.

I want to thank Assemblywoman Carlton for bringing up the septic tanks. Not far out of my district are Sections 10 and 11, roughly Jones Boulevard to Buffalo Drive and Desert Inn Road to Sahara Avenue. All those homes are on septic. I am sure the water comes basically right up to their homes, but they are on septic. I am very intrigued about that issue and look forward to having further conversations.

Mr. Entsminger:

I do not know if we have quite finished thinking the issue through, but that may well be something we want to discuss during the next session.

Specific to Section 10, Commissioner Jones talked to me last week. We are waiting for some more information from him, but I think they are doing some rehabilitation of some of the water lines there. Someone is digging up the street for something; it is an awesome opportunity to get in there and do a big chunk of conversions from septic to sewer connections while the street is already torn up.

Senator Goicoechea:

Mr. Entsminger, can you tell me what the average water bill is that you service in Clark County?

Mr. Entsminger:

We generally take out the highest 10 percent and the lowest 10 percent and use the median 80 percent. That bill today is right about \$55, which puts us right at the 50th percentile for water bills in the 63-city western index.

Senator Goicoechea:

I was just curious because we always hear about that, and I wanted to weigh it out. I know it is different than some rural areas, but we do not have the conservation and the return flow credits you have.

Chair Watts:

Any additional questions? Assemblywoman Hansen.

Assemblywoman Hansen:

I also had a question on septic tanks. I was surprised to hear septs use six times more water, and I was curious about the process for septic tank approval in new construction. Are they doing that much? Does that approval come through the county? I assume some have been grandfathered in in certain locations. How are we monitoring whether those are being installed in newer construction, or is that kind of behind us?

Mr. Entsminger:

Unfortunately, it is not behind us. In Clark County, it is driven through the Southern Nevada Health District. The Health District can permit septs and grant waivers from even the existing conditions. You are supposed to be a certain distance from sewer to get one; because of the cost, historically, the waivers have been granted pretty regularly. We have addressed the issue for 70 percent of retail because LVVWD has now put into our service rules that we will not connect to the potable water system unless the location is hooked into the sewer. But, for the other 30 percent of retail in Henderson and North Las Vegas, there are septs being hooked into Colorado River water today.

Assemblywoman Hansen:

Is the Health District in on these discussions as we address some of these concerns? Are they being made aware of the demand, that the water usage is higher?

Additionally, I know there are some new technologies with leach fields for septic tanks, such as sand mounds. Are we seeing any better conservation with those? Septic tanks users know using too much water in their homes negatively impacts their systems, so I think there would be a built-in motivation to conserve water in the home because it is a large demand on the leach field.

Mr. Entsminger:

At this juncture, the Health District is very involved. Fortunately, Commissioner Marilyn Kirkpatrick serves as Chair of SNWA and is also on the Health District Board. She has been very instrumental in helping us get their attention. We made a presentation to their entire Board three or four weeks ago and really drove home the water quantity aspect of this. We are working hard with them. Obviously, the Health District has been pushed to its limits with the Coronavirus Disease of 2019 (COVID-19), so it is a hard time to go in and

ask them to devote a whole bunch of staff to enforcement of septic conversions, but I think we are getting there with them.

I will turn to Colby for comment about new technologies. From our approach, everything that hits a drain in every other home and business gets treated and put back into Lake Mead. With septics, that water is lost. I would also raise the water quality concern. In areas of the Valley with a lot of septic systems, we have also seen a sharp increase in nitrates in the groundwater table, to the point where we have stopped producing water for our customers from a couple of our big production wells in the center of the Valley. Allowing these systems to be installed affects both water quantity and water quality.

Colby Pellegrino, Deputy Manager of Resources, SNWA:

To my knowledge, there is no technology that helps conserve water because there is no way to get that water back from the ground into the sewer system. Septic technology has changed towards helping with the water quality issues Mr. Entsminger discussed, but the problem we see is most people do not maintain the denitrification systems required by the Health District. So, not much has translated into increased water savings or improved water quality on that front.

Assemblywoman Hansen:

I visited the sewer treatment plant in the Reno-Sparks area and was absolutely amazed at the processes and the lengths that technology and the systems go to help us maximize and get our water clean. I want to give them and your district a shout-out as unsung heroes. I highly recommend taking a field trip to a sewer plant.

Chair Watts:

Yes, our wastewater treatment plant keeps the wetlands wet in southern Nevada.

One thing I want to clarify on this issue, and I think Assemblywoman Hansen was getting to this, is there can be some significant regional differences, particularly because of southern Nevada's location next to Lake Mead and its return flow credit system. This makes septic tank usage a particular issue for our water resources that may not apply in other areas of the state. Is that correct?

Mr. Entsminger:

Absolutely. Anything we would want to discuss with you we would be discussing on behalf of our service territory, not representing anything in the rest of the state.

Chair Watts:

I think it is helpful to get that on the record. I think there is significant interest in continued discussion on this topic among the members of the Committee.

Committee members, are there any other questions? Senator Goicoechea.

Senator Goicoechea:

Mr. Entsminger, my interest has been peaked listening to this conversation. For the connections that are going to a septic system, have you given any thought to a tiered rate structure because they consumptively use more water? Knowing that it might cost twice as

much to get water might incentivize them to hook up to the sewer. The developers know the long-term plans. If the current rate structure will increase the cost of water from \$55 to \$300 because of septic, you might worry about it more.

Mr. Entsminger:

We have been having a lot of conversations exactly about that over the last three or four weeks. My Board has not taken any action yet, but one of the ideas that has been considered includes a tiered system or a tiered rate structure and charging anyone who is on septic at the fourth tier, without the option of the first three tiers. You could have some sort of assessment on top of the existing tier structure just to do that.

Philosophically, we take the position that we rent people water. You get to use it, but you have to give it back to us so we can treat it and rent it to someone else. We do not sell people water; but, people on septic are 100 percent consumptive users. Having some sort of structure, not just to generate revenue, but then to have that revenue hopefully to be converting people off and providing some sort of incentive, very much like the groundwater management program, in which, if your well fails, we have monies to help you get hooked into the potable water system. Yes, we could generate more revenue from the septic owners, but we could use that to get them hooked into the sanitary sewer.

Chair Watts:

Members, additional questions? Assemblywoman Carlton.

Assemblywoman Carlton:

So, it comes back around to—if we want to get these folks off septic and there is a large cost to it, we have got to figure out how to be able to address that cost. Are there dollars available now, or have you been watching some of the other revenue coming into the state? You mentioned the domestic well issue we have had in the past and how we converted folks.

The second part of the question is—you mentioned Henderson and North Las Vegas do not seem to be taking this quite as seriously as other folks, but they are all drawing from the same lake. How do we address entities that do not want to follow the same measures? You are saying that those two entities are not really doing much about it, so how do we make all the pieces of this puzzle fit together?

Mr. Entsminger:

I think they are getting there. We have had several conversations with both those municipalities. We have a package of things that need to be put into code, including the ban on installation of turf anywhere except schools and parks, the 600 square foot limitation on new swimming pools, and something on evaporative cooling. At least for LVVWD, it is going to have to do with rates for high-volume customers. I think when that package gets put into city code, that is our opportunity to really press them on doing the same thing we have done vis-à-vis allowing new septic to hook into the potable water system.

Chair Watts:

I think the Committee members hit most of my questions, one of which was the financial issues and working out rates, bringing in revenue, and investing in some of these additional conservation initiatives.

One of the other questions I had was the role for state policy makers and, I think, towards some of Assemblywoman Carlton's questions, there is a lot of conversation and collaboration happening with local governments, and I think we want to encourage that to happen. Of course, there are roles for the state to play, and we want to make sure there are conversations happening with the different stakeholders in the community, but state policy can come in where needed and set some uniform policies, even on a county-by-county basis. I think that is something we will look forward to having a conversation about and exploring areas where state policy may need to come into place. Are there any other policy issues you want to make us aware of at the state level?

Mr. Entsminger:

Before I answer that question, I think I was remiss in not answering the first part of Assemblywoman Carlton's question about cost. We are having discussions at the LVVWD level about what sort of District revenues can be brought to bear. Commissioners James Gibson and Marilyn Kirkpatrick were having that same conversation with the Clark County Water Reclamation District last week. We are going to need to address this both from the water side and the wastewater side.

There may be a third piece. I have not seen the summary yet, but my staff is working on summarizing the United States Environmental Protection Agency guidance for distributing the bipartisan infrastructure funding into the State Revolving Fund (SRF). Historically, SNWA and LVVWD have not accessed much of the SRF except as it relates to Laughlin, Kyle Canyon, and some of the outlying rural systems we operate. We have used SRF funding for some of those. This may be a spot where, as a state policy issue, we really want to look at letting SNWA or LVVWD access some of the SRF funding from the bipartisan bill to take on some of the septic stuff.

Regarding other policy issues at the state level, I think we will know a lot more before we get into the session, once we see how this winter plays out and where the Colorado River is in terms of operations. You have given us tremendous support with AB 356; we will have a year of implementation and will be able to see if we need any tweaks to it. I think you have given us the tools we need for the time being.

Chair Watts:

I would like to note for the awareness of the Committee and the public that we will be having a Subcommittee on Public Lands meeting in Boulder City in May, where we will also be discussing water-related issues. I have asked SNWA to discuss some of the larger Colorado River Basin issues that were brought up. I look forward to getting a little larger perspective at that time on the status of negotiations and a larger base and wide perspective to figure out how we, as a Legislature, can provide some perspective from the State of Nevada on where the Basin should be going.

Thank you for your presentation. I look forward to continued discussion on how we continue to advance conservation and protect the water supply for southern Nevada.

We will move on to our next presentation, which will be on water issues in the Truckee Meadows and northern Nevada.

AGENDA ITEM V—PRESENTATION ON WATER ISSUES IN THE TRUCKEE MEADOWS

Chair Watts:

We have the Truckee Meadows Water Authority (TMWA) presenting. Please go ahead whenever you are ready.

John Zimmerman, Assistant General Manager, TMWA:

With me is Stephanie Morris, TMWA's Water Resources Manager. I want to thank the Committee for the invitation; I appreciate the opportunity to present on TMWA and northern Nevada water resource issues ([Agenda Item V](#)).

The TMWA is a joint powers authority. It was created in 2001 by the cities of Reno and Sparks and Washoe County. The water utility prior to that was owned by Sierra Pacific Power Company. When Sierra Pacific, now NV Energy, notified the community that it was going to sell its water utility, the community stepped up and created TMWA to manage those assets. We are governed by a seven-member board of elected officials from Reno, Sparks, and Washoe County.

One of the significant mergers we have had in the last few years was merging with Washoe County. In 2015, we merged with Washoe County and a large general improvement district (GID) in the southern Truckee Meadows. That was a large investment; it really shows the benefits of regional water resource management—Washoe County and the southern Truckee Meadows GID were heavily reliant on groundwater, and when TMWA took over the system, we were able to supply a lot of those areas with surface water which rested the groundwater wells and those aquifers recovered.

We have two main Truckee River surface water treatment plants. The Chalk Bluff Treatment Plant is our newest and provides water throughout the year. The Glendale Treatment Plant is in the center of the valley. It is an older plant used to provide water during summer peaking—it is shut down in the winter months. Unique to our system, we have three operating run-of-river hydroelectric facilities. These have been around since the early 1900s. They provide a significant amount of revenue to the utility, which lowers our customers' rates. We also have a water treatment facility off a creek in southern Truckee Meadows. Once that creek treatment water plant becomes operational in a few months, that will allow those groundwater wells to be rested even farther. We will use that creek water to supply water demand for our customers in the summer and for aquifer storage and recharge in the shoulder months in the winter.

Our total retail population is 430,000 people. We have one large wholesale customer, the Sun Valley GID. Our current demand is 83,000 acre-feet, of which 80 percent is supplied by the Truckee River and about 20 percent is groundwater. We have the ability to rely on conjunctive management of our water resources. For surface water, when we have a normal or above average year on the Truckee River, we are allowed to rely on that and generate most of our water supply through it. In the peak of the summer, we can rely on our groundwater pumping to meet our customers' demands. In a drought, we can rely on more groundwater pumping because we rested the aquifer so there is water there that we can use. We also have our upstream storage reservoirs. Our three hydroelectric plants generate about \$3.5 million, which equals about a 3 percent reduction on average on our customers' bills. It is a significant investment.

The sources of our water supply include two water rights on the Truckee River and Hunter Creek where we have very senior priority rights. We have municipal water rights that were decreed to the municipality when the Truckee River Decree was entered into—that is our 40 cubic feet per second (CFS). We used those up until the 1960s to create a water supply. In the 1960s when new growth was happening, developers started to convert decreed agricultural rights to municipal supplies. Through the state engineer's process, those agricultural rights can be converted to be able to be used for municipal purposes. We also have two privately owned storage reservoirs—Independence Lake and Donner Lake, which give us 27,000 acre-feet. With the Truckee River Operating Agreement (TROA), which I will get to in a little bit, we can store much more in the federally operated reservoirs like Tahoe, Boca, Prosser, and Stampede. Lastly, we have our groundwater supply. Within the Truckee Meadows we have a unique operating order with the state engineer in nondrought years. As I said earlier, we do not rely heavily on groundwater—we store it. We also recharge treated surface water, which increases our groundwater bank within the Truckee Meadows. In drought years, we can rely on that storage to meet our customers' demands.

In normal years, TMWA uses about 3 percent net from the Truckee River—a very small portion. A large majority of the Truckee River water in a nondrought year goes to the Pyramid Lake Paiute Tribe (PLPT). The Truckee-Carson Irrigation District (TCID)—the Fernley and Fallon farmers—also takes that water in a normal year. In a dry year, TMWA is allowed to take a little more and PLPT takes less.

That compromise allowed the formation of TROA, which involves the United States, the State of Nevada, the State of California, PLPT, and TMWA.

At one point during the negotiations, TMWA and PLPT discovered TROA needs water in a drought. We need to rely on upstream storage to be able to meet the demands of our customers, and then in a nondrought year, we do not need all the water we are entitled to under the Decree, so we can let that go. That is why TROA was a pretty good compromise between the lower users and the upstream users.

In the Truckee River system, Lake Tahoe is the largest storage reservoir on the system. Then you have Donner and Independence, which are privately owned stored water lakes, then you have Prosser, Stampede, and Boca.

The water year starts in October. That is when all the TROA parties start to establish credit water in upstream reservoirs. As the water year proceeds, if it is going to be a good water year, all the water TMWA has stored either spills and goes downstream in the Truckee River system or converts to fish credit water controlled by PLPT; they can store it for future use or allow it to be spilled in that year. Under TROA, we have operational flexibility allowing us to use that stored water when we need to.

After 30 years of negotiations, under the TROA river model, all the parties came up with the estimate that TROA would be able to meet a municipal demand for TMWA of 119,000 acre-feet. Right now, our current demands are 83,000 acre-feet, so our current water resource plan shows that we can meet the demands of our future population growth for the next 20 years. We update that every five years, and there are certain challenges we are going to have to face, but right now our water resource plan shows we can meet those demands for the next 20 years.

Every system is unique—the Truckee River system is different than most systems; it is different than the Colorado River system. We are not in the middle of a 20-year drought.

We had our highest water year on record in 2017, and then also another above-average year in 2019. It is really this ebb and flow for us of drought years and nondrought years, but our upstream storage reservoirs—I cannot emphasize enough the benefit of TROA—give us the ability to meet our customers' water demands.

The other thing I wanted to point out is, with TROA and the Truckee River Decree, there are certain return flow obligations to the Truckee River. In southern Nevada, they get credit for all the treated wastewater that goes back to Lake Mead, but in the Truckee River system that water goes to the wastewater treatment plants and is discharged back into the Truckee River to meet the downstream water right holders who are in priority. That is one of the big differences with the Truckee River and other rivers.

"Floriston Rates" under TROA are the required rates of flow at the California-Nevada state line. In the summer months they are 500 CFS and in the winter they go down to 400 CFS. That is made up of natural flow of water coming out of Lake Tahoe, Boca, Donner, and Independence Lake.

We have over 100 years of water records. In 2015, which was our lowest water year on record, Floriston Rates ran out in about June, and we had to start relying more heavily on groundwater pumping, our stored water out of Donner and Independence, and our TROA storage reservoirs—Boca, Stampede, and Prosser. That is what it looks like in an abnormally dry year. Once we get into the winter months, we can start relying just on our surface water again, with a little bit of groundwater pumping to meet our water supply. The year 2020 was more of a normal year. We rely heavily on Truckee River diversions throughout the year; we peak in the summer with our groundwater wells and then reduce our demands as we go back into the winter months.

I will turn it over to Ms. Morris to talk about TMWA's planning efforts and then open it up to questions.

Stephanie Morris, Water Resources Manager, TMWA:

I want to talk about some exciting things we are doing and how we are planning for the future. We do an informative water resources plan for 20 years. This one we did in 2020 goes through 2040. It is much more user-friendly—if you have a chance to look at it, I encourage you to do so. I want to focus on climate change because that is what we were using more and looking at even beyond 20 years to see how we may plan for the future. As you all know, models are always wrong, but also very informative. I will talk a little bit about the modeling and how we are using it to plan for the future and what it looks like in our water resources plan.

Planning for the future looks like a cone. At one side is what we know now, and as we get further away in the future, there is less that we know, but that does not mean we do not plan, and we do not look at scenarios for how we will deal with the future. It is like weather forecasting—two weeks in advance it is better than it was four months earlier, and it is really accurate within 24 to 48 hours. This is similar, but on a longer timescale. We care so much about the effects of climate change on our system because we are heavily reliant on snowpack. Most of our reservoirs where we have drought storage are located in California and are highly dependent on snowpack. As temperatures warm, the water equivalent in the snow changes and how it runs off based on temperatures impacts how we manage our system.

In this current 2020 through 2040 plan, we looked at some stress tests on the system. We looked out all the way to 2098—80 years out—and we used three different scenarios to see what would happen on our system. One was a historical drought scenario where we took some of the worst droughts on record and made an ensemble. Then we looked at a moderate emission scenario—we used eight global circulation models and fed each of them in, and we also did the same thing for the higher emission scenario. Going out to 2098, we looked at a hypothetical demand—hypothetical because we do not control population growth—of 140,000 acre-feet necessary to meet our demands. The overview essentially showed us that in the historical drought situation, we did not have any shortages. We had a lot of storage and upstream storage never dropped below 40,000 acre-feet. This highlights the importance of what Mr. Zimmerman was talking about, how critical TROA is to have those drought supplies upstream. The moderate scenario only showed a shortage in 10 out of the 640 years, or about 1.5 percent—you must take 8 times the 80 years to get that. The first shortage occurred in 2083 at a demand level of about 120,000 acre-feet. In the more extreme scenario, 25 out of the 640 years simulation, about 3.9 percent, showed a shortage. The first shortages occurred in 2069 at a demand level of about 113,000 acre-feet. Some of these global circulation models showed that we did not have any shortages and others did; it highlights that as climate change data becomes updated, we will continue to update our models and have, hopefully, more accurate information.

Essentially, our climate change analysis stress case showed that even though there is extreme variability in snowpack and upstream reservoir storage and runoff, we can meet our demands. We have good drought reservoir reserves, and we are optimizing our allocations for efficiently using our water rights—that is a portfolio including integrative management of both groundwater and surface water. But that is not enough; we need to do more.

I want to talk about a couple of things we have done and some studies we are looking at to further prepare for these types of changes in our system.

One is advanced water metering infrastructure. We are going through and systematically replacing our meters. These smart meters help us with conservation—they help customers know on a real time basis what they are using and identify leaks instead of letting water bills go up months in a row before the customers realize something is going on. This will allow real time information so they can call us and have our technicians come out and do an audit of the system to identify what potential issues are occurring.

Mr. Zimmerman talked a little bit about the Mount Rose Water Treatment Plant, which is coming online in the next couple of months.

Another project I want to talk more about is regional effluent management. The way TROA is set up—where return flows are required to go back to the system, not for credit—creates some difficulty in managing effluent as a region. The OneWater Nevada team, which includes a number of folks, is looking at the best ways we can manage our effluent; TMWA helps manage the water resources to help meet return flow requirements.

The A+ Pilot Project has been completed. I am happy and proud to say the first project coming from that A+ Treatment Plant, which is treating for potable use to be recharged into the groundwater and then potentially later extracted for use, is the American Flat project. We have finished and been approved by the United States Bureau of Reclamation for our feasibility study, and that project is moving forward. The City of Reno and TMWA have partnered in a cost-share agreement; we have obtained some federal funding for that project and are seeking more. It is a roughly \$103 million dollar project that would create

2,000 acre-feet of water that is drought-proof. It would help in the Lemmon Valley area to reduce the discharges into Swan Lake, to put them to use, initially, and then to test and get the permit for A+ indirect potable reuse. It is very exciting, and I am happy to be working on that project.

I will hit on three items under planning and studies.

The first one is upstream reservoir reoperation. Stampede is the largest upstream reservoir where we have drought storage. That reservoir has certain flood rule curves which are based on older hydrology, so we are partnering with the Bureau of Reclamation and others to study how we can manage reservoirs in real time, in a way that is a little bit more predictive, so that we do not release a whole bunch of water and then we do not actually get the storm that was supposed to come in to fill it—so we do not lose that important storage. That is an exciting project, and I am hoping it will lead to more efficient water management in the future.

Marlette Lake is something TMWA is interested in looking at right now. The state is running that system, and there are potential opportunities to use water when others who are interested in using Marlette water and have rights to it are not using it. We are interested in partnering with those entities and the state to use Marlette water when other people are not needing it to help us meet some of these return flow management goals, potentially to put it into the groundwater for storage, and other ways to put that water to full beneficial use.

Finally, I want to talk about something I think is near to us given the recent changes and what we have seen in fire behavior, fuels reduction, and watershed protection. We are a bit unique, given that our upstream reservoirs are largely located on land we do not own—that is largely owned by the United States Forest Service—and in heavily forested areas. They could have fires with a very catastrophic impact—as we have seen in Colorado and other states—on water supply, in terms of sediment entering reservoirs, reducing storage, and creating water quality issues. We have been working with the Forest Service, The Nature Conservancy, the Truckee River Watershed Council, and the National Forest Foundation to look at innovative ways TMWA can partner and help focus and prioritize projects and funding to protect that upstream reservoir. I am happy to say our board last week approved one-half of a million dollars over the next two years for a fuel reduction project right above Stampede Reservoir to help close the funding gap of an approximately \$4 million dollar project that would treat 2,900 acres of forest and help protect our water supply.

A lot of exciting things are happening; and, again, just because things look good and are in planning, that does not mean there is not more that we are doing. Thank you for your time.

Mr. Zimmerman:

Mr. Chair, if you have any questions, we would be happy to answer them.

Chair Watts:

I believe we do have some questions. We will start with Assemblywoman Carlton.

Assemblywoman Carlton:

I am not quite as familiar with this as I am with southern Nevada, so I want to clarify a couple of things. You were talking about the whole system you have, as far as storage goes.

That is not all one basin though; there are different basins involved in all these storage components. Correct?

Mr. Zimmerman:

That is correct. There are two main hydrologic basins for surface water: (1) the Lake Tahoe Basin; (2) and the Truckee River Basin. When it comes to our groundwater rights, we have water rights in nine different hydrographic basins.

Assemblywoman Carlton:

So, water is transferred amongst those different basins depending upon the climate and what the need is from the surface water side?

Mr. Zimmerman:

That is correct. Every year, the TROA parties exchange or establish credit water in those upstream storage reservoirs. It might be in Lake Tahoe or in the Truckee Basin, and you have Stampede, Boca, Prosser, Donner, and Independence Lakes. As far as our groundwater resources, we use those conjunctively as necessary to meet the demands of our customers, usually in the summertime for peaking purposes. We have a few satellite systems not connected to our Truckee River system that are completely reliant on groundwater.

Assemblywoman Carlton:

As far as Tahoe goes, that is bistate; we are talking about sharing it with California.

Mr. Zimmerman:

That is a good point, Assemblywoman Carlton. Under TROA, which established the percentage of rights between California and Nevada, Nevada got 90 percent of the water storage from the groundwater basins and California got 10 percent.

Assemblywoman Carlton:

I just want to make the point, Mr. Chair, that interbasin transfers of water are not the evil things most people like to portray them as.

Chair Watts:

Members, additional questions? Assemblywoman Hanson, go ahead.

Assemblywoman Hansen:

Maybe it is because we have a plumbing business that I find this so fascinating; we went to a sewer treatment plant, and I truly was fascinated. I remember the first time I learned about TROA—it was when I was first elected in 2018 and I was at a roundtable at Pyramid Lake with the PLPT and other stakeholders. My district is at the bottom of a lot of the water basins. It has cost me a lot of sleepless nights. I have Pyramid, I have Pershing County—the bottom of the Humboldt—and I used to have Walker until redistricting. Water issues have been a huge concern for my constituency. I have been so impressed to see how things are being handled.

To remind me and others, could you give us a brief history of TROA—when it was established and how it came to be?

Mr. Zimmerman:

The TROA negotiations started more than 30 years ago. Harry Reid got the parties together and forced them to start negotiating. Early on, they did what was called the preliminary settlement agreement, which established some of the initial parameters for operating the River while the parties were negotiating. In 2008, TROA was signed by all the parties. There were a few antecedent conditions that had to go into effect before TROA was implemented. In 2015, TROA was in effect and implemented.

Assemblywoman Hansen:

We looked at a normal year versus a dry year. When was the last time Pyramid got the majority—when was the last time it was a normal year? What was the last time they got more of the flow?

Mr. Zimmerman:

I believe that was in 2019; 2017 was the largest water year on record; 2019 was an above average water year, so more water would have flowed to Pyramid Lake, percentage wise.

Assemblywoman Hansen:

It was quite extreme. In 2015 as you mentioned, I remember seeing Governor Sandoval standing out at Washoe Lake and it was almost gone, and then driving by Rye Patch in 2019 and it was up to the top. That is the cyclical nature.

I was thrilled to hear about Swan Lake. I had thought to ask you about it, with it being in my in my district. I am thrilled to hear about the A+ pilot. You said \$103 million will go not just to that, but to try to help us with using affluent water. Is that right?

Ms. Morris:

The \$103 million is the cost of that project on American Flat—the project is upgrades to the treatment facility and A+ further refined treatment. It would reduce the amount of treated effluent discharged into Swan Lake.

Assemblywoman Hansen:

When did this get approved or finally finalized?

Ms. Morris:

The feasibility study that was approved by the Bureau of Reclamation was just last week. An interlocal agreement between TMWA and the City of Reno was approved in January and December of last year for the cost to move forward with that project. The engineering for that project has started and the contract has been awarded; there are other things we are doing and additional dollars would go towards that sort of regional treated effluent. This is sort of like a building block, so to speak, of how we may be able to use that and other areas and maybe recharge larger areas of groundwater basin with treated potable indirect use.

Chair Watts:

Members, additional questions? Senator Goicoechea, please, go ahead.

Senator Goicoechea:

I have a question about the 80,000 acre-feet of agricultural water rights that were converted. Was there any reduction in those numbers when they were converted from agriculture to municipal and industrial? Clearly there would be a change in the consumptive use—with agriculture, typically, it is used, spread, and goes in the ground or transevaporates. Was there any kind of a reduction when those 80,000 acre-feet were converted?

Mr. Zimmerman:

Good question, Senator Goicoechea. The way it works with TMWA is, if a project is going to be sewerred to the Truckee Meadows wastewater reclamation facility, which then discharges treated effluent to the Truckee River, there is no consumptive use reduction because that return flow goes through the sewer plant instead of through irrigated agriculture. If we have a project that is not sewerred to the Truckee Meadows wastewater reclamation facility, then we require the developer to dedicate an additional amount of water rights on top of their demand so that water can be left in the river to satisfy downstream users.

Senator Goicoechea:

I just have to say we did a better job in negotiating TROA and the decree on the Truckee than they did in southern Nevada on the Colorado.

Chair Watts:

Yes, and thank you to Senator Reid for spearheading some of that effort. Members, do you have additional questions?

I have a question, and really it is just putting a bit of a finer point on something you already brought up in your presentation. We are hearing about the different operating and hydrological conditions in different areas. We just heard a lot down here, for example, about turf removal programs. You discussed that you are looking long range at your water supply. If you did turf conversions in the Truckee Meadows service territory, essentially that conserved water would not be able to expand your supply for your customers, but it would go to flows downriver, is that correct?

Mr. Zimmerman:

Chair Watts, that is correct. The way we operate with our water conservation policy is that if we are able to store water upstream and it is a drought year, we ask our customers to conserve because we can conserve that drought storage upstream. In a nondrought year, we would not be able to store water from a turf removal program upstream. We do not recommit conserved water to new growth.

The way it works within the system is—when developers come into our service territory and want water service, they must dedicate water rights to meet their demand; we will not serve them unless they give us those water rights to meet that demand. From a turf removal perspective, we also must look back at customers on our system. We have been metered since the early 1980s. With each passing drought, that drought messaging

influences our customers' water use; over time, our customers slowly reduce their water use. We have had toilet retrofit programs. Developers coming into the area must dedicate water rights, which is expensive, and they want to reduce their water use too, so they are building residential developments that use less water. They are having homeowners' associations control front lawns so one landscape company can control the irrigation of the front lawn and reduce the water usage in that manner. We have reduced our dedication requirement because we are seeing that reduction in water demand for new development.

Ms. Morris:

It does not mean we are not conserving—we are conserving. The preliminary settlement agreement before TROA had a number of conservation measures in it, so we have been conserving since very early on. Since the 2000s, our population has grown by 30 percent and our water use has reduced by 30 percent.

Chair Watts:

I am glad you clarified that for the record because it is not my intention to make it sound like there is no conservation going on, but to help educate our members and the public that the conservation initiatives can look different in different places. Particularly from your perspective as a water provider to the community, some of the incentives change based on the system. It is not to say turf reduction is not a valuable thing—you discussed how some of the new development is adapting to that—but essentially it provides more of a downstream benefit than it does to the long-term supply for your customer base. I thought it would be helpful to get some clarification on that issue on the record and appreciate all the conservation initiatives TMWA has been undertaking.

Members, additional questions for our panel? Seeing none, that concludes our questions. Thank you very much to you both for your presentation today. I think it was very helpful for us to get a perspective on the two major water distribution systems in our state.

Mr. Zimmerman:

Thank you for the opportunity, Chair.

AGENDA ITEM VI—PRESENTATION ON WATER ISSUES IN NEVADA

Chair Watts:

We will move on to the next item on our agenda, which is a presentation on water issues in the remainder of the state. Administrator Sullivan and Deputy Administrator Fairbank from DWR are joining us to provide this presentation. When you are ready, you may begin.

Adam Sullivan, P.E., State Engineer and Administrator, Office of the State Engineer, DWR, DCNR:

Good morning, members of the Committee; thank you for having us. With me is Micheline Fairbank, Deputy Administrator for DWR.

I will be taking more of a statewide perspective on current issues and future challenges ([Agenda Item VI](#)). Many of the conservation tools we have heard about this morning that the municipalities have been able to implement, which are all excellent, are not necessarily available to a lot of the state, a lot of the water users. That is an important perspective, as I see it, going forward. The current drought highlights and brings forward the complexities

and the constraints faced by water users statewide in managing this very limited water supply with increasing demands. We have heard this before, but it is worth repeating—we are the driest state and one of the fastest growing states in the nation. All the big themes we talked about for moving forward in a smart way—economic issues, environmental protection, and public health and safety—rely on dependable water resources. Effective and realistic water management is essential, and none of these things happen without water security.

We are already fairly water-limited across most of the state. We have some areas with a deficit in the long-term ability to meet all commitments. It is important to note here that this is an oversimplification. Some areas have much more acute water issues; some areas, of course, have effective water management plans in place, but it is helpful as a visual geographically. There is also a real range or variety of reasons of how we got here, and it goes back decades—it is nothing new. The systems have resilience, so there has not always been a great urgency to address it, but the longer we wait, the more difficult and the more expensive it gets, particularly with increasing demands and more intense drought or water stress.

The framework we work under that defines our water management options moving forward is provided in Nevada water law. Our agency is responsible for implementing sound policy in accordance with the water law and the best available science. More immediately, the focus of our agency is on meeting the day-to-day needs of serving the public, meeting statutory deadlines, and keeping up with the workload that is right in front of us. We process around 1,000 water right applications each year. Almost all of these are changes of existing rights. Although there is a basic standard of review to not conflict with other users, each of these change applications requires extensive consideration depending on the history or the location. We have an excellent staff who really knows how to do this effectively; this is critical for protecting both those water right holders who are changing applications as well as other users within the area who might be affected. We process about 6,000 extensions of time per year. These are extensions of time filed by water right holders to prevent losing a water right if they do not use it.

As time goes by, the demands and the complexities of these procedures and of the different issues continually seem to be increasing, and DWR's capacity to serve the public becomes limited. We are facing complex water management issues that will continue to get worse if we do not get ahead of them. I will explain a few of them in greater detail because I know it can be hard to grasp exactly what I am talking about.

First, hydrologic connectivity between surface water and groundwater. Generally, I am talking about wells pumping in the vicinity of a river. Over time, pumping wells in the vicinity of a river can have an effect on reducing the flow in that river. The river water generally has the senior water rights, but at the same time, the groundwater pumping might be supplying the local drinking water supply or other essential needs. It might be difficult to quantify or measure to what extent and where pumping might be related to flow in the river and be able to have an assured metric of that. Addressing this issue is generally what we refer to with the term conjunctive management. There is a distinction between that and conjunctive use which Mr. Zimmerman was talking about; conjunctive management is where we are talking about these issues of groundwater and surface water that are connected.

Secondly, chronic decline in local groundwater levels—this happens when too many wells are pumping in a concentrated area. In a number of places around the state we have a foot or two of aquifer drawdown each year, with limited rebound in the wet years. The question

is how much drawdown is too much. There is a lot of resilience in the system. Wells can still get the water, and you can drill deeper, but at what point do you need to take a different tactic?

Third, assertions of conflict, where certain users feel their use is being inhibited by the use of others, including junior right holders. Again, it can be hard to quantify and demonstrate what is happening in a complicated aquifer system.

This is related to the fourth challenge—competing interpretations of hydrologic science. Where there is limited data, the same set of information can be used to draw different conclusions, to support different points of view, which makes things challenging.

To my last point, despite following the law and using the best available science as we have it available to us, our decisions are often appealed. Often this is for opposite reasons—we are not doing enough, or we are doing too much. This represents a significant demand on our staff and our office. All these issues are generally very site-specific, which additionally makes it hard to be responsive, especially when we are really focused on meeting our day-to-day duties.

The common theme among the complex issues is that there is not enough water to meet all needs in the long term. It is often recognized that Nevada water law is really good—it has a lot of history behind it and has worked well for us for so many decades. That is true for the appropriation and reallocation of water rights; however, there are limited statutory tools to address water shortage. I will note here that the use of the term “water shortage,” as I am saying it, has a different sense than the specific definition that Mr. Entsminger gave in working within a municipal system. I am just talking about not having enough long-term. It is also worth mentioning again that municipalities have great options and have used them to implement conservation measures that are effective within their systems. Being the sole provider for a customer base enables a lot more flexibility in how that can be implemented, and that is just not available in every area, where each user has their own water right.

This difference sets things up for a different set of options or limitations in being responsive. I will talk about three options.

The first is administrative cancelation, forfeiture, and abandonment of water rights. This is related to the issue of extensions of time and approving or not approving them. These are all very important tools for reducing commitments where water is not being used. However, it must be done very carefully and with a lot of documentation because, obviously, the impacts on the holders of those water rights are very significant. It needs to be done because it protects the users in the area who are, in fact, using water.

Secondly, curtailment by priority. This seems simple, especially within a prior appropriation system—if there is not enough, then the senior right holders get water and the juniors do not. However, it can or would have very severe, and in some cases ineffective, outcomes depending on the setting. It is often discussed, it has been proposed and held up in court, but it has never been implemented on a large scale—at basin scale or a larger system. That is similar to other Western states—there are a few cases where this has been carried out, but it is not typically a management tool.

Lastly, designation of critical management areas (CMAs). In 2011, this ability was added into state law, allowing a community to develop a groundwater management plan as a way of getting back into balance. There is one groundwater basin in the state—Diamond Valley, near Eureka—where this has been implemented. It has been appealed and we are currently

awaiting a ruling from the Supreme Court of Nevada. The legislative intent was good, and we are creating an alternative path that would work best for the community affected, but the limitations here are being tested. Depending on what comes out of the Supreme Court decision, it will set a course, or give an example, of what we might be able to do in other places in similar situations. In the meantime, the community in Diamond Valley is somewhat in limbo. I have many good things to say about the individuals there that have worked on this plan and have struggled through the very difficult process.

Looking forward, there are areas that I would like to point out where there is not much directive in state law, but there is a need or demand to address it. The challenge here is that we need to be able to implement or apply state water laws consistently everywhere but also be able to acknowledge local conditions. These areas include: incentivizing water conservation, particularly for irrigation uses; application of conjunctive management principles—again, this is the connection between surface water and groundwater—and clarity or guidance for adopting groundwater management plans, particularly relative to CMAs. There is room to do this and approach this within existing law and within the prior appropriation system, but there is also some need for clarifying how that could be done. Doing so would add certainty and defensibility to those who are affected by it.

Regulations can be part of this. For example, [AB 62](#) from 2019 addressed extensions of time. That is certainly something we are exploring and talking about with stakeholder groups, but it also must be done very carefully.

I will finish with some summary comments on key needs for Nevada's water resources. Water is foundational to our state's vitality. It needs to be a financial and policy priority. By doing so, we get ahead of some of these problems of limited supply and increasing demand. The longer we go forward without addressing it head-on, the harder it is. In a lot of ways, that is the path we are currently on. A key starting point is to address critical funding needs for DWR. We are short-staffed, just like all state agencies and across all sectors, but even when we are fully staffed, it is a challenge to keep up with our basic public services and maintaining and preserving our records, which leaves little room for addressing some of the more difficult long-term systemic risks that are facing us. We have taken some steps to streamline and modernize our internal processes, which helps, and we have amazing staff who have done great work with really limited resources to move this along, but there are some limitations.

Looking forward, I want to point to two areas of need that are important to prevent future problems.

First, updating the science on water resource availability is one of our priority asks with the federal funding available through the [American Rescue Plan Act of 2021](#), Pub. L. 117-2, 135 Stat. 4 (2021), known as ARPA. I am talking about using current, accessible, proven methods that can help us get a better understanding of the natural water budgets, what the long-term water availability is, and what our water use is.

Second, reinforcing Nevada water law. Changing law, of course, is very contentious, difficult, and time-consuming, but there are opportunities—as I see them—to clarify the legislative intent. For instance, if we want to be strict about nonuse and cutting back based on strict interpretation of prior appropriation, that needs to be more clarified in the law. On the other hand, if we are more open to practical alternatives, that, too, could be clarified or reinforced.

In all cases, it is critical to have a lot of public participation. We have been doing as much as we can to communicate with people who are potentially affected by this in the long run, but of course it is not easy. It does not happen overnight, but it does need to be a priority. I thank you for your time. If you have any questions, I will be happy to take them.

Chair Watts:

I am sure we have quite a few questions. I will open it up to other members. Assemblywoman Hansen, please proceed.

Assemblywoman Hansen:

I appreciate what you must do—it is a difficult job, fraught with a lot of tough decisions. I have a couple of things. Are you doing any sort of roundtable discussions out in the rural areas? I think of my communities along the Humboldt and other areas of the state. Are you engaging with water users and water right holders on how they can offer suggestions on how they could conserve and how they can better manage? What is the outreach from your office?

Mr. Sullivan:

We are making this a priority. Coming out of the pandemic gives us opportunities to have public meetings. The issues, solutions, and concepts are local and site-specific, so it is important to have public engagement. We have held recent meetings in Lovelock, Winnemucca, and Elko to talk about issues on the Humboldt River. We have a meeting coming up next week in Overton to talk about the Muddy River. We have two meetings in Smith and Mason Valleys in April to talk about issues with the Walker River. We have continual engagement with the community in Eureka to discuss the groundwater management plan. To the extent we can, we are prioritizing that—it is especially important now, with the drought and the acute water shortage issues—the priority is to help people navigate water law; share the data; talk about the options and consequences and how our office, given the limitations, can be a partner with local communities in coming up with practical solutions to the local problems within the umbrella of Nevada water law.

Assemblywoman Hansen:

And yes, I do understand that you have been constrained with the pandemic. I know you are recently new to this position, so I am glad you could get on the record that you are going to make these efforts. I am sure they will be well-received. Having that personal one-on-one, with your office being involved in these communities, will be a real boon for people to have a voice and hopefully provide you with some really good information.

Could you give some examples of conjunctive management that is used now or even some hypotheticals that you would like to see?

Mr. Sullivan:

Again, the thing that comes to mind is how site-specific it needs to be—looking at the local hydrogeology and the water use. As far as implementing it from the state level, it is in its infancy. It is a concept that was only introduced into, or recognized in, the law just recently. Historically, there has been a different set of rules for administering surface water sources and groundwater sources, and it has been a challenge to recognize the hydrologic realities within those constraints that are built into whatever one has relied on for generations in some cases. It becomes most acute in river systems that are losing and have the most

senior rights at the downstream end of the system. There are a number of challenges—practically, climatically, and socioeconomically—in how that can go forward in a smart way that follows the water law and follows the science. For example, the Humboldt River is really at the forefront of what that can look like and how we can do something that is effective long-term for the people affected.

Assemblywoman Hansen:

To that point, you have no real examples yet because it is still new. It is hard for people in these communities because they do not have something concrete that they can see. If they are going to be the guinea pigs, there is some understandable concern over it. I think having test programs, doing some studies to collect data, and having that information will help all of us to get a better understanding of how this might be a possible solution to a very difficult problem. Thank you.

Chair Watts:

Members, additional questions? Assemblyman Ellison, go ahead.

Assemblyman Ellison:

I hear a lot of concerns out of the Humboldt River area. Ranchers who are close to the Humboldt have water rights on downstream and groundwater. For years they have been using irrigation, but they may go to pivots and groundwater or wells. At that point in time, does the water permit come from the groundwater? Is that creating the problem with determining the water rights? It seems to me that the biggest discussions and complaints are coming from the upstream users. Can you hit on that? These people had water rights for years, but not as much as the ones downstream; that is going to be challenged eventually, but you still have somebody with downstream water rights and surface water rights who goes from the surface to drilling wells. Can you describe that or give me some ideas?

Mr. Sullivan:

You hit on some of the difficult issues. It has been very helpful to have public meetings up and down the river system because you get different perspectives, different questions, and different ideas about how to manage it depending on where you are. We are trying to move forward in a way that people really understand. One of the benefits of those meetings is that, over time, there has been more understanding of the different perspectives and the realistic limitations of limited water supply. I do not have an answer for how to do it, but it all takes time.

Assemblyman Ellison:

Do you think some of these upstream water rights are going to be challenged? That is what it looks like to me—these people are going to have to challenge some of the new laws coming on the books or lose a lot of their water rights. The people upstream, such as Lamaille, are the ones having the problems. Is that going to be more of a challenge and a cost expense that is going to go back on you? That is what it will have to be.

Mr. Sullivan:

It is a challenge. It puts a lot of pressure on our office to work with limited staff and limited tools to not create more problems than we already have, to work towards solutions and not make really draconian decisions that cause more harm than they serve to specifically

address the problem; to make the water go as far as we can and to honor the prior appropriation system, but also allow as much beneficial use under existing groundwater rights as we can.

Chair Watts:

Go ahead, Senator Goicoechea.

Senator Goicoechea:

I need to clarify—you said Diamond Valley was the only CMA. I thought 161 Pahrump was also a CMA, even though it is over appropriated but not over pumped. Am I wrong in that?

Mr. Sullivan:

Pahrump is not designated a CMA. It was discussed for a long time, but it did not go forward. Nye County has a groundwater management plan for the Pahrump Basin. Part of the reason for doing that was to get ahead of that problem and not be designated a CMA, because of some of the concerns that that might have.

Senator Goicoechea:

I thought it was a CMA.

I agree wholeheartedly with updating the science; we must know what water is available and have an accurate computation of what we have in the bank. I will speak to this Committee and to all my colleagues—we need to fund this. If we do not come up with the science that says what is available, we will never know whether we are over appropriated, under appropriated, or over pumped. We talked about changing water law—let us find out what we have in the bank first.

Chair Watts:

Understanding that this is the Natural Resources Committee and not the Interim Finance Committee, I appreciate having some of those issues raised. I appreciate DWR for limiting those to the last part of the presentation because I know resources are a significant issue across state agencies.

Other questions from Committee members? Senator Scheible.

Senator Scheible:

Senator Goicoechea inspired and confused me with the CMAs because I also thought Pahrump was a CMA. Can any community develop a groundwater management plan or are there other ways to qualify, other than being a CMA?

Mr. Sullivan:

A community can petition the state engineer to designate a CMA, or, under certain circumstances, the state engineer could designate the CMA on our own. It has some significant consequences, so it is not something I would be inclined to go forward with without community support. It has to be a single groundwater basin and it has to be in an area where pumping consistently exceeds the estimated perennial yield each year. So, it is

not necessarily just about being over appropriated—but it is about being over pumped. Those are the basic rules.

In a CMA, the local community is responsible for developing a groundwater management plan for the long term. The state engineer needs to approve that plan, and if it is not done within a period of ten years, then the state must curtail by priority. So, the consequences are severe. Right now, as I said, we are awaiting the Supreme Court's ruling on Diamond Valley going forward. Depending on what comes out of that, I think that will be a good building block to see how this can be used effectively in other parts of the state.

Senator Scheible:

Okay. But I thought that you said Pahrump already had the groundwater management plan even though they are not a CMA. Did I misunderstand that?

Mr. Sullivan:

You understood that correctly. Pahrump has a groundwater management plan, but it was not created in response to being designated a CMA. The Las Vegas Basin has a groundwater management plan. There are lots of good reasons and ways to develop a groundwater management plan, but a CMA designation would require a community to develop one.

Senator Scheible:

Do all groundwater management plans have to be approved by the state engineer?

Mr. Sullivan:

Only in the instance of a CMA. However, the state works with other communities, such as Pahrump and other municipalities, to help make a groundwater management plan effective.

Senator Scheible:

I would assume that a groundwater management plan still must fall within the parameters of Nevada law, so it would have to follow the “first in time, first in right” rules; it would have to follow any other parameters set by regulation or law about how we allocate and how we use water. Right?

Mr. Sullivan:

Yes, it does not supersede any other water laws.

Chair Watts:

I think the presentations are helpful, but sometimes I like to zoom out a little bit to put a finer point on the issue. With many of these issues, but particularly with conjunctive management, especially as science has evolved, it is clearly supported. We understand, for example, that with irrigation, some of that water goes down and recharges. Similarly, it has become clear that when you have groundwater and surface water close to each other, there are interactions between those two; a water law system that treats them as completely separate leads to some double counting. Unfortunately, addressing that means there are going to be some winners and losers. Is that an accurate summation of some of the issues,

that as the science has evolved, it has created a situation in which adjusting our water rights and our law to that essentially creates conflicts?

Mr. Sullivan:

Yes, I think that is a fair characterization. We are now in a situation where we need to figure out the smartest way to move forward that honors the prior appropriation system while also protecting existing users as much as we can within a realistic knowledge or understanding of the water budget.

Chair Watts:

I would like to revisit something you said on the issue of curtailment. You discussed that it can be draconian, but it is essentially the hammer we have in our current water law to protect against over appropriation—over pumping, in particular. You mentioned that there are potentially some areas with a lack of clarity. Could you refresh the Committee on whether curtailment by priority has occurred in Nevada and what some of the issues are that you see on its potential application to bring a basin into balance?

Mr. Sullivan:

I did not say that curtailment by priority is draconian, but that is a good word; it can also be ineffective. We manage groundwater rights on a basin scale. Oftentimes when we are looking at concentrated shortage, it might be within one particular area, and to strictly curtail by priority, you might be curtailing those who, if you curtailed in a certain area, would not affect anybody else over a really long period of time. You must be realistic about the implications for the local community affected. Another example could occur if the municipal water supply in a small community has the most junior right in a basin. For the purposes of health and safety, it would not make sense to curtail the most junior right if it had that sort of an impact on an area. So, although it can be a tool in how we deal with this, there are a lot of unintended consequences of using that strictly and as the sole basis for decision-making.

Chair Watts:

That provides some additional clarity on some of the complications and details. I know there was legislation within the last couple of sessions addressing health safety and minimum use of domestic wells. I think that is a broader issue in terms of ensuring the most basic water needs of people are met in some of these dire circumstances. I will come back around to domestic well issues shortly. First, I will pause and see if there are any other questions from members that have come up so far. Senator Goicoechea.

Senator Goicoechea:

We have 256 basins. Presently, by my numbers, 129 of them are either fully or over appropriated; of those, 49 are over pumped. Mr. Sullivan, do those sound accurate to you?

Mr. Sullivan:

That sounds approximately accurate to me.

Senator Goicoechea:

That is why I continue to plead my case. If you happen to be—and I always challenge this—on the Humboldt River system, for example, in which we have all these basins where a number of them have groundwater, surface water, and supplemental rights, and yet technically, they are in the same basin and they are being recharged by that river system. Would you agree to that?

Mr. Sullivan:

Yes. It is very site-specific. The hydrologic setting in different basins around the state can vary tremendously.

Senator Goicoechea:

Okay, so you might not agree with that, but anyway, that is where the real catch comes with conjunctive management. Thank you, Mr. Chair. I do not think we can diminish the fact that we have some bad numbers out there that we need to address.

Chair Watts:

I agree with that, and it leads into another question. I will take it again to a little bit bigger picture. What are some of the policy options that could be used to deal with over appropriation, and particularly over pumping, in the state?

Mr. Sullivan:

From a policy standpoint, going back to creating incentives for water conservation that can be implemented, I draw the distinction here between what our municipalities can do. Within a system where they are the sole water right holder and they have a customer base, that is a good system for being able to implement conservation and incentivize it. But in large areas where everybody holds their own water rights, what do we do? In a prior appropriation, a use-it-or-lose-it basis, what can you do to incentivize or promote conservation in that setting? A second matter is this question of CMAs and groundwater management plans. That is another avenue for local communities to develop effective plans. I think there is some room policy-wise to add some guidance and certainty about what can or cannot be done and still be within other parameters of water law.

Chair Watts:

Let us move over to funding; I appreciate there was distinction in some of the things you addressed. It is obviously a recurring concern among members of the Legislature regarding one-time funding. There is discussion of some of the modernization and scientific updates that would be one-time expenditures versus some of the ongoing staffing needs you discussed, which require sustainable ongoing funding. You also discussed incentives for conservation. I think there is a policy aspect to that; I look forward to us having a more robust conversation about moving forward, including at our upcoming Subcommittee on Public Lands meetings. We will get different stakeholders to provide their perspectives on what some of those policy incentives could look like.

There are financial incentives needed to undertake many of these conservation initiatives, which, again, comes back to the issue of funding. Could you speak a little bit to some of the funding options through fees, assessments, and other things within your agency? Are there any options or barriers that you see in terms of being able to bring in some revenue at your

agency level to support some of the staffing you have in addition to, of course, general funding? I know this is starting to get into the financial sector, but specifically thinking about some of the financing opportunities within your agency I think does have a bit of a policy connection.

Micheline Fairbank, Deputy Administrator, DWR, DCNR:

Our agency is supported through a variety of funding mechanisms that are predominantly funded through the General Fund—not revenue-based, or fee-based. We do collect fees, but all our fees are set in statute. About four sessions ago, there was a proposal to structure our agency to be proportionally based upon our fee revenue. However, fee revenue generally only brings in about \$3 million per year, which is about one-third of our actual operating budget; that was determined not to be a feasible revenue source for the agency and was ultimately reversed.

The other portion of revenue that supports the work of the agency is through our basin revenue accounts, which are assessments in designated basins where we have assigned an assessment. Those assessments are based per water right. For basins where we have municipal uses as the predominant manner of use, then we do ad valorem assessments. The Las Vegas Basin and the Truckee Meadows are ad valorem assessments; our rural areas, where irrigation is the predominant manner of use, are done on a water right basis. Those basin funds are used to support work specifically to the benefit of those basins. We use that to fund nonclassified employee basin specialists who are assigned to do the work within those basins, as well as operating costs to support the work being done to support those staff members.

When we talk about the constraints, needs, and other funding mechanisms, one of the challenges we face is that 85 percent of our budget pays for our people. So, when we must do budget cuts and different types of things, there are very limited areas for us to make those cuts, and they impact the type and manner of services we have. Certainly, we are looking at the availability of ARPA funding to try to do some of the budget patching—we had to use basin funds to offset the General Fund, which was not preferred, but it was the only mechanism we had to avoid laying off 11 staff members. We believe the state has an obligation to restore that funding out of General Fund dollars. We also acknowledge an ongoing but essential cost to just maintain the minimum level of services we are providing at this point.

We are also looking at utilizing ARPA funding to help do some of the one-time costs. State Engineer Sullivan mentioned the water resource initiative to update our basin budgets. It would be an appropriate and responsible use of ARPA funding to help fund that on an upfront basis and also support that work over the next five years, plus.

There is an ongoing cost component to the modernization and digitization initiative that has been spoken of, but it is also an essential cost component if we are going to go ahead and bring our agency into the twenty-first century. We sometimes jokingly say we are still operating in 1903 data management—every single file is a paper file. While it is good to have paper, and some of our historic records certainly have sentimental value and historical value as a state, it is not a benefit to the public to have everything in paper. If a water right user in Gabbs or Caliente wants to review the permit file, the user either must contact our office to get a copy mailed physically or sent by email, or they must drive to Carson City to physically view the file. To get a copy requires us to use staff time and resources to make a photocopy of the file and mail it to the person or send it via electronic delivery. That is not a public service and not an efficient expenditure of state funding. Modernizing and digitizing

our systems to allow us to operate in the twenty-first century is a critical need of the agency that is not satisfactory based on how we are currently funded and operating.

The bottom line is—as an agency, we are responsible for administering and managing all of Nevada's water resources except for the Colorado River. If the state wants to go ahead and continue to prosper in economic development, public health, social justice, and all its other priorities, we cannot do that without water. If you do not prioritize funding the agency that is responsible to support that, then you are short-shifting the entire state for how we are going to proceed on a forward moving basis.

Chair Watts:

We have a question from Assemblywoman Bilbray-Axelrod.

Assemblywoman Bilbray-Axelrod:

Mr. Sullivan, I was wondering—do we still allow residents in the Las Vegas Valley to drill domestic wells?

Mr. Sullivan:

The answer is yes. Following up on the discussion you heard from Mr. Entsminger, we are telling people that if they have a water right, they can drill a domestic well and use that water right to support that. But there are different kinds of constraints and concerns about the water resource in the Las Vegas Valley. We are trying to work carefully with SNWA, as well as other entities, to allow what is permissive in water law and make that consistent with good water management policy for that basin.

Assemblywoman Bilbray-Axelrod:

I am surprised by the answer. I honestly thought it was going to be “no.” Is it just sort of a blanket policy that if you have water rates you can go ahead? Does proximity to the water line does not matter? Or do we look at each request individually?

Ms. Fairbank:

The reason it is not a blanket now is because there are certain circumstances and locations where drilling a domestic well is the only viable option to support the construction of a residential dwelling. There are other constraints. We do look at it on a case-by-case basis. Clark County has implemented certain lot size restrictions—a lot size must be one acre for most of the areas. Some areas of the basin require a minimum lot size of five acres for the drilling of a domestic well. We also look at proximity to city water and the availability or practical reality of obtaining service. By allowing an existing water right to drill a domestic well, we are not actually increasing the demand to the system because it is an existing water right, unlike an exempt domestic well that does not have to have a water right and would be an additional draw on the system. So, we do have some limitations and restrictions, but we also must recognize the practical reality that exists in the need to supply properties and homes with water.

Chair Watts:

Members, additional questions? One of the things I wanted to revisit would be forfeiture, which you discussed earlier in your presentation; you discussed some of the potential challenges that exist there. Could you discuss that a little bit more? What has been

happening in that area? Have there been any successes around that? What are the barriers you see, and is there any opportunity for streamlining when it comes to forfeiture or abandonment while also making sure it is a deliberate process to give folks the opportunity to make sure their rights are protected?

Mr. Sullivan:

We do not like to be in the business of taking away water rights, but there is a clear process in state law for forfeiture or abandonment if water is not actually being used or if there is no intent for that water to be used in the foreseeable future. We also have a lot of protections. We recognize that it is important to protect other users within an area who really are relying on the water supply. We have put effort into following through and documenting what is necessary to move forward with the forfeiture. Those decisions are commonly appealed, and there is a matter of working with the district court to understand what goes into that and what the implications of either approving or overturning that could be. I think there is a recognition that it is a difficult thing to do, but it is necessary. It is not a streamlined process. It is not something we are really built as an agency to be able to handle effectively on a large scale—it is a case-by-case, one-by-one sort of operation. As I said, we have 6,000 extensions of time per year, but let us just say 1,000 of those are extensions of time to prevent forfeiture. Those are cases in which we sent the owner notice that water has not been used for at least four years or more and the owner is submitting extensions of time to prevent forfeiture of those rights. We process a lot of those, but we do not have a lot of depth to give the attention necessary to each one of those cases.

Chair Watts:

I know there have been significant issues with domestic wells in Pahrump. Could you speak to the most recent developments in Pahrump around domestic well issues? Could you refresh the Committee on how the interests in domestic wells are separate from the water rights and how those interact?

Ms. Fairbank:

With respect to Pahrump domestic wells, the State Engineer issued Order 1293-A, which prohibited drilling of a new domestic well in the Pahrump Basin without the relinquishment of 2 acre-feet of water rights. The significance of that is—under Nevada water law, a domestic well is exempt from the requirement to obtain 2 acre-feet of water to serve that domestic well. That also means the domestic well is not subject to the other perfection requirements under the statute—that is, equipping the well, the works of diversion, proving beneficial use, and certificating the right. In the Pahrump basin, Order 1293-A was issued in response to the significant groundwater declines, the over appropriation of the basin, and the extreme conditions. That decision was challenged and was ultimately upheld by the Supreme Court of Nevada, which found we had the jurisdiction and authority to regulate domestic wells in that manner. So, in Pahrump, there is a requirement that a 2 acre-feet water right be relinquished. That helps to offset the additional draw of new domestic wells within the basin and takes additional water rights off the books. It is one small step to bring some balance to that particular groundwater basin, given the significant issues there.

Overall, with regard to domestic wells, there are a lot of different localized issues and challenges. Certainly, where you have concentrated domestic wells, you have concentrated issues with effects on the groundwater levels, groundwater supply, and similar things. That is not isolated to Pahrump, but there are other locations throughout the state that eventually will have attention drawn to them because it is a concern.

Regarding Assemblywoman Bilbray-Axelrod's question about drilling domestic wells in municipal areas like the Las Vegas Basin, that does create additional challenges, particularly if the water supply is expanded in those areas and there are existing domestic wells. For example, say you did not have a municipal water supply within reasonable proximity of that parcel at the time the well was drilled, but a municipal water supply is available several years later. In that case, what is responsible resource management for that location? Is it to have the municipal water supply in the service territory with domestic wells? Or are there other resource management decisions appropriate for that location? Those are localized issues specific to the particular basins and communities. We certainly enjoy being engaged in those questions and those processes to try to find appropriate resource management in those locations, as well as what is appropriate for statewide policy management.

Chair Watts:

I appreciate there are a lot of local nuances. I personally believe that domestic wells are one of the most difficult remaining elements to deal within our water law because their different status does not require a water right. In a fully appropriated basin, domestic wells can continue to be drilled and utilized, even in an area that is not only over appropriated, but even over pumped. I think there should be some additional discussion around a statewide policy to address that, to account for domestic wells within these basins, while also understanding some of the regional differences in the actual impacts they can have.

In many basins, 2 acre-feet alone may not be much, but we have seen the concentrated issues. Under our current system, we do things by basin, and if a basin is already fully appropriated, particularly if it is already being over pumped, it seems that to go back to the language used by SNWA—the first step we want to do is stop the bleeding and prevent the problem from getting worse so it does not become more costly and more conflict-riddled when we work to unwind it moving forward.

Members, last chance for any questions for our panel. Senator Goicoechea, go ahead.

Senator Goicoechea:

There is one thing I would like to clarify. Mr. Sullivan and Ms. Fairbank, I want to get this on the record. You are required by law to notify a water right holder prior to forfeiture that the right is subject to forfeiture and the holder has a year to cure it.

Mr. Sullivan:

Yes, that is correct. Beyond that year, they have the option or allowance to file for an extension of time.

Senator Goicoechea:

But you do have to notify them that they are subject to forfeiture?

Mr. Sullivan:

Yes.

Chair Watts:

That concludes our questions. Thank you for your presentation on these issues and answering all the questions. We are going to move on to the next item on our agenda today, which will be a presentation on emergency preparedness and climate issues.

AGENDA ITEM VII—PRESENTATION ON EMERGENCY PREPAREDNESS AND CLIMATE CHANGE

Chair Watts:

We are going to be joined by the Division of Emergency Management (DEM), Office of the Military. I believe we have Mr. Fogerson joining us from Carson City; whenever you are ready, you may begin.

David W. Fogerson, C.E.M., Chief, Division of Emergency Management/Homeland Security, Office of Homeland Security, Office of the Military:

I appreciate the opportunity today to talk to you about emergency response, hazard mitigation, resilience, and the effects of climate change we are seeing on the increase of disasters ([Agenda Item VII](#)). It ebbs and flows—that is what I like about the term climate change—climate gets better, climate gets worse. We must figure out how to fix those issues moving forward, to pare down the number and cost of disasters.

Emergency management is in kind of an odd world. We are not in charge of anything until the disaster strikes, and then everyone looks at us to lean forward and do the work. We do a lot of consequence management for the cascading impacts of these different emergencies. I would like to walk you through a little bit about how we do emergency management and talk about some of the disasters we have seen the last couple of years. We can discuss how that is being affected by climate, the environment, the growth of our state, and items we probably need to consider. We have had great discussions about the water and drought issues. Last meeting, the Committee has heard from State Forester Firewarden Kacey KC and the wildland issues. We are not looking at this as a water issue. We are not looking at this as a land management issue for wildland fire. Emergency management looks at all these hazards. We want to bring all the friends to the party to have that conversation about how we fix things moving forward. That is what we are good at.

The Division is a proud part of the Office of the Military. On July 1, 2021, we moved from the Department of Public Safety (DPS) to the Office of the Military. A lot of people still think we are over at DPS, but we are proud to be able to work for Adjutant General Ondra Berry. We are Nevada's essential disaster coordinating partner. Our vision, mission values, and goals are not about doing stuff—ours are about bringing people together and having conversations, ours are about building resilience through coordination and partnership. Our goals are getting people together in effective teams to handle those issues because we are not the subject matter experts, but we are the people who must know the subject matter experts and bring them to the table. This could be a state water engineer, the state floodplain manager, a climate scientist, the state forester, or other people who we bring together to have these discussions about what is going on, how we move forward better, and how do we best respond to disasters.

The process that emergency management uses is a great circle that feeds from one section to the other. In real life, it is not this pretty. We start with preventing disasters from occurring—some disasters we can prevent and some disasters we cannot prevent. But for

the ones we can, we start taking those pieces to see how we reduce that impact to the disaster. How do we prevent that disaster from occurring? How do we prevent the disaster from being so severe? Then we also look at protection. How do we protect people from that disaster? How do we protect the systems, the critical infrastructures of our state, and all our residents and visitors? Then we look to mitigate. How can we reduce the impacts of the disaster? We will talk a little later about our hazard mitigation program that we manage for the state and the funding we have for some of those processes moving forward.

Then, we respond. Emergency management really does not respond like you think. We are not going to be the first responders out in the field. We are making sure those first responders and the local government partners have the pieces they need to make the right decisions and the right help at the time. Then, we recover from that disaster. Some of these recoveries are short term; some of these recoveries are very long term. For example, we are still working on the 2017 floods. Those are still open disaster recovery; we recently received a grant of about \$600,000 from the Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, to buy those homes around Swan Lake to reduce the impact again in the future. That is a mix between the mitigation and recovery pieces—how we do things moving forward.

We always try to look at emergencies as being locally executed; state-directed or state-guided; and federally supported. The more we get the locals to be able to solve the problems themselves, the less we must be involved with the process. When it exceeds their capabilities—that is when we lean in to help. As you know, the state does not have a tremendous number of resources. We saw that through COVID-19 when we had the Nevada National Guard supply resources. A lot of times, what we do is state-directed, state-guided, to find the resources from nonprofit agencies, other local municipalities that are not affected, or from other states that can assist us. After that, we go to the federal government for assistance. Through the COVID-19 disaster, we have had FEMA, three employees from the National Foundation for the Centers for Disease Control and Prevention, Inc., and the Nevada National Guard embedded in our Emergency Operations Center. It is really a community partnership that is making all this work together, and that is what emergency management excels at.

I will talk about the main hazards in Nevada. These include earthquakes. We are not able to do much in the earthquake realm about protect and prevent. We cannot change the weather that well, but if you look at our other hazards of wildland fire, flooding, severe storms, extreme heat, drought, and pandemic, those are all areas that we can work on preventing, protecting, mitigating, responding, recovering from, and bringing together all those parties.

The Tamarack Fire that burned from California into Nevada resulted in the loss of a number of homes in Nevada and the largest evacuation of Nevada's population in our history. As a result of those fires, we saw some debris flows postfire—that is what we are looking at with the mitigation activities. How do we keep a fire from becoming a mudslide event that closes the road in the future? How do we buy down those risks, so we have better opportunities to reduce the future impacts of that disaster?

The year 2020 had the big disaster of COVID-19, but we only had a couple of other smaller disasters. We had an earthquake that damaged U.S. Highway 95, and Nevada's Department of Transportation (NDOT) had to declare a disaster to repair it. We had a wildland fire in the City of Reno that burned a few homes in October/November, which is not normal fire season.

In 2021, the number of things DEM was involved with pertaining to the COVID-19 pandemic was off the chart. Hopefully we never have to repeat any of those things. While that was going on, we were dealing with multiple other incidences. I think that is a good segue for some discussion about the future of what we look at for disasters. We start with the Dixie Fire, which was the first fire to ever cross the Sierra Crest. In U.S. history, we had never seen a fire cross the Sierra Nevada mountains, and the Dixie Fire crossed multiple times. We were heavily involved with evacuations of residents into California and Nevada, and the coordination piece should that occur. The Tamarack Fire in California burned into Nevada, creating some burn scars. I believe State Forester Firewarden KC talked in the last meeting about some of the efforts to reseed that area to prevent flooding and debris flows. The Caldor Fire was probably the biggest incident last year outside of COVID-19, but it never hit the State of Nevada. Local firefighters from the Lake Tahoe regional basin, along with firefighters and law enforcement officers from southern Nevada, were able to hold it in Christmas Valley. The fire entered the Lake Tahoe Basin and then we had to evacuate all those evacuees into Nevada from California. The Caldor was the second fire to ever burn over the Sierra crest in U.S. history—two fires, same year. Everyone remembers the media accounts of the unprecedented fire behavior we saw on both incidents.

We had a nice, white Christmas in northern Nevada, and that nice, white Christmas closed all our roads in and out of California, trapping all the Californians who came over for tourism season for the holidays and were unable to return. Caltrans was able to open U.S. Highway 50. All those people jumped on Highway 50 to try to get out, but Caltrans was also checking for chains, and it was having to do snow control, so it was very slow going. People were trapped in Lake Tahoe and eight hours in traffic. We had to declare an emergency because that night another foot of snow was going fall on them along with the cold weather, and those people were not prepared for those conditions. We declared a state of emergency to evacuate and shelter those folks.

In October, northern Nevada saw three inches of rain within a 24-hour period. We thought between the three inches of rain in October and then the large snow event over Christmas that the drought was over. Stephanie McAfee, Nevada State Climatologist; Bunny Bishop, State Floodplain Manager; and I were jubilant that we were out of the drought. We know droughts end with floods, but then, we saw all the weather get turned off. Even though we had two significant weather events, we are still in a significant drought through the entire state.

Southern Nevada was not forgotten in any of these disasters; Nye County had some significant flash flooding that washed out some state highways and parts of the town of Pahrump. Highways were also washed out in parts of Moapa—all from the monsoon season we see in the south. These events seem to be getting more frequent and with more severity than in the past.

The worry I bring to you is that I think there is an increase in frequency. I know Forrester Firewarden KC talked about this—we do not have a fire season anymore. We have a fire year. When I started with Truckee Meadows Fire in 1994, we hired seasonals in May so they would be ready June 1. We laid them off in September and we did not go to fires outside of those months. Since that time, when I retired from the fire service 18 months ago, we always left our brush gear on the apparatus because fire season came at all times. I fought better fire in November, December, and January than during the summer. A lot of the fires we fought during those months were in our urban interface areas where not only lost homes, but in Washoe County, in two of those instances we lost people as well.

There is also an increase in severity. Those two fires—Caldor and Dixie—burnt over the Sierra crest. The drought continues to get worse. There are more significant weather events, such as hotter temperatures and the rain downpour events. When we only get 7 inches per year, 3 inches of rain in northern Nevada in 24-hours is a significant event; and then you add in those snow events...

Increasing costs—I have to mention the pandemic, but we cannot really use the pandemic to show for the increase in cost. However, the Government Accounting Office figures are looking at disasters costing us more because they are becoming bigger and badder. We must figure out how to turn down the impact of these disasters over time.

There is also an increasing number of those exposed. If you look at the State of Nevada and its population growth in the last few years, more people are coming into our state. While we are rural in some areas, we still have an opportunity to make sure we have effective building, fire, and urban interface codes to reduce the impact of those issues before we start moving more people into our communities.

We try to increase resilience. Resilience is about bouncing back and returning to a previous state after disaster, after a disturbance, but hopefully with some adaptations so it is better than what it was. This is hard at times. When we start talking hazard mitigation, the federal government likes to pay you to get things back to the way they were pre disaster. But if we made it the same as it was pre disaster, are we not setting ourselves up again for another disaster in the future? For example, if we let those houses around Swan Lake get rebuilt and stay there, are we not going to see them flooded when they have the next disaster? Nevada does not have a lot of those types of examples, but we see it greatly on the Mississippi and the Gulf Coast in areas where they have recurring disasters. We want to be able to build back better than what we were before and adapt to our issues.

Nevada is one of 16 states that has an enhanced mitigation plan; that means that we get better funding from the federal government after a disaster. Every year, the federal government provides funding that DEM uses. We have a Hazard Mitigation Grant Program and a new program called the Building Resilient Communities and Infrastructure, or BRIC. These two programs fund our hazard mitigation programs to buy down those risks and reduce the impacts of future disasters. We also get postdisaster declaration funds, and there are two of those. One is for situations such as COVID-19; we have a disaster declaration, so we are able to receive \$14 million dollars for hazard mitigation funds from the federal government to apply to whatever disaster we want to buy down in the future. We also have Hazard Mitigation Post Fire Management Assistance Grant funds. Whenever we have a wildland fire that affects predominantly an urban interface area, we do not have to declare disaster. We can ask for a Fire Management Assistance Grant, which the regional administrator can approve. Rather than having to go through the process of a local government, state government, and the federal government, the local government can go directly to FEMA and ask for that declaration. Following a fire, we get hazard mitigation funds that we can spend not only to reduce that fire risk, but to reduce the flood risk and all those other associated risks.

The DEM's role is to coordinate, plan, collaborate, fund, and support. We are looking at those cascading impacts and dealing with consequence management. Moving forward, one of those things we are doing that has not been done before is a state heat plan. We know temperatures are rising. We know people are becoming more exposed to higher temperatures. We know Las Vegas is probably hotter now than it has ever been before. We want to be able to find ways we can buy down those risks—we can use hazard mitigation to do that. We can design a heat plan; we can find ways to reduce the impact of that to our

population. One of the ways we are doing that is funding a study for the City of Las Vegas for a microgrid that would be attached to cooling centers, so when we have a high heat environment, the city can find places to turn on cooling centers. Currently, it is so hot we lose power; we think about tying it to a solar system or something else to make it better. We are working with the University Medical Center in Las Vegas on a project to give them solar panels that would power the facility. They could sell energy back on good days, but then also have storage so they do not rely upon generators to run the site during those days when we do not have power because of energy issues.

We see that also in north Nevada when we start turning off power on high-risk wind event days. NV Energy will turn off power on high-risk power days in the Lake Tahoe basin, the Genoa foothills, at Mount Charleston, and also at a location in eastern Nevada when the conditions hit right. How do we make sure the populations in those areas have power when the power company turns the power off? How do we make sure we have fuel lines still coming over to Nevada from California when issues occur and the pumping stations get turned off? Those are all part of the mitigation process we look at. How do we make tomorrow better than today?

It seems like disasters are occurring more frequently, with bigger impacts. The Division is trying to figure out how to step up to become more aggressive in getting the right partners together to have those discussions to make sure our state stays better tomorrow than today.

In conclusion, as your emergency manager, I must ask—do you and your family have a plan and a kit to survive for 72-hours? Can you survive right now if we had a no-notice earthquake? Do you have your disaster kit with you? Does your family know how to contact you? Do you have all those links in place in order to stay ready? If you go to [ready.gov](https://www.ready.gov) or to the DEM website at dem.nv.gov, we have links on what you should have in your disaster survival kits for work and home to make sure you are ready.

Before I open up for any questions you might have, I would like to highlight a picture. Last year was the first time that we used the Intrastate Mutual Aid System to move Clark County, Las Vegas, and Pahrump fire and rescue resources to northern Nevada in support of the Caldor fire. The Tahoe-Douglas fire station at Lake Tahoe was staffed by Clark County Fire. They ran calls; they went into a commercial structure fire at the grocery store in South Lake Tahoe while they were up here managing this incident. We had to bring them up because we were out of firefighters in the north, but we could not send Clark County Fire to the fire itself because they did not have wildland fire training. However, they were able to cover that fire station with their firefighters, paramedics, and battalion chiefs to allow the local responders to go to the wildland fire. This is a great avenue of cooperation through our state to help make tomorrow better than today. Thank you.

Chair Watts:

Members, I will open it up for questions. Mr. Ellison, go ahead.

Assemblyman Ellison:

Just a few minutes ago, I received a text that President Biden has issued a warning of cyber warfare against the United States. What are we doing to prepare for that? That could affect gas stations, hospitals, and more.

Mr. Fogerson:

A month to five weeks ago we saw this coming, so we produced a policy team and engaged with the Department of Administration, DPS, Office of the Military, Department of Motor Vehicles (DMV), and some other essential partners. We added DMV because of their high utilization of cyber needs. We meet every Monday at 1:30 p.m. to discuss what the impact is going to be to make sure we can advise the Executive Branch of the government on what we need to do. We also opened our Emergency Operations Center and brought in what we call our emergency support functions—that is the Nevada State Police, NDOT, and different components thereof—and we talked through what would happen if we had these different cyber issues. We gave a nonclassified brief on the issue. The following week we met with our local government partners and our major utilities to discuss the possibility of this happening. We told them what we know and what we do not know. We do not have a crystal ball, so we cannot predict, but we told them what we think might happen, so they need to start leaning forward, thinking. A lot of people are doing a lot of leaning forward right now to make sure we are ready for this.

I can guarantee you that when it happens, we will not be ready for it, because we do not know what could happen. But we are having those conversations on a weekly basis to think of what we should do, how we should do it, and how we make sure we are resilient through this process. We are also looking at what policy issues we need to change moving forward. It may be hard for people to understand that for earthquakes and cyber, the end effects for emergency management are the same. We must figure out how to shelter, how to evacuate, how to defeat, how to communicate—all those same things—but the nexus between those two are so different that people who are used to earthquakes see cyber as scary. The result is the same, what we do every day, and that is what we need to focus on. I know Shaun Rahmeyer with the Nevada Office of Cyber Defense Coordination, DPS, and Robert Dehnhardt with the Division of Enterprise Information Technology Services, Department of Administration, are working their fingers to the bone trying to make sure all the cyber folks are all together and having those discussions.

Assemblyman Ellison:

It seems like we are having a lot of increases in small earthquakes across Nevada, and I have seen earthquakes where we have never had them in rural Nevada. They seem to be more frequent all the time. Are you seeing the same thing throughout the state?

Mr. Fogerson:

Absolutely, we are seeing that, and that is the point of this presentation. It seems like more things are occurring more frequently and we are becoming more aware of them. I do not know if it is because social media is making us more aware of the earthquake risk, but it seems as if we are having more of the smaller quakes on a more routine basis. We had a 6.0 here in northern Nevada; we had one last year in your and Senator Goicoechea's land where we had some problems with one of the schools and looking at some dams. They do seem to be occurring on a more frequent basis.

Chair Watts:

Members, additional questions? Go ahead, Assemblywoman Hansen.

Assemblywoman Hansen:

I have two questions—one about fire and the other about Swan Lake. Do we have a general idea of what percentage of fires are caused by humans on the ground versus storms, lighting, wind, and similar things? I know last year was a horrible year for fire. We dodged a bullet in the sense that they were not necessarily in Nevada, but certainly we suffered the consequences of those in our quality of life and the emotional toll it took on a lot of communities.

Mr. Fogerson:

I do not have that information with me, but I know the geographic coordination center does track that. Forester Firewarden KC can get that data. There is probably a disproportionate number of human-caused fires than naturally caused fires, but we do have a phenomenon around the northern Nevada area where we have more contacts from lightning that actually make it to the ground and cause an increase in lightning starts than probably most areas outside the country or outside the northern Nevada area.

Assemblywoman Hansen:

It would be great if you could get that information to the Committee. Firewarden KC touched on it in our last hearing, but I did not make a note.

When you mentioned Swan Lake, I knew there had been a process to perhaps buy out those affected homeowners. Where did that money come from? How many homes were affected? Did they buy 100 percent of them, or did some people opt not to be bought out?

Mr. Fogerson:

I got the notes from that this morning, but I do not know if I have that level of detail. I know it was a \$600,000 grant from FEMA to buy out homes, but I would have to get back to you on how many we bought, how many were offered, and those other details.

Assemblywoman Hansen:

That would be very helpful. I assume market values are high, even if they live in a flood zone. As crazy as that is, our market values are a little off the charts. If you could get those numbers, I would appreciate it.

Chair Watts:

I will note that in the backup materials for Ms. KC's presentation to our Committee at our February meeting, there is a slide that has a breakdown of total starts for wildfires and how many of those are human-caused as well as acres burned. Usually, lightning starts were the vast majority of starts, but that has been shifting in recent years. Often, some of the acres burned on an ongoing basis have tended to be human-caused; the human ignitions tend to lead to more acres burned.

Any additional questions from the Committee? I think that concludes our questions for you, Mr. Fogerson. Thank you for your presentation and for providing a bit of an update on the heat planning initiative that the state is undertaking. It is important to not only understand that extreme heat can be dangerous to people but thinking of it at a disaster scale and understanding the increased demands that it puts on our electric infrastructure and making sure we have some plans in place to deal with it. I know we have had some scenarios when

we have been asked to cut back our energy use to make sure we do not have blackouts, which could be extremely detrimental to folks. Thinking about some of those grid resiliency pieces is important to that conversation.

We will move on to the last presentation on our agenda for today, which is on waste management and sustainability efforts in the state.

AGENDA ITEM VIII—PRESENTATION ON WASTE MANAGEMENT AND SUSTAINABILITY EFFORTS IN NEVADA

Chair Watts:

We have members of the Partners for a Sustainable Nevada (PSN) initiative joining us in Carson City. This includes folks from Nevada’s Division of Environmental Protection (NDEP), DCNR, as well as some of the stakeholders involved in that group. You can begin whenever you are ready.

Jeffrey Kinder, P.E., Deputy Administrator, Air Programs, Sustainable Materials Management, Industrial Site Cleanup, and Corrective Actions, NDEP, DCNR:

Joining me today are Daren Winkelman, Chief, Bureau of Sustainable Materials Management, NDEP, DCNR, and Kayla Alm, Sustainable Materials Management Coordinator—North, Bureau of Sustainable Materials Management, NDEP, DCNR.

The Bureau has several roles related to materials management. First, the Bureau is responsible for ensuring safe management of hazardous waste by regulating its handling, transportation, treatment, storage, and disposal. The Bureau implements the provisions of the federal [Resource Conservation and Recovery Act](#), or RCRA, (42 U.S.C. § 6901 et seq. [1976]). Second, the Bureau ensures the safe collection and disposal of solid waste. Third, but no less important, the Bureau encourages businesses, institutions, and individuals to reduce the amount of waste generated, participate in recycling programs, and conserve natural resources. Additionally, our team prepares the recycling and waste report each biennium ahead of the legislative session. We look forward to presenting that report next year as we continue to look for opportunities to improve our data collection and presentation. While our role in the management of hazardous and solid waste is conducted within a regulatory framework, our role in sustainability is less prescriptive. We appreciate the opportunity today to share the important sustainability work our team at NDEP, along with our partners, are doing. With that, I will turn things over to Mr. Winkelman and Ms. Alm.

Daren Winkelman, Chief, Bureau of Sustainable Materials Management, NDEP, DCNR:

Thank you for allowing us a few minutes to talk to you about the PSN ([Agenda Item VIII](#)). Several years ago, we, as an organization, recognized an opportunity to redefine our philosophy regarding waste in Nevada, and our agency began to shift from end-of-life waste management to an entire lifecycle approach, also known as sustainable materials management. During this transition and through our strategic planning process, we received a tremendous amount of feedback regarding the lack of communication cohesiveness relating to sustainability in Nevada. One solution to overcome the patchwork was to create a stakeholder group where like-minded, passionate people could discuss sustainability challenges, but, more importantly, a group that could affect change within the state. So, we began the process of creating PSN. I would like to stress that NDEP is the logistics behind

the partners—we provide the forum and the structure, we support their meetings and make sure the decisions are captured and available to all the members, making sure the groups have a platform for these discussions. Ultimately, we want the group to grow and become self-sufficient. With that, I will turn to Ms. Alm to give you a brief overview of the group structure, what has been accomplished, and the future ahead.

Kayla Alm, Sustainable Materials Management Coordinator—North, Bureau of Sustainable Materials Management, NDEP, DCNR:

The PSN held its first kickoff meeting in August 2021. Several surveys were sent to interested stakeholders about the parameters of sustainability that they view as important to support and collaborate on within Nevada. The survey results were then compiled into six working groups, each led by a chair and co-chair.

The first phase of the stakeholder group was to discuss in deeper detail the status of the working group topics and what needs to happen to further their objectives. The work is currently being compiled into a document called the Menu of Options, which will be published on March 31. This document will outline various ideas or options that all sectors and industries can consider to further their sustainability efforts. The second phase will be prioritizing and implementing programs for the remainder of 2022 and onward.

During the kickoff meeting, we facilitated an exercise to develop a mission statement; with this, all sectors came across with one common goal—to change the way Nevada thinks about sustainability. Once the working groups gained some traction, the sustainability working group created a definition for what sustainability means for the entire partnership group. These two phrases have created a foundation from which the stakeholder group will move forward.

The six working groups are run by a chair and co-chair who volunteered to be in their position after the August kickoff meeting. We have representatives from nonprofits, private businesses, and governmental entities, which provide a broad representation of opinions in each working group. I will briefly describe the following groups:

- The Education and Outreach Group is going to unite the sustainability message to audiences around the topics discussed in other working groups;
- The Organics Management Group will discuss and streamline the different organic collections, such as yard and food waste, and promote beneficial end use of this material;
- The Policy Change and Funding Group will streamline policy ideas and create broad communication routes for legislative and policy proposals;
- The Recycling Group is working on increasing recycling opportunities, starting with multifamily residences;
- The Source Reduction Group is focusing on reducing the amount of waste that is generated; and
- The Sustainability Group is working on uniting the broader topics of sustainability and inviting additional stakeholders to the conversation.

The Organics Management, Recycling, Source Reduction, and Sustainability working groups are idea-based, with members focusing on a single topic, outlining options to improve their focus. To present a single message and to unify collaboration and communication, the Policy Change and Funding Group and the Education Outreach Group will eventually take over some programs to push forward. This will ensure the mission statement of this partnership group is met—to change the way Nevada thinks about sustainability while providing a united message.

Once the Menu of Options is published on March 31, the chairs and co-chairs will convene to prioritize which programs outlined in the document need to happen first and start creating the baseline projects to elevate their focus areas. Once baseline projects are decided upon, project-based groups will be created to coordinate efforts. A meeting will be held in September 2022 to provide an update to all projects that are occurring and to further outline the next steps for the stakeholder group.

We are very grateful to have several organizations throughout Nevada that have stepped up and participated in ensuring the success of sustainability in Nevada by participating in PSN. Thank you for listening to our presentation on the great work being accomplished by all the organizations statewide to unite the voice of sustainability. Do you have any questions for us today?

Chair Watts:

We had some conversations with Tina Mudd, Chair of the Policy Change and Funding Group. If Ms. Mudd is available and would like to speak, I want to provide her the opportunity to come up and do so.

Tina Mudd, Environmental Manager, Granite Construction, Inc., and Chair, Policy Change and Funding Group, PSN:

I want to compliment NDEP staff and this team for putting a diverse group of folks together. The benefit of this group is that it is a diverse group. As Ms. Alm mentioned, this includes business, industry, nonprofits, municipalities, and folks representing initiatives in their communities. This is beneficial because we are looking at what is being done right now, building on what is being done, and doing better, before we introduce a bunch of new things. On top of that, we are also looking at how we can do things efficiently and make sure we do not have unintended consequences with the things we propose. We are looking to some of our neighboring states, counties, and partners to see what has been done well. Staff has brought us a bunch of ideas from other areas for ways we can progress in a meaningful way. I want to thank the staff members for doing what they are doing for sustainable Nevada and for including such a diverse group of folks..

Chair Watts:

I appreciate the time you and others have given to this effort. I think it is important. We have seen waste management issues come before the Legislature at various points in time, and without saying anything about whether some of those efforts are positive or negative, I think often they have been brought forward by one stakeholder, and then there is usually a response to that. I think it is helpful to get this broader conversation going among all the different stakeholders in kinds of waste management. I am looking forward to seeing what comes out of the process.

We also appreciate you being flexible and presenting to this Committee. I understand it is a little bit early because you are in the process of finalizing the Menu of Options to be considered. We look forward to seeing that when it comes out, but we appreciate you briefing the Committee on what has been happening so far, as well as where things are looking in the process moving forward. I would like to open it up to members for questions. We have a question from Assemblywoman Bilbray-Axelrod.

Assemblywoman Bilbray-Axelrod:

I am curious about recycling. I know there has been a lot of anecdotal talk, at least among my peers, that there is not a market for purchasing things that are recycled, and therefore, a lot of things we intend to be recycled are not being recycled. I also think we do not really inform our consumers on what is recyclable and what is not in a meaningful way. I even find myself questioning and having to go on the Republic Services [website](#) to see if something can be recycled. Could you address those issues?

Ms. Alm:

That is exactly why the stakeholder group came together; there are a lot of questions from the public. This is something the Recycling Group is going to be working on and eventually pushing out through the Education and Outreach Group to ensure there is a uniform and united message going out to all stakeholders. Does that answer your question?

Assemblywoman Bilbray-Axelrod:

Can you address the first part of the question about whether there is a market right now? In the past, China had been one of the largest purchasers of recycled material, and I have heard that is not happening anymore.

Ms. Alm:

Recycling is dealt with mostly in the private sector—Republic Services, Waste Management, and other waste-focused companies throughout the state. It is constantly shifting. We have been trying to gather some more information about where the material is moving so we can bring those areas back to these working groups to see how we can better help and suit Nevada's recycling infrastructure. So, it is currently being addressed. If you want any other further data, we will be submitting the recycling report coming up this next legislative session.

Chair Watts:

Senator Scheible.

Senator Scheible:

I am optimistic about this group. I am glad to hear we are honing in on some of these really important issues that Nevada has struggled to address for decades at this point. Recycling is one of my personal favorites.

I have a couple of questions. First, I understand the Menu of Options has not been published yet, but it is going to be published on March 31 and today is March 21. Can you give us a preview of some of the projects and options so we can get a sense of the scope that this working group is talking about? Is it going to be something like installing signs to

encourage people to recycle their aluminum cans or something like building a facility to process aluminum cans into new aluminum cans or other products?

Ms. Alm:

I would be very happy to give you more insight of what will be published in the next ten days. As you saw, there are six different working groups, and each working group has put forward anywhere from 5 to about 25 different programs, so this is a very extensive plan. Most of the projects that we are going to be starting with are baseline data collection projects. To further these different projects, we need to really see where we are standing today because we do not want to jump forward—like Ms. Mudd mentioned earlier—and have unintended consequences. We need to see where sustainability within these six working groups stands today.

I think one of the most notable and exciting projects coming out is within our Organics Management Group. They have been discussing a lot with food and yard waste—how we are going to collect, process, and transport that material and then eventually utilize the end material. There are a lot of fun and exciting projects coming out here in the next several weeks. As I said, a lot of these projects are going to be around baseline data collection, so we see where we are at today and where we can further expand.

Senator Scheible:

Who is footing the bill for these projects?

Ms. Alm:

Funding is a very big portion of this stakeholder group; we need to identify some funding sources. We need to identify where funding is needed; in order to acquire funding, we need to see what projects need support moving forward.

To touch on your last question on the projects that are coming now, we are going to be redoing the Nevada Recycles [website](#) into more of a sustainable Nevada website. This is something NDEP currently utilizes, so we do not need funding to start off this very first project.

Senator Scheible:

Why would we change the website from recycling to sustainable Nevada?

Ms. Alm:

Sustainability is all encompassing; recycling is a single part of sustainability. We are going to be keeping a lot of the same material from the Nevada Recycles website, but we are going to be amplifying and bringing in more topics to this website. Instead of just recycling, we can be discussing organics management, we can be discussing funding all these different projects. There is going to be resource reduction and how we can reduce our waste generation. We are going to be taking the recycling information and amplifying to encompass the entire sustainability message.

Senator Scheible:

I would like to ask about the long-term planning. You mentioned the groups will be coming back in the future for a status update. What is the mechanism to get these projects from start to finish, as opposed to start to inception to never completed?

Ms. Alm:

This is a question we have been discussing and thinking about. Bringing in our chairs and co-chairs, bringing together the stakeholder group, we were noticing a lot of those projects would—just like you said—start up having a wonderful idea and then were never really completed. Involving the chairs, co-chairs, and stakeholders at all industry levels—the private, nonprofit, and municipal government levels—that have a passion for these different projects will ensure that we are meeting and completing the project proposals from beginning to end. As the stakeholder group moves forward, the chairs, co-chairs, and other project leads are going to be managing and ensuring that the communication and collaboration continues throughout the process.

Chair Watts:

I know this is looking far into the future on the process, but at a very high level, do you see this as a process that is going to be an ongoing thing to some extent, where this stakeholder group is going to continue to have meetings on some sort of regular basis? Even though there is this immediate planning process and you have discussed how some of that is envisioned moving forward into implementation and through the end of this year, is this something that you plan on continuing to convene and gather feedback from on an ongoing basis for the foreseeable future?

Ms. Alm:

Absolutely. We hope to expand and continue the status of the stakeholder group for the duration of Nevada. There are a lot of other very successful stakeholder groups managing other portions of the nation that are showing great success, and in doing so, they have been starting at these smaller, grassroots-level groups, where we are today. Eventually NDEP would like the stakeholder group to become self-sufficient. As Mr. Winkelman mentioned earlier, we are here to provide that foundation to really bring everyone together and create the stakeholder group. In the future, when the stakeholder group is ready and has the buy-in and commitment from chairs, co-chairs, and other partners, this could be a standalone stakeholder group.

Chair Watts:

I appreciate the approach that looks at these issues comprehensively—even just expanding from recycling to “reduce, reuse, recycle”—really taking a comprehensive look at the waste stream, as well as organics, composting, and food waste reduction, which is separate from other types of waste reduction.

Do we have any members in Carson City who have questions for our speakers? Go ahead, Assemblywoman Hansen.

Assemblywoman Hansen:

I really like that those working groups have a mix of public and private, which is very important. I would like to follow up on the question about selling off recyclables and the

reduced size of the market that my colleague in the south asked. I think you mentioned the private side is selling these offshore. Is there any reason they do not have a market in the United States, per se? Are there regulations that would prohibit them from using those, so they are going to markets where the regulations are not as strict?

Ms. Alm:

That is a wonderful question. Something the team has been touching on with the policy side is looking at what current policies are in place and creating barriers for sustainability. At this point, I do not know if we have any actual barriers to bring in those different facilities for recycling within Nevada and the nation. We do have several facilities in Nevada and the rest of the country that are able to process material, but I do not believe there are any policy barriers. We are trying to focus within the Policy Change and Funding Group on incentivizing these different industries that can come in and keep this material in Nevada. We can reduce the transportation of material and create in-state jobs for Nevadans. We want to explore how we can take the material we are generating within the state and keep it in within the state.

Assemblywoman Hansen:

We talked about the organics, such as composting. There was a fire in Spanish Springs a few months ago, which affected the air quality. Is there a higher incidence of that sort of fire? It is just smoldering; it is very difficult to mitigate when it is happening. How did the fire start? Is it self-combustion that creates gasses that catch fire? I am just trying to understand the process.

Ms. Alm:

“Windrow composting” is where you have large piles of material composting within each other. The piles get hot inside and, as you said, can self-combust and smolder within. They are very hard to put out as there is a lot of material to feed these fires. To prevent these fires, there are permit requirements from the state and the local health districts; within those, the facilities must test for temperature at various intervals. That should be a lot of the prevention side. However, there are different pockets of materials; some materials can generate different gasses that can get hotter. It leads to maintenance on the facility side, but it is rare for these fires to happen. They can be well-prevented, and that is in their permit requirements.

Chair Watts:

I will just say it is always interesting hearing about some of these issues, especially as they approach larger scales. There are nuances to all of those. I have done small-scale at-home composting, and it has never combusted, but it is interesting in the winter to see the steam coming off a compost, especially as you turn it. Because those microbes are at work, it does heat up.

Any additional questions from our members up north? Hearing none, I want to ask about a couple of things. First, I know there were some questions around financing and policy, and there is a financing and policy work group that is going to bring some ideas—in legislation, regulation, or other avenues—but when it comes to financing some of these, I am looking for some clarification. There could be a range of options and opportunities; some of those may be generating and using revenue at the state or local level, but some could be executed by the private sector in taking on different education initiatives. Is that correct?

Mr. Winkelman:

That is correct. One of the biggest ideas in creating this partnership was to bring together both private and public so we could start to address some of those issues and how we are going to fund some of these larger projects. For example, how do we get an anaerobic digester or waste energy facilities in the state? I am not saying we want either one of those, but we want those discussions around how we begin to look at them, and we had to have private partnership to do so. I think this group is moving forward very quickly and will come, hopefully, with some of those recommendations either through the next session, or in some interval of that. We are headed that direction; it is where we hope we can go.

Chair Watts:

I have had the opportunity to sit in on a couple of the meetings of the partners. Could you speak a little bit about the solid waste management plan that NDEP has, the process of updating it, and to what extent some of these broader sustainability principles may be incorporated into that solid waste management plan—which I think is a little bit narrower than it traditionally has been?

Mr. Winkelman:

That plan is due every five years, including in September of this year. We have opened that plan to begin to look at solid waste in Nevada; we believe the plan is pretty weak and has a narrow focus on just solid waste in Nevada. We wanted to open that up in sustainability and really begin to look at a holistic approach of waste management within the state. We are, for lack of a better term, knee-deep in that process. We have a lot of people working on the group to bring that plan forward. We hope to have this done by the end of the year. It is an exciting time because we have a great opportunity to really look at the plan holistically for the state.

Chair Watts:

I think this is a great opportunity. It sounds like there is already a lot of diverse participation in this workgroup, but seeing as how the hope is that it is going to continue on for the future, I think this is another opportunity to get the word out to the community for anybody who would like to participate, who is not already, to help shape some of the policies and initiatives that are going to be affecting our waste management strategy in the state. We look forward to seeing the Menu of Options that comes forth—as well as some of the initiatives undertaken by the partners moving forward—and evaluating any options that relate to the Legislature in supporting some of these things or even just looking how the state addresses them from a fundamental planning perspective to make sure it is a little bit more holistic.

Members, any last questions?

Mr. Winkelman:

Mr. Chair, if I may, I would just like to say thank you to Ms. Mudd and the other partners. We have six chairs and six co-chairs who are running these meetings, making it work, trying to bring all the issues forward, trying to corral a lot of different people. They really deserve the credit; the people who have come as stakeholder members deserve all the credit. We are just here to make sure it works and moves forward and to provide support. So, again, thank you to them for truly making it work.

Chair Watts:

We appreciate all those who have been involved in this process, but I want to recognize NDEP as well for bringing this together. I think there is a lot of potential benefit from undertaking this process and getting such a diverse group of people together to talk about these issues at such a broad and interconnected level. I am glad we can get that information out, and I encourage anyone who is interested to reach out to NDEP to join the partners, if they have not already.

AGENDA ITEM IX—PUBLIC COMMENT

Chair Watts:

We have arrived at the last item on our agenda for today, which is our second period for public comment. We will begin by seeing if we have anyone wishing to provide public comment in person either here in Las Vegas or in Carson City. Seeing none in Las Vegas or Carson City, BPS, can we see if we have anyone wishing to provide public comment via phone?

Patrick Donnelly, Great Basin Director, Center for Biological Diversity:

We are in the worst drought in recorded history in the Southwest. So, when the state's top water official comes to you and says we are badly under resourced, that should qualify as an emergency. The state engineer's pay rates are not comparable with private industry, and during the current employment upheaval, they have lost substantial staff. You can see this playing out in their operations. For instance, new water right applications are not being scanned and uploaded to the DWR website in a timely fashion. You may know your neighbor just applied for a whole bunch of water, but you cannot see the application to know whether or how to protest it. The Office of the State Engineer has always been under resourced, but there is concern that it could be verging on dysfunction. While this Committee is not a money committee, the members should take urgent action to ensure the state engineer has the resources he needs at this time of urgent need.

We also desperately need the one-time allocation for basin budgets. We are using perennial yield numbers from a different time in water science and a different climate. Epic data presented in the lower White River flow system proceedings show that in some aquifers in the Mojave Desert, there is functionally zero recharge except in the most exceptionally wet years. We are using a hydrological model of water that is based on science derived in wet places. It turns out most of the groundwater people pump in Nevada fell as precipitation decades, centuries, or millennia ago, reflective of a different climate regime. Mr. Sullivan was talking about over allocation. We do not even know which basins are over allocated—it is probably most of them.

We need to fund that science, but the state engineer also needs to make the tough choices. We heard Mr. Sullivan say we try not to be in the business of taking anything away, but how could that be in a state with widespread over allocation of groundwater resources? How can we possibly balance the books if the state does not take anything away? We heard curtailment by priority described as draconian, but why should it be if someone at the end of the line is pumping water that just is not there, they should lose that water right? The answer is not to mess around with the law to allow gimmicks like water markets. If the pumps need to be shut down, shut them down.

Finally, we need to reckon with growth. Mr. Entsminger spoke on the topic of growth, but if you read between the lines, it is clear the only reason Las Vegas has been able to grow as it has is because of unprecedented water conservation measures. At some point, you just cannot conserve anymore, and you have got to start limiting the new water users. Proposals like the Clark County lands bill, which will add tens of thousands of acres of new residential development and residential irrigated landscaping, will negate all SNWA's great conservation work by overloading the system with consumers. If we do not address growth—as Mr. Entsminger pointed out—someone will need new resources, and historically that has meant enormous, contentious pipelines to rural groundwater basins, a road none of us want to go back down. Thank you for your attention to this important topic today.

Chair Watts:

Thank you for your comments, Mr. Donnelly. Broadcast and Production Services, we will move on to the next caller.

BPS:

Thank you, Chair. The line is open and working, but there are no other callers wishing to offer public comment at this time.

[Subsequent to the meeting, written comments on a variety of points raised during the meeting were received from Darlene Anderson, a resident of Henderson, Nevada. ([Agenda Item IX](#)).]

Chair Watts:

Thank you, members, for your time and attention and to everyone who was able to come and participate in person. It is good to be back to full hybrid meetings; we are glad to welcome participation in any form.

Our next meeting as the full Joint Interim Standing Committee will be on Thursday, June 16, and it will be a special joint meeting with the Joint Interim Standing Committee on Health and Human Services to look at some of the health impacts related to climate and environmental issues.

Lastly, I want to note that between now and then, our Subcommittee on Public Lands will be meeting in April, May, and June. The first meeting of the Subcommittee will be in Ely, Nevada on Friday, April 15.

AGENDA ITEM X—ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 1:23 p.m.

Respectfully submitted,

Steven Jamieson
Research Policy Assistant

Jann Stinnesbeck
Senior Policy Analyst

APPROVED BY:

Assemblyman Howard Watts III, Chair

Date: _____

MEETING MATERIALS

AGENDA ITEM	PRESENTER/ENTITY	DESCRIPTION
Agenda Item IV	John J. Entsminger, General Manager, Southern Nevada Water Authority	PowerPoint Presentation
Agenda Item V	John Zimmerman, Assistant General Manager, Truckee Meadows Water Authority	PowerPoint Presentation
Agenda Item VI	Adam Sullivan, P.E., State Engineer and Administrator, Office of the State Engineer, Division of Water Resources, State Department of Conservation and Natural Resources (DCNR)	PowerPoint Presentation
Agenda Item VII	David W. Fogerson, C.E.M., Chief, Division of Emergency Management/Homeland Security, Office of Homeland Security, Office of the Military	PowerPoint Presentation
Agenda Item VIII	Daren Winkelman, Chief, Bureau of Sustainable Materials Management, Division of Environmental Protection, DCNR	PowerPoint Presentation
Agenda Item IX	Darlene Anderson, Resident, Henderson, Nevada	Public Comment

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