NEVADA LEGISLATURE
LEGISLATIVE COMMITTEE FOR THE REVIEW AND OVERSIGHT OF THE TAHOE REGIONAL PLANNING AGENCY AND THE MARLETTE LAKE WATER SYSTEM

(*Nevada Revised Statutes* [NRS] 218E.555)

DRAFT MINUTES

June 24, 2022

The second meeting of the Legislative Committee for the Review and Oversight of the Tahoe Regional Planning Agency and the Marlette Lake Water System for the 2021–2022 Interim was held on Friday, June 24, 2022, at 9 a.m. in Room 3138, Legislative Building, 401 South Carson Street, Carson City, Nevada. The meeting was videoconferenced to Room 4412, Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada.

The agenda, minutes, meeting materials, and audio or video recording of the meeting are available on the 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 CARSON CITY:

Assemblywoman Sarah Peters, Chair
Senator James A. Settelmeyer

COMMITTEE MEMBERS ATTENDING VIA REMOTELY:

Senator Melanie Scheible, Vice Chair
Assemblywoman Lesley E. Cohen

COMMITTEE MEMBER ABSENT:

Assemblywoman Lisa Krasner

LEGISLATIVE COUNSEL BUREAU STAFF PRESENT:

Alysa M. Keller, Senior Principal Policy Analyst, Research Division
Lisa Creamer, Research Policy Assistant, Research Division
Eileen O'Grady, Chief Deputy Legislative Counsel, Legal Division
Erin Sturdivant, Principal Deputy Legislative Counsel, Legal 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—CALL TO ORDER

Chair Peters:

Welcome to the second meeting of the Legislative Committee for the Review and Oversight of the Tahoe Regional Planning Agency (TRPA) and the Marlette Lake Water System. Today the Committee will receive presentations focused on forest health, water quality, and climate change resiliency in the Lake Tahoe Basin.

[Assemblywoman Peters discussed meeting guidelines, including procedures for providing public comment, noted meeting materials have been uploaded to the Committee's meeting page, and pointed out members of the public can sign up to receive electronic notifications concerning the Committee's activities through the Nevada Legislature's website.]

AGENDA ITEM II—PUBLIC COMMENT

Chair Peters:

We will go ahead and move into public comment. This is the first public comment period; there will be a second one at the end of the meeting. Please limit your comments to three minutes to ensure everyone has a fair opportunity to speak.

Is anyone in the room for public comment here in Carson City? Not seeing anyone, we will move down to the Grant Sawyer Office Building. Is anyone there who would like to come up for public comment? I do not see anyone. Broadcast and Production Services (BPS), please check the public comment line to see if anyone would like to call in for public comment.

[BPS staff explained how callers can take their place in the queue.]

Fred Voltz, Nevada resident:

A severe and increasing problem has bedeviled the Lake Tahoe Basin for 20 plus years and continues to lack unified attention and action by the one and only body overseeing the 500 square miles—the TRPA. Despite clear acknowledgements and environmental responsibility for the Lake Tahoe Basin, in its Regional Plan and most recent annual report, the TRPA has claimed three excuses for failing to take a universal and effective approach towards requiring wildlife-proof human trash containment across the Basin's various jurisdictions. The first excuse for taking no action is local control, which has failed miserably. The second excuse is excessive cost, but is this proposed requirement any different than insisting vehicle owners secure an annual smog check in urban Nevada counties or the $2.2 billion of electricity rate hikes enacted by the 2021 Legislature to implement renewable energy projects in Senate Bill 448? These costs have been imposed seeking hope for the betterment and benefit of all Nevadans. The third excuse is that TRPA would have too much of an enforcement burden when the reality is local health departments working with trash hauling companies and contracted nonprofits would leave TRPA with no new duties.

Multiple other mountain communities with precisely the same problem have successfully established universal wildlife-proof trash containment installations outside of garages and away from dwellings. They include Cranmore, British Columbia [*sic*]; Mammoth Lakes, California, Yosemite National Park; and Durango, Boulder, and Vail Colorado. This approach

works. So why is TRPA not using it as well? The peril to all wildlife species as they are drawn into the urban areas of the Basin for the free food, added on top of the dangers of humans thinking wildlife can be casually interacted with and treated as toys for their pleasure, eats up considerable law enforcement time and places factions of the communities at odds with state wildlife enforcement agencies and their neighbors. Wildlife crossing highways are frequently killed as they seek the free food. Existing trash hauling and handling contracts with local jurisdictions cannot be arbitrarily abrogated or modified—precisely why TRPA's unwillingness to enact an ordinance has been so vexing. Beginning in 2014, government wildlife agencies and community members went to TRPA on three separate occasions seeking action and leadership. Each and every time TRPA staff and the board members have been unwilling to act, citing the three flimsy excuses previously outlined.

As Nevada's oversight body for TRPA, agendizing this issue for discussion and concrete action needs to happen sooner rather than later in the interest of public safety and the Basin's overall environmental health. (Agenda Item II)

Chair Peters:

Please add the next caller to the public comment line, BPS.

BPS:

Chair, the public lines are open and working, but there are no more callers this time.

Chair Peters:

I am going to close this agenda item.

AGENDA ITEM III—APPROVAL OF THE MINUTES FOR THE MEETING ON FEBRUARY 15, 2022

We will move on to the next agenda item, which is approval of the minutes for the meeting on February 15, 2022. Committee members, you have all had time to review the minutes. Are there any questions?

> SENATOR SETTELMEYER MOVED TO APPROVE THE MINUTES OF THE FEBRUARY 15, 2022, MEETING.
>
> VICE CHAIR SCHEIBLE SECONDED THE MOTION.
>
> THE MOTION PASSED UNANIMOUSLY.

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AGENDA ITEM IV—PRESENTATION REGARDING THE *LAKE TAHOE BASIN FOREST ACTION PLAN*, LAKE TAHOE BASIN FOREST HEALTH AND WILDFIRE PREVENTION PROJECTS AND PRIORITIES, AND LESSONS LEARNED FROM THE CALDOR FIRE

We are going to move on to the next agenda item, which is a presentation regarding the *Lake Tahoe Basin Forest Action Plan*, Lake Tahoe Basin forest health and wildfire prevention projects and priorities, and lessons learned from the Caldor Fire. Kacey, KC, State Forester Firewarden, is here. Please go ahead when you are ready.

Kacey KC, State Forester Firewarden, Nevada's Division of Forestry (NDF), State Department of Conservation and Natural Resources (DCNR):

We are going to talk about the forest health conditions in the Lake Tahoe Basin. We are seeing an increase in wildfire quantity, frequency, and intensity. Last year, the Caldor and Tamarack Fires both came into the high mountain areas. The Tamarack Fire came into Nevada; luckily, the Caldor Fire did not. We will talk more about those in a little bit. We are seeing increased mortality from insect and disease across the forest. There is increased drought duration and frequency, and we expect the drought will affect the high elevations again this year—as far as fire is concerned—and a decreased winter snowpack.

Regarding Tahoe's forest health conditions—every year, we fly over all the forests of the state with the United States Forest Service (USFS), U.S. Department of Agriculture. Unfortunately, due to the Coronavirus Disease of 2019 (COVID-19), we have not been able to fly over the past two years. We hope to get back up in the air this year. The USFS has, however, been doing ground surveys to check the conditions on the ground. We are seeing an increase in mountain pine beetle. You can see them as you are driving around the state, but they are not yet at large outbreak scales. We are continuing to monitor the devastation. We are seeing some Jeffrey pine beetle increases due to the drought stress. The trees are stressed and competing for water. We are also seeing some ponderosa pine stress, which is probably due to the beetles as well.

There is a large effort that I am not going to go into much because I think you are going to hear about this later from the Tahoe Fire and Fuels Team (TFFT). Our report showed that about 920 acres were treated this year. That was almost a doubling from the previous year—getting back out of the COVID-19 slump with crews and personnel. These are all cross boundary interagency projects that are prioritized either in the *Lake Tahoe Basin Forest Action Plan* or the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*.

Although the Caldor Fire did not come into the State of Nevada, there was an imminent threat as it was moving towards the state. We deployed a contingent through a partnership with NV Energy and funding approved through SB 508 (2019). It was a full Type 3 incident management team. They were stationed at the Hard Rock Hotel. There were 203 personnel between local government, state government, and our partners at NV Energy. They were out there for 16 days, and their purpose was to build a fuel break from Stateline to Genoa in preparation for the fire coming into the Nevada side. That was about 25.5 miles of contingent fire line that was created on that deployment. This is something we are doing across the state with these crews we have built with our local governments. The crews were available if they were needed for fire response, but their purpose was to get that fuel break created so we could slow the movement of that fire when it moved over.

I want to briefly discuss the implementation of the Lake Tahoe Environmental Improvement Program (EIP) by the Division of State Lands, DCNR. They manage 493 urban parcels in the Lake Tahoe Basin; that covers about 232 acres. That includes an additional new parcel that was purchased this year in the Kingsbury area, which is about 10 acres. Last year we were able to burn just over 1,250 piles, eliminating about 850 tons of forest fuels. We had a little bit of a window for prescribed fire, which was done between local government contract crews and NDF crews. We burned piles that have been in large quantities for a long time, as we had the snow cover that was required by the burn plan. They treated about 866 acres total on state land. The State Lands' forester manages these parcels, looks for forest health conditions, and makes sure the parcels are managed to the standard of fire safety and all of those aspects.

In the Lake Tahoe Basin, as with the rest of the state, there is an interagency wildfire prevention campaign that goes on to make sure that all the partners are speaking with one voice. We recognized a long time ago that people did not understand our boundaries that were drawn by our agencies, so we needed to speak with one voice. We go into fire restrictions together. Our fire restrictions are often very similar. They are all posted online. We are looking at fire causes all throughout the year. We are deploying interagency prevention teams across the state when we start to see an influx in human-caused fires; in some years, it is target shooting and in others it is campfires. We target the messaging to what we are seeing on the ground to try to stall those human-caused starts. Unfortunately, we are seeing a huge increase over the last couple of years in human-caused starts, so it is really critical that we try to prevent those fires from starting.

Next, I will discuss some of the key challenges that we are facing as agencies. We are having employee recruitment and retention issues. I think we had about a 50 percent vacancy rate with positions at NDF. Luckily, we have been able to fill positions; we are currently at a vacancy rate of about 26 percent. We were lucky to get some of our firefighter positions filled for the year, so most of our fire crews are full. However, we are hiring a new fuels crew; of the 18 we are hiring, we have 6. If you know anyone who wants a job, we have some.

We are seeing some supply chain disruptions. It is hard for us to purchase equipment and supplies—it is taking a lot longer than what we are used to—which is causing some delays in us getting out and doing work.

Obviously, drought and climate conditions are increasing the risks up in the Lake Tahoe Basin and across the state from a fire perspective.

We are also experiencing a lack of support in the industry, meaning we do not have a biomass industry in the State of Nevada. Part of what we need to do to get all the trees out of the forest, particularly in the Lake Tahoe Basin, is have mills to process them or biomass facilities that can utilize them to make energy. We are working as an interagency partnership to get some of that moving so that we can move a lot more of that out. The windows for prescribed fire are small in the current conditions, so it is very hard to continue to create a deficit of piles up in those hills.

We are having some challenges with having enough contractors in the state to do all the work that we are trying to get done. We have been actively working with our partners and the local communities to build that infrastructure so we have adequate crews when we need them to get out there—both from a firefighting perspective and from a fuel reduction perspective. This year, the State of Nevada will contract with the super scoopers that we had two years ago. Although they are under federal contract this year, they will be parked here because we give them free space, and hopefully we will be able to use them adequately when we need them. We also have a new contract with five single-engine air tankers this year, which we have never done at the state level. They will be housed in Stead, but we might move them up to Elko as the fire risk increases. They will be mobile across the state and called upon when needed. That is all part of us trying to be good partners—making sure we are filling the gap of what we are lacking in crews available on the ground and trying to get some aerial assets in to attack fires quickly.

Our key messaging is we are always looking to ensure firefighter and public safety. Evacuation during the Caldor Fire was a great example of how we did that safely and effectively, which can be challenging in the Lake Tahoe Basin. We always want to aggressively attack wildfire with the closest available forces. A couple of years ago, we

transitioned back to having local government assets dispatched out of our state and federal interagency dispatch centers. It increases the workload on the centers, but it ensures you are actually calling the closest available resources when they are needed. We want to continue to use the interagency cross-boundary methods to implement forest health and fuel reduction projects in these areas. You will hear later that these methods were highly successful with keeping the Caldor Fire out of the community and moving it up into the hills. We want to continue to use the interagency approach that we talked about earlier with messaging—making sure that when we are going into fire restrictions, we try to make our restrictions the same across state, local, and federal government. The public does not usually understand where those boundaries are drawn. It is the same with fire prevention. We have also been increasing our work with homeowners so that we can ensure that they are doing their part while we are doing our part to make them more firesafe.

I would be happy to answer any questions.

Chair Peters:

Does anyone on the Committee have questions before I ask some of mine? I am not seeing any.

I have a couple of questions for you—starting with your interagency approach. You said you want to continue doing that. Is there anything you need from us to continue that effort with the interagency approach and partnerships?

Ms. KC:

As always, funding is helpful. There is a lot of federal money coming down through infrastructure packages. With the America the Beautiful Challenge, one of the greatest assets we had as a state was to provide the matching funds. Every one of those grant funds is coming down with some sort of match. Sometimes it is a 10-15-20; sometimes it is 1 to 1. Having that state funding available through SB 508 was very helpful to gain that partnership. We have treated over 10,000 acres to date with the NV Energy funds. That was helpful along with the support you gave with the ask that we push forward for contracts with single-engine air tankers or scoopers. These things are always appreciated.

Chair Peters:

I have two more questions. First, the biomass industry—we talked about that previously. Can you give us a breakdown of what we need in the State of Nevada to stand up a biomass industry that can take on the quantities you need to be producing with the fire reduction efforts you are working towards? What can we do in this legislative body to help you get there?

Ms. KC:

The biomass industry is complicated. What we need is support for the production of these sites. We will need a lot of them, and they are going to have to vary in size and scale and what they do. There is timber that could be sold as timber along the Sierra front. When you get into the pinyon-juniper woodland areas, that is not a marketable timber; we have to find other uses for that. There are four industries coming into the state—in varying stages of approval—which will be helpful in getting some of this stuff out. We need support with innovating and bringing in this industry. We need people to understand that we do have a sustainable supply chain and can produce enough for their business to be successful in the long term. We have historical and current reports for the industry, which show where we

are ready with the National Environmental Policy Act (NEPA) of 1969 (Pub. L. 91–190, 83 Stat. 852 [1970]). Obviously, most of the supply is going to come from the USFS in the Lake Tahoe Basin, so we want to make sure they understand the supply is there to create this industry. It is going to take more than just one mill or having a 1-megawatt biomass facility back up and running. One thing that would be helpful is support for getting the one at the prison back up and running—trying to find an end user. We have been working collaboratively with the Department of Corrections to find a way to get that back up and running and useful for whomever might want to be the end user. There is some interest in it, so we will continue to support that effort.

Chair Peters:

To be clear, you have NEPA-ready fuel that people could take in and produce? Is it available?

Ms. KC:

Yes, the USFS and the Bureau of Land Management (BLM) has done that. It is one of the things we are mapping through shared stewardship statewide. Tahoe has done their own survey on what they have as NEPA-ready in the Lake Tahoe Basin. We are doing that at the statewide level right now in our high priority shared stewardship areas to see what is actually NEPA-ready. A lot of these funding sources are going to require that we be ready to hit the ground right away. If NEPA is not ready, it not going to allow for that. The mission we have given our staff is to: (1) look at what we can do immediately; and (2) outplan for the next two to five years to make sure those high priority areas of NEPA are getting done and if the federal agencies need planning with that, we have contractors on the good of the state contract to help with that.

Chair Peters:

That is amazing. I do NEPA in my day job. I know it is disheartening to tell clients, "Your NEPA is going to take 18 months," and sometimes it takes up to five years. It is nice to have that up and ready for people as they come in. I know, from some of the other work I do, that there are novel technologies coming out for biomass production—mobile units and smaller units that we have not had before. That drives into some of the other efforts of our body to ensure we have energy resiliency in some of our more rural communities or communities that are more at risk for losing power through the traditional grid.

I have one more question for you about your interagency voice—the single voice that you are using with the Tahoe Living with Fire program. Do you have social media that people can follow to stay up to date—get those instant notifications about what is going on and where decisions are being made so that they can stay more apprised than having to look up and refresh the website every day?

Ms. KC:

Yes, there is one. We can get that to you.

Chair Peters:

That would be great. I would love to share it on my social media so people around here know where to look for that information.

Ms. KC:

The TFFT does for sure. That is where I get a lot of my information on what is happening with the prescribed fires they are doing in the Lake Tahoe Basin.

Chair Peters:

Fantastic. Those were all of my questions. Are there any other questions?

Senator Settelmeyer:

My question is based off of one of yours, Madam Chair. You were discussing the concept of portable biomass cogeneration (cogen) facilities. The cogen facility at the prison was not economical when gasoline was at $2 per gallon. Therefore, I do not see that facility being a realistic concept for the foreseeable future. Are there grants or opportunities to look into a portable facility for the Lake Tahoe Basin, or for other areas, to try to generate power in that respect, and obviously, to get rid of the fire danger?

Ms. KC:

Yes, we are looking at all options. The Carson City cogen plant was not economical. We are hoping there will be some subsidy available because, if you look at the economics of reducing fire risk—how much fire suppression in the Lake Tahoe Basin costs—those things do outweigh the money that we would put into a cogen facility. The price of gas is killing all of us right now. We would definitely be interested in looking at portable plants. We are looking at anyone who would want to do anything in this realm with little parts and pieces to help us get some of this stuff out of the forest. We cannot continue to build piles forever, which we may never get a window to burn. Our windows are getting shorter, particularly in the Lake Tahoe Basin when we require a snow cover to burn those piles.

Chair Peters:

Are there any other questions? I do not see any. We look forward to working with you in the legislative session on those asks.

The presentation from the Division of Forestry, DCNR, for this agenda item is on file in the Research Library of the Legislative Counsel Bureau, Carson City, Nevada. For copies, contact the Library at (775) 684-6827 or https://www.leg.state.nv.us/Division/Research/About/Contact.

Chair Peters:

Next, we have Dr. Kat McIntyre, Forest Ecosystem Health Program Manager with the TRPA. Please go ahead and begin when you are ready.

Julie W. Regan, Deputy Director and External Affairs Chief, TRPA:

I will kick us off. It is wonderful to see you here in Carson City. We wish we were on a field tour but understand the logistical challenges around that. We are delighted to be here. Today, June 24, is a day many of us will never forget. It is the day when the Angora Fire broke out in South Lake Tahoe 15 years ago. It set the stage for what you will hear from Dr. McIntyre and all of the speakers around forest health. I wanted to put a fine point on the TRPA's role with this incredible partnership around the TFFT and our local fire agencies—state, federal, and local fire districts. As a local Tahoe resident who has lived through these

fires, it has been quite gratifying to see the amount of collaboration that has happened. I wanted to provide a little perspective around that as you hear this presentation, and we are both available for your question.

Kathleen McIntyre, Ph.D., Forest Ecosystem Health Program Manager, TRPA:

I will be presenting on the *Lake Tahoe Basin Forest Action Plan*, forest health, and wildfire prevention projects. Later, you will hear from the USFS on the lessons learned from the Caldor Fire. You will hear a bit of background on the Angora Fire, the Emergency Bi-State Fire Commission, and the creation of the Tahoe Fire and Fuels team—otherwise known as the TFFT—and the three-pronged approach the TFFT takes to get work done in the Lake Tahoe Basin. This involves looking at priority work, coordinating around the entire Basin, looking at opportunities for regulatory or permitting streamlining, and coordinating funding across all of our partners and projects. There is another kind of prong that Kacey touched upon and that is public information. The TFFT has what we call the "fire pit," or public information team, which coordinates across all the agencies in the Lake Tahoe Basin to present a unified message regarding fire risk, wildfire preparedness, defensible space, and work that is occurring in the Basin. I can get resources to you so you can share those.

The TFFT was formed in 2008, right after the Angora Fire. It was created to help implement the *Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*. The TRPA is a founding member, which is interesting because TRPA typically wears a regulatory agency hat. In this instance, because we are not a land manager, TRPA acts as a convener, collaborator, and a backbone agency to help support the TFFT and the implementers in focusing to get their work done in the Lake Tahoe Basin. The TFFT collaboratively coordinates on cross-jurisdictional work focused on forest health, wildfire preparedness, and risk reduction. There are 21 agencies and groups across the entire Basin that work through the TFFT.

As Julie mentioned, the Angora Fire happened in 2007—to the day—which is fascinating. It was an illegal campfire start—31,000 acres burned in the South Lake Tahoe area, destroying about 254 structures, including multiple homes. This precipitated *The Emergency California-Nevada Tahoe Basin Fire Commission Report* (Bistate Commission Report). The Nevada and California governors came together and formed this bistate commission, which looked at what can we do—how we create recommendations on policy implementation and education regarding vulnerability to fire and forest resilience in the Lake Tahoe Basin. There were six areas of recommendations that came out of it, and they included things like policy changes, education around wildfire, funding, government structure, and environmental practices. This has really driven the past 15 years of work in the Lake Tahoe Basin, specifically lining us up in such a way that we were prepared for the Caldor Fire when it came in.

Getting to that first prong of the TFFT—prioritizing work around the Lake Tahoe Basin. The Forest Action Plan was created in 2019, and this is almost a direct offshoot from the *Multi-Jurisdiction Fuels Reduction and Wildfire Prevention Strategy*. The Plan charts the path for cross-boundary collaboration to increase the pace and scale of forest treatments in the Basin. There are three main avenues to do that. One is scaling up treatments—scaling up our solutions to match the scale of the threat with things like the Lake Tahoe West project on the west shore, the *Program Timberland Environmental Impact Report* that is on the California side, and the powerline resilience corridors, specifically the NV Energy Resilience Corridors project. Another key piece of this strategy is to build capacity. How do we expand our workforce and how do we utilize restoration by-products? This gets at the heart of the question around biomass utilization in the Basin. Lastly, another piece of the strategy is

leveraging technology; this is data management for decision making—our wildfire cameras that are all around the Basin help us with early detection, and the large lidar data sets that we have been gathering for the past five years tell us the health of the entire forest in the Basin.

The Forest Action Plan outlines priority work, and since 2019, TFFT partners have completed 9,600 acres of wildland-urban interface (WUI) treatments around the Lake Tahoe Basin. They plan to treat an additional 12,000 acres by 2025 in the WUI. At that point, it will be full completion of all priority treatments that have been outlined in the Forest Action Plan, so we are making great progress. We obviously had a hiccup in the last year because of the Caldor Fire and COVID-19, but partners feel confident that they are going to meet these numbers by 2025.

Another piece of what TFFT does is to look at regulations and permitting to see how we can streamline while maintaining environmental protections. One of the recommendations that came out of that Bistate Commission Report was Recommendation 17 regarding simplifying regulations. Subpart J states the Commission recommends the TRPA, the Lahontan Regional Water Quality Control Board, the USFS, USDA, and other affected agencies to amend their plan and ordinances to allow equipment use on slopes greater than 30 percent based on current and future technology and current forest practices. This recommendation affects approximately 61,000 acres—or 27 percent of the total land in the Lake Tahoe Basin—is on these slopes between 30 to 50 percent. Of these acres, 41 percent fall within the WUI and 59 percent fall within the general forest. When we talk about those steeper slopes, specifically in the WUI, up until recently, you were only able to treat those with hand thinning. That is expensive, can be time and resource intensive, often leads to more burn piles left on the landscape, and does not get those ecological benefits that you might get if you thin the forest mechanically and do broadcast burning.

The TRPA and TFFT members engaged science partners and the larger group of TFFT to assess erosion effects of restoration treatments on hill slopes and soil types and to draft code amendments that would allow for ground-based mechanical equipment on the steeper slopes while maintaining environmental protections. These amendments were adopted in February 2022, which was a huge success for TFFT. This was one of the last outstanding recommendations from that Bistate Commission that had not been implemented or completed. We got that across the finish line, and it offers another tool for implementers to get more work done to scale up treatments to reduce fire risk and ultimately improve forest health.

Lastly, TFFT's other hat is coordinating funding within the Lake Tahoe Basin. We regularly look at all the funding sources that are coming in and across all of our priority projects and partners and try to move all the pieces so every project and every partner is getting the funding they need to get the work done. Generally, the largest funding sources are federal, which makes sense since the largest landowner in the Basin is the federal government. This includes two sources; (1) the Southern Nevada Public Lands Management Act (SNPLMA) of 1998 (Pub. L. 105–263, 112 Stat. 2343 [1998]); and (2) the Lake Tahoe Restoration Act (LTRA) of 2000 (Pub. L. 106–506, 114 Stat. 2351 [2000]).

The SNPLMA has been helpful in terms of funding projects to reduce fuels and fire risk all around the Lake Tahoe Basin. For Round 18, multiple partners applied jointly through the TFFT, and we were able to secure $46 million across the entire Basin to get this type of work done. To give you an example, North Lake Tahoe Fire Protection District will receive $1.2 million to do defensible zone improvement work. They will receive another $2.7 million to do fuels reduction in their WUI. Tahoe Douglas Fire Protection District is going to receive

$430,000 to do fuels reduction on United States Highway 50. This has been a great source of funding to get important work done, especially at our fire protection districts.

In terms of LTRA, that program and policy has been critical to supporting EIP partnerships and the program in general. We are seeing projects from the Division of State Lands, the Nevada Tahoe Resource Team, and NDF on that list as priority projects to receive funding in the future. That could not be done without state funding that matches and/or continues to support. Nevada's "Tahoe Bonds Act" (Lake Tahoe Basin Act of 2021 [SB 368]) is critical for Nevada work. There are also California Tahoe Conservancy and California Department of Forestry and Fire Protection (CAL FIRE) grants. A great example of what the TFFT is doing to coordinate this funding—California got a surge of funding that is going through the Conservancy. That money can only go to California projects, so what we are looking at is, "Okay, can we fund those California projects with that money, and now we have a larger federal pot to go towards our Nevada partners." We are constantly looking at how we are balancing our sheet across both states and all jurisdictions.

I will open it up for questions or any discussion.

Chair Peters:

Are there any questions from the Committee at this time on the presentation? I have one related to best management practices (BMPs). I have done some work up in the Lake Tahoe Basin and across Nevada for stormwater management. I know that Tahoe has been a front-runner in developing regional BMPs for stormwater management. On these 30 to 50 percent slopes, I imagine that is going to look a little different. Have you worked towards developing a comprehensive strategy for what BMPs will look like in the Basin and what the expectation is with those?

Dr. McIntyre:

We left our language pretty broad in our code amendments, and that is because we wanted to give our implementers as much latitude as they needed to get their work done. There are a series of suggested BMPs—things like vegetative buffers and water bars and breaks, which are an obvious requirement. All projects must go through the TRPA for approval, so you cannot just go out and run mechanical equipment across the landscape on 30 to 50 percent slopes. You need to show that you are not going to have a water quality impact from erosion before you will be allowed to go out there. We have not done that yet, but that is a great suggestion to just give a little bit more guidance so our partners feel empowered to utilize the new code amendment.

Chair Peters:

It is helpful to have a working document that shows what works and what does not on certain terrains and soils. Nevada is so diverse with what you experience in the field. Having that to share with everyone—even outside the Lake Tahoe Basin around some of our other regions that have similar topography and soils—would be really helpful to the industry. I appreciate your effort on that. Are there any other questions? [There were none.]

The presentation from the TRPA for this agenda item is on file in the Research Library of the Legislative Counsel Bureau, Carson City, Nevada. For copies, contact the Library at (775) 684-6827 or https://www.leg.state.nv.us/Division/Research/About/Contact.

Next, we have Eric Walker with the Lake Tahoe Basin Management Unit of the USFS. Please proceed when you are ready.

Erick Walker, Forest Supervisor, Lake Tahoe Basin Management Unit (LTBMU), USFS, USDA:

You are going to see a lot of similarities between this and the prior presentations. The emphasis is there is a tremendous amount of collaboration, coordination, and integration of the work being done on the Lake Tahoe Basin. Hopefully, you will see that through this presentation (Agenda Item IV). It stands out to me that this is new to the Lake Tahoe Basin. I arrived here in November of 2021. I previously worked on the Basin from 1991 to 1998; then my career took me elsewhere. Coming back to the Basin after the Caldor Fire, I am grateful that there was still a community to become a part of. You will see through this presentation that a lot was done in advance of that.

I will be focused on the federal land base, and I will try to keep it mostly focused on the Nevada side of the Lake Tahoe Basin. The LTBMU has increased the pace and scale of restoration on the National Forest since the Angora Fire, which was the launch. I did not realize it started on this day. It seems very early in the fire season. Whereas, the Caldor Fire came in later in the summer, following a more traditional fire season. We are beginning to have fire years not just fire seasons. Nevertheless, we treated an average of 1 to 2 million board feet and 1,200 to 1,500 acres of land in the last five years. We have been able to increase the pace with an average of nearly 9 million board feet of forest health work and about 2,200 acres of treatment across the landscape. We recognize there is a need to go faster to increase that pace in scale. A lot of our work has historically been done with hand thinning with a combination of mechanical work as well. The code amendments that were just mentioned will actually offer us an opportunity to treat more acres mechanically, which is often a less expensive treatment. We currently average about $3,500 an acre to treat federal land. That is a lot of money with 155,000 acres of land in the Basin managed by the USFS although not that all those acres would need, or be proposed for, treatment. We have to find some ways. The code amendment change and the growth of the restoration economy infrastructure will help us with that. It was mentioned earlier that we rely heavily on SNPLMA to fund the work on the National Forest as well as the LTRA.

Between 2008 and 2018, we completed treatments on just shy of 25,000 acres. We are currently planning treatments for approximately 21,000 acres. We have been focusing largely in the WUI. As we continue to do that work, we will start to move more into that general forest area with different types of treatments. It generally takes multiple treatments before we can introduce fire in a broadcast way to mimic the natural processes as well as the processes that were in place with the cultural burning conducted by the Washoe people prior to settlement in the Lake Tahoe Basin. It usually takes that mechanical hand treatment and maybe a secondary treatment prior to us being able to do more broadcast burning. Kacey KC pointed out in her presentation the number of burn piles that we have across the landscape. We are actually creating them faster than we can burn them because of those narrow burn windows and we have such long fire seasons. The same staff are doing the fire response as well as the prescribed burning. We have these narrow windows, and we are frequently burning literally in peoples' backyards. We cannot light the pile and walk on as we might do in a less urbanized setting. That adds to the cost and slows the pace. We are also looking at mechanisms by which we would look at whole-tree yarding, which is a technique of bringing all the biomass to a central location and putting what is merchantable onto the trucks to market. That material then could be chipped, processed, and used as a product in the restoration economy. It will also lessen the number of piles we need to treat.

We are trying to tailor the treatments. When you do hand treatments, you do not have the ability to bring that out. You literally are cutting small diameter material and burning it on site. We will still have that as one of the practices we use; however, we will be able to increase our pace and scale with the changes with the code and the restoration economy having more markets. I will speak a little more to that in a moment.

You heard that a lot of work is being done through the TFFT and partners. We are also partnering closely with the Washoe Tribe and on the Meeks Bay Restoration Project. The Tribe will implement cultural burning in the Meeks Meadow area, which is on the California side. That is just one of the projects we are looking at. We are actively engaging with them around other work, including the Calaveras Healthy Impact Product Solutions (CHIPS) Crew program. There are grants to hire Tribal members to participate and support activities on the landscape. We want to continue to advance, learn from, and work cooperatively with the Tribe now and into the future.

Forest health is a big issue. During her presentation, Kacey KC pointed out some of the forest health metrics with insects and disease. White-pine blister rust is affecting the whitebark pine, and it is a high elevation pine that is prominent throughout the Lake Tahoe Basin. It is currently proposed for listing. There is a chance that it will be listed under the Endangered Species Act of 1973 (Pub. L. 93–205, 87 Stat. 884 [1973]) sometime this year. It is threatened, and one of those threats to the species is the lack of fire. It is a fire-dependent species. It is not only impacted by the foreign pathogen—the white-pine blister rust—but also by encroachment on the landscape by other conifers that are outcompeting it. There is a loss of habitat. Restoring fire into these landscapes along with other proposed mechanical or hand treatments will hopefully help in the preservation of the species.

Prevention is one of our most successful tools in managing fire on the landscape from the standpoint that oftentimes our human-caused fires are our biggest challenge. While Mother Nature does provide challenges with lightning and wind, it is the human environment that we have some ability to influence. We have a very aggressive prevention program in line with the TFFT. We also have prevention technicians who are frequently out on the landscape working through public education, one-on-one encounters, and oftentimes they are the first people on scene with an escaped campfire—those types of things. Through that prevention program, using our fire restrictions judiciously, we want to base them on good sound science. We are looking at going into our first level of restrictions during the Fourth of July weekend to limit fires—open flame, such as wood and charcoal—only to developed sites. We use science to help inform those decisions, but we also work closely with our cooperators so we are in alignment and carrying that same message. As Dr. McIntyre mentioned in her presentation, there is a public information team around the TFFT. Again, there is a lot of collaboration. Beyond that, our work is integrated across jurisdictional boundaries and responsibilities.

I will move quickly through the partnership side since you have heard a lot about it. Nothing would get done without partners. While we have a substantial workforce to implement projects on the National Forest, we would not be doing as much without our partners. We have been able to work with the TFFT to get work done on the urban lots within the National Forest. We are also working with NV Energy on the NV Energy Resilience Corridors Project. This is a partnership, as they are authorized and required under their special-use permit to do a certain amount of work where their transmission lines go through the National Forest. They are doing that. They are also bringing their capital and resources to treat areas outside of that required zone. We have a Round 19 SNPLMA request to help fund the work in zones that are outside their required area. Capital from NV Energy and the

federal government will allow us to treat the three different zones within NV Energy's right-of-way areas so it gets into the general forest and WUI areas.

There are several other agency and nonagency partners, including Great Basin Institute, the National Forest Foundation, the utility companies, and what I like to refer to as the "restoration industry," also known as the timber industry. We cannot get this work done without them.

We recently signed the decision for the NV Energy Resilience Corridors Project. We have two more decisions that will allow us to treat an additional, approximate 4,000 acres in the WUI with our urban forestry decision. We are also close—two to four weeks out—to signing our Caldor Fire hazard tree environmental document, which I will speak to in just a moment. Basically, these are allowing us to treat that immediate zone around homes or adjacent to homes—our urban lots. Having these planning documents in place allows for what we call the "shelf stock," and we can be competitive for funding because decisions will have been made. We can then move on implementation.

With the forest restoration planning work and having this additional opportunity to treat on slopes greater than 30 percent, we will be judicious in how we use that. As Dr. McIntyre mentioned, we are not just going to run out and start putting equipment out there. Ultimately, we have to do right by the landscape to make it fire resilient as well as making communities fire resilient. We also need to make sure we do not harm the landscape with our efforts.

While the parcels are small with the NV Energy Resilience Corridors Project, the landscape footprint is extremely important. We do not want to have the forest impact the energy transmission because that cuts off the supply to customers. We also know that can lead to wildfires. It may be a small footprint with acreage; however, it is a tremendous bang for the buck. We end up getting so much from that in terms of protection on the landscape and with the services the energy provides. NV Energy has been a great partner with bringing their resources to bear. This could also be said of Liberty Utilities on the California side.

With prescribed fire, last year we did not get as many acres as in the previous year. A lot of that had to do with the fatigue and the system because of the large wildfire years that we had in 2020 and 2021 and weather variables. This year, the snow of December helped us after December, but it stopped us during that month due to the amount of snow. Acres have been treated by our partners. Our local fire districts are getting work done. We have agreements where we move money from our ledger to theirs in order to get this work done. We have agreements with all of our local fire protection districts, and they are all contributing to the success of our fuels program and our prescribed fire program on the landscape in the Lake Tahoe Basin.

I would like to switch over to the Caldor Fire. While I was not here, I watched closely as I knew I was coming this way. As I stated earlier, I was grateful for the outcome. I would like to speak to how we got to that outcome. Some rough statistics—almost 220,000 acres burned in that fire, most of those being in the Eldorado National Forest, but 10,000 acres were in the Lake Tahoe Basin. We lost about 40 recreational residences in the Echo Summit area. There were additional recreational residences lost in the Eldorado National Forest. I think the total between the two forests is around 160 or 170. While these were not primary residences, they were, in some cases, homes that have been occupied by families for many generations—occupied for some period of time throughout the year with many memories made. We are working closely with them, and I will speak a little bit to that as

part of the restoration side of it. Thirty thousand people needed to be evacuated from South Lake Tahoe.

Regarding lessons learned with the Caldor Fire, I want to point out our efforts of completed fuel treatment since 2011 on that landscape. Our fuels treatments were adjacent to properties—to homes, values at risk—that we are entrusted with protecting. Our first objective is the protection of life and property. When you look at photos and go out on the ground, you know where the firefight was. These were instrumental in the outcome that we had. Yes, there was some property lost at Echo Summit. It could have been a totally different story throughout the Lake Tahoe Basin and especially in Christmas Valley where we and our partners conducted work. One example is that the Lake Valley Fire Protection District was able to get grants to help homeowners remove flammable shake roofs and put more fire-resistant composite or steel roofing on them. Not only was there vegetative work, but there was also structural work. People were working to make their defensible space just that—defensible. Without those things, we would be having a different conversation today. We would have seen much more devastation in the landscape. We are doing a lot of treatments, and they were successful in that area. It took multiple treatments. Again, it is not a "one and done." It takes a consistent effort.

We did all this fire work. What did that mean on the day the fire rolled into the Lake Tahoe Basin? It did not roll; it blew into the Basin. It literally blew from Echo Summit across Christmas Valley, over to the next slopes, and then moved its way—and backed its way—down into the area. What these fuels treatments and the work allowed our firefighters to do was to be there and be present. If we had not done those fuels treatments, we would have had flame lengths that would not have allowed our firefighters to aggressively get in there and fight those fires. We were able to change fire behavior through those activities. It allowed us to be in there. It also allowed our public to safely get out of the area as well. Fuels treatments are critical to the success of fire on the landscape. These are fire dependent landscapes; fire is essential to their health.

I will switch to the postfire recovery efforts. The first order of business that happens while the fire is still going is to put together a suppression repair plan that addresses the activities of putting out the fire that may have an adverse effect on the natural resources, such as helipad construction and any type of line construction—handline or dozer line, et cetera. We do that work first, and we are fairly close to having all of that work done. There was some work we could not do because of the October weather events. We will be completing that here this summer. We also have the Burned Area Emergency Response, which is the effort to go in and stabilize the landscape as best as we can so when those first damaging storms come in, we do not have further impacts to the community or the landscape because of the fire itself. We have implemented most of those activities. Some of that is early warning information and some of that is work on the ground, such as revegetating to keep soil in place and to keep the land and the people safe. The next step was to take care of the 40 homes that were lost. When a home burns, it can leave behind a mess. We were able to work with the California Governor's Office of Emergency Services (Cal OES) and partners to do the Phase 1 cleanup, which was basically to get the material off the ground so it would not mobilize through gravity or weather into streams or other sensitive areas. That material was all taken care of last year prior to winter setting in. We are now in the process of doing the Phase 2 cleanup, which is where they literally go below ground, if necessary, to make sure that nothing that leached into the soil would be able to mobilize at a later date. We have every intent to have that all completed. We have been able to work with the Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security; the state, county, and residents—permittees—to have that all completed by the middle of October of this year.

Regarding active restoration work, we will have a decision in place in the next two to four weeks to treat roughly 1,500 acres with the Tahoe Basin Caldor Hazard Tree and Fuels Reduction Project. We are looking at one to two tree lengths with the removal of those burned trees that would pose hazards to infrastructure, homes, residents, and people using the forest around our developed recreation and travel arteries. We plan to have that into contracting and hopefully awarded by the end of the summer or early fall. The next step is to look at the fire-landscape footprint more broadly with a CAL Fire restoration emphasis so we do not have a fuels problem ten years from now. We will address where we can get a jumpstart with removing and planting some trees to stabilize any areas that might be environmentally sensitive to provide quality habitat for wildlife, fish, and plants. However, we do not want to invest so much time in restoring Caldor that we lose sight of our need to treat our green landscape.

With preparedness, as we come into the 2022 fire season, we have been working with all our cooperators to be ready. This is not something new because we had Caldor Fire or the Angora Fire in 2007. We do this annually to be well-coordinated—well-oiled—and be ready when that that fire bell rings. As Kacey KC mentioned, it is the closest resource. It is not about, "I only fight fire on my jurisdiction." We fight fire and put it out as quickly as possible, regardless, and we have agreements in place that allow us to manage that fiscally as well as to authorize those types of activities. It is essential that we have this coordination, otherwise, we may have delayed responses. Every moment that fire is on the land, it has the potential to become an extended attack and not be put out during an initial attack. Through our "Sub-Geo" agreement, we can work with agencies outside the Lake Tahoe Basin—whether on the California side or the Nevada side—to bring in resources rapidly. We do not necessarily have to work through our regional or national dispatch centers, so we can have an expedited response to fires. We also work with our partners to have prepositioned resources or understandings of needs. Heavenly, the Four Seasons Resort, the South Tahoe Public Utilities District, and other public utility districts around the lake are important. We are coordinating with them so that when the fire bell rings, we know what values at risk are there and how they best can integrate with us to protect them. We are continuing to modify the evacuation plan. It was a draft going into the Caldor Fire, and we are continuing to revamp that using the lessons learned from that fire. We also conduct After Action Reviews; we have done those numerous times around the Caldor Fire. It is a continuous improvement process with, "How do we get better?"

I would be glad to answer any questions you may have.

Chair Peters:

Are there any questions from the Committee on this presentation?

Assemblywoman Cohen:

I have a general question. Is there a difference between what locals and visitors have to be taught about prevention? Are you seeing issues with prevention not being taken seriously or people not knowing enough about it?

Mr. Walker:

We tailor our message to resonate with as broad of an audience as possible. At the same time, local fire chiefs are talking to homeowners within their communities, whether they are second homeowners or permanent residents. The resident base might get additional conversation because of the local connection with the jurisdiction. But the broader

communication that is done through the public information team and the TFFT is generally applicable to all folks, although someone who lives in a fire-adapted community probably has a higher level of awareness than that of a visiting person who does not understand what it means to live in a fire-adapted or fire-dependent ecosystem. We want to make sure to have that broad level of communication that can reach all people and also have them see themselves and what their role is in contributing to a fire safe environment—whether they act as a visitor or live as a resident.

Chair Peters:

It is an interesting idea to gather some information and provide it to short-term rental (STR) owners as a piece they can lay out for the people who come and stay at their residences who may not know where to look for fire information, such as burn limitations in the Lake Tahoe Basin. It would be nice for people to have something that is readily available that can be printed and left out. I am not sure if you have done that, but that would be an interesting way to integrate for tourists—how they can impact our basins.

Mr. Walker:

Yes, that is a great point. Some of that may exist, but I am not familiar enough with the variety of documents or resources that are provided to visitors and residents. We will make sure to follow up on that and see if that is a something that we have in place. If we do not, we can look at how we might be able to do.

Chair Peters:

I was looking at Dr. McIntyre, and she was nodding her head.

Mr. Walker:

Good.

Chair Peters:

We can help you disseminate that if it is of interest. Please keep us posted on what we can do to help in that area.

I have a question for you about the whitebark pine and its potential for being listed as a threatened or endangered species. Can you comment on what that listing could mean for the treatment and permitting that we discussed previously in the Lake Tahoe Basin?

Mr. Walker:

As an example, we are currently doing a project with a chair replacement at Heavenly, which is within whitebark pine habitat. Even though the species is not listed, we began what we call "conferencing" as soon as we knew this was a project they want to do. This is for species that are likely to be listed but have not yet been listed. Basically, we worked through the process with the U.S. Fish and Wildlife Service (FWS), U.S. Department of the Interior, as we would have done if the species were listed. We are able to put in place the necessary best management practices and resource protection measures that would not, in a sense, jeopardize that species. I think it is being proposed as threatened. We are going to do this with NV Energy because there are areas they want to treat that are within whitebark pine habitat. We are already having those initial, early, and frequent conversations with FWS in anticipation that it will be listed so we do not have a break in our

implementation should it be formally listed. We are quite familiar with the consultation process under the Endangered Species Act. A lot of the work we are proposing to do currently with our existing documents and future planning is consistent with its recovery and getting the encroachment of conifers out of there. We do plant whitebark pine, so one of the conservation measures for the Heavenly project is to remove some younger trees. Heavenly has agreed to plant four trees for every one that is removed, and we will use rust-resistant stock. That will help with the white-pine blister rust effort. They are not rust proof, but they have demonstrated their ability to not succumb to blister rust as readily. We will be enhancing whitebark pine through efforts like that. Getting fire back into them will help. I am confident we know how to consult. We have had early engagement with them around projects already. Should it be listed, it should not affect our ability to do the necessary work on the landscape.

Chair Peters:

That is great to hear. I would refer to those as genetically selected and resilient species. I do not see any other questions from my colleagues.

Mr. Walker:

I look forward to perhaps getting into the woods and taking a walk to look at these things.

Chair Peters:

We have diverted a little bit from the tradition of this Committee with not being up in the Lake Tahoe Basin for the first part of our days. We have historically done that, but with the current state of the world, it has been difficult to get everyone together and in the same place. Hopefully, we can do that in coming years and interims, if not in upcoming meetings of this Committee.

This was the final presentation on forest health, so we will close this agenda item.

AGENDA ITEM V—PRESENTATION REGARDING THE *LAKE TAHOE CLIMATE RESILIENCE ACTION STRATEGY*

The next presentation is on the *Lake Tahoe Climate Resilience Action Strategy*. We have TRPA here again. Please begin when you are ready.

Ms. Regan:

I want to commend our panel on forest health and particularly commend Supervisor Walker for his leadership and coming in at a difficult time following the Caldor Fire. Connecting the dots of all these programs that we are hearing about today is the partnership of the EIP. All these EIP projects are high priority and high profile, and the USFS and TRPA co-chair the Tahoe Interagency Executive Steering Committee that has leadership over that program. Few agencies in this vast partnership of almost 100 agencies have multijurisdictional boundaries in the whole watershed and the USFS and TRPA share that. I wanted to offer our congratulations to Supervisor Walker for coming in at this critical time, which is a great segue to climate change because what we are seeing now, as he alluded to, is we do not really have a fire season anymore. It is a year-round situation and there are a lot of factors driving that. With the point about collaboration, which you have heard, I want to mention our Executive Director, Joanne S. Marchetta, could not be here today. She has testified before this Committee for many years on the power of collaboration and nowhere does it shine as brightly as in the forest health and the climate program. It is a nice thing to talk

about collaboration and coordination, but as Supervisor Walker said, it is more than just talking to each other, it is actually integrating the implementation on the landscape. When we are talking about forest health, it is not a nice "to do," it actually saves lives. We are talking about saving lives and personal property and the future of Lake Tahoe's existence as a pristine ecosystem, so the stakes are high and we are taking it really seriously. I wanted to add that to the record as we preview the climate discussion.

Devin Middlebrook, Sustainability Program Manager, TRPA:

I am going to talk to you today about the newly adopted *Lake Tahoe Climate Resilience Action Strategy*, and more broadly speaking, what we are doing to address climate change at Tahoe and on the Nevada side of the lake. I will not beat that horse of the Caldor Fire much longer, but something that was not mentioned in the presentations is the Caldor Fire was one of two fires in the history of California to crest and cross the Sierra Nevada—the other being the Dixie Fire. Both fires happened last year. Nevada was important in the resilience and emergency response, and we thank the state for its support with housing our Emergency Operation Center in the casinos and housing many of our residents, including myself, here in Carson City while we were evacuated from our homes. The emphasis of what we are seeing with these mega fires is that the impacts of climate change are not happening in 50, 60, or 100 years; the impacts of climate change are happening today, and we must accelerate our implementation of projects to address those challenges.

As with everything we do at Tahoe, we use science to drive action and guide our implementation programs. We use many sources of science. Dr. Chandra is here today for an agenda item on the Tahoe Science Advisory Council (TSAC), who really helped inform the policy and decision makers at Tahoe in how we address climate change and those impacts that we know are coming.

Those are real impacts. For example, a boulder fell during a winter storm onto the Nevada side of U.S. Highway 50 near Logan Shoals Vista Point. It took an extensive construction project to repair that damage. By 2100, annual road damages from impacts of flooding and wildfire could exceed $75 million. We are also seeing our winter recreation seasons impacted with more rain and less snow, which causes the season to be shortened and changed. By the end of the century, we are expecting our winter seasons to be cut in half, which could lead to a $268 million annual loss for the ski industry, which is a major economic driver in the Tahoe region.

We have talked a lot about wildfire today, and we have seen through the Caldor Fire, other communities in that fire were not as lucky as ours. There were some tragic losses. The Tahoe community was saved in part because of the investment in forest fuels work—upfront and on the ground—and the firefighters. For every $1 million invested in climate adaptation projects, you can protect up to $10 million dollars in property damage and prevent that from happening.

Regarding extreme heat, we can see that changing and impacting the visitation patterns at Tahoe. For example, the difference between a 65°F and 100°F day in Sacramento is a doubling of traffic over Echo Summit. Tahoe is a refuge for both sides of the valleys around us for those extreme heat days and people trying to escape that heat. While that does help us economically, it comes with negative consequences in terms of traffic, litter, and congestion on our roadways.

I want to highlight that all the work we do aligns well with Nevada climate policy. There are a variety of bills and executive orders in the State of Nevada that direct climate action

statewide. We always ensure that the work we are doing at Tahoe not only aligns with Nevada's policies, but also with California's. We are doing our fair share to implement your goals and are guided by Nevada's 2020 *State Climate Strategy*, which identifies transportation and land use as two of the four main strategies; the TRPA has regulatory authority over transportation and land use, so here is a lot of nice alignment there.

There has been a concerted effort towards addressing climate change in the Tahoe region since the creation of our Lake Tahoe Sustainable Communities Program in 2014. The *Sustainability Action Plan* was awarded an American Planning Association Award of Excellence in 2015. Within this Plan, we identified over 75 climate actions that can be implemented across the region towards making it more resilient. To date, we have implemented over 85 percent of those recommended actions, so we have seen a lot of progress since 2014 on building resilience in the Tahoe region.

Where are we going, and how are we measuring our greenhouse gas emissions? Before we get to the resilience piece, I want to touch on mitigation. We recently completed and updated a greenhouse gas inventory for the Tahoe region. For the first time, we also looked at carbon sequestration on our landscape—what our landscape is absorbing each year in carbon dioxide—in order to have a better understanding of our total balance of greenhouse gas emissions.

For both Tahoe and the State of Nevada, energy and transportation create the vast majority of greenhouse gas emissions. The big takeaways here are that, from 2005 to 2018, our emissions pretty much decreased across the board, which was great. However, in the interim between 2015 and 2018, we saw a small uptick in those emissions. More action is needed to meet our carbon reduction goals.

As a region, we had a 15 percent greenhouse gas reduction goal for 2020. We actually met that in 2018. It was exciting to meet that goal two years early. We have a goal to reach net-zero by 2045 in the Tahoe region. We are including both California and Nevada's carbon reduction goals, and I will give the nod to Nevada. While California says their net-zero goal is 2045, that is only by executive order. Nevada gets more credit since your goal is in statute.

I want to highlight more on carbon sequestration, which is an emerging field and emerging area of science that folks are looking at. In 2019, Nevada's Division of Environmental Protection (NDEP), DCNR, specifically identified the need for further research across the state into carbon sequestration and understanding how forest practices not only create sustainable carbon capture for the natural environment but also ensure we are preventing wildfires so all that carbon we stored and protected does not go up into smoke. Forests are one piece of that; meadows are the other piece. In Tahoe, we have a long history, through the EIP, of restoring the meadows, marshes, and stream environment zones that were destroyed prior to the creation of the TRPA. Unhealthy meadows emit carbon into the atmosphere. Healthy meadows not only provide benefits with water quality, recreation, and habitat, but they can also sequester quite a bit of carbon.

Where were we at in 2018? On the emissions side, we were emitting about 800,000 metric tons of carbon dioxide equivalent, which is down overall from when we started measuring these. On the carbon sequestration side, there is a lot of variability within that. Annually, our forests and meadows are sequestering between 300,000 and 1 million metric tons of carbon dioxide. We are anywhere from the negative side, where we are still emitting more carbon dioxide than we are sequestering, to the high end of it where we could technically be calling ourselves carbon neutral or carbon sinks. We provide that benefit to the state overall

towards meeting your carbon neutrality goals. However, as we have seen with the Caldor Fire, that is not necessarily sustainable. We can have any number of fires start across the Lake Tahoe Basin, and that carbon we are storing goes away and we lose that functionality. We need to balance the increased demand for storing carbon on our landscape with ensuring those landscapes are sustainable and resilient in the future, so we are not losing those gains through wildfire.

One of the strategies I want to highlight for reducing emissions is vehicle electrification. The TRPA and our partners in the region created the *Tahoe-Truckee Plug-in Electric Vehicle Readiness Plan* in 2017. Since then, we have seen a 50 percent increase in the number of electric vehicle charging stations available for the public to use. There is a mobility hub at Lake Tahoe Community College, which now has two overhead electric chargers to power the Tahoe Transportation District's Proterra electric buses. Hopefully, when we get this Committee up to Tahoe for the next tour, you will be whisked around in the silent and lovely ride of an electric transit bus. The TRPA also participates in a number of State of Nevada steering committees through Nevada's Department of Transportation (NDOT), and these committees are working on statewide electrification plans.

Now, the main attraction—the *Lake Tahoe Climate Resilience Action Strategy*. This was adopted in March of this year among Lake Tahoe Basin partners through the EIP. This Strategy lays out all the things we are doing under the EIP and beyond in order to build resilience across the Lake Tahoe Basin. It addresses landslides, wildfire, drought, and flooding. I left some copies on the table, and I believe a link to that was included in the materials (Agenda Item V).

Again, we are being informed by science. The basis of the Resilience Strategy was the *Integrated Vulnerability Assessment of Climate Change in the Lake Tahoe Basin*. The resilience of our highway corridors to landslides is important because we need those highway corridors open during events like the Caldor Fire and emergency evacuations and during winter storms and flooding, which can block highways. Not only does that cost a lot of money for NDOT to repair, but it also interrupts commute patterns, business, and economic activity in the Tahoe region.

We have five main focus areas in our Resilience Strategy. The first area is to build sustainable recreation and transportation systems—making sure we have a transportation system that can support emergency evacuations. During the Caldor Fire, we were able to evacuate the whole of South Lake Tahoe in about four hours without the loss of any life. I will not hit on the second area [reduce wildfire risk and build forest resilience], as we have talked a lot about wildfire resilience today. The third area is to increase watershed resilience and biodiversity. I mentioned the importance of healthy meadows to sequestering carbon, water quality, and protecting the famed clarity of Lake Tahoe. It is important for us to take the practices we are doing today and determine how we can model our restoration techniques for streams and meadows to not only meet those water-quality goals but to also maximize the carbon sequestration and climate resilience benefits. With the fourth area—our infrastructure and vulnerable communities are important to protect. The TRPA has identified five community priority zones across the region where we have our most disadvantaged communities. One of those is identified in Incline Village. We are identifying and undergoing a transportation equity study to ensure those neighborhoods are given the priority and funding needed to be climate resilient and have access to the transportation system that is needed in case of emergencies and evacuations. The fifth area is advancing the science around climate so we have accountability and are using the best available science to direct our work.

Everything we do at Tahoe under the EIP umbrella is about multiple benefits. Everything we are doing within climate—all the projects we put together—have climate integrated within them. There are multiple benefits from expanding equitable public access. When you have years like this with drought, it is great because there is a lot more beach for people to spread out on; however, boating access is much harder when places like the boat ramp at Sand Harbor are closed. We are looking at how we can increase the resilience of our nearshore where we have algae growth and where people interact with the lake while also increasing public access. Natural lands have a role in not only the resilience of our forest from wildfire but also in carbon sequestration. Lastly, natural infrastructure—Tahoe is blessed with the beauty of the lake and the forests. How can we use that to protect our most vulnerable communities and ensure economic prosperity into the future?

I want to highlight the Nevada Tahoe Resource Team (NTRT). We work closely to help integrate climate adaptation across their programs through the EIP, including forest fuel reduction treatments that have happened at Spooner Lake and stormwater and shoreline hardening at Cave Rock. The NTRT is great to work with underneath the EIP. It has worked hard to integrate climate adaptation and resilience across all the projects they implement.

There is a shared funding need at Tahoe, and we do very well with our implementation of priority projects. We come together to develop a list of priority projects that everyone agrees on, including how they will benefit the overall region. I want to highlight the reduction in wildfire risk category, which is addressed within the ten-year action plan [*Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*]. While this category has the lowest amount of funding needed, it reflects the work the TFFT has done to secure a lot of funding from many sources—including the State of Nevada—to implement the needed forest actions. It shows there has been success there. We also have the transportation and sustainable recreation component. We will be back before you next month to talk about our bistate transportation strategy. The need identified in our *Lake Tahoe Climate Resilience Action Strategy* is a subset of the overall transportation need. We are focused on our community priority zones, disadvantaged communities, and the hardening of infrastructure for emergency response.

Finally, it is about accountability and making sure that what we are doing is meeting our targets and goals and is transparent for the public. We have a Sustainability Dashboard as part of our larger Lake Tahoe information ecosystem. You can check out many different indicators of the health of communities and the response to climate through the environment, community, and economy. We are currently working on a project to update that dashboard to include more real-time information and tell a more accurate story to connect our projects, goals, and outcomes.

I will open it up to the Committee for questions.

Chair Peters:

Are there questions from the Committee? I am not seeing any. I have a question about the Vulnerability Assessment. When was that completed?

Mr. Middlebrook:

That was completed in 2020—right before the world went into a spiral. I was talking with Ms. Regan on our drive down about some of the wildfire risk analysis in that study. The Caldor Fire footprint is right over it. It was extremely accurate in terms of the areas the fire burned—the areas we said were going to be most vulnerable to fire. It provides the

background for that, based off of a lot more data from statewide adaptation plans and resilient vulnerability assessments as well.

Chair Peters:

That is interesting. I think it speaks to the science and how these things are being determined today and how it is impacting the implementation of policy. Are there any other questions from the Committee before we close this agenda item? Yes, please go ahead, Ms. Regan.

Ms. Regan:

Before we close this item, I just want to circle back to the last question about the community engagement. For the record, takecaretahoe.org could reflect some of the work we have been doing to educate our local community and our visitor community around all of these threats related to climate, forest health, and invasive species. There is a button you can click on, "How to Take Care of Tahoe," which includes messages that are specifically targeting some of these issues. We have an active partnership under the EIP and the Take Care group. More than 50 different organizations have come together to get the messages out through multiple channels, including social media videos, rental units/property management companies, and lodging properties—sending these in check-in packets before people come to Tahoe. We utilized this group heavily during the pandemic.

Chair Peters:

We appreciate that. I think we are ready to close this item. It is a lot to digest, and we look forward to seeing how some of these things follow in future conversations around transportation and other issues at the lake.

The presentation from the TRPA for this agenda item is on file in the Research Library of the Legislative Counsel Bureau, Carson City, Nevada. For copies, contact the Library at (775) 684-6827 or https://www.leg.state.nv.us/Division/Research/About/Contact.

AGENDA ITEM VI—PRESENTATION REGARDING THE LAKE TAHOE AQUATIC INVASIVE SPECIES PROGRAM

Our next agenda item is a presentation regarding the Lake Tahoe Aquatic Invasive Species Program. This is interesting. I love how, after being in Nevada for a long time, you start to see cycles in your life where you come across the same thing over and over. When I was in college, we talked about the treatment of zebra mussels and other creatures. Today, we are talking about other invasive species and problems with our state waters. I look forward to hearing how things are moving. When we talked about it in college, there was literally a tarp that we pumped bleach under. Perhaps things have changed a little bit. Please go ahead and introduce yourself and proceed when you are ready.

Dennis Zabaglo, Aquatic Resources Program Manager, TRPA:

I will be adding another acronym to your repertoire—AIS—which will replace aquatic invasive species. You will hear me say that frequently throughout the presentation.

We will look at a broad overview of what the program consists of and the partnerships we have built. You have heard others say the critical component partnerships have in all aspects of the EIP. I will highlight successes of our prevention program over the past

15 years, including education, customer service, and coordination at the regional and national levels and with our Western partners. Priorities have focused on prevention and the control and eradication of existing species that came into the Tahoe region prior to the boat inspections occurring. I will also discuss some of the strategic planning and goals we have to reduce existing species as well as how we are implementing projects and some the major projects that we are focusing on currently. I will conclude with a funding picture for the AIS program.

Overall, the Lake Tahoe AIS Program is part of the EIP and is one of the higher priority implementation programs to minimize the devastating impacts of AIS. You heard Supervisor Walker discuss the importance of prevention. That is certainly true with AIS. We are trying to keep out—and have been very successful to date—species like zebra and quagga mussels. Unfortunately, they were found in Lake Mead in 2007, and we started doing inspections that following summer. With our control program, we are eliminating or reducing as much as possible those existing species like Eurasian watermilfoil and curly pond weed. They are notorious, aquatic invasive plant species throughout the country, so we are not unique with that. We are implementing projects to reduce and monitor those impacts. We track our success not only with prevention but with control as well.

Regarding the partnerships we have built, there is a working group under the Tahoe Interagency Executive Steering Committee—our AIS Coordinating Committee—which is made up of multiple agencies and nonprofit and academia partners throughout the region. Nevada has representation from Nevada's Department of Wildlife (NDOW)—who we work closely with on AIS issues—and DCNR. Of course, there are the private and public partnerships; the partnership would not exist without them or the agencies, other entity partners, the boating public, the general public, our elected officials, and the boat industry.

With prevention, why does our program work? As I mentioned, we have been doing it since 2008 with no new invasions being detected since the program started. We are very proud of that. It is a mandatory program. Under the *TRPA Code of Ordinances*, all motorized watercraft are required to be inspected and decontaminated when necessary. We do not use bleach to decontaminate; we use hot water instead. We have worked with research efforts to demonstrate that a certain temperature and time will kill any invasives we are concerned about, so we use hot water when we do those decontaminations.

We have a highly trained staff. We go through annual training, not only with our boat inspectors, but with our partners at the marinas as well; we work closely with them to ensure only inspected boats are being launched onto Lake Tahoe. A staff person will place a seal between the boat and the trailer. That is how we indicate the boat has been inspected, and people can go straight to the launch site if that seal is in place. It is a mechanism, or protocol, that other programs throughout the West utilize, including the State of Nevada with their inspections at various water bodies—certainly coming out of Lake Mead. That seal indicates you have been inspected. You go to the launch ramp, and the staff we partner with see that seal and ensure it is in place. When you come off the water, that staff puts another seal back on. This allows you to go right back to the lake without having to get reinspected. It is an efficient program that has proven to be very successful.

Our protocols with temperature and time requirements for killing what we are concerned about is based on science, and we have consistent protocols over time. I will talk a little bit more about that with some of the regional collaboration that we do with our Western partners. We do a secret shopper effort. It is part of the monitoring we do for the prevention program. We have someone independently go to our boat inspection stations and the marinas to ensure all of our protocols are being followed.

Education is key with anything that we are doing up here. It is important that the boating public and the public in general knows not only what we are doing, but why we are doing it. Some examples of the education we are doing involves a billboard that says, "3 steps closer to fun—clean, drain, dry." That is a mantra used throughout this program, not only in Tahoe, but throughout the West. It is simple, easy, and directive, so the public can do something ahead of time to help reduce risks themselves before they get to a boat inspection station. There is also a gazebo at one of our boat inspection stations. If there happens to be a queue, and someone is waiting for an inspection, they can get out of the sun and learn about the program and why it is important.

We recently implemented, after COVID-19, a way to reduce stress and congregation of too many people at the site. We implemented an appointment system in 2020; all of our inspections were done with appointments. The boating public really liked that option, so last year we implemented a choice. You could come on demand as you could historically; whenever we are open, you can come and get an inspection. Now you have an opportunity to also make a reservation. About 70 percent of our boaters are utilizing that appointment-based system; we charge a $15 convenience fee. It is similar to Southwest Airlines' EarlyBird Check-In. You are getting that opportunity to get ahead of the line.

I mentioned our regional and national coordination. There is the Aquatic Nuisance Species Task Force, which is the federal advisory committee overseeing national AIS policies and strategic goals. We have a seat at that table. The TRPA is one of the members of the Task Force. With other national coordination, both Ms. Regan and I have testified and presented to congressional committees and caucuses on the importance of managing AIS and the importance of those private-public partnerships and having a collaborative approach to addressing the issue. On a more regional level, the Western Regional Panel (WRP) is a subset of that Aquatic Nuisance Species Task Force. The WRP is made up of the 19 Western states—moving west from Texas up through the Dakotas—all collaborating on the issues. We certainly have a great concern for prevention because of the scarcity of water in the West, so we have been well-coordinated on our prevention efforts. I currently serve as Chair of the WRP, and one of the major products that we worked on collaboratively were two documents. One is the *Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreisssenid Mussels in the Western United States, UMPS III*, which is the science-based approach and protocols on how we do these inspections and decontaminations consistently so boaters know what to expect when they cross state lines. Having that consistency is helpful for the boaters as well as for us when we are communicating with our regional partners—making sure we are speaking the same language and having those same protocols. The other document is the *Advanced Watercraft Decontamination Manual*, which the TRPA took the lead on for our Western partners. It is a tool and education piece for our inspectors when we have multiple types of boats to look at, including those from the oldest legacy fleet. Having that guidebook allows our inspectors to better identify components and decontaminate watercraft more effectively.

Next, some of our prevention priorities—staffing and housing is certainly an issue we are not unique to. It is a challenge across multiple sectors, so we review our wages for inspectors on an annual basis to make sure we are remaining competitive. The housing component is important as well. Housing costs in Tahoe are high; that limits our ability to bring on the talented and dedicated staff we need to ensure we have effective programs and good customer service. We are continuing to work with our regional partners to make sure we are staying on top of that housing issue. We are investing in permanent inspection stations. We have demonstrated the value of our program by being successful. Having a permanent station would be an ease on our resources. With our seasonal station at Spooner Summit—known as "hospital hill" in the wintertime because of all the sledders up

there—we must go through the permitting process on an annual basis to get a temporary encroachment permit through NDOT. We are working with the USFS and NDOT on the *State Route 28 National Scenic Byway Corridor Management Plan* to identify a location along that Corridor for a permanent inspection station in Nevada. It would be a little bit west on SR 28 from the existing location at the intersection of SR 28 and U.S. Highway 50 where we would have a permanent location with utilities present, and it would be part of a multiuse facility that would also have parking and trailhead access for recreators. We are working with all of our partners. We have funds through the Lake Tahoe License Plate Program administered through Nevada's Division of State Lands, and are also anticipating federal funds coming in through the Infrastructure Investment and Jobs Act of 2021 (Pub. L. 117–58, 135 Stat. 429 [2021]) to get the design plans up to 100 percent and ultimately start construction. We are also looking at one on the California side that is located in a more urban area, so there may be an opportunity to have workforce housing along that property.

Moving into control—as I mentioned, we are implementing projects to eradicate, if we can, existing species like Eurasian watermilfoil, curly pond weed, and Asian clam. We have the *Lake Tahoe Region Aquatic Invasive Species Action Agenda 2021–2030*, which is our strategic guide, that includes a goal of 90 percent reduction of existing species over a 10-year planning horizon. That was kicked off in 2020—one year ahead of schedule. We are trying to achieve that localized eradication. There have been infestations throughout the lake. One was on the west shore at Meeks Bay. We just completed that project. Others are at important locations in Nevada. One of our first successful projects was in the Incline Village area. There were three sets of condominiums at Crystal Bay that had Eurasian watermilfoil present. That place has been weed free for almost ten years, so that is an important project for us. We started small—lessons learned—and built up. Now we are starting to tackle larger, more complicated infestations. Part of the first step of an overall restoration is, as you heard from Mr. Middlebrook, to build resiliency and biodiversity. Having landscapes dominated by native species rather than invasive species helps to build that resilience that is needed to have a healthy ecosystem.

With control methodologies for plants, we predominantly use nonherbicidal methods. These include mechanical methods, such as diver-assisted suction to pull the weeds out of the substrate. We did a project at Sand Harbor State Park for Asian clam, which is an invasive species present in that boat landing area. Approximately five acres of gas-impermeable membranes—rubber pond liner—was laid over the top of the clam beds. It suffocates them—deprives them of oxygen and kills them. It was an effective program. We are reaching 100 percent mortality under the entire treated area, but the overall infestation was much larger. This was more of a management project to keep that population at bay and provided us with opportunities to investigate more feasible approaches to treating larger infestations of Asian clam. Another technology we are utilizing is the use of ultraviolet (UV) light, which is an innovative approach created in Lake Tahoe. Ultraviolet light is used on a boat to kill weeds. It looks like a pontoon boat with on array of several bulbs of UV light underneath. Dr. Chandra helped provide research on this technique. It emits a certain wavelength of UV light that basically breaks down the cell walls of these invasive plants.

Some of the major projects we are focusing on now include larger landscape restoration projects. We are working with the USFS on a project at the marsh and wetland area of Taylor and Tallac Creeks on the south shore where there is a 17-acre infestation of Eurasian watermilfoil. This project got started this season with the implementation of bottom barriers, which will block photosynthesis and kill these plants. These are important ecosystems for building resiliency, as natural filtration removes nutrients and other concerns prior to reaching the lake.

The other major project we are focusing on is the Tahoe Keys. You have probably heard of it before. It is a large residential area on the south shore with 170 acres of waterways and channels and about 1,500 homes. It is almost entirely infested with Eurasian watermilfoil and curly pond weed. It is our highest priority for control. It is much larger than any project we have implemented before—by over 30 times—so traditional and innovative approaches are not likely to be enough to address this infestation holistically. Aquatic herbicides were proposed and subsequently approved for use in a test project. We had a collaborative approach to finding the right solutions, or the right way, to address this issue. We had organizations like the Tahoe Water Suppliers Association at the table to bring in other ideas and to ensure everything we are considering is transparent. This test is currently being implemented to find a set of tools will give us the best chance of success moving forward.

There are many monitoring locations at the Tahoe Keys, and every point is being sampled on nearly a daily basis to ensure any treatment method being used does not have any impacts, or it would trigger a mitigation that may be needed. When weeds die, they emit or release nutrients into the system. Excess nutrients could create harmful algal blooms, so sampling is in place to ensure we are prepared if we do see those spikes. We are tracking the degradation of those herbicides to ensure that nothing is reaching the lake proper.

A rake pull was used 14 days after treatment in one of the areas to assess efficacy of the project. The herbicide that was used is endothall. It is a selective herbicide, so it only impacts certain species. There was brown debris that did not look good. It was the Eurasian watermilfoil, which is what we are interested in killing. There were also green plants in the rake pull; that was the native species, elodea, that we want to protect. In another area, after 14 days of treatment with UV light, the Eurasian watermilfoil is starting to die back and dissolve. These are interim results. The test will utilize these approaches in a one-time application during this season to see what level of knock back we get. In subsequent seasons, we would be using all of these mechanical methods to maintain that infestation. Not only are we using innovative approaches like UV light and national, traditional approaches with aquatic herbicides, no one has ever done that in a one-time application. The idea is to only utilize herbicides once and never again. Having a combination site is a science experiment looking at different combinations. We are utilizing herbicides only in one area and utilizing UV light only in one area, and we are utilizing both in some of those areas to see which set is going to give that best result. Herbicides are applied on the edges and the UV light boat can go down the middle; it is hard to get the boat in and around the docks. Utilizing both technologies help to maximize the efficiency of both methodologies.

Next, I will discuss current, annual funding for the AIS program. The federal funds we are fortunate to receive through appropriations and agreements with the FWS and the U.S. Army Corps of Engineers is about 67 percent of our funding. In the early days of the program, SNPLMA was a critical funding source to get this program off the ground. We have since received appropriations from the LTRA, which allows us to move forward. We have 17 percent coming from California and Nevada either through direct funding, including $375,000 from the State of Nevada to support prevention and control activities, and grants that we receive through that license plate grant I mentioned. Private contributions and the fees that we charge complement the public funds that we get to support boat inspections. There are also nonprofit dollars from organizations like the League to Save Lake Tahoe and the Tahoe Fund that provide funding for some of our projects.

I am happy to answer any questions the Committee may have.

Chair Peters:

I have a variety of questions, but I will ask the Committee if there are questions from other members before I start on mine. I am not seeing any. What are you intending to do with the debris as you pull out the weeds?

Mr. Zabaglo:

Generally, we do not pull them out. We kill them in place or in situ. The ultraviolet light and bottom barriers remain in place. The weeds dissolve. They are about 95 percent water, so there is not a lot of biomass once these things die. In the case of the Tahoe Keys, the management approach of the property owners is to do harvesting of aquatic weeds. It is a necessary evil. It is intended to improve navigational channels throughout the Keys. These weeds will grow up to the surface and clog the waterways. In some areas of the country, it is a safety concern for swimmers. Not only does harvesting improve navigation, it also removes that biomass. If it were to stay—remain in place and die in the waterways—that would add more nutrients to the system and potentially lead to some of those harmful algal blooms.

Chair Peters:

Are the nutrients that are left in the system a concern in the Tahoe Keys, in particular?

Mr. Zabaglo:

That is one of the major, potential impacts of that project. Some of the mitigations and protective measures designed into the project itself were to treat early when biomass is low—when plants are smaller—so when they die, less nutrients are released into the system.

Chair Peters:

How are you addressing the potential for cross contamination from kayaks and paddle boards? What can we do as the public and owners of these to ensure we are not problematic?

Mr. Zabaglo:

We have a nonmotorized component for our prevention program. It is a stewardship program called Tahoe Keepers, and it is voluntary. Our code currently states that nonmotorized watercraft are subject to inspection, so we encourage people to learn and become self-certified for doing their own inspections and decontamination of their paddle craft. You can watch a video and take a quiz on the Tahoe Keeper's website at tahoekeepers.org. Assuming you pass, you will get a nice letter from me and a sticker to put on your paddleboard or kayak to demonstrate that you understand the impacts, risks, and what is necessary to ensure that your paddle craft can launch safely.

Chair Peters:

We will get on that. I have one more question about your qualifications for staff. We know that staffing has been an issue in the state, across the board, particularly for public service offices. What are your qualifications for staff and what do your staffing rates look like right now?

Mr. Zabaglo:

It is a challenge. We have been fortunate to have at least a moderate level of staffing and dedicated staff that have returned over multiple seasons. We are reaching out and partnering with different organizations to maximize the ability for people to stay in Lake Tahoe with these seasonal jobs. Some of our staff are ski patrollers in the wintertime, so having a summer job allows them to stay. We have a presence at various job fairs and the community colleges where we advertise for the various positions that are available. I am not 100 percent sure what our current staffing level is; however, it is pretty good compared to previous seasons. Prior to last year, we reduced the number of inspection stations to three. That has alleviated some of the stress. The north shore is where we struggle the most. We have an inspection station at Alpine Meadows Ski Resort, and that station is currently understaffed. This limits our ability to inspect more boats, but we still make sure we have the staff necessary to do the job effectively.

Chair Peters:

That is good to hear. This is my last question. There have been some social media posts about a scuba program in Tahoe that is doing some stewardship around removing debris in the lake. Are you they working with you, and is there a potential for people who are scuba-certified in our region to volunteer and help with some of these efforts?

Mr. Zabaglo:

Some of the dive organizations or companies that we work with do that themselves on their own time. Due to the technical nature of the work that occurs underwater and the liability, we want to make sure we are utilizing professional divers who have insurance. Doing any work underwater is tricky. We want to make sure it is done by professionally trained people who are also scientists, so they understand the difference between a native and invasive species. We are investigating the idea of using an AmeriCorps group to have volunteer divers. A lot of research and work needs to go into that to make sure that this can be done safely and effectively.

Ms. Regan:

I want to build on what Mr. Zabaglo was referring to. We are very supportive of the nonprofit's project to get the trash removed. One of our staffers, Jeff Cowen, who is our Public Information Officer, serves on the board of that project. From an outreach and engagement standpoint, we are trying to get awareness around this issue of litter in general. Some of the debris being collected is going into a public art project at the new Tahoe South Events Center. The Tahoe Fund and other partners are actively working on that, so it has been a good collaborative endeavor to raise awareness of what has become a really big problem in the last few years at Tahoe with litter. We are supportive of people being more aware and educated about litter.

Mr. Zabaglo:

One of the things they find on a regular basis are anchors. When boats come to our inspection stations, sometimes they are not properly prepared or equipped to be out on the treacherous waters the lake can present; they do not have their anchor. We have worked with groups to have anchors available for boaters if a donation is made for that trash collection effort.

Chair Peters:

Those are cool programs. Thank you for all the information and the work you are doing to keep Tahoe beautiful. Are there any other questions? I am not seeing any.

Ms. Regan:

Chair Peters, I want to thank you and the Committee for your leadership and for past investments of time by other Committee members. I want to share that Joanne Marchetta has announced her retirement as our Executive Director. She will be around for the next six months in a part-time capacity, so you will see her again before the interim closes.

Chair Peters:

I am glad you said something about that. I want to thank Ms. Marchetta for her service, efforts, and leadership in the TRPA community—all of the work that she has done over her tenure. We look forward to seeing how things turn out and what the next leadership will look like. I am going to go ahead and close this agenda item.

The presentation for Agenda Item VI is on file in the Research Library of the Legislative Counsel Bureau, Carson City, Nevada. For copies, contact the Library at (775) 684-6827 or https://www.leg.state.nv.us/Division/Research/About/Contact.

AGENDA ITEM VII—PRESENTATION REGARDING ACTIVITIES OF THE TAHOE SCIENCE ADVISORY COUNCIL

We will move on to the next agenda item, which is a presentation regarding activities of the Tahoe Science Advisory Council (TSAC). Dr. Chandra, please proceed when you are ready.

Sudeep Chandra, Ph.D., TSAC Co-Chair; Professor, Department of Biology, College of Science, University of Nevada, Reno (UNR); and Director, Ozmen Institute for Global Studies, UNR:

I will give you some updates on TSAC activities, but first, I would like to remind you of the Council membership to show you how broad the membership of the Council is and the different systems and organizations the members belong to (Agenda Item VII). They bring in different expertise. The Council is designed with two members from each the following institutions:

- University of California, Davis (UC Davis);
- UC System—currently UC Santa Barbara;
- UNR;
- Desert Research Institute, within the Nevada System of Higher Education;
- U.S. Geological Survey; and
- USFS' Pacific Southwest Research Station.

With the exception of UC Santa Barbara, all of these institutions have historically played an important role in developing science programming at Lake Tahoe. We also have nonvoting members from DCNR as well as its California equivalent—the California Natural Resources Agency.

What is the purpose of this Council? It was created between the two states, and the primary goals are to continue linking our scientific knowledge with management needs. A number of previous presentations relied heavily on the scientific information to help guide management of the Lake Tahoe watershed and system. It is also to provide some collaborative science, so no one institution is necessarily leading an effort. We have some consensus building among scientific institutions on moving forward with science-driven management and tool development. One of the most important things we have moved into, especially in the last year, is to maintain a venue for science and policy dialogue. There are many different things to think about up at Lake Tahoe. Having a venue and opportunity for agency staff to connect with scientists, or for scientists to try to understand what the needs are for our management community, becomes increasingly important when we have a diversity of topics that we need to address. Having regular meetings between scientists and managers is helpful and more efficient than reaching out individually to scientists.

We have had a number of activities, particularly over the last few years, that the Council has taken on to provide advice. I will walk through some of these activities. One was discussed by Mr. Zabaglo—trying to understand how we can control invasive species in the Tahoe Keys, which is a major area in the lake that produces invasive species. We have been working closely with the TRPA, the Tahoe Keys Property Owners Association, and other parties to try to understand the best methods for controlling weeds and invasive species. The Council engaged in this process by reviewing documents and conducting peer review—or external scientific review—of these documents. We sent them to other institutions for another party review to ensure the implementation of these projects has a sound scientific basis and to help with decision support for management. Are the methods that have been deployed or proposed for testing—whether it is UV light or herbicides—the most efficient methods at the time for testing? We plan to assist with ongoing data analysis, findings, and assessment as additional data is produced in the coming year.

The next item we are starting to work more closely on with the TRPA is the reevaluation of its threshold standards. Currently, there are more than 150 standards and thresholds that we are evaluating. Previous Council projects have established a new threshold structure. The current subcommittees of the Council are supporting the evaluation of those thresholds and the development of new thresholds. In short, we are trying to utilize scientific information to be more efficient and on top of what types of thresholds we should be having as well as modernizing those thresholds into this next generation. That is an ongoing activity that we started in the last quarter.

A major topic, of course, is sustainable recreation and tourism. You heard from previous speakers about climate resiliency and planning into the future. We are assisting managers with coordinating policies around sustainable recreation and tourism. The Council led efforts and worked with partner institutions. It took the lead, for example, with UC Davis transportation studies to understand visitor use patterns in relation to climate. This becomes increasingly more important as we have shifts in changing climate in our neighboring valleys. We have found that when there are a number of degree days above certain thresholds of temperatures—for example, 100-degree days in the valleys next to us over a certain period of time—we might double our visitation rates over Echo Summit. Another evaluation from the study shows that as we see 10 degrees of temperature increases over a certain period of time in neighboring valleys, we will increase the number of day visitors by 50 percent to the Lake Tahoe Basin. It makes sense. The valleys are hot; people come to the mountains to seek refuge. By quantifying those numbers, we can try to understand the amount of visitation pressure in the system and how to address that challenge and improve our sustainable recreation opportunities. The Council is working with

the UC Davis transportation group to try to understand recreational values and guide future policies in the Lake Tahoe Basin.

Lake Tahoe's clarity is always a topic that comes up. It is a metric of the lake's health that is generally measured in the offshore—the middle part of the lake—not necessarily in the nearshore. The Council has played an important role in reevaluating and evaluating data related to clarity and the drivers of clarity over time. Annual clarity is measured by UC Davis over time at multiple points within the year. There is a long-term trend of changing clarity. Over the last decade or so, there has been some stabilizing clarity value with years that are becoming more variable in their clarity over time and decreasing. In particular, summer clarity is changing more than winter average clarity.

The Council has been evaluating the data to try to understand the importance of seasonality—which directly relates to climate and maybe the internal wiggles of the lake and the loads from the watershed—and their contributions to the clarity in the lake. We have been reviewing and updating the clarity model to try to understand what those internal wiggles are that might contribute to the loss or maintenance of clarity or how loading in the watershed may or may not be changing over time to affect clarity. That is one of our priority issues. This is the second annual TSAC Data Synthesis and Analysis Project Subcommittee review of the data for the current year in relation to historical trending. I think you will learn more about that in the coming month.

There has been a continued focus on the Total Maximum Daily Load—the particle loads and nutrients into the system—which continues to be important. It is something that both Nevada and California have invested heavily in over the last two decades. We are exploring new methods for evaluating long-term clarity. Is a model the best approach? Are there other tools we need to bring in that are novel for statistical analysis to understand these internal or external wiggles and how they influence clarity? The big focus for clarity for us—what stimulated this idea of the partnership within the Council of having many institutions review the clarity data—is the change in clarity in 2017 or so when we saw a big stage shift. Since 2017, we have been having more drought conditions, yet we continue to see a loss in clarity. It has been a large focus of the Council and the TSAC Data Synthesis and Analysis Project Subcommittee to try to understand what is causing that clarity loss—or at least presenting concepts and ideas that we would recommend to the management community to focus on into the future.

We cannot have a good talk in these sessions without talking about wildfire. You have heard about wildfire almost all morning. The Caldor Fire and other fires in the region impacted the lake not only through direct burning but through smoke generation of wildfire; however, it was a small amount within the watershed compared to other watersheds in our neighboring area. The Council has promoted and implemented a number of research priorities to inform management around water quality changes. We have some enhanced water quality monitoring that has been ongoing since the Caldor Fire in the south end of the watershed to understand the loads and nutrients coming into the lake. We have a second study evaluating the effects of that wildfire smoke and the particles from that smoke in influencing clarity and whether there are short- versus long-term effects, both in the offshore clarity and the nearshore water quality as well. With forest treatment review, we are trying to understand what the forest treatments may or may not be doing to influence the wildfire movement through the Lake Tahoe Basin.

What is our focus into the future? The Council has been doing a lot of different activities for a small member institution. In the next few years, we will develop watershed-to-lake planning to link research and management priorities from watershed to lake, so no longer

treating them as "the lake is the lake" or the "the watershed is the watershed." Instead, can we manage the watershed—its biodiversity, the meadows, the things that people care about in the upland—and manage it in a way that is efficient for maintaining the overall ecosystem health of the lake, whether it is the nearshore part of the lake or the offshore? I think we will end up seeing many more focused studies on in-lake particle studies under changing conditions like shifting climate or perhaps shifting lake conditions due to changes in climate. There will also be a refocus on nearshore water quality. This is something the science community worked on individually with our management community prior to the development of the Council. Our hope is to continue to focus on what is happening with changes in the nearshore, whether it is the invasive species that were just measured or simple water quality—the algal conditions—such as why is the north shore having a bloom versus the south shore during a certain time? Or, is this really an algal bloom or is this something that occurred in the past that we have not detected? There is going to be a lot more focus on nearshore changes. The nearshore is the area where most of the public has its interaction with the lake, and the clarity is largely measured in the offshore. Having these connections in the nearshore process will be important into the future.

I want to point out there is a lot more science need going on. As you heard in the presentations, there is a lot of help from the science community with guiding future policy; however, we have had static or declining budgets. This is difficult to continue to assist without securing resources for the Council. I want to remind the Committee of the support that comes to the Council. In general, California has provided about $100,000 annually to the operating budget from 2015 to the present, and we had a $500,000 one-time clarity evaluation from 2018 to 2022 that was largely to bring us up to speed on what is causing these wiggles and changes within clarity during the summer or during particular seasons. Nevada's contribution has been $150,000 through NDEP, grants in 2020, and $70,000 through a Lake Tahoe License Plate Program grant in 2022. Individual institutions, such as UNR and UC Davis often provide in-kind salary contributions for participation. For example, when I or others participate. We could utilize assistance from the State of Nevada in supporting resources towards the Council. If I was making a pitch for this, I would love to see it equivalent in some way to what California provides; however, any additional resources at this point could be helpful for Council operations and activities.

I am ready to take questions.

Chair Peters:

Are there questions from the Committee?

Assemblywoman Cohen:

I have a question about the makeup of the Council—the different institutions that the members are coming from. Do members tend to come from certain fields, such as "This university is always going to send someone from this field," or do they tend to rotate them around the different fields that could affect the science—such as engineers and chemists. Do they get involved in biology? How does that work?

Dr. Chandra:

Yes, we have tried our best to balance, as a whole, the need for having Council scientists that can weigh in on upland changes in the terrestrial areas versus lake process and now streams and atmosphere. The Council is a living entity, and peoples' roles and responsibilities can change depending on the needs. Some of the Council's institutions have

expertise, for example, in lake studies, which is what you would see coming from UC Davis, so its Council membership has largely been ecologists or engineers that are focused on lake dynamics. Other institutions will bring in expertise from their different areas. For example, UNR, which I represent, has expertise in water, lake, and watershed studies or climate and snowpack. The Pacific Southwest Research Station is another excellent example. It has some cornerstone excellent research going on in biodiversity and forest structure. The membership expertise can and does change as Council members turn over, and we are also evaluating what the needs will be into the future. Whenever there is a hot topic to be studied, such as sustainable recreation and tourism in relation to changing climate, we not only try to do things within the institution, but we contact experts within those fields and subcontract those people who can provide advice on these topical areas that we do not have expertise on within the Lake Tahoe Basin. While the membership has different expertise, we are deliberate about seeking expertise where we do not have to have it on the Council.

Chair Peters:

Can you talk about your authority and jurisdiction and what that crossover looks like? Those involved in implementation—the people who are downstream from the science.

Dr. Chandra:

Simply said, we have no authority. We are a council membership designed to provide advice to management agencies—some of which have authority—and policy level authorities and others with other broad decision-making. There is no direct link for Council recommendations with authority and policy unless the management community deems it important. The beauty of Lake Tahoe, in my opinion—having worked globally on a dozen plus lakes or watersheds to this point—is that the interface between the scientific knowledge that often goes into policy making is really tight, and it continues to be strong compared to these other systems that I have worked in. While we have no authority, we can provide information to people who have some decision-making capabilities. They work together quite well. Let us keep that part up if we can. Having resources for the Council would allow us to do that.

Chair Peters:

I can appreciate that. While at UNR, many of my colleagues in research programs were working on projects related to the lake. It helped them build the kind of career base that they needed to be successful in their scientific fields. It is a fantastic resource, not only for the economic and natural resource value but also for the scientific community in northern Nevada and across the state. We can talk about all the things you do to crossover into other areas, but I digress. I do not think there are any other comments from members.

We heard a lot today about the economic needs in supporting the ongoing efforts in our community at the lake. I want to take a moment of personal privilege to make the connection to the economic viability, regionally. I have had several conversations recently with people about how we often talk about Lake Tahoe as a unique gem in the region, and it is, but that crosses over to what the economic infrastructure looks like across the northern Nevada region. Without Lake Tahoe, we cannot farm in northern Nevada. Without Lake Tahoe, we cannot build communities in northern Nevada. Without Lake Tahoe, we cannot treat post-traumatic stress disorder (PTSD) and other issues that people have who need that outdoor recreation option to take care of themselves. Without Lake Tahoe, my children would not know what freshwater looks like in a desert region like this. Lake Tahoe has an important value, both intrinsically and economically to our region, and it is

imperative that we sustain and support that. It is not something we can write off as a gem that one entity is responsible for. It is a collaborative effort among parties, and you all do a phenomenal job of that.

It is up to us during the legislative session to ensure we are supporting your efforts as well. Thank you for all of your ideas and recommendations. We will take those into account as we process what we are going to do in the upcoming session.

I am going to close this agenda item.

AGENDA ITEM VIII—PUBLIC COMMENT

We will move into our final agenda item for the day, which is public comment.

[Chair Peters discussed guidelines and procedures for providing public comment.]

I see we have someone in Carson City for public comment. Please introduce yourself and proceed. You have three minutes.

Steve Teshara, Principal, Sustainable Community Advocates:

I may have missed two or three meetings of this Committee since it was formed many years ago. I am here today on behalf of Carol Chaplin, who is the President and Chief Operating Officer (CEO) for the Tahoe-Douglas Visitor's Authority, and Lewis S. Feldman, Esq., Feldman Thiel LLP, who is Counsel for the Visitor's Authority. As you know, they were supposed to present to you on May 27, 2022. That meeting ended up being cancelled, and they were out of town that day anyway. I want to affirm with you and your staff that they can be on your agenda for the meeting on July 29. We could bring forward to this group a presentation on the Tahoe South Events Center, and perhaps there would be an opportunity for a tour. They asked me to come today to make sure we can be on your agenda for July 29.

Over the years, the staff of this Committee has been terrific to work with. I have always told them that if there is anything I can do to help with agenda planning or logistics of tours, I am always happy to do that. I want to give a shout-out to the staff that you have because they are very important in terms of how these committees operate and the tremendous work that goes on between your meetings.

Chair Peters:

I want to clarify that we had to bump that meeting to July 15 because I am unavailable on July 29. I hope that works out. We will have staff reach out and make sure we can fit you on that or the August agenda if we need to push it out.

I am not seeing anyone else coming to the table here in Carson City. I will go to Las Vegas. Is there anyone in Las Vegas who would like to present public comment? Seeing none, I would ask BPS to check the public comment line. Please add the first caller.

BPS:

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

Chair Peters:

I am going to go ahead and close the agenda item. We intend to hold our next meeting on July 15, 2022, at 9 a.m. at the Legislative Building with videoconferencing to Las Vegas. If that changes, staff will let everyone know. We are obviously having some complications ensuring people are available for these meetings. It is important to ensure we have your input on policy. If we can get tours going again, we will. Our final meeting and work session is scheduled for August 31, 2022. That is the deadline day for bill draft requests, so we are going to be moving pretty quickly on that. During the work session, we will consider recommendations that have come before this Committee from the public and private sector. Please let us know by August 1, 2022, at 5 p.m. if you have any recommendations that you would like us to consider. That will allow staff to get us that information so we can make those decisions. Are there any other final comments from the Committee members before we adjourn? Seeing none, we are adjourned.

The following public comments were submitted for the record:

- Kathryn Bricker, Nevada resident (Agenda Item VIII A);
- Jacquie Chandler, Executive Director, Sustainable Tahoe and Earth Travel (Agenda Item VIII B); and
- Staci Baker, D.V.M, Nevada resident (Agenda Item VIII C).

AGENDA ITEM IX—ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 11:42 a.m.

Respectfully submitted,

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Lisa Creamer
Research Policy Assistant

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Alysa M. Keller
Senior Principal Policy Analyst

APPROVED BY:

_____

Assemblywoman Sarah Peters, Chair

Date: _____

MEETING MATERIALS

AGENDA ITEM	PRESENTER/ENTITY	DESCRIPTION
Agenda Item II	Fred Voltz, Nevada resident	Written testimony
Agenda Item IV	Erick Walker, Forest Supervisor, Lake Tahoe Basin Management Unit, United States Forest Service, U.S. Department of Agriculture	Presentation
Agenda Item V	Devin Middlebrook, Sustainability Program Manager, Tahoe Regional Planning Agency	Link to Report
Agenda Item VII	Sudeep Chandra, Ph.D., Tahoe Science Advisory Council Co-Chair; Professor, University of Nevada, Reno (UNR); and Director, Ozmen Institute for Global Studies, UNR	Presentation
Agenda Item VIII A	Kathryn Bricker, Nevada resident	Written Testimony
Agenda Item VIII B	Jacquie Chandler, Executive Director, Sustainable Tahoe and Earth Travel	Written Testimony
Agenda Item VIII C	Staci Baker, D.V.M, Nevada resident	Written Testimony

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