

**Tennessee Valley Authority
Virtual Meeting
Regional Resource Stewardship Council Minutes
April 20, 2021**

The Tennessee Valley Authority (TVA) Regional Resource Stewardship Council (RRSC or Council) convened for the third meeting of the 11th term at 9 a.m. ET on Tuesday, April 20, 2021. The meeting was held virtually, in keeping with public health guidance during the coronavirus pandemic. The meeting recording is available at www.tva.gov/rrsc.

Council members participating:

RaeLynn Butler, Keith Carnahan, Robert Englert, Jr., Richard Holland, Mark Iverson, Ronald Lambert, Whitney Lipscomb, Tom Littlepage, John McConnell, Will Nelson, Ron Robertson, Danette Scudder, Robert Sneed, Catherine Via, Randy Wiggins, Greg Young.

Designated Federal Officer: Melanie Farrell

Facilitator: Jo Anne Lavender

- Appendix A - TVA staff and members of the public who attended the meeting
- Appendix B - Agenda
- Meeting presentations and recording can be found at www.tva.gov/rrsc

Purpose

The purpose of the meeting was to provide updates on TVA, its Natural Resources, River Management and pro bono work during the global pandemic, and to provide information on TVA's Asset Management Strategy and its Carbon Strategy and Sustainability.

1. Welcome and Introductions

- A.** Althea Jones, Senior Manager for Stakeholder Relations and TVA's Committee Management Officer, welcomed everyone to the meeting and introduced Melanie Farrell, Vice President of External Strategy & Regulatory Oversight. Farrell is leading efforts to transform how TVA engages with external stakeholders. She is the new Designated Federal Officer for the RRSC.
- B.** Farrell spoke briefly regarding her position and excitement to work with the Council.
- C.** Jo Anne Lavender, Meeting Facilitator, provided a safety moment, reviewed the agenda and explained that TVA would not be seeking advice from the Council at the meeting. Instead, the presentations were in preparation for when TVA seeks advice at subsequent meetings.

D. Kendra Mansur, an attorney with TVA's Office of the General Counsel, explained the protocol of RRSC meetings and thanked the Council members for their participation and leadership.

2. Designated Federal Officer Briefing — Melanie Farrell
(Presentation can be found at www.tva.gov/rrsc)

Melanie Farrell, DFO, provided an update on the TVA Board of Directors. In January 2021, the Board welcomed two new members — Beth Harwell and Brian Noland. There are currently two Board vacancies, and two Board members will complete their term in May 2021. TVA anticipates that the new Biden administration will fill the four open positions over the course of this year.

Farrell discussed that Memphis Light, Gas and Water (MLGW), TVA's largest customer, has been looking at alternative power supply providers. She said TVA has been involved and has been respectful of MLGW's process. Last summer, MLGW performed its own integrated resource plan, which suggested that it could save on costs if Memphis took a different path. Memphis City Council voted to approve MLGW's pursuit of requests for proposal for power generation and transmission. TVA believes TVA and the value it provides will be the best option, but it is respectful and supportive of MLGW as it works through the process.

She also mentioned that in January 2021, four local power companies (LPCs) filed a petition with the Federal Energy Regulatory Commission (FERC) to allow them to use TVA's transmission system to deliver power to their customers. The four companies had requested this of TVA, but TVA denied the LPCs' request, because it would shift costs for using the transmission system to the other 149 power companies that TVA serves. TVA believes it would be fundamentally unfair and goes against the foundation of public power. TVA has been engaging with these customers and with the remainder of TVA customers as well. Ninety percent of TVA's local power company customers have signed long-term power agreements, showing their support for the public power model that brings such value to the Valley. At this point, there have been multiple petitions filed and information provided to FERC. By an act of Congress, TVA's service territory is clearly defined, and TVA believes it would create an unfair balance to allow the four companies to use its transmission system.

Farrell said TVA is excited to be involved with the development of the Southeast Energy Exchange Market (SEEM), a collaborative energy exchange system. TVA is one of a group of utilities exploring the use of an automated energy exchange system. The purpose is to allow lower costs and optimize renewable energy resources across the region. A motion has been filed with FERC to authorize approval of this new platform. Once the exchange receives FERC approval, TVA would take additional steps to go through the National Environmental Policy Act (NEPA) process and seek Board approval. With more renewable resources coming online, and with those resources being intermittent (think solar — sun shining/sun not shining, for example), SEEM would

enable TVA to take advantage of excess renewables its peers may have at times when they were needed to balance the load.

She reported that TVA is working with organizations across Tennessee and beyond to develop strong partnerships to support electric vehicle (EV) adoption. This is an effort across the seven-state region to help address challenges with EV adoption. It is a multi-year plan to eliminate market barriers that prevent people today from choosing EVs. The ultimate goal, in partnership with states and other business partners, is to establish the infrastructure needed to have more charging stations, which will reduce the public's anxiety about the distance between places to charge an EV. That is one of the barriers to easy EV adoption. As TVA is focused on its own resources and what it can do to reduce the impact of carbon emissions, outside of TVA's business area, transportation throughout the southeast also presents opportunities to reduce carbon emissions. TVA thinks these partnerships and its support align well with this.

The Council did not have any questions following Farrell's presentation.

3. TVA's Energy System of the Future (Presentation can be found at www.tva.gov/rrsc) — Jacinda Woodward, Senior Vice President, Power Operations

Jacinda Woodward provided information on TVA's diverse power portfolio, which uses a wide variety of generating assets to serve TVA's load. TVA's mission is to make life better in the Tennessee Valley, and it focuses on three specific drivers: providing low-cost, reliable energy; being a steward of the environment; and promoting economic development. TVA's mission is the same as it was when the agency was created in 1933, but the way it satisfies that mission continues to change over time.

Woodward walked through how TVA's power generation has changed over time to satisfy additional energy demand in the region. TVA started with hydro power plants, then added coal plants as a result of World War II and increased industrialization; added natural gas to deal with hot summers and cold winters; and added nuclear in the 1970s. Those assets are still used, but TVA continues to lower its carbon emissions with increased use of solar and wind energy, storage, and energy efficiency and demand response, while also focusing on upgrades to its transmission system. The transmission system connects TVA's generating plants back to local power companies and direct served industries.

In 2005, TVA generated more power than it does today. The region has had industrial growth, so the fact that TVA is generating less power today indicates that energy efficiency continues to take place in homes and industry. In fiscal year 2005, about 36 percent of TVA's power generation was carbon-free, and coal plants generated 57 percent of TVA energy. Today, TVA's power is 60 percent carbon-free. Since 2005, TVA has retired a little more than half of its coal fleet and grown its gas fleet, which costs less to operate. Looking ahead to 2030, TVA plans to continue to increase its use of solar and wind energy. For example, it has about 2,700 megawatts of solar under

contract today, and plans to increase that to more than 5,000 megawatts by 2030. TVA also expects that advanced technology such as small modular reactors could play an important role as it moves toward 2030 and beyond. TVA also expects to see more retirements of coal. Gas is going to play an important part in TVA's ability to bring solar onto the system in large amounts.

The RRSC has been involved and influential in providing feedback to TVA during the integrated resource planning process, which is used to make asset decisions. The most-recent Integrated Resource Plan (IRP) was published in 2019. The next one is expected to start in late 2022, with an expected finish in 2025. Today, TVA is acting on the guidance that came from the 2019 IRP. The IRP looked at a number of scenarios that might play out in the future and the approaches TVA could use. The plan looked at a broad variety of outcomes, and TVA needs to anticipate what the future will look like down the road. In TVA's asset planning space, the agency looks at three time horizons — 0 to 5 years (if TVA needs additional generation, it needs projects on the ground), 6 to 10 years (planning for technologies that are available today, such as gas, solar and other renewables) and 10 years and beyond (what emerging technologies can help TVA transform the power system even further). TVA operates each business cycle with those three time cycles in mind.

From a conceptual plan to an actual decision, there are a number of processes that take place. One process is looking at the different considerations that have to be taken into account as TVA makes determinations of what needs to change in the generating portfolio. Woodward talked about three factors that play a role in decision-making: customers, operational characteristics of the units, and economics.

Industrial customers are more and more concerned about their environmental footprint. Many customers that are coming in are talking to TVA from an economic development standpoint and negotiating their decision to come into the Valley with the concern about being able to support their impact on TVA's load with renewable resources. That is part of what is driving TVA's increase in solar installations across this decade. Also, economics: It is important to continue to provide low-cost energy so TVA can help attract businesses to the Valley. That is better for everyone, because it means that there are better-paying jobs, more opportunities for the people TVA serves, and also reliability for TVA customers. Customers depend on high power quality and high reliability in order for their processes to work.

Each of the assets in TVA's portfolio has unique characteristics. For example, TVA's nuclear assets are on all the time, except for when there is a refueling outage. That is very different from solar, which works when the sun shines but doesn't work when it is cloudy or at night. TVA has to consider how the operating characteristics match with its daily change in load profile.

Economics is important to TVA as well, because the agency must be sure it is meeting its statutory requirement to provide power at the lowest feasible cost. TVA increased gas assets and decreased coal assets, in part due to the expense of operating the coal

units and the efficiency gains that have been made over time with gas. In addition to customers, operational characteristics and economics, other considerations in TVA asset decisions include environment, transmission, workforce and fuel supply. With all seven in mind, TVA looks at what is going to provide the best combination of outcomes. As part of the assessment process, TVA develops a timeline for what it believes it will need to change in its generating portfolio over time. Before any decision is made, it goes through several processes, including environmental reviews.

Coming up this year, TVA will be evaluating two of its coal plants — Cumberland and Kingston. TVA will have separate Environmental Impact Statement (EIS) Notices of Intent, and will invite stakeholders to participate in the evaluation process, which will take 18 to 24 months to complete. After that, TVA will complete a recommendation to take to its Board of Directors. The Board will act on the recommendation either by approving it or asking TVA to go back and look at other options.

Woodward said that another important aspect of TVA's considerations in asset planning is to consider the employees in Power Operations — people who work hard to operate the assets, and who have worked throughout the pandemic. When TVA makes decisions about retiring assets, they are not taken lightly. In addition to its asset planning, TVA is developing a long-term integrated workforce strategy to ensure it is providing opportunities for employees who may need to be retrained or transitioned to a new technology. TVA also is working closely with its economic development team on opportunities to bring industry to communities that are going to be impacted by plant closures.

QUESTIONS

Robert Englert, Jr., asked about the timeline when TVA will start the determination process as to whether it will continue to operate the Cumberland and Kingston coal plants.

Woodward: This year, probably late this spring or early summer, TVA will issue notices of intent for an Environmental Impact Statement, and that will kick off the process for TVA's formal evaluation. The processes will take 18 to 24 months. After that, TVA will be poised to begin the actual construction of new generation. That is the trick of this; because its load is growing slightly but certainly not declining, it is important for TVA to have replacement generation available prior to closing these plants. TVA expects the earliest it would see an impact to Kingston would be in the 2025 to 2026 timeframe, and Cumberland in the 2026 to 2028 timeframe.

Englert asked if the determination can be made to new generation elsewhere or the continued operation of those plants or both?

Woodward: TVA will look at alternatives — as is or no change of continuing to operate Kingston or replacement generation on that site. Existing coal sites are very favorable, because they have infrastructure, they have transmission connections, they have water sources. They have it all. But there could be other drivers, such as if it's a gas plant or if

it's solar or a combination, you may have different characteristics that you need to consider that the Kingston site might not completely meet.

Englert asked at what point TVA will bring stakeholders into the process.

Woodward: When TVA issues the Notice of Intent, it will include a public comment period. There will be opportunities to bring stakeholders in to get specific input. You'll be seeing that take place over the next year.

4. Energy System of the Future: Building a Sustainable, Clean Future (Presentation can be found at www.tva.gov/rrsc) — **Rebecca Tolene, Vice President, Environment**

Rebecca Tolene said she is excited to be at the meeting. She is Vice President, Environment, and Chief Sustainability Officer for TVA. Her position includes responsibility for environmental compliance as well as environmental policy and sustainability. TVA is working hard every day to ensure that it is in compliance as well as proactively protecting the environment, doing environmental assessments and protecting cultural resources in the Tennessee Valley.

Tolene said that in partnership with communities throughout the Valley, TVA is working to build an innovative, promising future for families today and for the next generation. That is at the heart of a sustainable approach to the public power model and to its business.

TVA has always been driven to find a sustainable path, especially throughout its integrated planning journey. It is important today to talk about TVA's sustainability journey and its path moving forward. TVA's current sustainability footprint, particularly its carbon reduction, has been a part of significant recruitment of economic development in the Valley, both new industries and expansions. There is a strong benefit to this region being seen as a clean energy hub, as far as continuing to grow the economic benefit. Ultimately, TVA wants to be part of the solutions that the Valley is pursuing to reduce impacts on natural resources, working with policy makers to find the best path forward. As a public power entity, TVA is well-positioned to do this.

Tolene said TVA's 2020 Sustainability Report is scheduled to be released in early May. TVA did its first broad, corporate Sustainability Report last year, and based on feedback from the RRSC, TVA focused on creating a simpler document. TVA focused on creating a tighter, more graphic-intense report so people can digest the accomplishments. It focuses on accomplishments in 2020, TVA's pandemic support for communities and employees, carbon reduction activities and renewables work.

Tolene noted that when you ask a group, "What is sustainability?" you get many different answers. TVA believes sustainability is about creating a business with long-term value. At TVA, sustainability helps TVA meet its mission — low-cost, reliable energy; protecting the natural resources of the river system and public lands; and serving as a catalyst for economic development. Tolene also described the

“sustainability lenses” — a strong governance structure, caring for the health and well-being of employees, economic impacts, strong partnerships with customers and communities, and positive impact on social issues in communities served. Focusing on TVA’s performance of its mission through the sustainability lenses enables TVA to understand the impacts and invest in the positive and minimize or reduce the other. It also enables TVA to assess its strengths and how the public power model can thrive in the future. Both academic and business research supports the proposition that looking at business through these sustainability lenses translates into better financial performance and better risk management. That is part of what TVA can do when reporting on TVA and sustainability.

TVA’s goal is not just to report on past performance, but to embed sustainability into its planning processes. One of TVA’s steps is moving to a proactive program, creating this annual cycle that monitors and confirms material sustainability issues. That means ensuring TVA has the right leadership and oversight, the right stakeholder input from groups like the RRSC and moving proactively toward setting policies, initiatives, metrics and goals. In the governance space, stakeholder input is important. TVA looks forward to continuing to work with the RRSC as it continues to improve and develop a stronger program.

Using external metrics is very important. There are a handful of competing standards in the world. TVA uses the Global Reporting Initiative (GRI) standards. The goal of any standard is to transparently and correctly disclose key information on sustainability in a way that can be quantified and compared. GRI also provides sector standards, and there is one for electric utility that provides guidance to the industry. TVA uses external standards to take a hard look at performance.

Tolene showed a slide (Slide 28 on presentation at www.tva.gov/RRSC) that reminded the RRSC of its advice after the 2019 Sustainability Report, and she thanked the Council for its feedback and guidance. She noted that TVA views the report development as a continuous improvement process, and looks forward to improving the report each year with support from teams like the RRSC.

There is a lot of focus today on carbon and greenhouse gas emissions. TVA has reduced its mass emissions by more than 60 percent since 2005 and its carbon emissions rate by 59 percent through changes in its generation fleet. These numbers aren’t finalized yet; TVA is in the last days of that finalization. TVA is in a leadership position in its pace of carbon reduction and its ability to do that while maintaining affordability and reliability.

Looking ahead at further decarbonization, TVA believes there are foundational pieces that have to be included to achieve large decarbonization. The first is around reliability and affordability. With a national policy of decarbonization, that requires electrification of other sectors. Retaining affordability and reliability are key. They also remain key to TVA’s job of delivering improvement in the quality of life in the Tennessee Valley. These are two pieces that are not only core to TVA’s mission, but the agency would argue that

they have to be at the core of good carbon policy. To maintain reliability and affordability, industry must address the intermittency that occurs with some of the carbon-free resources. TVA's investment in renewables is moving forward at a fast pace. It must continue its strong history of its robust nuclear fleet, hydro generation that has been with TVA from the beginning, and improving the transmission grid. TVA also has to be willing to change and adapt. That's difficult sometimes for a capital intensive business that needs long lead times, but TVA is in a time of change. Being able to start with no-regrets types of decisions and build and adjust will be key for TVA's success moving forward.

How do you talk about all these different factors, these Guiding Principles, and then move toward something you can utilize in this conversation? One tool TVA has is a framework. The Guiding Principles are the foundation. Step 1 is an effort to capture the carbon capture reduction options in front of us. TVA calls the options carbon levers. This is a continual process now. Most of the interest and the whole generation world is on R and D levers such as small reactors, hydrogen, investment, carbon capture investment. TVA brings those into this process, certainly, because they are the pieces that will make the biggest impact, but it also is capturing the smaller levels that would help TVA fill gaps, provide partnership and community opportunities throughout the Valley, and may have other benefits to the Valley as well.

TVA's first review is really around the impacts, and Step 2 is to understand the impacts — how much carbon reduction can be achieved, what is its cost and what is its feasibility. Some companies stop at Step 2. TVA continues further and, in Step 3, looks at some of the other values — other power system benefits, environmental justice benefits, environmental benefits. The value analysis is more subjective. It is not just a cost timeline. It is helpful to us to look at the impacts. After going through this framework, the outcome is really a toolbox.

TVA has developed toolboxes in five areas — energy technology innovation, valley innovation, fleet innovation, energy delivery innovation and natural resource stewardship innovation. Tolene used a slide (Slide 36 in the presentation at www.tvo.gov/rrsc) to detail TVA's Decarbonization Journey, which highlights TVA's story of leadership and looks at TVA's carbon reduction today, its path forward over the next few years, and exploration within these toolboxes. Tolene provided a summary of each toolbox.

She summarized TVA's decarbonization journey by noting that TVA has executed a plan to reduce carbon emissions by 60 percent, has a clear plan in place to reach a 70 percent reduction in carbon intensity by 2030, is working on achieving an 80 percent reduction by 2040 or sooner, and is investing and exploring new technologies and options to move TVA forward to create a clean energy future and to serve as a catalyst for clean energy economic development.

The Council did not have any questions following Tolene's presentation.

5. Serving the Valley through Environmental Stewardships (Presentation can be found at www.tva.gov/rrsc) — **Bucky Edmondson, Director, TVA Natural Resources**

Bucky Edmondson offered highlights of TVA's Natural Resources activities, which he said were impacted somewhat by COVID-19 and the global pandemic. He noted that David Bowling, Vice President of River and Resources Stewardship, is moving to gas and hydro operations, and Allen Clare, a 36-year veteran in the power industry and five-year TVA executive, will be the new Vice President of River and Resources Stewardship. Clare talked with the Council and said he is excited by the opportunity to work with TVA's River and Resource Stewardship teams and values partners including Council members. Bowling thanked the Council for its advice over the years and looked forward to continuing collaboration.

Edmondson said the Natural Resource Plan that was finished in October 2020 has been implemented. The plan includes 10 focus areas — reservoir lands planning, Section 26a permitting and land use agreements, public land protection, land and habitat stewardship, nuisance and invasive species management, cultural resource management, water resources stewardship, recreation, ecotourism, and public outreach and information.

It was a busy year for the recreation world, with many people out on public lands during the pandemic. That activity helped TVA, once again, understand the value of public lands, as people needed and demanded a place to go. TVA shut down some places initially where people were congregating, but it kept everything it could open, and it opened places back up based on CDC and state guidelines.

TVA created a task force with the state park system and other public-land managers in Tennessee, and that's been a big offshoot of where TVA is and what it did during the pandemic. The task force is going to be a great resource going forward. Land managers had conversations, and TVA found that when it closed an activity, it popped up at a state park, and when a state park turned something off, it popped up at a national park. There are a lot of interrelated activities.

With so many people home during the pandemic, TVA saw a surge of building on the lake front. TVA issued close to 1,600 permits in 2020 (The slide lists 1,300, but Edmondson says it is closer to 1,600), and it is on pace to issue 2,200 to 2,300 permits in 2021. Environmental employees have to do a lot of environmental, archeology and wetlands reviews. They are on pace to do about 2,300 a year, and are staffed to do 1,600 a year. Edmondson said that is a challenge.

He said people ask why the tremendous growth is occurring, and noted that Tennessee was the largest U-Haul® growth state in 2020. People who worked from home thought, "Why not have my office in my lake home?" Tennessee has seen tremendous growth in people moving to the state, and many of them went to a lake and built a dock, Edmondson said. TVA typically goes into schools and talks to 15,000 students per year

about water quality, does hikes and discusses natural activities. Some of those activities were impossible to do during the pandemic. The Natural Resources team began to think about ways to do it a little differently. It offered activities such as virtual walks to a dam with a TVA biologist telling people what they are viewing. TVA also took its water worldwide monitoring program and turned it into a virtual activity. TVA is excited to be able to get back into the communities in-person, but it also will continue to use virtual programs to increase its outreach. This follows the RRSC's previous advice to TVA to figure out ways to offer more virtual and web-based activities.

The COVID-19 global pandemic prompted challenges for holding public meetings. To gather public input for the Tellico Land Management Plan Revision, TVA set up a tent so it looked like a public meeting, then held the meeting virtually. The video takes people through each of the areas virtually. It worked out well. It doesn't take the place of one-on-one interaction, but it provided TVA the opportunity to explore new ways of presenting meetings, Edmondson said.

In the Natural Resources Management realm, TVA manages 293,000 acres of land and 11,000 miles of shoreline. It continues to do many of its outdoor management activities with employees socially distanced and following public health protocols. The teams assessed the condition of 10,000 acres of TVA land, did biodiversity projects for pollinators and warm season grasses, stabilized over 1,400 linear feet of shoreline that have sensitive resources, and planted 60,000 trees.

Edmondson said that TVA is taking an innovative approach to dealing with aquatic vegetation in the Gunter'sville residential area. The whole team was pulled off Browns Ferry to work on eel grass, which had died and broke away. It ended up against the Browns Ferry water intake, and it was an all-hands-on-deck activity to keep the aquatic weeds out of there.

Fontana Village Resort in the mountains of North Carolina has been in operation since 1946. The current operation began in the early 1970s. They were struggling. TVA jumped in with a TVA contractor and operated it for last year and this year. TVA has been working to get another long-term operator in there. It is an important economic driver in the North Carolina counties, and TVA wants to get it back up and operating. It is releasing a request for proposal to find a full-time operator for Fontana Village Resort.

Edmondson offered a report on the status of floating cabins. He said every time it moves a step or two closer to finalizing this, something comes up. With the change in administrations and the new Office of Management and Budget person, there was a little slowdown on getting regulations published. TVA has hope that they will be published in the next few months and offer the basic concept of what TVA is going to do with the floating cabins. Then, TVA will go into execution on that.

TVA has established a new partnership with the University of Tennessee. There has been a nonprofit called the Tennessee RiverLine for several years. They want to create a 652-mile trail — water, bike, hike — from Knoxville, Tennessee, to Paducah,

Kentucky. It would encompass the Tennessee River and the towns and parks around that, and put emphasis on economic development and advertising to have that become a focus point. TVA has created a long-term partnership with them and is deeply involved.

QUESTIONS

Robert Englert, Jr., said he wanted to compliment TVA. In his neck of the woods, around the 26a permits, he has had a lot of folks comment and compliment what TVA has done. TVA sent folks from other areas to work on Kentucky Lake in particular, and people were happy with the turnaround time on their permit application. Kudos to TVA for that.

Randy Wiggins followed up with Bucky Edmondson later in the program and stated that he knows TVA is getting ready to do the RFP for Fontana Village. He asked if there has been interest and if TVA feels confident about the people interested in submitting RFPs.

Edmondson: There have been about 35 names on the list. For the selection process, a public notice will go out. Meeting qualifications might be tough, because there is a minimum clause. It is a \$5 to \$6 million operation.

Wiggins: I wanted to let you know, too, that we do have a partnership program on a little project we're doing here in Cherokee County, where TVA is installing some vault toilets at the Mickens Branch Boat Ramp. We're very pleased to see those coming in.

6. River Management Update (Presentation can be found at www.tva.gov/rrsc) — **Tom Barnett, P.E., General Manager, River Management**

Tom Barnett started his presentation by providing a few Tennessee River System facts and a brief overview of TVA's management of the river system. The Tennessee River watershed is about 41,000 square miles and touches seven states. TVA manages 49 dams in an integrated fashion within the watershed, and that management provides several benefits. Those benefits include navigation, flood damage reduction and power generation operating objectives, which are original to the TVA Act signed in 1933, and the three others — water quality, water supply and recreation, which have come about with additional legislation to meet the changing needs of TVA stakeholders. TVA's current river operations policy was adopted in 2004, and it provides guidance for balancing often competing objectives to optimize public benefit.

TVA uses its systems of reservoirs and dams to store water and regulate releases to protect downstream communities from flooding impacts. On average, TVA prevents about \$288 million in flood damages annually. Since TVA's inception, it has averted nearly \$9 billion in flood damages across the Valley. The region is coming off the three wettest years in its 131 years of record keeping. The region set a record last year with over 70 inches of rainfall. In the past two years alone, TVA has prevented more than \$2.6 billion in flood damages. In February 2020, there was Valley-wide flooding, and TVA averted nearly \$1 billion in damages, including averting \$772 million in damages in Chattanooga alone. In 2021, the Valley was below normal in rainfall until mid-March,

when it received about two months of rainfall in two weeks. TVA stored a lot of that water and managed releases to avert over \$150 million in damage in the last half of March.

During the record rainfall, TVA worked to keep stakeholders informed of potentially dangerous conditions. TVA continues to use traditional methods of communication, such as phone calls, its website, news outlets and others. It also relies heavily on social media platforms to get the word out. For 2020 river management social media impact alone, TVA had over 2.6 million impressions, which is the number of times the content is viewed. It also had over 191,000 engagements, which is the number of times a user engaged with the post by “liking” it, sharing it or commenting on it. TVA leads the industry in engagement on its social media channels.

One of TVA’s operating objectives is commercial navigation. TVA manages the river to provide for that commercial navigation. That includes 652 miles of navigation channel in the main stem, from Knoxville, Tennessee, to Paducah, Kentucky, and about another 150 miles of secondary tributaries. River shipping is an effective and efficient method to transport bulk goods, providing savings over \$1 billion annually with more than 50 million tons moved each year. TVA partners with the U.S. Army Corps of Engineers, national district for navigation. They operate and maintain the navigation locks on the Tennessee River. TVA also partners with the U.S. Coast Guard on the main stem, where they provide and maintain the aids to navigation. TVA also have a tow vessel that maintains over 2,500 aids to navigation on the secondary channels. They make two trips up and down the river each year.

TVA has two large construction projects at two dams to build new navigation locks. The one is Chickamauga Lock, which has a fully funded total project cost estimate of \$757 million. It is about halfway complete based on expenditures through January. They are receiving \$191 million this fiscal year from the Congressional work plan. The Corps of Engineers is expected to finish construction of the lock by 2025, but it could be operational as early as 2024. The other is the Kentucky Lock, which has a fully funded total project estimate cost of \$1.23 billion. It is also about halfway complete, and it is slated to receive \$110 million this fiscal year. It should be completed by 2025. TVA is looking forward to having these locks in operation and service to continue to fulfill its navigation obligations on the Tennessee River.

In addition to flood control and navigation, TVA’s dams produce power. It has 109 conventional hydro generators, one of which is reversible. It was the first and most powerful of its kind when it was installed in 1956. TVA also has an additional four pumped-storage unit at its Raccoon Mountain facility. Those 113 units account for about 5,200 megawatts of capacity. Hydro is TVA’s most cost-effective source of generation. With all the fuel TVA has received in the past three years, it has been able to produce well above normal hydro totals, averaging about 20 percent above, so hydro generation helps offset more expensive and carbon intensive forms of generation. TVA passes these savings and environmental benefits on to its customers and stakeholders.

Barnett explained that TVA has over 700 water supply intakes across the watershed, and it actively manages reservoir levels and releases to support 139 of those that supply water to cities, communities and industries, providing drinking water for over 5 million people. It is important to plan for water supply in case of extreme drought. In 2019, TVA started a water reliability assessment. In the first step, River Management in partnership with Natural Resources and the University of Tennessee resurrected a project that originated in the 1930s while planning for Norris Reservoir. The study uses tree rings to assess long-term historical dry periods prior to record data. This will provide historical precipitation data back over 1,000 years. TVA uses this data along with observed events to model water availability, using TVA current operating policy so it can assess water reliability and all water supply intakes regulated by TVA. The water reliability model and associated dashboard should be completed by the end of June 2021. Following completion, TVA is going to develop a short two- to three-page summary of findings for each intake so TVA can share that information with water suppliers and discuss potential ways to mitigate water supply concerns in the event of severe droughts.

The Tennessee Valley is fairly water rich, but if that water doesn't have good quality, it can't fulfill its intended purposes. So, River Management does quite a bit to ensure TVA sustains good water quality to support the needs of the people and also one of the most biodiverse river systems in the world. TVA ensures that nearly 11,000 minimum flow commitments are achieved each year to maintain good water quality and aquatic habitat. Its River Management hydrothermal team provides expertise, modeling and forecasting to help ensure temperature compliance at its thermal generation facilities and water temperatures to support numerous aquatic species, some of which are threatened and endangered. River Management also does active dissolved oxygen improvement through its reservoir release improvement program. Barnett described several methods TVA uses to improve dissolved oxygen and support thriving aquatic ecosystems below many of its dams.

Another TVA operating objective is recreation. Reservoir recreation on TVA lakes accounts for about \$12 billion in annual economic impact for the region. A big part of that is getting the reservoirs full so people can enjoy them during the warmest parts of the year. That makes spring a delicate time, because TVA has to balance filling the reservoirs up with its flood control mission that requires room in the reservoir to store water. With normal rainfall, TVA expects to have them full by June 1. TVA schedules hundreds of recreation releases each year to support water activities. TVA is also working to mitigate a potential adverse impact from the invasive species, Asian Carp, by monitoring for the species and partnering with other agencies. TVA started to evaluate potential barrier technologies and locations to help prevent upstream migration. A contract for a programmatic environment assessment was awarded to a NEPA consultant last June, and TVA expects the draft to be completed this month. TVA plans to have a public comment period this summer, and TVA hopes to have the final completed in November.

Barnett offered an update on TVA's Boone Dam renovation in northeast Tennessee. In 2014, TVA discovered seepage in the earthen embankment that was moving material out of the bank, which can be a potentially serious condition if left unaddressed. TVA immediately lowered the reservoir about 30 feet below normal summer pool level to decrease the downstream risk. The reservoir remained there until spring. This has had a huge impact on the region, because it is one of the most intensely used reservoirs in the TVA system. During the past five years, TVA developed a plan. In Spring 2021, TVA completed construction of a concrete cut-off wall inside the earthen embankment, which should permanently mitigate the seepage issue. TVA is starting to refill the reservoir, per the schedule. It will be testing and monitoring performance of the fix for the next year and a half before it releases it to normal operations. The lake should be full by mid-July 2021, and will follow the normal operating guide afterward, providing good performance is observed.

Barnett wrapped up his presentation by saying that TVA's effective management of the Tennessee River System continues to deliver significant benefits to the people of the Valley. TVA can be proud, particularly this past year, given the challenges from Mother Nature, the pandemic and other causes. Barnett said TVA did what TVA does best — rising to the challenges and continually delivering on its mission of service.

QUESTIONS

Ron Robertson said he wanted to let TVA know that people in Harden County appreciate its efforts to keep water through this county as low as possible. He said county residents appreciate that TVA kept water under control after it started raining in mid-March. He said it went higher than they would have hoped; he lost a few 100 acres of wheat. He said he expects that when he plants wheat in the river bottom, it's not a sure thing. He said they appreciate TVA's efforts to keep the levels as low as possible and, unfortunately, right now, they are suffering from the fact that the water was high and the ground is wet and they can't plant, but he thanked TVA for its efforts.

Barnett: It definitely got higher than we would have liked to have seen it. Thankfully, it has been dry over the past week and a half, and there is not a lot of rain in the forecast for the next week or two. So, hopefully that crop land will get dried out and y'all can get out there and plant.

7. Pro Bono During the Pandemic: Generating Justice (Presentation can be found at www.tva.gov/rrsc) — **Kendra Mansur, Office of the General Counsel, Attorney and Chair of Generating Justice: Pro Bono Opportunities**

Kendra Mansur, an attorney in TVA's General Counsel Office and Chair of the Generating Justice: Pro Bono Opportunities, said the initiative is a type of stewardship activity in the Office of General Counsel. Implemented in 2020, the initiative is meeting critical legal needs in the Valley by offering legal services free of charge to people with lower incomes, in collaboration with community partners. The initiative is now under the leadership of TVA's new Executive Vice President and General Counsel, David Fountain.

The initiative provides legal support to people who may be going through hard times, and the committee sets up trainings and events. Through the Office of the General Counsel, the team provides opportunities for TVA employees to perform pro bono work with legal aids and other nonprofits already doing good work in the communities. Generating Justice cannot take questions directly from the public, but if RRSC members want links to legal resources in the community or wish to discuss the initiative, Mansur is available to assist.

With the support of TVA leadership including the General Counsel, Mansur implemented the program with the additional support from the pro bono committee. Mansur has a background in poverty law by working for several legal aid programs before coming to TVA. Mansur noted that other federal agencies and law firms have pro bono programs. Many attorneys and other professionals volunteer in the legal sphere, working with lower-income people and under-represented populations, and the general public may be aware of this work.

Last year prior to the pandemic, TVA held a pilot pro bono event in Memphis to serve lower-income clients, along with Memphis Area Legal Services and a private law firm that has a strong pro bono commitment. The pro bono committee and OGC's leadership team assisted. That event was a highlight of the new program's service commitment, and it was the only opportunity the team had to be in-person before the pandemic began. The team was very proud to be there. Among the services TVA provided, it helped people with their wills, drafted power of attorney documents and offered other services to individuals and seniors who did not have had the resources to hire private attorneys. There are very worthy people who have legal needs, and the team tries to meet them when resources allow, Mansur said.

She noted the extreme poverty in parts of the South, and she shared statistics from Legal Services Corporation that, prior to the pandemic, more than 86 percent of very low-income people in the United States could not afford a lawyer. She stated that many people have legal needs to include those who work, and there is no right to an attorney in the United States for civil legal issues.

Legal Aids, which are nonprofits, work diligently to meet the legal needs of lower-income folks. However, the ratio of legal aid lawyers working with lower-income people who have legal needs is estimated to be one attorney for up to 80,000 people in need depending on the location. Mansur commented that there is no way that all lower-income persons can be assisted with that kind of ratio, so private attorneys and federal agencies try to meet what is called the "access to justice gap." Mansur commented that this type of pro bono work within TVA's service territory attempts to assist individuals who would not have otherwise been helped and meets TVA's service commitment.

This year, in addition to other activities and events, TVA has connected with the Tennessee Valley Public Power Association, and Danette Scudder is the TVPPA representative on the RRSC. OGC is planning to have a legal clinic on April 29 with

TVPPA and local power company attorneys to serve lower-income people, and the work together builds teams, develops relationships, and strengthens business and legal skill sets in addition to serving those cannot afford an attorney.

Mansur pointed out that there is a legal framework and there are ethical requirements the program must follow. In addition, Mansur said there are several Executive Orders applicable to pro bono work. Executive Order 12988 from 1996 encourages access to justice for all persons. This executive order asks that federal agencies provide pro bono and volunteer services, including in the legal sphere to lower-income people. In 2021, Executive Order 13985 asks the federal government to look at its programs and policies and determine if there are barriers to racial diversity, gender diversity or any under-represented populations, whether that is in rural communities, those who are disabled or other disenfranchised groups. The pro bono program, in spirit and in the law, meets those directives, Mansur said. Most importantly, the pro bono work provides a valuable community service to TVA's stakeholders in its seven states by serving underrepresented populations.

When performing pro bono work, Mansur indicated that TVA is meeting ethics and compliance guidance that organizations such as the American Bar Association and state licensing boards suggest. The American Bar Association encourage attorneys to provide at least 50 hours of pro bono work annually without charge to underprivileged populations or to the organizations that serve them. The American Bar Association also suggests that law firms and other attorneys allow paralegals and other professionals to help in this space. Although only licensed attorneys can provide legal advice, there are volunteer tasks that people in other professions can do as well to help with legal issues for lower income populations, such as intake, outreach and paralegal work.

Mansur and TVA colleagues have contributed significant hours to ensure the program is successful. The committee hosted several legal clinics and lunch events last year and this year. The virtual events allowed TVA to serve people they would not be able to serve otherwise, such as people who are bedridden and could not go to an in-person clinic. The TVA program has received awards and recognition from the Memphis Bar Association Access to Justice Committee and the American Bar Association for TVA's work answering legal questions on the virtual site, ABA Free Legal Answers. Most licensed attorneys can join this platform and answer questions virtually from their office or home.

TVA's pro bono initiative is virtual at the moment. The goal is to reduce legal barriers and serve lower-income people in states across the Tennessee Valley. Mansur invited Council members to reach out to her if they would like to join an event or have questions.

QUESTIONS

Randy Wiggins asked how the community can engage with the pro bono committee to provide these types of services within any particular community.

Mansur: Someone can reach out to me, and she is happy to have a dialogue about that. The need is great, and we could work it into a long-term plan.

Wiggins: That is what I was wondering. What is the right format to do that? Would a legal services group get in touch with you, or a local law firm that was interested in partnering with you? Should they contact you to set up a future clinic? Where should that contact come from?

Mansur: You can reach out to me or ask that a local legal aid or law firm coordinate with me. Legal Aids would obtain the clients and provide the malpractice insurance coverage for the pro bono attorneys including those from private law firms.

Will Nelson commented that this is an example of how TVA is so much more than just a power company. He said he has been involved for many years, and he has seen that TVA cares as much about the land and the people as about generating power. He said he wanted to share his appreciation.

Mansur: She thanked Nelson for being supportive and offering comments, and noted that this program is one more way TVA can partner with the community. Mansur said she would be glad to partner with Nelson to help the local community. She also mentioned that Council member Whitney Lipscomb is a lawyer, and Rebecca Tolene, one of the TVA presenters and Vice President of TVA's environment group, is a lawyer. She said the OGC team appreciates the legal community providing support in this way.

8. Public Comments

Trey Bussey, Southern Environmental Law Center

I'm Trey Bussey, an associate attorney from the Southern Environmental Law Center. I speak today to highlight comments that we submitted to TVA and to this Council about a critical threat to the Duck River. A company called Volunteer Sand and Gravel is illegally constructing a mine in a floodplain next to the Duck, which may be the most biologically diverse river in North America. Because the entire mine site lies within a flood plain, that biodiversity is at risk from sedimentation. So are the wildlife and neighboring landowners that depend on an intact ecosystem. Section 26a of the TVA Act vests TVA with responsibility to determine whether to authorize any obstruction affecting flood control, including on the Duck River. When TVA reviews applications under 26a, it must comply with federal environmental laws, including the National Environmental Policy Act (NEPA) and the Endangered Species Act. Last year, Volunteer Sand and Gravel initiated the 26a permitting process, but later withdrew its application.

Despite a warning from TVA, Volunteer began construction without a 26a permit. After calls from citizens, TVA issued a cease-and-desist letter in early December 2020. Volunteer ignored that letter, and TVA has not yet exercised its enforcement authority, which includes the right to seek an injunction in federal court. As the photos provided with our letter show, flooding in late March overtopped the shoreline berms, discharging pollution from the mine site to the Duck River. Those berms are obstructions that affect flood control, falling squarely within TVA's 26a authority. TVA's failure to take enforcement action so far against Volunteer's lawless behavior undermines TVA's

commitment to protecting the Valley's water resources, particularly as climate change results in more frequent and severe flooding. Inaction sends a clear and dangerous message. Why apply for a 26a permit when a mining company in a floodplain saves time and money by skipping the process entirely? To protect our river resources from further harm, we urge TVA to take enforcement action against the illegally constructed Volunteer Sand and Gravel mine, and we ask that this Council do the same. Thank you very much. I appreciate your time.

Kat Diersen, Southeast Field Office, Defenders of Wildlife

Kat Diersen, a second speaker who had been hoping to attend but was not able to join, submitted written comments that TVA's Cathy Coffey read to the Council.

Re: TVA's 26a rule and the Volunteer Sand and Gravel Mine

Dear Council Members:

My Name is Kat Diersen. I am the Southeast Representative for Defenders of Wildlife. Our organization's Mission is to protect all species and the habitats on which they depend. I represent more than 25,000 members and supporters in Tennessee who are proud to live in the most biodiverse inland state in the nation.

A 2003 report by The Nature Conservancy found the Duck River to be the single most biodiverse river in America. It is also one of only 3 "hotspots" for fish and mussel diversity in the world. In addition, it provides the sole source of drinking water for 10s of thousands of Tennesseans in the surrounding watershed. The portion of the river immediately downstream of the Volunteer Sand and Gravel mine contains habitat for numerous federally and state listed mussel and fish species and is ranked at the highest priority level for protection under the TN Wildlife Resources Agency's State Wildlife Action Plan.

These species are known to be sensitive to chemical and sediment pollution, and the recent flood and overtopping of the berm at the Volunteer mine has led to a plume of it so large and dense that it can be seen easily seen entering the mainstem channel from aerial photographs. This pollution event, and subsequent events that are entirely predictable due to the long history of frequent flooding at this site, will absolutely degrade these federally and state protected species' habitat and hinder their chances at recovery. It is not a question of if, but when, and how severely.

Tennessee Department of Environment and Conservation and Tennessee Valley Authority are both charged with protecting the Duck River, and there can be no further denial that Volunteer Sand & Gravel's mining operation along the Duck River currently presents a threat to the river's water quality,

threatened and endangered species, and surrounding farmland.

The company did not obtain a necessary Section 26a permit from TVA. After applying then withdrawing its application for this permit, the company proceeded to construct the mine despite their lack of authorization from TVA, and even after TVA issued a Cease and Desist notice. They are in clear violation of the 26a rule and appear determined to continue their operations despite this fact.

TVA does have the legal authority to enforce the 26a rule by seeking a court injunction against the Volunteer Sand and Gravel company that would compel them to stop work at the site on the Duck River. To date, they have not elected to do so. The serious harm to the river, its species and surrounding communities is undeniable in the wake of the recent flood event, and due to the well-known history of frequent flooding at this site, certainly bound to occur again in the future. I call upon TVA to exercise the full extent of their regulatory authority under the 26a rule and seek a court injunction against Volunteer to prevent further development of the mine site.

Thank you for the opportunity to provide comments on this most urgent matter.

Sincerely,
Kat Diersen
Southeast Representative

9. Closing Comments

Melanie Farrell thanked the Council members for the commitment they have made to serve on the Council and for the time they gave this morning. TVA appreciates the engagement and questions. She also thanked the TVA presenters, and said she looks forward to the next meeting, which is scheduled for Sept. 22nd. It has not been determined whether it will be in-person or virtual, and TVA will let Council members know closer to that time.

Minutes Approved

Date



Melanie Farrell, DFO

July 19, 2021

**Appendix A
Non-Council Meeting Attendees**

TVA Staff Members	
Pam Anderson	Jo Anne Lavender
Tom Barnett	Scott Lea
Kelly Baxter	Latricia Lloyd
Jennifer Bogus (TVA Office of Inspector General)	Kendra Mansur
David Bowling	Kathy McGinley
Allen Clare	Deborah Murray
Cathy Coffey	Holly Oswalt
Elizabeth Cook	Barbara Perdue
Frank Edmondson	Julie Reed
Melanie Farrell	Marylee Sauder (contractor)
Scott Fiedler	Andrew Scalf
Tiffany Foster	Spencer Sessions
Kelie Hammond	Hugh Standridge
Rebecca Hayden	Rachel Terrell
Travis Henry	Rebecca Tolene
Steve Johnson	Rick Underwood (TVA Office of Inspector General)
Althea Jones	Liz Upchurch
Susan Jones	Christy Valerio
RaSharon King	Milli Warren
Carolyn Koroa	Jacinda Woodward
Heather Kulisek (TVA Office of Inspector General)	

Stakeholders	
Kendra Abkowitz	Miriam Makhyoun
Trey Bussey	Maggie Shober
Molly Cripps	
Kat Diersen	
Odell Frye	

**Appendix B
AGENDA**

9:00	Welcome – Althea Jones and Designated Federal Officer Melanie Farrell Safety, Introductions, Agenda FACA TVA Update
9:30	TVA Asset Management Strategy
10:00	Break
10:15	TVA Carbon Strategy and Sustainability
11:00	Natural Resources Update
11:30	River Management Update
12:15	Break
12:30	Public Comment
1:00	Pro Bono During a Pandemic
1:15	Closing Remarks/Adjourn