



2023 TVA Section 3 Progress Report

This report provides a brief update on the progress made by the Tennessee Valley Authority (TVA) in identifying, managing and protecting historic properties pursuant to Executive Order 13287 (Preserve America). This report focuses on new initiatives since 2020 and updates on program areas and projects summarized in previous reports.

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I. Identifying Historic **Properties**

Historic Building and **Structure Inventory**

In FY19, TVA initiated a multi-year project to develop a comprehensive inventory for historic buildings and structures on TVA land and adjacent to TVA transmission lines. Surveys and assessments to continue to grow the inventory have continued through FY23. In addition to survey, the project also includes the creation of historic architectural resource records in TVA's Cultural Resource Management System (CRMS). The addition of this data not only improves efficiency of Section 106 project reviews, but also serves as a planning tool for the management of TVA's historic properties.

59% of TVA's inventoried facilities are historic, at least fifty years of age or older. Of those that are historic, 83% are historic properties-listed in or eligible for listing in the NRHP.

TVA's 70 generating facilities are comprised of hydroelectric, fossil, nuclear, gas, and solar facilities. 84% of TVA's historic generating facilities are also historic properties. All of TVA's hydroelectric projects are historic properties; one of these, Wilson Dam, is listed as National Historic Landmark. Additionally, two fossil plants are historic properties. The high percentage of TVA's historic generating facilities that remain historic properties poses a unique challenge as TVA aims to balance preservation and retention of historic

TVA's Inventoried Facilities (Generating, Non-Power Dams, and Corporate) 41% Historic (> 50 years old) Non-Historic (< 50 years old) **59% TVA's Historic Facilities** (Generating, Non-Power Dams, and Corporate) 17% NRHP - Listed Ineligible 60% 23% NRHP - Eliaible

fabric and character-defining features with safe and efficient energy production to meet the growing demand for electricity.

In addition to generation, TVA's facilities also include nonpower dams-including two systems of smaller dams for recreation and flood control and NRHP-listed Normandy and Tellico Hydroelectric Projects-as well as historic corporate offices in Knoxville, Tennessee and Muscle Shoals, Alabama. Transmission assets were excluded from this discussion, given TVA's on-going programmatic efforts to evaluate these resources.

Since FY19, TVA has assessed 13 major facilities or systems of smaller resources. TVA plans to enter the results of these inventory assessments into CRMS. In addition to inventories, other activities associated with this project include the addition of NRHP boundaries for the 29 NRHP-listed TVA hydroelectric projects and 1 NRHP-listed fossil plant into CRMS and the development of a historic context for TVA's historic transmission assets. TVA plans to finalize this historic context in FY24.

Additionally, in FY23, TVA began fieldwork for systematic updates of NRHP documentation as a part of the inventory project for the first of several groups of NRHP-listed hydroelectric projects. Additional updates are anticipated to continue thru FY31.

Archaeological Inventory

Since 2019, TVA has focused much of its Section 110 archaeological inventory effort at its power generation sites to improve planning for anticipated future projects. TVA's nuclear, coal, gas, and hydroelectric generation sites occupy large land areas, including undeveloped land. Maps of documented sites are used by project planners as a tool, so that the sites can be avoided whenever feasible.

Nuclear Generating Plants

TVA operates three nuclear generating plants (Browns Ferry in Alabama and Sequoyah and Watts Bar in Tennessee) and has obtained an Early Site Permit Application from the Nuclear Regulatory Commission for siting a new type of reactor on a TVA property along the Clinch River in Oak Ridge, Tennessee. The total area represented by these four sites is approximately 7,300 acres. An estimated 50-60% of the land area at each of the three operating plants is undeveloped and has some potential for archaeological resources. By 2020 we had completed archaeological surveys of all undeveloped land at the Sequoyah and Clinch River sites. In 2021 and 2022 TVA completed archaeological surveys of undeveloped areas at Browns Ferry (193 acres) and Watts Bar (620 acres) nuclear plants that were not included in previous surveys meeting current SHPO guidelines and TVA requirements. Both surveys identified previously unidentified sites and revisited known sites.

is far from complete.



Coal-Fired Generation Plants

TVA at one time operated 12 large coal-fired generating plants. TVA has retired eight of those plants, recently decided to retire one more (Cumberland), and is currently evaluating the retirement of Kingston. All 12 coal plant sites are still owned by TVA. These occupy a total land area of approximately 17,800 acres in Alabama, Tennessee, and Kentucky. The developed areas in each site (where archaeological potential is low or absent) make up an estimated 40%

of the land area. Thus, we estimate that around 10,700 acres of land at TVA's coal-fired plant sites has potential for archaeological sites. We have completed archaeological surveys of various areas within all the sites as part of our Section 106 compliance for multiple undertakings, but survey coverage

Of all these types of generating sites the coal-fired plants contain the largest amount of area of any of the types of plants in TVA's fleet, and a much larger percentage of these areas remain undeveloped and therefore have archaeological potential. In 2019 and 2020 we completed surveys of all previously-unsurveyed, undeveloped areas at five coal plants in order to reach 100% coverage: Allen (191 acres), Bull Run (439 acres), Cumberland (462 acres), Kingston (322 acres), and Johnsonville (171 acres). The surveys at Allen, Bull Run, and Johnsonville identified no archaeological sites. Surveys at Cumberland and Kingston identified previously unrecorded archaeological sites.

II. Protecting Historic Properties

Section 106 Compliance

Section 106 PA Update

In our last report TVA highlighted that we had executed a Programmatic Agreement (PA) that governs how TVA fulfills its Section 106 responsibilities. The PA allows for a certain set of routine activities to be excluded from full Section 106 review provided no historic properties are present. TVA tracks these activities in our CRMS database and TVA's no effect findings are provided to all PA Signatories at the end of the reporting period. Since the PA was executed, TVA cultural staff reviewed 3,995 projects that did not require consultation under the Stipulations of PA. Most of these undertakings are associated with individual water use facilities that require permits under Section 26a of the TVA Act or transmission line maintenance activities.

Electric Vehicle Charging Station Exemption

In 2022 the ACHP approved an exemption that relieved federal agencies from requirements under Section 106 of the NHPA for the installation of maintenance of electric vehicle supply equipment and charging stations provided certain conditions could be met. TVA has incorporated these previsions in our planning and design process to meet TVA's goal of a fast-charging electric vehicle network across the region. Under this program, TVA is working with local power companies to install over 55 fast charging electric vehicle stations across the Tennessee Valley that were exempt from further Section 106 review.

Historic Transmission Assets in Tennessee Program Alternative PA

TVA's Power Service Area (PSA), encompasses approximately 80,000 square miles covering most of Tennessee and parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina, and Virginia and contains more than 16,400 miles of transmission lines and associated transmission assets. Prior to the recently executed programmatic agreement (PA) for historic transmission assets in Tennessee, each undertaking involving these assets were assessed and mitigated on a project-byproject basis without consistency in approach throughout TVA's PSA.

In early FY20, TVA began to think more programmatically about review of TVA's transmission undertakings as TVA continually performs numerous maintenance activities related to the operation of existing transmission assets. In late 2019, TVA began development of a historic context for TVA's historic transmission assets. The context includes an overview history of transmission at TVA and recommended thresholds for determining which resources are most likely to be eligible for listing in the National Register of Historic Places (NRHP). In FY23 TVA consulted with the seven State Historic Preservation Officers (SHPOs) within TVA's PSA regarding the historic context. In lieu of the eligibility guidelines, the Tennessee SHPO (TN SHPO) suggested the development of a program alternative programmatic agreement (PA) to comprehensively mitigate for effects to TVA's historic transmission assets throughout the state of Tennessee.



For the purposes of the PA and the historic context, TVA's historic transmission assets are defined as transmission lines, substations, switchyards, metering stations, switching stations, switch houses, radio and microwave stations, transmission-associated cell sites, power stores, and transmission offices (crew quarters, transmission service centers, and other buildings tied directly to the support of TVA's transmission system). The agreement will no longer require assessments of individual historic transmission assets and will instead programmatically mitigate for potential adverse effects to these resources. TVA, the TN SHPO, and the Advisory Council on Historic Preservation (ACHP) executed the agreement in August 2023. Initial

estimates, based on current project costs and volumes, indicate that this PA will save TVA more than \$3 million dollars (not accounting for inflation) in assessment costs alone over the next 20 years. This estimate does not include costs of mitigation or delays due to disagreements regarding eligibility of individual historic transmission assets.



Project Highlight: Gallatin Fossil Plant Dry Storage Facility

In 2019 TVA and the Tennessee Department of Environment and Conservation entered into Consent Order No. 15-23-IV. which obligated TVA to create a new dry storage facility for coal combustion residuals (CCR) that was being stored in impoundments at Gallatin Fossil Plant in Sumner County, Tennessee. A landfill siting study determined an on-site landfill was the best alternative. TVA chose a location that avoids potential project effects to previously-recorded archaeological sites including four pre-Contact stone feature sites considered sacred to the consulted federally recognized Indian tribes. TVA's review identified six historic cemeteries within the affected area. These cemeteries were used by the local community prior to TVA's acquisition of the land in 1952. These cemeteries have not been in use since TVA acquired the property and have been protected. Creation of the new on-site landfill would require relocating the six cemeteries. Based on previous archaeological surveys and consultation the project would not affect any archaeological sites other than the cemeteries.

In late 2019, TVA consulted with the TN SHPO, the mayor of Gallatin, TN, and members of the local community and then entered into a Memorandum of Agreement (MOA) with TN SHPO. The MOA stipulated that TVA would complete identification of all the cemeteries (including delineations) and archival research, engage the local community and provide an opportunity for their participation, identify and design the relocation cemetery, disinter the graves following state and local ordinances and law, determine NRHP eligibility based on the content of the graves, and consult with the TN SHPO regarding eligibility and effects. As stipulated in the MOA, TVA would evaluate the potential NRHP eligibility of each cemetery under Criteria A, C, and D (having previously established, through historic research, the absence of any connections with important historical figures). Eligibility under Criterion D would be assessed upon opening the grave shafts and tabulating the remains. TVA would have a finding of adverse effect for eligible cemeteries. TVA was to guickly reinter and ineligible cemeteries, but as mitigation for the adverse effect on the eligible cemeteries would complete detailed osteological and artifact analyses before reinterment. Finally, the MOA stipulates that TVA will prepare a detailed report of the project and provide it to the TN SHPO any interested members of the local community. TVA hosted a virtual

public meeting to discuss this project in November 2020 and received only one negative comment on the project, a general concern about exhuming graves.

TVA completed the cemetery delineations (using remote Management sensing) in 2019 and 2020 and also completed civil surveys at each cemetery, resulting in updated plat maps of each. TVA continued and expanded the archival research, including all available historical records and genealogical **Effects of Climate Change on** sources; attempted to contact living descendants; sued successfully in court to terminate the use of the cemeteries **TVA's Historic Properties** as burial grounds; posted notices in local papers concerning the proposed cemetery removal project; and carried out a study of potential relocation cemeteries. TVA Over the past three years, TVA has increased the number eventually identified Crestview Memorial Gardens in Gallatin of historic buildings that have been retrofitted to improve as the best alternative, and in 2021 purchased land within operational energy efficiency. As historic windows have that facility, completing all excavations and disinterments been repaired or non-historic replacement windows between March and July of 2022. TVA and the TN SHPO have been replaced, TVA has made a concerted effort to agreed that one of the cemeteries (McCrary) failed to ensure that the repairs and replacements are appropriate meet criteria of significance. We further agreed that the and sensitive to the character of the buildings, while also remaining five cemeteries are eligible under Criterion D increasing energy efficiency. When in-kind replacement for their potential to provide important new information on of glass panes in historic windows at Ocoee No. 3 was not the poorly-documented historic Odom's Bend community. available, TVA's facility asset management team sought Excavations failed to locate one of the cemeteries, to find new panes that would increase energy efficiency indicating it was either relocated at some point or that it had without diminishing the character of the original windows been incorrectly mapped when it was first noted in 1962. to the maximum extent possible. Remains from all four of the other cemeteries were carefully Extreme temperatures (both hot and cold) have directly transported to a laboratory, and analyses of the skeletal affected the efficiency and ability of TVA's historic remains, artifacts, coffin and casket hardware, and textiles generation facilities to generate and distribute power. were completed in 2022. Reinterments began in late 2022 Recent winter storms in late 2022, brought extreme cold and were completed in the spring of 2023. temperatures to the Valley, and TVA had to adapt to meet demand during the event. Just as the cold-and freezethaw cycles-can affect masonry buildings, intense heat and increased humidity and moisture can also accelerate deterioration of building components. Increased moisture and extreme temperatures can further accelerate the deterioration of wood, concrete, and stone, and TVA's

TVA also created a committee, made up of five interested members of the local community, to help plan the design of the relocation cemetery, conduct informant interviews to obtain oral history, and plan the reinterment ceremony. A small team of TVA staff including the archaeologist has been meeting regularly with the Gallatin Cemetery Reinterment Ceremony Planning Committee since May historic properties continue to display signs of stress from 2022, and we continue to communicate with the committee exposure to the elements. via email. The committee has done all the planning for the ceremony; named the relocation cemetery "Garden of Eternal Freedom"; chose an inscription for flat markers that are being placed on all the unidentified graves ("Beloved"); and prepared a 20-page booklet that contains information on local history, including historic photos of some of the people buried in one of the cemeteries and oral history accounts. TVA and the committee plan to have the ceremony in late summer or early fall of 2023. Once the detailed report of investigations is completed TVA will provide copies to all the committee members, the Gallatin Public Library of Sumner County, and the TN SHPO.

Climate Change and Historic Property



In addition to accelerating the deterioration of facilities, the increase of the annual rainfall in the Tennessee Valley also increases opportunities for flooding. Significant flooding events have affected recreation facilities, particularly restrooms. TVA restrooms have been damaged by flooding to an extent that they lost structural integrity and required demolition or were swept completely off the foundations. TVA chose pre-cast concrete flood resistant restrooms and bathhouses to replace the demolished restrooms; however, TVA selected finishes, colors, and textures to be sensitive and to harmonize with the setting of these historic properties. For example, a restroom within the view of a Streamline Moderne concrete dam and powerhouse would blend into the setting with the selections of a smooth finished exterior in a similar gray color to the concrete of the powerhouse. Replacement of these restrooms, the majority of which were within NRHP-listed properties, required balance between durability, sustainability, and sensitivity to the historic properties.

Archaeological Sites and Severe Weather Impacts

As mentioned previously, the Tennessee Valley has seen an increase in major rain events and storms possibly linked to climate change that have resulted in flooding of the Tennessee River and its tributaries. This includes multiple events where the Tennessee River reached 100-year flood elevations resulting in increased erosion of the shoreline. In some cases, severe flooding resulted in major impacts to archaeological resources, exposing Native American graves and other sensitive features.

TVA's Archaeological Site Monitoring & Protection Program focuses on identifying TVA land where archaeological sites are at the greatest risk of damage due to erosion, looting, or other impacts. Each year, TVA identifies sites that are at the greatest risk for these types of impacts and implements protection measures, such as shoreline stabilization of eroded riverbanks. In the past three years, this work has been focused on the protection of Native American graves that have been impacted as a result of these major weather events.

A total of 15 sites and over 15,000 linear feet of shoreline have been protected as a result of these stabilization efforts between FY21 and FY23. In addition to erosion, TVA has also implemented extensive protection measures at six archaeological sites that had been repeatedly damaged as a result of illegal looting



Tribal Partnerships in Management and Protection of **Native American Historic Properties** and Sacred Sites

To strengthen relationships with federally recognized Indian tribes (Tribes) and show that TVA is committed to the protection of and tribal access to sacred sites, TVA signed the November 16, 2021 MOU Regarding Interagency Coordination and Collaboration for the Protection of Indigenous Sacred Sites. TVA is responsible for the management of many culturally significant sites and landscapes that are considered sacred by Tribes and has implemented the following projects to better manage and protect Indigenous sacred sites.

Tribal Cultural History Project

Begun in 2021, TVA's Tribal Cultural History Project is intended to create geographic historical narratives of tribal presence in the Tennessee Valley through collaboration with Tribes. The narratives will focus on the physical locations and specific time periods during which the participating tribal nations were present in the TVA service area, and it is intended that these histories will reflect the tribes' perspectives on the historical and archaeological data that is collected. In 2021, TVA consulted with Tribes on this project and developed individual bibliographies and research proposals for each Tribe that requested participation. In 2022, the focus was to conduct oral history interviews, collect data and draft research reports for seven Tribes who were interested in participating in this project. In 2023, this work continues with a focus on Tribespecific research, development of draft research reports, and finalizing research reports. The narratives included in these reports will be designed so that information from them and the derived GIS datasets (to the extent permissible by the tribe whose history is being discussed) can be readily adapted for use in the cultural history sections of CRM archaeology reports. The narratives will also serve as resources to inform future planning, project development, and tribal consultation activities by TVA. The following Tribes are participating in this project: Absentee Shawnee Tribe of Oklahoma, Alabama- Coushatta Tribe of Texas, Chickasaw Nation, Choctaw Nation, Delaware Nation, Eastern Band of Cherokee Indians and The Muscogee Creek Nation.

Trail of Tears/Removal Route Documentation

In 2019, TVA began a multi-year mapping project in consultation with Tribes to document and record intact portions of forced Native American Removal Routes (NARRs) and associated archaeological sites located within TVA's Power Service Area (PSA) into ArcGIS. The goals of the project are to:

In FY20 and FY21, TVA gathered data on NARRs from archival sources, Tribes, and local Trail of Tears Association chapters. The research during this period focused on NARRs in the PSA in western North Carolina, northern Georgia, Alabama, and Mississippi. TVA completed the research in FY22 and began entering the data into ArcGIS. Creation of a GIS layer depicting the NARRs was completed in FY23 and provided to the Tribes. TVA began ground verification of the mapped NARRs on TVA fee-owned land in FY23 and expects to complete this work by the end of 2023. Plans call for NARRs in Tennessee to be researched and mapped in a similar fashion.



 Establish an accurate map of all removal routes and sites in order to better manage these sensitive resources and improve project planning to avoid them when planning projects.

• Provide Tribes a map with accurate removal routes pertinent to their Tribe.

• Develop data sharing agreements in order to incorporate existing Tribal data and maintain confidentiality and to share across federal agencies that are also located within the TVA PSA.

• Long-term goals include field verification of all routes in order to determine where intact RRs are located and potential development of interpretation and education opportunities in partnership with Tribes.

Stone Features Management Plan and Recordation Forms

As reported in 2020. TVA has been consulting with Tribes regarding above ground stone resources and their surrounding landscapes located on TVA land or identified within TVA project boundaries. As these resources are considered by many Tribes to be Sacred Sites and Traditional Cultural Places, TVA has developed a management plan and documentation forms to better understand the significance of these features and ensure that the agency was identifying them consistently as well as managing and protecting them appropriately.

A team of TVA staff, contracted archaeologists, and tribal experts was formed to participate in this project. Multiple avenues were utilized in the documentation and examination of these resources based on input received from the Tribes. These included the use of K9 survey, LiDAR, and Aerial Imagery. Since 2020, TVA consulted with Tribes and seven State Historic Preservation Officers on stone feature recordation forms and a management plan that will provide for a consistent identification process. The plan and forms were finalized in FY23. Next steps include the development of training materials to ensure that the process is followed consistently by all TVA staff and contractors.

Chokkilissa Old Town National Register Nomination

The Chickasaw Nation requested TVA nominate the Chokkilissa Old Town for listing in the NRHP as a Traditional Cultural Property (TCP). The Chokkilissa Old Town is a culturally and historically significant place for The Chickasaw people. TVA's Tupelo Power Service Center facility is located on one of the remaining intact remnants of the town. The Chickasaw Nation completed the NRHP nomination and asked TVA to formally nominate the site. TVA is working with the Keeper of the NRHP to finalize the nomination.



Native American Plant Partnership

TVA established a partnership with Tribes utilizing Indigenous Traditional Ecological Knowledge (TEK) and tribal expertise to facilitate plant harvesting and gathering opportunities on TVA land. In 2021 TVA initiated a project to propagate, harvest, and develop educational signage of native plants on TVA land adjacent to Tellico Reservoir near the Overhill Cherokee site of Halfway Town. TVA conducted a noninvasive archaeological survey in preparation for this plant partnership which not only identified possible areas that can be used for the planting partnership but also provided new and important information that can help TVA better manage and protect the Cherokee village associated with Halfway Town. In 2023 TVA partnered with the United Keetoowah Band, Eastern Band of Cherokee Indians (EBCI), and Tennessee Wildlife Resource Agency to plant 100 river cane plants near Halfway Town to be available for future harvesting.

TVA worked with EBCI to identify plants that will be in the monitoring of archaeological sites located on installed in a native plant garden at the Native American TVA land. The area of focus included a large island Removal Park visitor center in Birchwood, Tennessee. with a concentration of recorded archaeological sites The Cherokee Removal Park, located at Blythe Ferry in in Lauderdale County, Alabama where TVA conducted Meigs County, Tennessee where thousands of Cherokee a pedestrian walkover that took multiple weeks and Creek and Seminole people were forced to cross the numerous staff to complete in 2019. In FY22, TVA used Tennessee River and leave their ancestral homelands. drone mounted LiDAR equipment to collect data across This park memorializes and remembers this forced the entire island in less than a day. In FY23, TVA flew an removal known by many as the Trail of Tears. TVA plans area of approximately 1300 acres on Kentucky Reservoir to install educational signage with plant names in native (Humphreys County, Tennessee) to assess site condition languages as well as other relevant information determined and identify potential looting, as well as previously appropriate by Tribes. unrecorded archaeological features.



Data from these efforts is compiled with information from the previous field work to identify signatures of looting and other site disturbance with the goal of being able to narrow our focus areas for regular monitoring and protection. While the current technology is not able to identify all types of illegal looting and will never replace the need for "boots on the ground," TVA will be able to compare data sets in future years to identify changes over time which might reduce the need to monitor potentially vulnerable sites as frequently.

The use of this technology is continually improving and has proven to be an effective tool in the management of remote archaeological sites on TVA land. TVA hopes to expand its use of LiDAR in future years to support our site monitoring efforts.

Application of LiDAR Technology in the Management and Protection of **Archaeological Sites**

In FY21, TVA began testing the use of LiDAR technology

III. Using Historic Properties

Integration of Renewables at TVA's Historic Properties

The shift to clean energy and the desire for renewable energy sources, particularly solar, at TVA's historic properties has increased over the past three years. With the push to electric vehicles, TVA has added solarpowered charging stations to several of its historic properties. TVA has minimized the effect of these mobile solar-powered charging stations within the historic properties by siting them so as not to detract from the historic properties while remaining publicly accessible.

TVA has also successfully added Smartflower solar panels within NRHP-eligible facilities including the Chickamauga Power Service Center and the Raccoon Mountain Visitor Center near Chattanooga, Tennessee and the Melton Hill Hydroelectric Project near Lenoir City, Tennessee. TVA will be considering other larger solar installation on historic properties in the future. Siting of the panels to minimize view to contributing resources will be key to the success of future renewable installations by TVA in the coming years.

Adaptive Reuse of Historic Properties at TVA

As TVA's historic architectural resource inventory has expanded and TVA's Section 106 PA has been in place over the past three years, TVA's Cultural Compliance staff have continued to educate across TVA the significance of our historic properties. Adaptive reuse of purposebuilt generating plants and the buildings and structures that support their operation—often in remote locations continues to be a challenge for TVA.

While TVA has not implemented a large number of adaptive reuse projects to date, two recent projects have highlighted the benefits of adaptive reuse of existing historic properties. TVA is currently considering the adaptive reuse of 4 former operators' houses at TVA's Blue Ridge Dam to support future construction projects in that portion of the Tennessee Valley. The houses were originally constructed prior to TVA's establishment to house the operators' and their families. Increased rainfall and extreme temperatures as a result of environmental changes have accelerated the overgrowth of vegetation, moss, and other biological growth on and around the houses. Mothballing and stabilization is proposed for these buildings as TVA determines next steps. Another excellent example of adaptive reuse and rehabilitation of historic properties is the recent work at TVA's Norris Engineering Laboratory Complex, which is highlighted in this report.

TVA has also furthered the education of historic preservation through a sensitive, but holistic approach to the care of and keeping of TVA's historic properties. Instead of piecemeal repairs of various break room spaces or restrooms one year and a roof replacement the next, TVA is actively taking steps to do comprehensive assessments of all resources at a plant or plant group to ensure efficiency the buildings while minimizing mobilization costs. An excellent example of this holistic approach at the Ocoee 1-3 Plants is highlighted in this report.



Heritage Tourism in TVA's 90th Anniversary Celebrations

Built for the People Tours

To celebrate TVA's 90th anniversary, TVA invited the Heritage tourism is also showcased in a recently-launched public to tour several of TVA's historic hydroelectric social media campaign, Pat and Ashley's Excellent plants. TVA historians and plant staff led visitors, Adventure, to celebrate the Tennessee Valley and TVA's chosen via random selection, through the dams 90th anniversary. TVA Historian Pat and Social Media giving them a close-up look at these unique historic Specialist Ashley have embarked on a road trip visiting properties. Observing units generating power, walking TVA generation facilities, employees, local landmarks, and through the galleries of a dam, and reading the words "Built for the People of the United States of America" attractions across the 7 states within TVA's power service area. Each of the adventures highlights historic properties within these historic spaces provides an experience that include TVA's generating assets as well as other one can only get from directly interacting with these historic properties along the way. The adventure is shared facilities. Findings opportunities for visitation at TVA's in episodes focused on each of the major communities hydroelectric facilities-designed to be accessible to visited on the journey on Facebook, Instagram, and the public-while ensuring necessary security remains a TVA's public website. It highlights what a great place the challenge. TVA hopes to continue to be able to provide Tennessee Valley region is to live, work, and play! events like this in the future.



Pat and Ashley's Excellent Adventure

IV. Highlights and Updates from Other Cultural Programs

CRMS Implementation

In FY22 TVA Cultural Compliance launched its new information system named the Cultural Resource Management System (CRMS). CRMS utilizes ESRI's GIS software which centralizes, standardizes, and automates many processes for TVA's day-to-day management of cultural resources. Improvements include custom workflows through all phases of TVA's compliance work and improved, automated reporting meeting federal and state documentation standards. Also, information can now be collected and managed in CRMS for all of the cultural resource types. CRMS can now transfer documents to consulting parties in compliance with Executive Order 14028, "Improving the Nation's Cybersecurity".

Tribal Partnerships

Over the past five years, TVA has increased its efforts to provide partnership and engagement opportunities to strengthen TVA's relationship with Tribes, and to encourage meaningful cultural interaction between tribal representatives, TVA staff, and the public. These partnerships include the those previously mentioned in this report (Trail of Tears/Removal Route Documentation, Tribal Cultural History Project, Stone Features Management Plan and Recordation forms, Chokkilissa Old Town NRHP nomination, and Native Plant Partnership) as well as others (Thousand Eyes Archaeological Outreach Site Stewardship Program and Speakers Series and Tribal Engagement Events for TVA employees). Each of these partnerships has helped not only strengthen relationships, but also improve our management of the many significant Native American historic sites and and resources that are under TVA's stewardship.



V. Challenges, Success, **Case Studies**

Challenges

Adaptive Reuse and Retrofitting

Strategic real estate efforts continue to evaluate TVA's building footprint to make the best use of the buildings TVA maintains. While this sometimes presents opportunities like the successful Norris Engineering Laboratory Complex, other times the right-sizing of TVA's footprint is at odds with our needs to retain and utilize historic properties. Comparative analysis of costs for demolition and reconstruction vs. adaptive reuse, like those done for the Blue Ridge Operators' Houses, continue to highlight options that promote sustainability and preservation of TVA's historic properties.

Consulting Party Participation in Section 106

Participation of SHPOs and federally-recognized Tribes in Section 106 consultation are key to the development of meaningful solutions for avoiding, minimizing, or mitigating effects of TVA undertakings. While TVA seeks to identify other consulting parties for undertakings-from local historical societies, hobby enthusiasts, local museums, or historians-TVA rarely receives responses from any other identified consulting parties. Increased participation from these stakeholders could better inform TVA decision making to ensure any significant resources are avoided, where possible, and the effects to projects are minimized or mitigated in ways that are beneficial and meaningful to the people of the Tennessee Valley.

Case Studies

TVA Solar Program

TVA mission has always been committed to renewable and Bride's Hill both owned by the Alabama Historical energy since our inception and the construction of Commission (AHC). TVA initiated consultation early in Norris Dam in 1933. Over the decades the investment in the process and staff from TVA, TVA's archaeological renewable generation has taken on greater importance. contractor, AHC, and the director of Pond Springs meant Currently, TVA has over 8,200 megawatts (MWs) of on site prior to conducting the cultural resources survey renewable energy, including solar capacity totaling over to discuss project concerns and identification level 2,800 MW when all committed solar projects come online. efforts. The survey area was expanded to afford the TVA is working toward a goal of 10,000 MW of solar by 2035 from both TVA built facilities and power purchase array which was based on results of the environmental agreements. Towards this goal, TVA has made many and cultural surveys. The project was able to avoid process improvements when it comes to Section 106 all sixteen archaeological sites determined eligible or potentially eligible for the National Register as well as reviews for these types of projects, which has led to early coordination with consulting parties, a greater flexibility two potentially sensitive cultural resources areas. The archaeological sites ranged from precontact occupations in design to avoid significant cultural and environmental resources, and avoidance protocols that both protect to sites associated with the Pond Springs plantation archaeological sites and introduce pollinator habitats. and postbellum sharecropping system. The project also

An example of this initiative is TVA's North Alabama Solar project. In 2022, TVA proposed to construct an approximately 200-megawatt solar photovoltaic facility, including an electrical substation and possible battery energy storage system on an approximately an approximately 2,896-acre project site two miles east of Courtland in Lawrence County, Alabama. The project site is located adjacent to two National Register listed plantation sites, General Joseph Wheeler's Pond Springs,



- project maximum flexibility and the final design of the solar
- incorporated larger visual buffers to minimize adverse effects to listed or eligible historic properties within the viewshed. TVA developed a plan with consulting parties to plant a native rich habitat on some of the avoided sites and buffer setbacks (totaling 150 acres). This served the dual purpose of protecting significant sites that previously suffered from erosion and collecting and promoting TVA's biodiversity initiatives.

TVA also conducted additional research and historic landscape reconstruction to identify the potential for a rural historic landscape in the project area. Based on this additional analysis, TVA determined, in consultation, that the location should be considered part of a rural historic landscape as defined in National Register Bulletin 30, Guidelines for Evaluating and Documenting Rural Historic Landscapes. The Wheeler Station Rural Historic District (WSRHD) encompassed both historic archaeological and architectural resources and surrounding landscape with a period of significance from 1818-1955. TVA determined that the proposed undertaking would alter the historic characteristics that gualify the proposed rural landscape district WSRHD for the National Register by diminishing its integrity of design, setting, feeling, and association. TVA and AHC developed memorandum of agreement (MOA) to mitigate adverse effects to WSRHD. As part of the stipulations TVA worked with New South Associates to produce a traveling exhibit on the WSRHD with a specific focus on the frequently underrepresented history of African American life in late nineteenth to mid twentiethcentury Lawrence County, Alabama. The travelling exhibit can be used for public outreach events at the Pond Springs Historic House as well as brought to underserved communities in North Alabama.

TVA is also seeking ways to install large solar arrays that avoid potential effects on archaeological sites. While rooftop installations can be an attractive way to accomplish this, they do not have capacity for utility-scale solar. TVA is currently considering another possibilityinstalling a 300-acre solar array on an existing, capped coal combustion residual landfill at Shawnee Fossil Plant in Kentucky. The solar array would be installed using a racking system pinned into the artificial turf that lines the landfill cap. The only components that would not be installed on the landfill are the transformer bank, battery storage system, and transmission line connector, but these would all be in areas affected by documented ground disturbance and lacking in archaeological potential, or where TVA has completed previous archaeological surveys and identified no sites. The array does have potential for visual effects on historic architectural properties, of which one (Shawnee Fossil Plant) is located partially within the viewshed. Therefore, TVA has completed a viewshed analysis and an evaluation of effects. TVA has found that the solar project would result in a minor effect on the National Register-listed fossil plant, but that the effect would not be adverse. TVA is consulting with the Kentucky Historic Preservation Officer regarding this finding.



Norris Engineering Laboratory Complex

One of TVA's greatest preservation efforts began with a tragic fire as the result of a lightning strike during a thunderstorm. While the loss of a building is not often a good thing, in this case, it led to the rediscovery of TVA's electric tunnel kiln and fueled the adaptive reuse and redevelopment of the Norris Engineering Laboratory Complex (NEL).

In the midst of planning related to consolidation of TVA real estate assets within Knoxville, Tennessee and the surrounding area, a lightning strike and resulting fire in August 2016 rendered Building F. a non-contributing building, unusable. During demolition of the remaining portions of Building F, the tunnel kiln was discovered hidden within the footprint of the building. The kiln, a key component of the Ceramic Laboratory established by TVA in 1934, had been enclosed within the building during the occupation of the facility by the U.S. Bureau of Mines between 1938 and 1965. It remained hidden after its transfer back to TVA in 1965 until that fateful night in 2016.

Located within the NRHP-eligible Norris Historic District, the NEL was originally determined eligible as a historic district in 2015. As assessments and investigations continued at NEL in 2018 and 2019, plans for the complex shifted as well. Beginning in the fall of 2019 and continuing through the spring of 2022, TVA reimagined Buildings C and D-originally considered for conveyance via sale, lease, or easement-into new office and laboratory spaces. The sensitive rehabilitation of Building C and other buildings on site that had been underutilized were brought back to life through adaptive reuse-avoiding conveyance all together. In 2022, TVA cleaned and stabilized the kiln and began planning efforts for the development of interpretation and recreation at the kiln. Design of a pavilion or other structure over the kiln is continuing into 2024.

Ocoee 1-3 Holistic Approach to Facilities Asset Management

Moisture also affects the integrity of structural components of TVA's historic properties as well. Since 2020 TVA has been challenged to find a solution to the framing of the north wall of the Ocoee No. 2 powerhouse. The steel-framed wall, originally designed to the modular, is stuccoed on the exterior. The stucco has been subjected to a combination of exposure to the direct and relentless moisture of the Ocoee River and direct, intense sunlight on this particular elevation. Storms with high winds shifted the windows within the wall and upon further investigation, the steel frame of the wall had rusted and degraded from the moisture. TVA is considering other alternative materials or methods to replace the wall that would retain the appearance of stucco but would be more resistant to rot, deterioration, and biological growth. The top-to-bottom approach to the building envelope of TVA's historic properties along the Ocoee River provides an example of efficiency and planning for the future over the next 20 years. This holistic approach is critical as TVA

An excellent example of a holistic approach to maintenance and rehabilitation of historic properties is the recent focus on the maintenance and rehabilitation of the three plants of the Ocoee Plant group in Polk County, Tennessee. Ocoee No. 1 and Ocoee No. 2 are among the oldest generating facilities operated by TVA and pre-date the establishment of TVA in 1933. Ocoee No. 3, while designed and constructed by TVA, also operates as a third dam within the rugged mountain landscape along the Ocoee River. While the Ocoee River provides world-class whitewater recreation opportunities, it exposes the three Ocoee plants along its winding route to a large amount of moisture. The dense forest canopy and ever-increasing rainfall within the Tennessee Valley exacerbates the moisture exposure for the facilities. One of the biggest challenges faced by TVA's Facility Asset Management team in the Ocoee plant group is the ongoing maintenance of large banks of wood windows lining the walls of the powerhouses at Ocoee No. 1 and Ocoee No. 2. Increased humidity and temperatures continues to experience extreme elements in our weather, provide a perfect combination to support increased which has an impact upon the resiliency of our historic biological growth on the windows. Further, extreme properties. A comprehensive approach to facility asset temperatures—both hot and cold—can guickly accelerate management aims to correct concerns today, but also rot and deterioration of wood components, particularly preserve for the buildings in a sustainable manner so that with newer wood replacements and repairs. they can continue to serve the people of Tennessee Valley.

