



Building Tomorrow Together

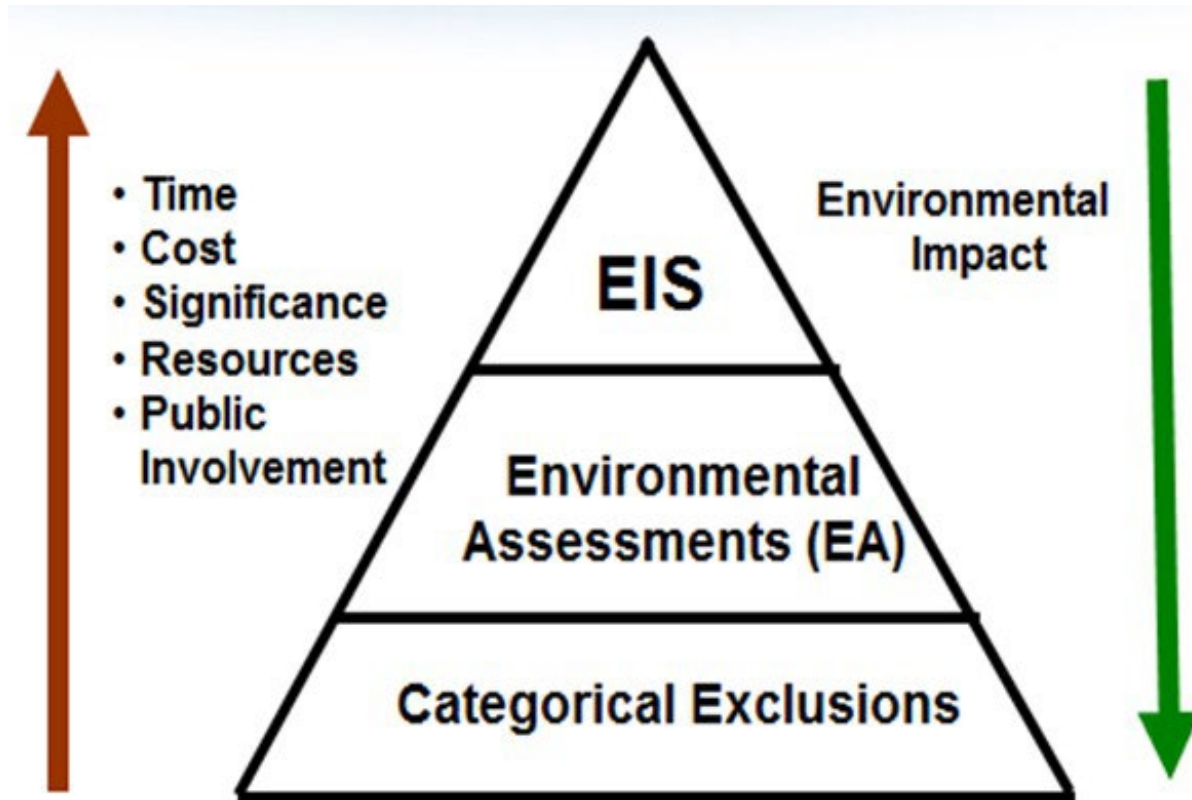
National Environmental Policy Act (NEPA) Compliance

Elizabeth Smith, TVA NEPA Specialist - Solar Lead, NEPA Program

What is NEPA?

- NEPA requires all federal agencies, including TVA, to evaluate the potential environmental impacts of actions they propose to take or authorize others to take.
- TVA activities associated with interconnection requests, such as upgrades or new construction on the TVA transmission system, must undergo an environmental review.
- TVA's purchase of renewable energy (i.e. PPA) is also considered a Federal action that is subject to formal review under NEPA and other environmental review statutes such as the Endangered Species Act and National Historic Preservation Act.
- NEPA is a decision-making tool allowing TVA to fully incorporate environmental considerations into its decision-making processes.
- Allows for meaningful public engagement (citizen and stakeholders) to inform the process and decision.

Levels of NEPA Reviews Based on Significance



Categorical Exclusions (CE)

- Categories of actions that have been pre-determined to normally not result in significant environmental impacts
- Public involvement is optional and not typical
- Geotechnical Surveys are covered under a CE
 - ~6-week TVA review
 - Required Information:
 - Scope of Work which includes location of all ground disturbing activities (drillholes, access routes)
 - Biological and Cultural resources identified at each drillhole location and along access routes and reported to TVA for review

CE #13. Engineering and environmental studies that involve minor physical impacts, including but not limited to, geotechnical borings, dye-testing, installation of monitoring stations and groundwater test wells, and minor actions to facilitate access to a site. (CEC required)

Environmental Assessment (EA)

- For actions not covered by CEs and not requiring an EIS
- EA process results in a Finding of No Significant Impact (FONSI) or Notice of Intent (NOI) to prepare an EIS
- Typically takes 12 to 15 months to complete
- 30-day public comment period for Draft EA
- EA is typically appropriate for solar projects less than 200 MW and dependent on potential impacts to resources determined during TVA's pre-screening.

Environmental Impact Statement (EIS)

- Most comprehensive review
- 18 to 24 months to complete
- Mandatory public engagement opportunities, including a 45-day public comment period and public meeting(s)
- Process results in a Record of Decision
- EISs are most appropriate for projects 200 megawatts or more and dependent on potential impacts to resources determined during TVA's pre-screening.

Example EAs and EISs



Information Subject to Change

Resource Areas to Consider in NEPA Reviews

- Air Quality
- Social Cost of Carbon
- Greenhouse Gas Emissions
- Aquatic Ecology
- Geology
- Groundwater
- Surface Water
- Floodplains
- Wetlands
- Recreation
- Vegetation
- Threatened and Endangered Species
- Managed and Natural Areas
- Land Use and Prime Farmland
- Solid and Hazardous Waste
- Visual Resources
- Cultural and Historical Resources
- Transportation
- Navigation
- Noise
- Socioeconomics
- Environmental Justice
- Public Health and Safety

NEPA and PPA Solar Projects

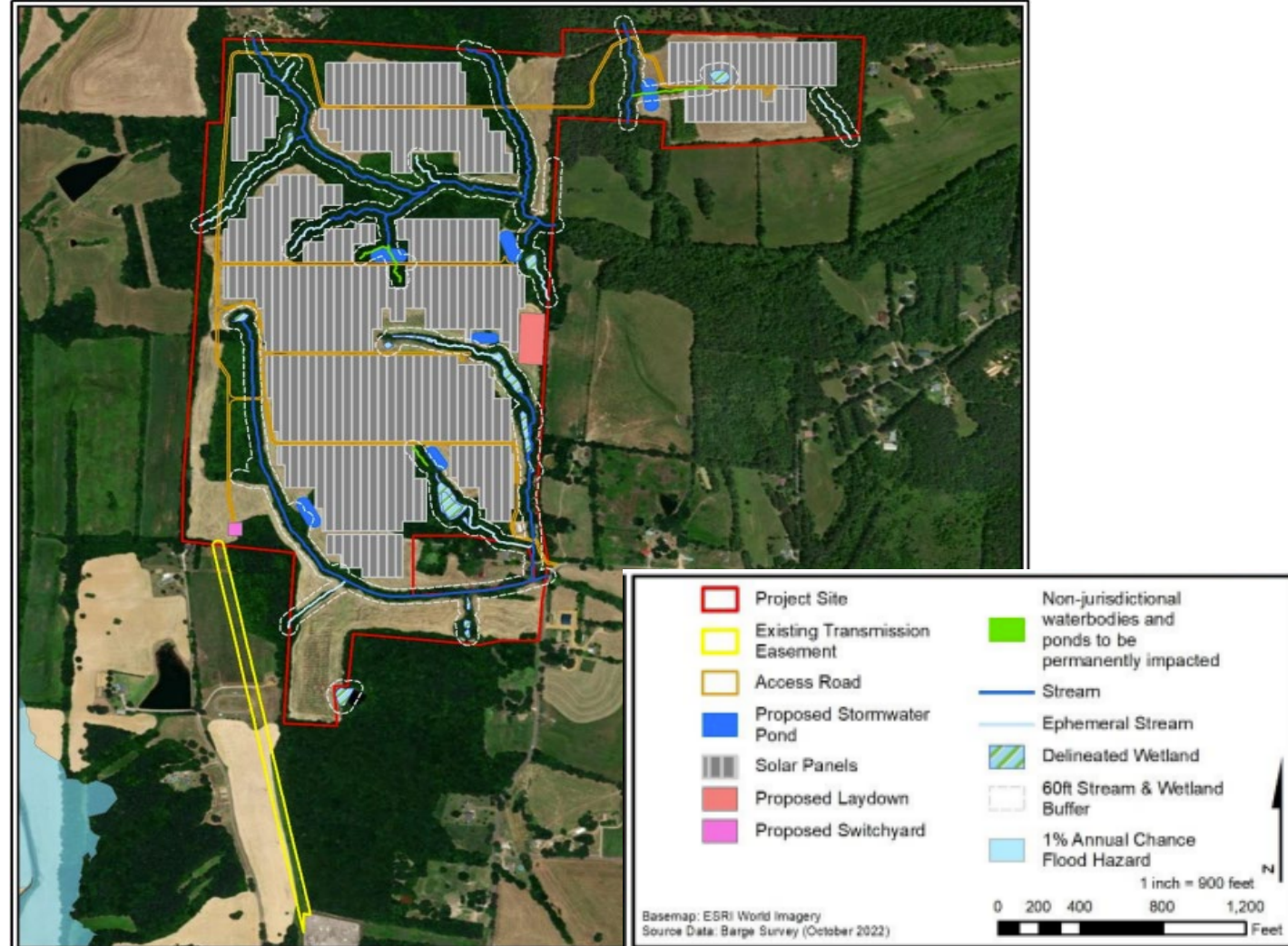
Environmental Review Process for PPA Projects



Project Pre-Screening Review

During TVA's prescreening review conducted by TVA SME's, the following resources are considered:

- Floodplains
- Recreation
- Natural Areas
- Wetlands
- Aquatics
- Terrestrial Zoology
- Botany
- Current/Historic Landuse
- Environmental Justice
- Cultural Resources



Power Purchase Agreement and Tri-Party Agreement

TVA considers a variety of factors when selecting projects for a PPA:

- Project Prescreening Results
- Transmission Interconnection and Upgrades
- Developer Experience with Utility-Scale Solar
- Development Feasibility
- Timeline
- Price
- TVA Generation/Capacity Plans

Tri-Party Agreements:

- Outline roles and responsibilities of TVA's team and developer's team
- Typically signed within 30 days of PPA execution
- Provides the funding source needed to kick off NEPA

Biological Compliance

Guidelines for Conducting Biological Surveys and Impact Analyses

Emily Kathryn McCann, Biologist- Solar Lead, Biological Compliance

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- TVA will provide Guidelines for Conducting Biological Surveys and Impact Analyses (Guidelines)
 - Updated annually
 - Provide consistency across all TVA projects
 - Ensure compliance with NEPA
 - Geodatabase template provided by TVA
 - Guidelines must be adhered to.

Biological Compliance (BC)

- Works to ensure compliance with
 - the Endangered Species Act (ESA)
 - Clean Water Act (CWA) around streams and wetlands
 - the Migratory Bird Treaty Act (MBTA)
 - various Executive Orders.
- BC reviews for impacts to natural areas and managed lands within the TVA Valley.
- BC houses the Natural Heritage Program which includes TVA's database
 - over 40,000 elements

Endangered Species Act

Section 7

- Agencies are to ensure that actions authorized, funded, or carried out are not likely to jeopardize the continued existence of listed species or adversely modify critical habitat.

U.S. Fish and Wildlife Service

- When an action may affect a listed species or critical habitat, the agency must initiate consultation with the USFWS.

State Sensitive Species

- TVA also considers an action's effects on state listed species



Wetland and Stream Regulations

Clean Water Act Section 404

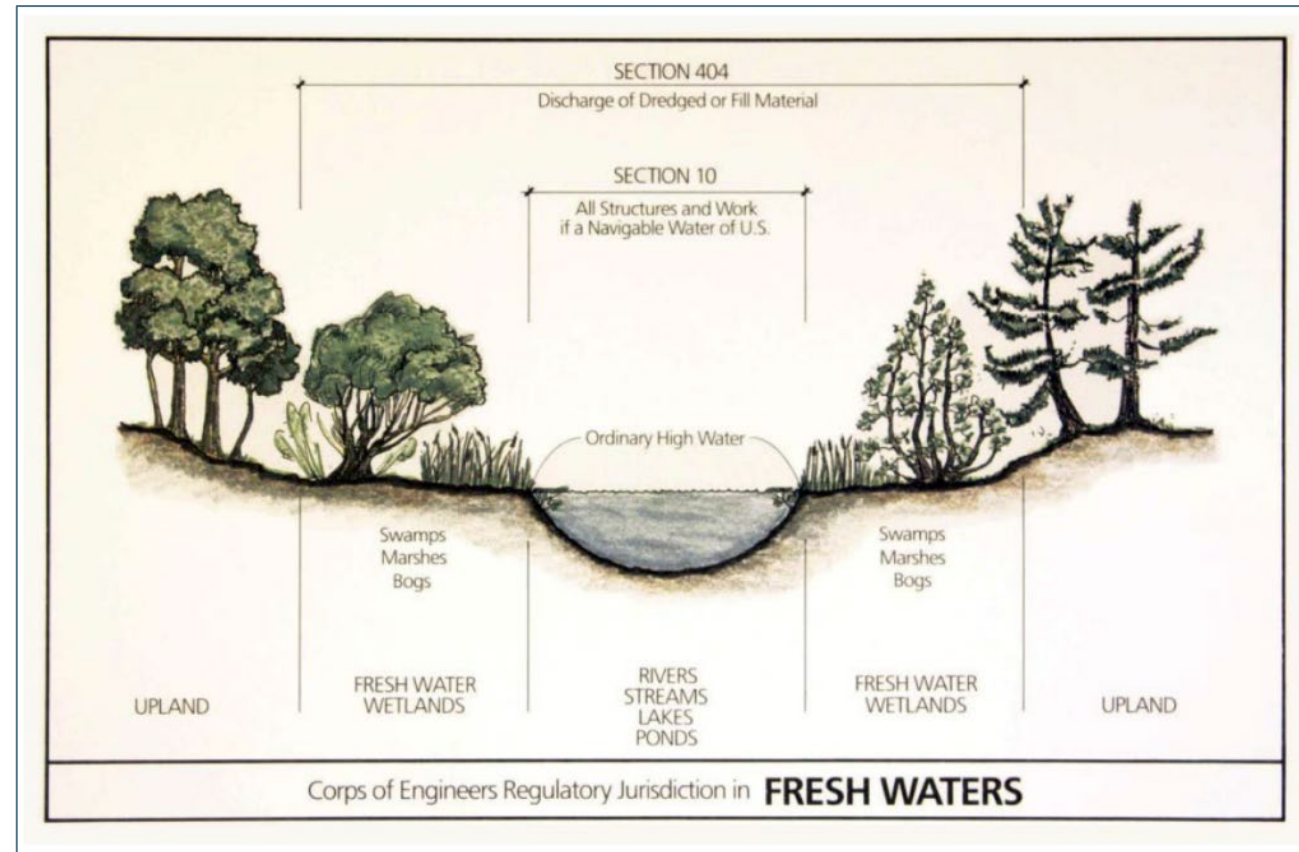
- Regulates the discharge of dredge and fill material, and associated secondary actions in wetlands or streams
- U.S. Army Corps of Engineers (USACE)
- Nationwide Permits, Individual Permits

Clean Water Act Section 401

- Requires USACE obtain certification from the state before permitting wetland or stream impacts
- State Permitting Agency

Executive Order 11990 – Protection of Wetlands

- Requires federal agencies to preserve wetland functions and values on federal lands and otherwise avoid or minimize wetland impacts from new construction to the extent practicable.



Prior to surveys:

- Project Footprint
 - Entire project area
 - Transmission lines (TL)
 - Access routes
- Heritage Data Base Query (HDBQ)
 - Biological records within the site
 - State/Federal TZ records within 3 miles
 - State/Federal/Rare/Sensitive Botany and Natural Area records within 5 miles
 - State/Federal/Rare/Sensitive records within HUC10
 - Federal Biological Records within County

Technical Surveys

- Wildlife and Vegetation Survey report
- T&E Survey report
- Stream and Wetland Delineation
- Bat Habitat Survey report
- Bat Mist Net Survey report
- Geodatabase



Bats



- All correspondence with USFWS to be conducted by TVA.
- Mist net surveys required for any project that requires tree clearing
 - Mist Net Surveys can ONLY be conducted between May 15- August 15
 - Plan to commit to winter tree clearing

Botany



- Entire footprint for state/federal/rare/sensitive species.
- Seasonal surveys may be required.
- All surveys to be completed by a qualified botanist:
 - M.S. degree or higher in botany or related field. (B.S. degree considered with appropriate experience.)
 - Minimum of 5 years of experience focusing on field botany and plant identification.
 - Working knowledge of the flora, both common and T&E species in the TN Valley.
 - Individual has contributed specimens to a herbarium or rare plant records to a state Natural Heritage program within the last 5 years. Be prepared to list applicable institution(s).

Wetlands

- Forms, photos, spatial data needed for each feature (upland and wet)
- Sequenced naming: W001_U, W001_W; W002_U; W002_W etc.
- USACE forms
- TN Rapid Assessment Method (TRAM) or TVARAM
- TVA provided Geodatabase



Streams

- Forms, photos, spatial data needed for each feature
- Sequenced naming:
 - Streams (perennial and intermittent) are categorized by a prefix of “S”
 - Ephemeral Streams and Wet Weather Conveyances: “E”
 - Ponds “P.”
 - S001, S002, E001, P001.
- TVA provided geodatabase.
- TDEC forms
- TVA Aquatic surveys



Consultation

- All T&E surveys have been completed, and all reports have been developed and approved by Biological Compliance
- Final acreages of tree removal and/or sensitive habitat have been identified and documented,
- Final impacts to wetlands and streams have been identified and documented, and
- Final maps of areas of impact in relation to the above resources have been developed.
- Consultation (to be conducted by TVA)
 - Informal: 60 days; Formal: 135 days

Biological's Solar PPA Process

- **Heritage Database Query**
- **Core Team Meetings**
 - Resource Discussions
 - Survey planning
- **Technical Study Reviews**
- **Draft Document Reviews**
- **Informal / Formal Consultation**
- **Final Document Reviews**

Activities	Predecessor Activity	Status
+ (TSR) Technical Study Review		Completed
+ (DDR) DRAFT Doc Review		Completed
+ (FC) Formal USFWS Consultation		Completed
+ Modification 1 - (DDR)		Completed
+ (FDR) FINAL Doc Review		Completed

TVA Section 106

Michaelyn Harle, Manager Cultural Projects ENV
and ED, Deputy Federal Preservation Officer

What is Section 106?

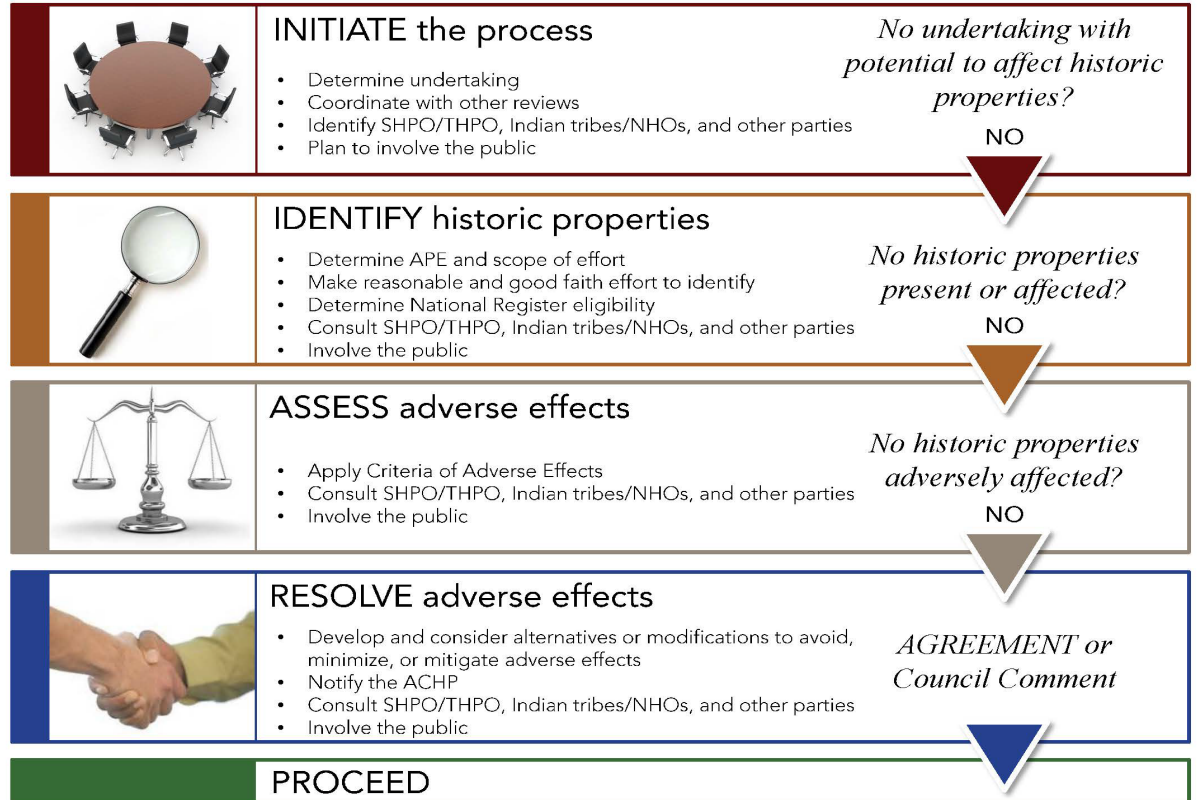
Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and its implementing regulations (36 CFR Part 800) require agencies to consider effects of their undertaking on historic properties

- Establishes a 4-step compliance process
- Mandates consultation – TVA does not have agreement with consulting parties to defer our consultation responsibilities
- Process must be initiated early in project planning
 - Broad range of alternatives should be available for consideration
- Section 106 must be completed
 - Prior to approval of the expenditure of Federal funds
 - Issuance of any license or permit



Section 106 Review Process

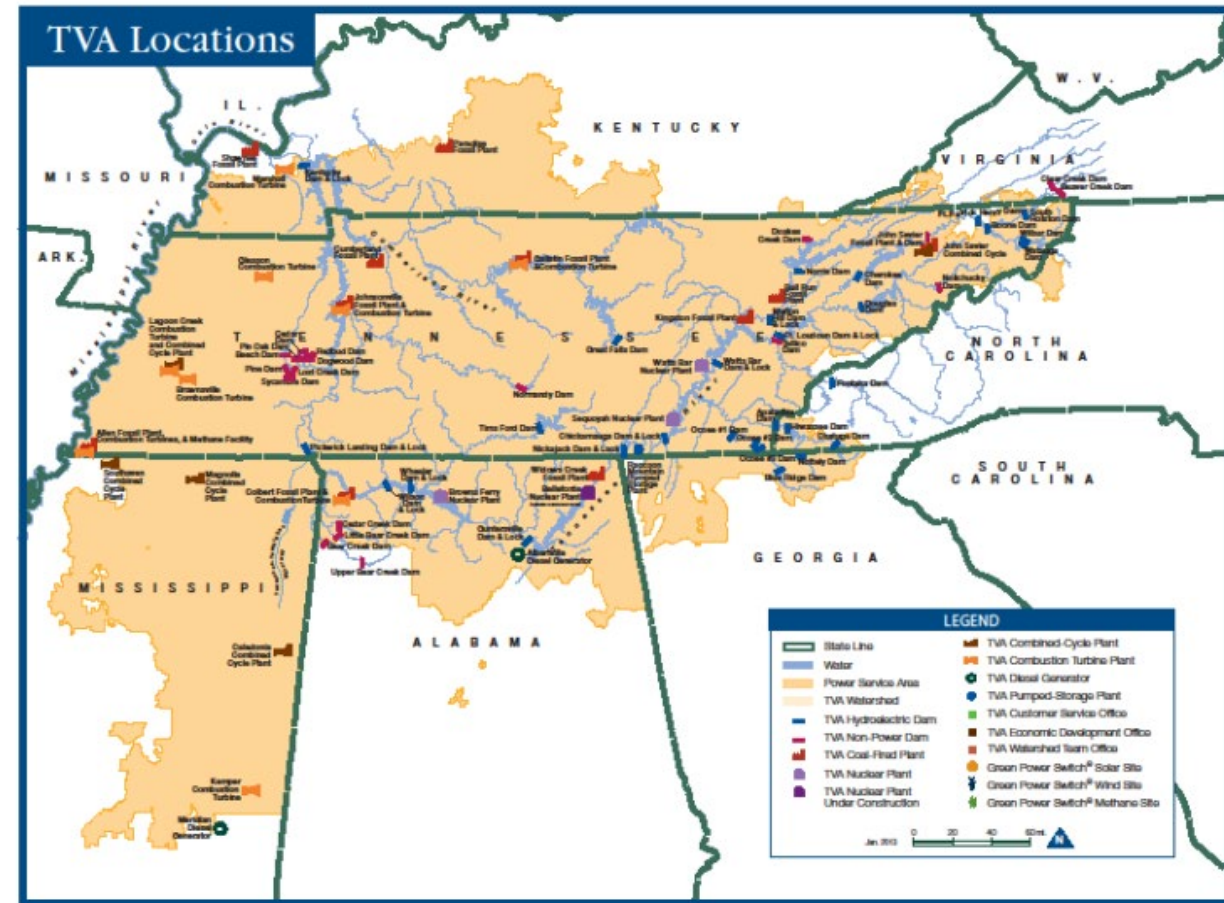
36 CFR § 800.3-7



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What is consultation and who are our consulting parties?

- Consultation – “the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process”
 - Consulting parties have 30 days upon receipt
- Advisory Council on Historic Preservation (ACHP)
- State Historic Preservation Officers (7 states)
- Federally Recognized Indian Tribes (24 Tribes)
- Representatives of Local Governments
- Applicants for Federal assistance
- Additional Consulting Parties (parties with standing)






Section 106 Review Process

36 CFR § 800.3-7

CONSULTATION



INITIATE the process

- Determine undertaking
- Coordinate with other reviews
- Identify SHPO/THPO, Indian tribes/NHOs, and other parties
- Plan to involve the public

No undertaking with potential to affect historic properties?

NO




IDENTIFY historic properties

- Determine APE and scope of effort
- Make reasonable and good faith effort to identify
- Determine National Register eligibility
- Consult SHPO/THPO, Indian tribes/NHOs, and other parties
- Involve the public

No historic properties present or affected?

NO




ASSESS adverse effects

- Apply Criteria of Adverse Effects
- Consult SHPO/THPO, Indian tribes/NHOs, and other parties
- Involve the public

No historic properties adversely affected?

NO



RESOLVE adverse effects

- Develop and consider alternatives or modifications to avoid, minimize, or mitigate adverse effects
- Notify the ACHP
- Consult SHPO/THPO, Indian tribes/NHOs, and other parties
- Involve the public

AGREEMENT or Council Comment

PROCEED

Early initiation of consultation with the Tribes and SHPO with SOW prior to any field work activities. TVA involves the public in 106 through the NEPA Process

BCC Guidelines, general template for archaeological fieldwork, each state also has their own guidelines, but agency determines “reasonable and good faith effort” for identification and based on “past studies, magnitude of the undertaking, prior disturbance, and likelihood of resources present”

Area of potential effects for solar – project footprint and areas that are visually connected to the project area within the .5-mile radius. Also can include any additional upgrades to existing access roads or transmission lines

Larger survey area, flexibility in design, avoidance of effects to archaeological sites – 20-meter buffer for avoidance, letter agreement, and viewshed photo renderings

ACHP Identified Common Issues with Solar Projects

- Project timing and coordination of Section 106 review
- Consideration of alternatives for project location and/or implementation
- Often large land areas involved
 - Screening process/initiation of consultation
- Direct and indirect effects
- Range of historic property types affected (archaeological sites, historic structures, historic/cultural landscapes, traditional cultural properties, archaeological districts)
 - Flexibility in design/landscape level analysis
- Tribal consultation
 - Frequent meaningful consultation

Community Relations

Danny McWilliams, Government Relations Manager, South Region

TVA's Community Relations – Solar Support

- Develop and build strong relationships with solar companies.
- Work with solar companies in developing relationships with stakeholders.
 - Elected Officials
 - Community Stakeholders
 - Civic Groups, Schools, Farm Organizations, Farmers, etc.
 - Landowners
- Encourage solar companies to:
 - Work to build trust with the community.
 - Demonstrate their company's desire to be a long-term partner with community.
 - Communicate TVA's and Community's expectations to solar companies
 - Be good stewards of the land and be good managers with their land.
 - Work with schools to educate our youth about solar.
- Support open houses if needed.
- Partner to educate community about solar and the need for solar.

TVA

**TENNESSEE
VALLEY
AUTHORITY**