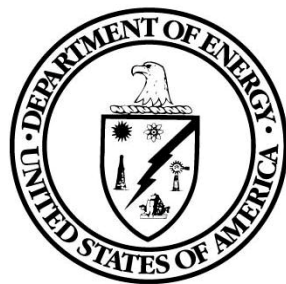


**FINAL
ENVIRONMENTAL ASSESSMENT
WEST TENNESSEE SOLAR FARM PROJECT
HAYWOOD COUNTY, TENNESSEE**

U.S. Department of Energy
National Energy Technology Laboratory
Pittsburgh, PA

February 2011



**FINAL
ENVIRONMENTAL ASSESSMENT**

**West Tennessee Solar Farm Project
Haywood County, Tennessee**

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List of Acronyms

AADT	Average Annual Daily Traffic
ACAM	Air Conformity Applicability Model
ACSR	aluminum conductor steel reinforced
ARAP	Aquatic Resources Alteration Permit
ARRA	American Recovery and Reinvestment Act
BMP	best management practice
CEC	Chickasaw Electric Cooperative
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
CO ₂	carbon dioxide
dB	Decibel
DOE	U.S. Department of Energy
EA	environmental assessment
ECD	Economic and Community Development
FAR	forestry, agriculture and residential
FHWA	Federal Highway Administration
FPPA	Federal Farmland Protection Policy Act
FR	<i>Federal Register</i>
gpd	gallons per day
GHG	greenhouse gas
I-40	Interstate 40
“Interim Guidance”	“Interim Guidance on Air Toxic Analysis in NEPA Documents”
kV	Kilovolt
kW	Kilowatt
L _{eq(8)}	equivalent noise level over an 8-hour period
L _{max}	maximum noise level
LOS	Level of Service
MGD	million gallons per day
MSA	Metropolitan Statistical Area
MSAT	Mobile Source Air Toxics
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operation and maintenance
ORNL	Oak Ridge National Laboratory
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
PV	Photovoltaic
RCRA	Resource Conservation and Recovery Act
RFP	request for proposal
ROI	region of influence
ROW	right-of-way
SEP	State Energy Program
Solar Farm	West Tennessee Solar Farm
STEMC	Southwest Tennessee Electric Membership Corporation
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TEMA	Tennessee Emergency Management Agency

TN-SHPO	Tennessee State Historic Preservation Office
TSI	Tennessee Solar Institute
TVA	Tennessee Valley Authority
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
UT	University of Tennessee
UTRF	University of Tennessee Research Foundation
VMT	vehicle miles traveled

1 INTRODUCTION

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act (ARRA) of 2009 (P.L. 111-5). The objectives of the ARRA are:

(1) to preserve and create jobs and promote economic recovery; (2) to assist those most impacted by the recession; (3) to increase economic efficiency by spurring technological advances in science and health; (4) to provide long-term economic benefits through investment in transportation, environmental protection, and other infrastructure; and (5) to stabilize state and local government budgets, in order to minimize or avoid reductions in essential services and counterproductive state and local tax increases (DOE 2009).

The ARRA appropriated funding for the U.S. Department of Energy (DOE) to award formula-based grants under the State Energy Program (SEP). The goals established for the SEP are:

- Increase energy efficiency to reduce energy costs and consumption for consumers, businesses, and government.
- Reduce reliance on imported energy.
- Improve the reliability of electricity and fuel supply and the delivery of energy services.
- Reduce the impacts of energy production and use on the environment (DOE 2009).

In accordance with Title 10 of the *Code of Federal Regulations (CFR)*, Section 600.6(b) and Part 420, eligibility for award to those applying for formula grant financial assistance under DOE's SEP is restricted to states, territories, and the District of Columbia (DOE 2009).

On May 12, 2009, the State of Tennessee filed an application with DOE to use some of its SEP funds appropriated under the ARRA to establish the Volunteer State Solar Initiative. This environmental assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), which requires federal agencies to evaluate the potential impacts of their proposed actions. The State of Tennessee prepared this EA for DOE review and approval.

1.1 VOLUNTEER STATE SOLAR INITIATIVE

The Volunteer State Solar Initiative has two key components: the Tennessee Solar Institute (TSI) and the West Tennessee Solar Farm (Solar Farm) project described below. This EA evaluates the installation and operation of the Solar Farm component of the Volunteer State Solar Initiative and the construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm.

1.1.1 Tennessee Solar Institute

TSI was authorized as part of the Volunteer State Solar Initiative. TSI is a Center of Excellence at the University of Tennessee (UT) and Oak Ridge National Laboratory (ORNL) that will focus on bringing scientists, engineers, and other technical experts together with industry leaders and policymakers to speed the development and implementation of solar-based and complementary energy storage technologies.

As part of its mission, TSI has established the Solar Opportunity Fund. The goals of the Solar Opportunity Fund are to accelerate the development and deployment of solar technology, enhance commercialization opportunities for promising technologies, and achieve growth in the solar economic industrial base in the State of Tennessee. Two grant programs will be administered at TSI through the UT Research Foundation (UTRF) to help achieve the goals of innovation and installation.

TSI, along with the UT Center for Industrial Services, the UTRF, and ORNL, is well-positioned to assist industry with technology development and to assess industry and workforce needs for an emerging alternative energy economy. The solar initiatives are intended to complement Tennessee's broader strategy to stimulate economic activity while positioning itself as a leader in the solar industry and accelerating the national solar transformation in a manner that will create jobs and ensure a clean energy future. All activities undertaken at TSI would align with the goals established for the SEP by providing a means to supplant the use of electricity generated by fossil fuels.

1.1.1.1 Solar Innovation Grants

To encourage growth in Tennessee's solar industry, TSI will offer solar innovation grants for qualifying Tennessee solar industry firms seeking technical assistance, facility or process improvements, and workforce development, as well as other efforts allowable under DOE regulations and SEP-ARRA guidelines. The program is intended to accelerate market transformation toward renewable energy and encourage energy efficiency and conservation. The grants will support activities to grow the solar value chain in Tennessee.

Activities eligible for solar innovation grants would include the following:

- **Technical Assistance**
Qualifying firms may access grants to support technology commercialization activities and other technical assistance.
- **Renewable-Energy Products**
Qualifying firms may access grants to acquire, upgrade, or demonstrate renewable-energy products, equipment, and materials for use in their operations, provided that any energy-generation demonstration must be on a small scale. "Small scale" is defined as appropriately sized units on existing rooftops and parking shade structures, or 60-kilowatt systems or smaller installed on the ground within the boundaries of an existing facility.
- **Facilities and Equipment Improvements**
Qualifying firms may access grants to conduct traditional building energy efficiency retrofits and purchase and install equipment or other upgrades that improve the overall energy efficiency of their facilities.
- **Process Improvements**
Qualifying firms may access grants to make production, manufacturing, assembly, or distribution processes less energy intensive by conducting industrial energy audits and purchasing and installing energy-efficient equipment and materials, including reasonable design costs.
- **Technology Improvements**
Qualifying firms may access grants to use resources that can analyze existing techniques or technologies in the interest of speeding the improvement and deployment of commercially available techniques and technologies.
- **Workforce Development**
Qualifying firms may access grants to conduct education and training activities for their employees related to the sale, installation, and maintenance of solar systems and equipment.

1.1.1.2 Solar Installation Grants

The Solar Installation Grant Program is intended to speed the deployment of solar energy in Tennessee. The funds available through this program will assist in the purchase and installation of small-scale, qualified, and approved solar (photovoltaic [PV]) systems on or adjacent to existing buildings located within the state that are used for retail, commercial, and/or industrial purposes. Not-for-profit entities (with 501(c)(3) designations) are also eligible for this program. A request for applications for the Solar Installation Grant Program was announced on June 21, 2010.

- Systems eligible for the grants would include small-scale solar PV systems installed either on or adjacent to buildings located in Tennessee and used by the applicant for retail, commercial, and/or industrial purposes.
- Other requirements of the grants would include the following:
 - Grants will be paid on a reimbursement basis after certifications of completion and support documentation have been provided.
 - Systems and installations must meet applicable local building codes and have required permits.
 - Contractors or installers must be licensed, bonded, and insured, and preferably certified by the North American Board of Certified Energy Practitioners.

1.1.2 West Tennessee Solar Farm

As part of the Volunteer State Solar Initiative, the Tennessee Department of Economic and Community Development (ECD) has contracted with UT to oversee the design, development, installation, and operation of the Solar Farm. UT, working through the UTRF, has completed the request for quotation and request for proposal (RFP) processes, leading to the selection of Signal Energy, LLC, as the design/build firm for the Solar Farm. The State Building Commission has approved this selection. ECD's contract with UT has a maximum liability of \$31 million.

The proposed project evaluated in this EA is the installation and operation of the Solar Farm and construction and operation of an Information and Welcome Center adjacent to the Solar Farm. The Solar Farm would be a 5- to 10-megawatt, multi-acre power generation facility located in Haywood County, Tennessee, adjacent to Interstate 40 (I-40) [see Figure 1–1]. The Solar Farm array would be composed of a multi-acre, fixed ground-mounted PV solar array, which would deliver power to the local electrical grid. Power generated by the Solar Farm would be purchased by the Tennessee Valley Authority.

Based on the results of the initial RFP process for the design and installation of the array, UT has estimated initial development and installation costs for the array at \$27.8 million. The final combined costs for installation and interconnection would be determined after a system impact study and a second RFP process are completed. Any balance in funding (maximum project total \$31 million) would be used to increase the array above the 5-megawatt minimum and conduct education and outreach activities associated with the Solar Farm.

The Solar Farm would be used to demonstrate the solar-powered generation of electricity on a highly visible and significant scale. The Solar Farm would create jobs, educate the public on the benefits of solar energy, encourage future renewable-energy interest and investments across Tennessee and throughout the region, reduce greenhouse gas emissions, and increase renewable-energy generation. The Solar Farm would be used as a model for utilities seeking to diversify energy generation portfolios to comply with new laws, rules, or regulations. The Solar Farm would also have a significant public education mission to allow citizens and students to gain firsthand exposure to solar energy production to better understand its benefits.

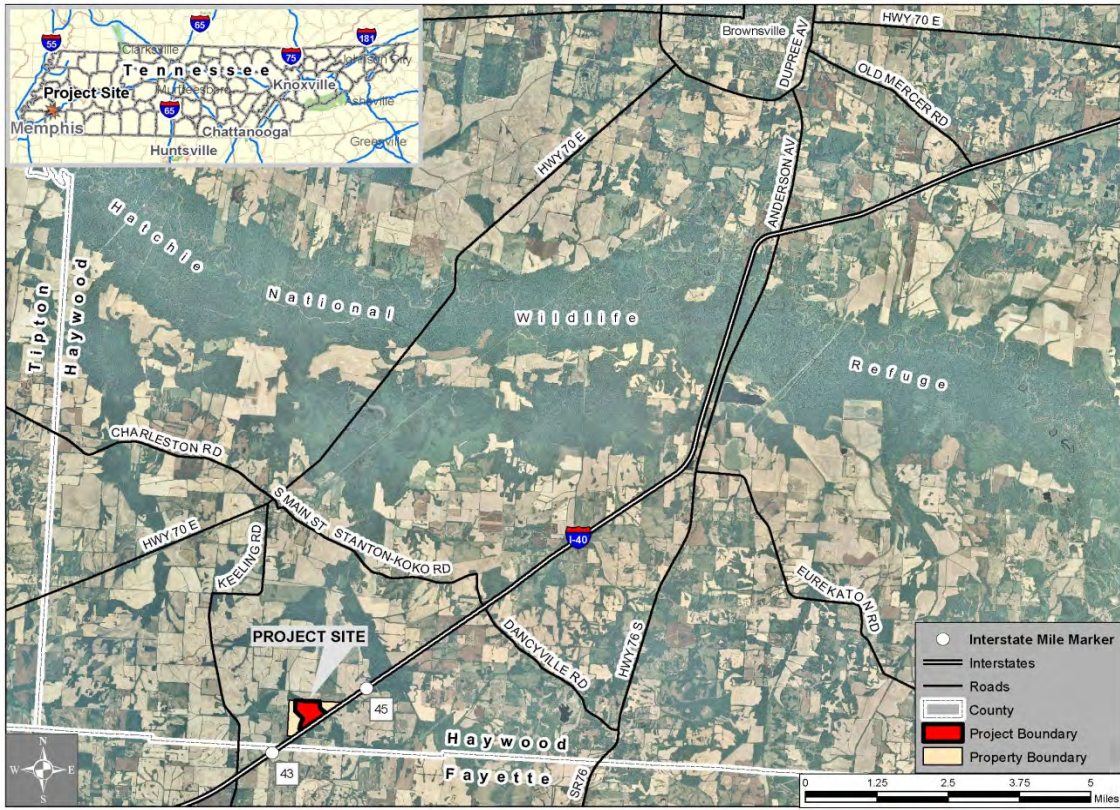


Figure 1-1. Location of Proposed West Tennessee Solar Farm

1.2 NATIONAL ENVIRONMENTAL POLICY ACT AND RELATED PROCEDURES

NEPA, the Council on Environmental Quality's (CEQ's) NEPA regulations (40 *CFR* 1500–1508), and DOE's NEPA implementing regulations (10 *CFR* 1021) require that DOE consider the potential environmental impacts of a proposed action before making a decision. This requirement applies to decisions about whether to provide different types of financial assistance to states and private entities.

In compliance with these regulations, this EA examines the potential environmental impacts of the proposed Solar Farm project and the No Action Alternative. This EA provides DOE with the information needed to make an informed decision about whether allowing the State of Tennessee to use some of its SEP funds for the proposed Solar Farm may result in significant environmental impacts. Based on this EA, DOE either will issue a Finding of No Significant Impact, which could include mitigation measures, or determine that additional study is needed in the form of a more detailed environmental impact statement.

DOE invited the U.S. Army Corps of Engineers (USACE) and the Federal Highway Administration to participate as cooperating agencies in the EA by letters dated September 7, 2010. Both agencies declined the invitation. Their correspondence is included in Appendix A.

The EA was prepared by consultants at the direction of the State of Tennessee. The preliminary draft EA was provided to DOE, which reviewed, edited, and adopted the document for the purposes of NEPA.

Nothing in this EA affects the project proponents' obligations to comply with the laws of the United States, including the Endangered Species Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

1.3 PURPOSE AND NEED FOR ACTION

1.3.1 DOE's Purpose and Need

DOE's purpose and need is to ensure that SEP funds are used for activities that meet Congress's statutory aims to improve energy efficiency, reduce dependence on imported oil, decrease energy consumption, or promote renewable energy. The State of Tennessee received \$62.5 million in ARRA SEP funds, and DOE must ensure the activities the State pursues with those funds are consistent with statutory requirements. However, it is not DOE's role to dictate to the State of Tennessee how to allocate its funds among these objectives or to prescribe the projects it should pursue. This includes the potential \$31 million in Tennessee's ARRA SEP funds for the proposed Solar Farm project.

DOE continues to encourage states to develop strategies that align their goals and objectives with national goals. By aligning with national goals—increasing jobs, reducing U.S. oil dependency through increases in energy efficiency and deployment of renewable-energy technologies, promoting economic vitality through an increase in “green jobs,” and reducing greenhouse gas emissions—states and DOE demonstrate SEP leadership in successfully addressing national needs at the state and local level. These national goals are set out in the Energy Policy Act of 2005 (P.L. 109-58), the Energy Independence and Security Act of 2007 (P.L. 110-140), and the ARRA (P.L. 111-5) [DOE 2009].

1.3.2 State of Tennessee's Purpose and Need

The State of Tennessee's purpose and need is to help fulfill its mission to encourage energy efficiency and conservation. The proposed project would allow the State to demonstrate low-carbon production of electricity on a highly visible and significant scale to create jobs, educate the public on the benefits of solar energy, encourage future renewable-energy interest and investments across Tennessee and throughout the region, reduce greenhouse gas emissions, and increase renewable-energy generation. The project would be a model for utilities seeking to diversify energy generation portfolios to comply with new laws, rules, or regulations.

1.4 SCOPE OF THIS ENVIRONMENTAL ASSESSMENT

This EA was prepared to assess the potential consequences of DOE's proposed action (release of Tennessee's SEP funds) and the proposed Solar Farm project on the human environment, in accordance with the CEQ's Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 *CFR* 1500–1508) and DOE's “National Environmental Policy Act Implementing Procedures” (10 *CFR* 1021). In addition, as required by CEQ and DOE regulations, the potential impacts of the No Action Alternative are also assessed.

This EA (1) describes the existing environment at the project site, (2) analyzes potential environmental impacts associated with the proposed project and the No Action Alternative, and (3) identifies and characterizes cumulative impacts that could result from the proposed project in relation to other ongoing or reasonably foreseeable proposed activities within the surrounding area of the project site. The proposed Solar Farm project is expressed as a range (5 to 10 megawatts). For the purposes of the analyses presented herein, all potential impacts were assessed assuming that the proposed project proceeds at the maximum (10-megawatt) size.

Throughout the NEPA process, it has been suggested that the West Tennessee Megasite is a Connected Action. DOE has determined the Megasite is not a Connected Action based on the definition provided in 40 *CFR* 1508. Neither the Megasite, nor Tennessee's proposed Solar Farm would automatically trigger the other. Similarly, neither requires the other to be undertaken previously or simultaneously. Finally, they are not interdependent parts of a larger action that depends on the larger action for their justification. Although the plans for the Megasite are largely speculative based on the existing information, it has been

included in the Cumulative Impacts section of the EA. References in the EA to the proposed project are to the Solar Farm, and not the Megasite.

Certain aspects of the proposed project have a greater potential for creating adverse environmental impacts than others. For this reason, CEQ regulations (40 *CFR* 1502.1–1502.2) recommend a “sliding-scale” approach so that those actions with greater potential effect can be discussed in greater detail in NEPA documents than those that have little potential for impact. To this end, those resource areas with the higher potential for impacts and greater potential need for mitigation measures are given more emphasis in this EA.

1.5 PUBLIC INVOLVEMENT

1.5.1 Public Scoping

Between November 19, 2009, and December 4, 2009, DOE and the State of Tennessee solicited comments from Federal, state, and local agencies; stakeholders; and the general public to assist in defining the scope of this EA. They hosted a public scoping meeting on November 19, 2009, in Brownsville, Tennessee, to obtain public comments on the proposed scope of this EA. Approximately 120 people attended the meeting, at which the State of Tennessee, DOE, UT, Genera Energy, LLC, and TDOT provided information on the proposed Solar Farm project. The meeting began with a short presentation on the NEPA process and the proposed scope of this EA. Following the presentation, attendees were invited to ask clarifying questions related to the presentation and then to provide comments. Oral comments were recorded by a court reporter; written comments were also accepted. In addition, informational posters were presented for public review, and the public was invited to discuss issues directly with the State of Tennessee, DOE, UT, and TDOT immediately following the meeting.

For those individuals who could not attend the meeting, the State of Tennessee provided other methods to submit comments: (1) a toll-free phone number (1-800-342-1340), (2) electronic mail (ecd.energypolicy@tn.gov), and (3) U.S. mail (Ryan Gooch, Department of Economic & Community Development, 312 Rosa L. Parks Avenue, 10th Floor, Nashville, TN 37243).

The State of Tennessee received 17 comment documents, containing a total of 26 comments, during the scoping period. DOE and the State considered all public comments in refining the scope of this EA.

This section summarizes the comments received during the public scoping period. The comments have been grouped into the following topics: (1) concerns regarding possible environmental justice issues associated with the proposed project; (2) cumulative impacts associated with the proposed project and proposed nearby West Tennessee Megasite; (3) community education associated with the Information and Welcome Center; (4) alternatives evaluated in this EA; (5) tornadoes; (6) socioeconomic impacts; and (7) potential impacts on nearby water bodies. A response is provided for each comment summary.

- **Concerns regarding possible environmental justice issues associated with the proposed project**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires agencies to identify and address disproportionately high and adverse human health or environmental effects its activities may have on minority and low-income populations. Since no high and adverse human health impacts are anticipated as a result of the installation or operation of the proposed project, no such impacts on minority or low-income populations are expected. Environmental justice is discussed in more detail in Section 3.9 of this EA.

- **Cumulative impacts associated with the proposed project and proposed West Tennessee Megasite**

Cumulative impacts are those that may result from the incremental impacts of an action considered additively with the impacts of other past, present, and reasonably foreseeable future projects. Cumulative impacts are considered regardless of the agency or person undertaking the other actions (40 *CFR* 1508.7; CEQ 1997) and can result from the combined or synergistic effects of actions that are minor when considered individually over a period of time.

Several commentors asserted that the proposed West Tennessee Megasite is a reasonably foreseeable future action pertinent to the analysis of cumulative impacts for this project. Cumulative impacts are discussed in Chapter 4 of this EA. The cumulative impact of the Solar Farm and the proposed West Tennessee Megasite on environmental resources is expected to be minor.

- **Community education associated with the Information and Welcome Center**

The Solar Farm would have a significant public education mission that would allow citizens and students to gain firsthand exposure to solar energy production to better understand its benefits. Educational opportunities associated with the Information and Welcome Center and Solar Farm property are discussed in Section 2.1 of this EA. The Information and Welcome Center is addressed in this EA as a connected action under NEPA.

- **Alternatives evaluated in this environmental assessment**

This EA (1) describes the existing environment at the project site, (2) analyzes potential environmental impacts associated with the proposed Solar Farm project and the No Action Alternative, and (3) identifies and characterizes cumulative impacts that could result from the proposed project in relation to other ongoing, proposed, or reasonably foreseeable future activities within the surrounding area. Chapter 1 provides a background of activities that would be performed by the State of Tennessee as part of the Volunteer State Solar Initiative.

The proposed project evaluated in this EA comprises the following:

- Installation and operation of a 10-megawatt PV Solar Farm array.
- Construction and operation of the TDOT Information and Welcome Center adjacent to the Solar Farm.
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The No Action Alternative provides an environmental baseline against which the impacts of the proposed project can be compared. The No Action Alternative is required to be considered in an EA by DOE and CEQ NEPA regulations. Under the No Action Alternative, DOE would not allow the State of Tennessee to issue the ARRA funding for the installation and operation of the Solar Farm array.

DOE has no ability to compel the State of Tennessee to consider other projects in lieu of the Solar Farm, or other locations for it. DOE's alternatives evaluated in this EA (the proposed Solar Farm project and the No Action Alternative) and those that were considered by the State of Tennessee but dismissed are identified in Chapter 2.

- **Tornadoes**

Impacts associated with regional climate and air quality are discussed in Section 3.3 of this EA. Tornadoes and other extreme weather conditions could be of concern for the proposed project, though no more so than for any building or facility currently in existence or being considered for construction in the region. The Solar Farm and Information and Welcome Center would be constructed in accordance with the wind-loading standards prescribed by the governing building codes.

- **Socioeconomic impacts**

Socioeconomic and environmental justice impacts are discussed in Section 3.9 of this EA. The new employment associated with the proposed project would represent a negligible increase (less than 0.1 percent) compared with 2007 employment in the Memphis Metropolitan Statistical Area. Based on the small number of estimated jobs that would be created, no impact on the population is anticipated.

- **Potential impacts on nearby water bodies**

The proposed project could potentially impact up to 586 linear feet of stream channel within the project site. The impact would result from the potential installation of culverts within two of the on-site stream channels. The potentially impacted streams are highly degraded because of channelization, lack of riparian habitat, sediment deposition, and erosion from unstable banks. If this impact is unavoidable, this would require, at a minimum, an Aquatic Resources Alteration Permit (ARAP) from the Tennessee Department of Environment and Conservation (TDEC) and possibly a Section 404 permit from the USACE. Permit requirements may include compensatory on- or off-site mitigation through the Tennessee Stream Mitigation Program.

Operation of the proposed facilities would require maintenance of the grounds to maintain roadways and the solar infrastructure. This would require mowing and the possible use of various herbicides to control vegetation around the roads and solar arrays. Any herbicide use would be controlled in accordance with regulatory requirements and manufacturers' recommendations to avoid introduction of herbicides into the streams and groundwater at the site.

Section 3.5 evaluates potential water quality impacts associated with grading- and construction-induced sedimentation of local drainages. Impacts associated with water quality are discussed in Section 3.6 of this EA.

1.5.2 Draft EA Public Meeting and Comments

DOE issued the draft EA on September 23, 2010, and advertised its release in the *Fayette Falcon* on September 22 and the *Jackson Sun* and *Brownsville States Graphic* on September 23. In addition, DOE sent a copy of the draft EA to the Elma Ross Public Library in Brownsville, Tennessee. DOE established a 30-day public comment period that began on September 23, 2010, and ended on October 22, 2010.

On October 5, 2010, DOE and the State of Tennessee held a public meeting on the draft EA at the Haywood County Courthouse in Brownsville, Tennessee. The format of the public meeting was similar to the scoping meeting that was held in November 2009. A total of 39 people attended the meeting. Four individuals participated in the formal comment portion of the meeting. A summary table of the comments received during the 30-day comment period and responses to those comments are provided in Appendix B. Copies of the actual comment letters are not included in the EA for the purpose of brevity. A copy of the individual comment letters will be provided by DOE upon request.

1.6 SUMMARY OF ENVIRONMENTAL EFFECTS

This EA evaluates the potential environmental effects that could result from implementing the proposed Solar Farm project or No Action Alternative.

Potential impacts of the proposed project for the resources evaluated in the EA include the following:

- **Land Use and Visual Resources** – The project would change existing land use from agricultural use to restricted industrial use. On November 15, 2010, the Haywood County Commission approved rezoning of the Solar Farm property from Forestry, Agricultural, and Residential (FAR) to Restricted Industrial (I-2). The primary visual impact would result from the removal of approximately 21 acres of lower-quality deciduous forest and shrub habitat within the project site and the tree line along I-40. The tree removal is necessary for the project site preparation and improvement of the sight lines from I-40 in order to increase the visibility of the Solar Farm PV panels and the Information and Welcome Center.
- **Air Quality** – Impacts on regional air quality would include short-term, temporary, and localized increases in criteria pollutants during installation activities. These increases would not exceed the applicable thresholds; thus, minor adverse impacts are expected from the installation activities. Best management practices associated with PM₁₀ (particulate matter with a diameter of less than or equal to 10 microns) would be employed to minimize blowing dust during construction and operations.
- **Noise** – Temporary and short-term noise generated during construction would not adversely affect any sensitive off-site receptors. Workers would wear appropriate hearing protection during construction. Operational noises also would not adversely affect off-site receptors.
- **Geology and Soils** – Clearing and grading during construction activities would disturb on-site soils and increase the potential for erosion. Implementation of a stormwater pollution prevention plan developed as part of the permitting process would minimize impacts.
- **Water Resources** – Up to 586 linear feet of stream channel could potentially be impacted within the project site. The impact would result from the potential installation of culverts within two of the on-site stream channels. The potentially impacted streams are highly degraded because of channelization, lack of riparian habitat, sediment deposition, and erosion from unstable banks. If this impact is unavoidable, this would require, at a minimum, an ARAP from TDEC and possibly a Section 404 permit from the USACE. Permit requirements may include compensatory on- or off-site mitigation through the Tennessee Stream Mitigation Program. Erosion and sedimentation controls would limit potential impacts on surface water. No wetlands are present within the Solar Farm property boundary. Three forested wetland areas on the proposed transmission route connecting the Solar Farm to the Dancyville Substation could be impacted. The potential impacts would result from improvements to the transmission line within the existing right-of-way (ROW) and construction within a 2.5-mile section of new ROW. Impacts would be limited to vegetation clearing and/or pole replacement. No wetlands would be converted to non-wetland habitat. The potentially affected wetland area totals approximately 2,240 linear feet or 1.3 acres. Normal facility operations would not be expected to have adverse impacts on surface water or groundwater. Installation of a groundwater well to provide non-potable water for washing the solar modules and the potential installation of a well to provide potable water to the Information and Welcome Center would draw from the Memphis sand aquifer, which can adequately supply the amount of water that would be required. Nonhazardous water from washing the solar modules would be re-absorbed into the ground under the modules. The on-site sanitary wastewater system would be designed, located, and operated to prevent any adverse impacts to surface or groundwater resources. Operation of the proposed facilities would

require maintenance of the grounds to maintain roadways and the solar infrastructure. This would require mowing and the possible use of various herbicides to control vegetation around the roads and solar arrays. Any herbicide use would be controlled in accordance with regulatory requirements and manufacturers' recommendations to avoid introduction of herbicides into the streams or groundwater at the site.

- **Biological Resources** – As part of the land purchase agreement, the previous owners were permitted to harvest timber from the property for 90 days. In addition to site grading for the installation of the solar array and construction of the Information and Welcome Center, approximately 21 acres of lower-quality deciduous forest and shrub habitat within the project site and the tree line along I-40 would be removed. Displacement and mortality of individual wildlife may occur during project installation/construction activities. The proposed transmission route connecting the Solar Farm to the Dancyville Substation would require some additional clearing of trees within the existing and new ROW. Adverse effects on resident plants or animals are expected to be minimal. The activities associated with the proposed project would not have any indirect or direct effects on any threatened or endangered species.
- **Cultural Resources** – No cultural resources are located on the site; thus, no adverse impacts on cultural resources are anticipated. The Tennessee State Historic Preservation Officer (TN-SHPO) concurred with the determination and finding that no historic properties would be affected by the Solar Farm project.
- **Socioeconomics and Environmental Justice** – Installation/construction employment would be limited and temporary and does not represent a permanent change in local employment. At its peak, the installation of the solar array could employ up to 50 workers with an average of 17 workers per day over a 7-month period. For Stage 1 of the Information and Welcome Center, TDOT estimated that 20 workers per day would be needed for the entire 365-day construction period. Operations associated with the Solar Farm and Information and Welcome Center would create less than 20 direct, full-time-equivalent jobs. No high and adverse human health or environmental impacts are anticipated as a result of the construction or operation of the proposed project; consequently, there would be no disproportionately high and adverse effects on minority or low-income populations.
- **Utilities** – The proposed project would initially generate approximately 5 net megawatts of electricity. A 9.1-mile-long transmission route from the Solar Farm to the Dancyville Substation has been proposed. Improvements would be made to the existing circuit and 2.5 miles of new circuit on a new ROW would be constructed. No natural gas would be required or supplied to the project site to support the Solar Farm or Information and Welcome Center. Installation of a new groundwater well would provide non-potable water for washing the solar modules. Potable water to the Information and Welcome Center would be provided via a connection to the local water supply or by installing a groundwater well on-site. Potable water use may be reduced by incorporating renewable and sustainable building designs, such as harvesting rainwater and storing it in an underground cistern. Sanitary wastewater generated from the Information and Welcome Center would be treated on-site, and no connection to the public sanitary sewer system would be required.
- **Transportation** – Project installation and construction would entail additional trips on the local transportation network based on additional construction employees, material deliveries, and equipment deliveries. Potential impacts during installation and construction would likely be minimal due to the existing spare capacity of the roadway network. Short-term traffic via Camp Ground Road to Allbright Road would increase slightly during installation of the Solar Farm and construction of the Information and Welcome Center. When the project is completed, vehicular traffic would have direct access to the project site only from I-40. I-40 would not be adversely

impacted by the traffic associated with the proposed project. Allbright Road would be closed on the south side of I-40 and the northern boundary of the project site. Local traffic would continue to use Camp Ground Road and Allbright Road to its terminus at the project site boundary.

- **Waste Management** – Construction activities and operation of the facility would generate nonhazardous solid waste and possibly a negligible amount of hazardous waste (e.g., petroleum, oil, and lubricants). Also, the PV panels in the solar array may contain hazardous materials and, although the panels are sealed under normal operating conditions, there is the potential for environmental contamination if damaged or improperly disposed of during decommissioning. Waste would be characterized, stored, transported and disposed of in accordance with all applicable Federal, state, and local regulations and codes. Disposal would occur in existing off-site facilities.
- **Public and Occupational Health and Safety** – Construction workers would be subject to typical hazards and occupational exposures faced at other industrial construction sites. Contractors would be expected to comply with existing health and safety requirements.
- **Cumulative Impacts** – The proposed West Tennessee Megasite has been identified as a reasonably foreseeable future action pertinent to the analysis of cumulative impacts for this project. The cumulative impact of the development of the Solar Farm and the proposed West Tennessee Megasite on the various environmental resources is expected to be minor.

The No Action Alternative would have no impacts on the resources evaluated in this EA but would not realize the beneficial impacts of bringing additional renewable-energy capacity to market.

2 DESCRIPTION OF THE PROPOSED SOLAR FARM PROJECT AND ALTERNATIVES

2.1 PROPOSED SOLAR FARM PROJECT

The proposed project evaluated in this environmental assessment (EA) comprises the following:

- Installation and operation of a 10-megawatt (MW) photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including the required upgrade of 6.6 miles of electrical transmission line and installation of 2.5 miles of new utility transmission line. Additional details on the electrical transmission line upgrades are included in Section 3.10.2.1.
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm.
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center and on the Solar Farm property (i.e., solar array).

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. American Recovery and Reinvestment Act (ARRA) of 2009 (P.L. 111-5) funds may be used to support educational activities at the Solar Farm and the Information and Welcome Center. ARRA funds were not used for the land purchase of the project site nor would they support construction of the Information and Welcome Center. Funding for the purchase of the project site was provided by the State of Tennessee, and that for construction and operation of the Information and Welcome Center would be provided by a combination of Federal and State Highway Administration funds. A conceptual drawing showing the possible site layout of the Solar Farm and the Information and Welcome Center is presented in Figure 2-1.

2.1.1 Installation and Construction

Site preparation activities prior to the installation of the proposed Solar Farm and construction of the Information and Welcome Center would involve vegetation removal and grading and leveling of the project footprint (approximately 104 acres). Construction activities would be staged so that the entire site would not be disturbed all at once. Installation of the solar array is estimated to take place over a 7-month period and a 365-day construction period would be needed for Stage 1 of the Information and Welcome Center.

2.1.1.1 Solar Farm

The Solar Farm array would be composed of a multi-acre, fixed tilt, ground-mounted PV solar array, which would deliver power to the local electrical grid. The Solar Farm and array would be owned and operated by the University of Tennessee (UT). The UT Research Foundation (UTRF) would be responsible for the development and installation of the Solar Farm.

The solar array would consist of a maximum of approximately 50,000 PV modules (10 MW), a fixed ground-mounted racking system, 9–20 inverters, and 5–11 transformers. The project would be divided into standard inverter power blocks; each block would consist of 2,000–5,000 individual PV modules, the racking system, 1–2 inverters, and 1 transformer. The fixed PV modules would be tilted at a site-specific angle to the sun and mounted facing due south. Solar radiation from the sun is converted into electricity in each cell of a PV module, and the electricity is converted from direct current (DC) to alternating current (AC) in the inverter. The AC circuit is connected to a medium-voltage transformer, which enables the power generated from the solar array to be distributed over electrical lines at the correct voltage.



Figure 2-1. Conceptual Site Layout of Solar Farm and Information Welcome Center

The project would be installed using a variety of powered equipment, such as a 40-ton crane, graders, scrapers, post pounders, forklifts, and trenchers. However, the majority of the work would involve manual labor using hand tools. Installation of the solar array would occur over a 7-month period, with an anticipated maximum of 50 workers per day on-site during installation.

2.1.1.2 Electrical Interconnection

Electricity from the solar array would enter the Chickasaw Electric Cooperative (CEC) distribution system. A system impact study evaluated three alternative routes for interconnection of the Solar Farm with existing distribution substations (Figure 2-2). Route 2 was selected by the UTRF to take advantage of as much existing ROW and distribution infrastructure as possible to minimize impacts to property owners and deliver power from the Solar Farm to the Tennessee Valley Authority (TVA) electrical grid as efficiently as possible.

Route 2 would be overbuilt¹ on the existing 1/0 aluminum conductor steel reinforced (ACSR) feeder south of the Dancyville Substation along State Route 76 to Joyners Campground Drive (1.5 miles). A new 24.9-kV line would be located near the top of each pole and the existing 13.2-kV line would be located approximately 10 feet below the 24.9-kV conductors. The feeder line would then be overbuilt on the existing 336 feeder line west along Joyners Campground Drive continuing west to the intersection of Yum Yum Road where the existing 336 feeder line ends (2.3 miles). The feeder line then would be overbuilt on the existing 1/0 tap line along Yum Yum Road to its termination just south of Hebron Drive (1.8 miles). The new feeder would then continue along Yum Yum Road, along Camp Ground Road and Albright Road to the site (3.5 miles). Of those 3.5 miles, approximately 1 mile of the new feeder line would be constructed on the existing single-phase line.

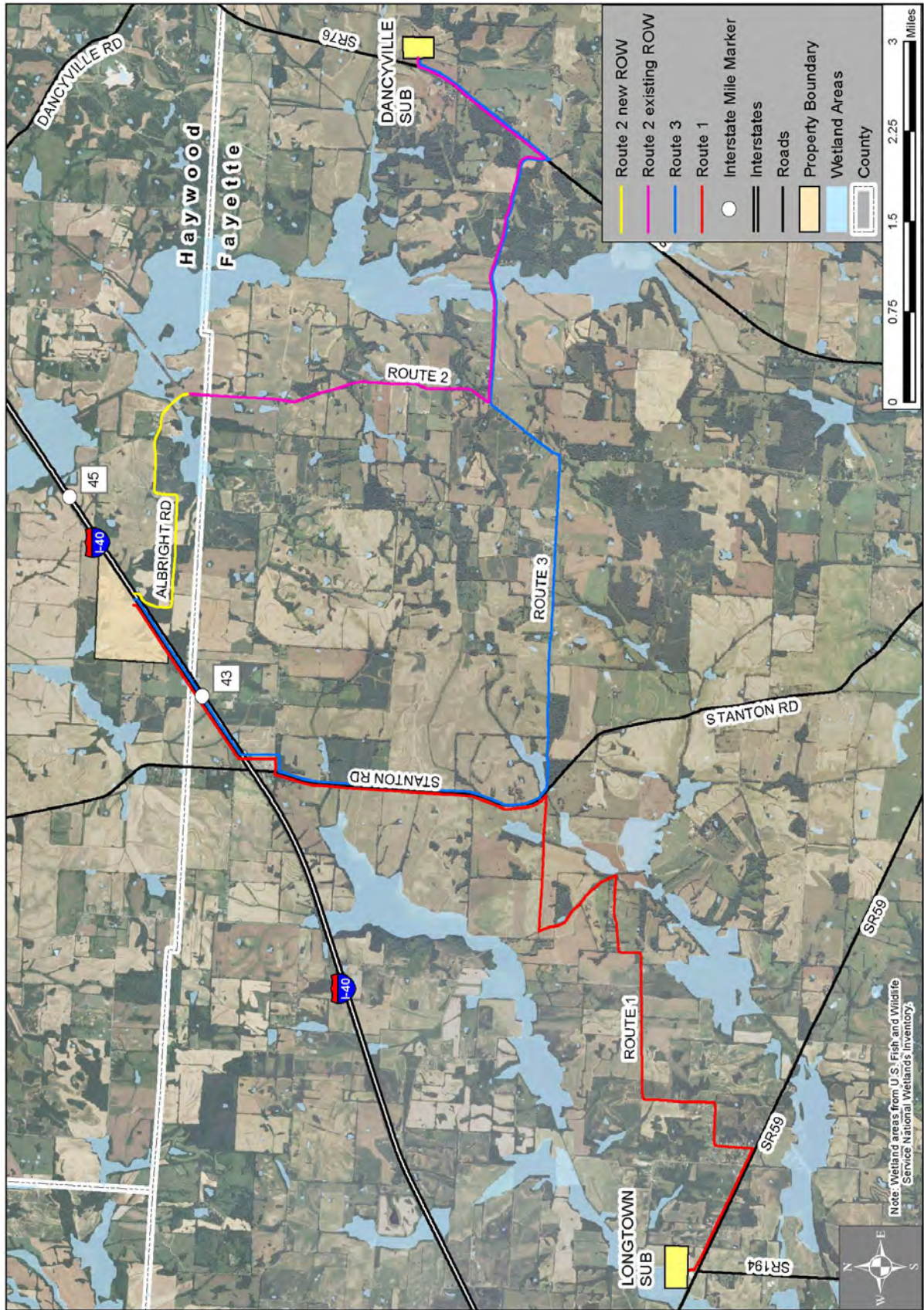
In summary, the feeder line would consist of the following:

- 2.3 miles of new circuit overbuilt on existing 336 ACSR feeder circuits;
- 3.3 miles of new circuit overbuilt on existing 1/0 ACSR feeder circuits;
- 1.0 miles of new circuit with underbuilt single-phase circuit;
- 2.5 miles of new circuit on new ROW, including the Solar Farm site; and
- 9.1 miles of total circuit length.

Line estimates are based on a 45-foot pole for single line construction and 55-foot pole for double circuit construction. A 250-foot span was assumed with additional poles added in those areas where the span between poles must be shortened due to ground situations. Approximately 150 poles 55-feet high are estimated to be needed for the double circuit (overbuilt) and 65 poles 45-feet high for the single circuits. It is assumed that the work would be performed while the existing 13.2-kV line feeding existing customers remains energized (Hot Work).

Some clearing of existing and new ROW would be required to install new feeder line equipment. Tree trimming and removal is estimated at 12.5 feet from pole centerline or 25 feet total. New substation equipment would also be installed at the Dancyville Substation (i.e., step-down transformer and metering). Sensitive resources (e.g., wetlands) would be avoided if possible. All applicable permits would be obtained prior to any new work in the ROW. The selected route would also cross a TVA 500-kV and a 161-kV transmission line corridor. If the required distribution improvements are such that the affected lines are raised at these crossing locations, a new crossing agreement application would need to be completed and submitted to TVA for approval.

¹ Overbuilt is a term that means two circuits constructed on the same pole line with the new line above the existing line.



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Figure 2-2. Electrical Interconnection Routes Evaluated in System Impact Study

2.1.1.3 Information and Welcome Center

The positioning of the Information and Welcome Center would be such that it would provide an area with a clear and engaging viewing area of the Solar Farm. The Center would be a pull-through interstate facility, providing for on and off movements from I-40. The Center would initially provide for on and off movements only from westbound I-40. Access from eastbound I-40 is planned to occur after the initial construction is completed. Access to and from the Information and Welcome Center would be from I-40 via exit ramps, and there would be no break in the right-of-way (ROW) access to adjacent properties or roads. The Information and Welcome Center is estimated to be 6,000–10,000 square feet in size. The parking lot would be designed to have segregated areas for cars, buses or recreational vehicles, and tractor trailers. The State of Tennessee would take this opportunity to highlight energy-efficient, renewable-energy, and sustainable building design in keeping with the solar power focal point.

The Information and Welcome Center would be constructed in two phases. In Stage 1, TDOT would construct westbound access to the Center from I-40, site infrastructure, facility, and parking areas. Construction would include interstate entrance and exit ramps for westbound travelers. The footprint of the interstate ramps, the Information and Welcome Center, and parking lot would be approximately 32 acres. Allbright Road, a local road that includes a bridge that spans I-40, would be closed within the project site boundaries. The roadway and bridge would be removed and demolished as a part of the project. In Stage 2, TDOT would construct eastbound access to the Information and Welcome Center from I-40, including ramps and a two-lane vehicular bridge over I-40 to accommodate eastbound travelers. The footprint of the interstate ramps would be approximately 2.4 acres.

Stage 1 has been programmed and funding has been secured with construction to occur over the duration of 365 days with an anticipated maximum of 20 workers per day or a total of 45 construction-related jobs. Stage 2 has not yet been programmed for funding and thus no time frame for construction has been established. Construction of the Information and Welcome Center would entail typical methods and equipment associated with site preparation and building construction.

2.1.2 Operations

2.1.2.1 Solar Farm

Facility operations would involve operating and maintaining facility equipment, including carrying out electrical tests and inspections, cleaning modules, cleaning around the site, verifying connections, landscaping, and performing corrective maintenance. Monitoring of the Solar Farm would also be conducted by utilizing an automated data system.

No more than two full-time employees would be required on-site for the operation and maintenance (O&M) of the Solar Farm. O&M of the Solar Farm would require service contractors to periodically visit the site for planned maintenance as well as for unplanned corrective actions.

The State of Tennessee expects the Solar Farm to be a long-term endeavor. However, the structural components of the Solar Farm would eventually need to be renovated or replaced over the Solar Farm's operational life. These activities would generate waste that would be disposed of or recycled according to disposal regulations and recycling technologies and markets applicable at the time of renovation, replacement, or demolition.

2.1.2.2 Information and Welcome Center

The operation and maintenance of the center would include welcoming guests; assisting guests in making hotel reservations; distributing maps and literature, including tourist information; groundskeeping; cleaning restrooms; and operating and maintaining water and wastewater systems. The center would be

open and staffed 24 hours per day, 7 days per week. Approximately 10 to 12 workers would be present on-site daily for operation and maintenance.

2.1.3 Educational Programs

The Solar Farm would have a significant public education mission that would allow citizens and students to gain firsthand exposure to solar energy production to better understand its benefits. Development of educational displays regarding solar energy production would be included in the proposed Information and Welcome Center. Public education activities would also occur on the Solar Farm property where the solar array would be located.

2.2 NO ACTION ALTERNATIVE

The No Action Alternative provides an environmental baseline against which the impacts of the proposed project can be compared. The No Action Alternative is required to be considered in an EA by DOE's and CEQ's NEPA regulations.

Under the No Action Alternative, DOE would not allow the State of Tennessee to use its SEP funds for the installation and operation of the Solar Farm. DOE assumes for purposes of this EA that the project would not proceed without SEP funding. This assumption could be incorrect, but it allows for a comparison between the potential impacts of the project as proposed and the impacts of not proceeding with the project. The State of Tennessee's ability to use its SEP funds for energy efficiency and conservation activities would be impaired, as would its ability to create jobs and invest in the nation's infrastructure in furtherance of the goals of the ARRA.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED

Because DOE is limited to a decision on whether to release Tennessee's SEP funds for use on projects selected by the State, DOE may only accept or reject a project as proposed by the State, including its proposed technology and selected site. DOE's consideration of reasonable alternatives is therefore limited to the projects selected by the State of Tennessee and the No Action Alternative for each selected project.

In designing the Volunteer State Solar Initiative, the State of Tennessee considered various types of renewable-energy projects, from which it developed a two-prong approach: (1) establish the Tennessee Solar Institute to oversee multiple medium-to-small-scale solar projects aimed at enhancing the affordability, durability, and commercialization of solar products; and (2) build and operate the proposed Solar Farm, a larger-scale solar project designed to demonstrate utility-scale solar generation and transmission onto the grid, as well as to serve as an educational resource for the State of Tennessee.

For the Solar Farm, the subject of this EA, several alternatives were considered for two key project factors: (1) types of solar technology and (2) location.

PV technology was chosen over another alternative, concentrated solar technology, primarily due to the ease in developing the PV arrays and the lower maintenance associated with PV technology, as concentrated solar technology requires constant washing of the solar mirrors. Initial engineering estimates also show that PV technology would result in greater kilowatt-hours of renewable-energy generation. Other potential project sites considered but dismissed by the State did not meet the following criteria:

- Statutory authority for the land acquisition for this project belongs to the State; specifically, Tennessee State legislation authorizing funding (Public Chapter 554), which stipulated that the land be purchased in Haywood County.

- A project planning team made up of representatives from the Tennessee Department of Economic and Community Development, UT, and the UTRF visited several tracts of land along I-40 in Haywood County. Primary criteria considered for site selection included size, safe visibility and access from the interstate, and the ability to purchase the land.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the existing social, economic, and environmental conditions of the project site and the surrounding areas that might be affected if the proposed project is implemented, and the potential environmental effects that could result from implementing the proposed project or No Action alternatives described in Chapter 2. A discussion of potential cumulative effects is provided in Chapter 4.

3.2 LAND USE AND VISUAL RESOURCES

Land use is defined as the way people develop and use land in terms of the kind of activities that occur in different areas (such as agriculture, residence, industry) [USEPA 2006]. Visual resources are natural and manmade features that give a particular landscape its character and aesthetic quality.

3.2.1 Affected Environment

The project site is located in Haywood County, Tennessee, on 200 acres of land purchased in 2009 by the State of Tennessee and transferred to UT (see Figure 3–1). Crops produced on the site in 2009 consisted of cotton, soybeans, and corn. On November 15, 2010, the Haywood County Commission approved rezoning of the Solar Farm property from Forestry, Agricultural, and Residential (FAR) to Restricted Industrial (I-2) [Haywood County 2010a]. The project site appears to have been cultivated property, pastureland, and wooded since the 1950s. No structures are located on the site. Two houses were located on the project site in the past; however, both structures collapsed years ago (ACI 2009).

The majority of the land surrounding the project site is rural and primarily used for agriculture. The closest residences to the project site are located approximately 0.70 miles west and 0.25 miles north of the project site boundary. Interstate 40 (I-40) was constructed adjacent to the site in the 1960s. The project site is located adjacent to the westbound lanes of I-40 between mile markers 43 and 45 (see Figure 3–1).

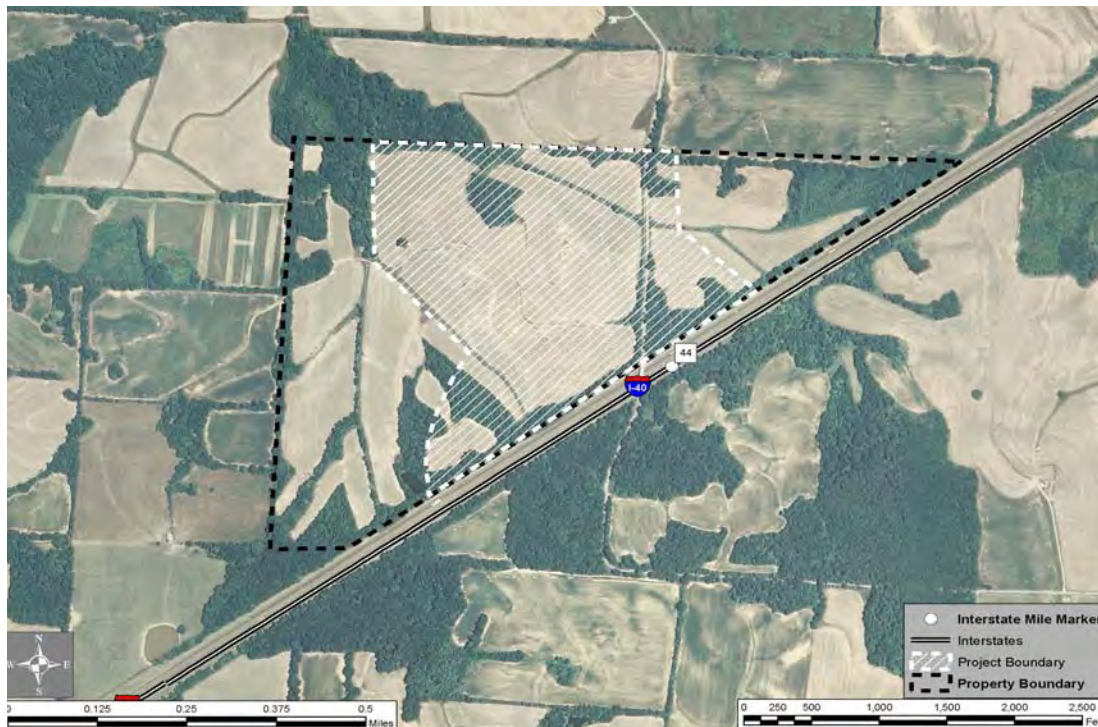


Figure 3–1. Project Site

3.2.2 Environmental Consequences

3.2.2.1 Proposed Solar Farm Project

The project would change the existing land use from agricultural use to restricted industrial use. The primary visual impact would result from the removal of approximately 21 acres of lower-quality deciduous forest and shrub habitat within the project site and the tree line along I-40. The tree removal is necessary for the project site preparation and improvement of the sight lines from I-40 in order to increase the visibility of the Solar Farm PV panels from the Information and Welcome Center.

3.2.2.2 No Action Alternative

The project site is currently zoned for Restricted Industrial (I-2) use within the Haywood County Zoning Map. The visual appearance of the area would not change under the No Action Alternative. No land use or visual impacts would occur as a result of the No Action Alternative.

3.3 AIR QUALITY

Ambient air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed in terms of concentration.

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) [USEPA 2010a] and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare. Tennessee has adopted NAAQS (TDEC 2006). Based on measured ambient air pollutant concentrations, the U.S. Environmental Protection Agency (USEPA) classifies areas of the United States according to whether they meet NAAQS. Those areas demonstrating compliance with NAAQS are considered “attainment” areas, while those that are not are known as “nonattainment” areas. Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise.

3.3.1 Affected Environment

Regional Air Quality

The project site is located in an undeveloped area of Haywood County in western Tennessee. Haywood County is an attainment area for all criteria pollutants (USEPA 2010b).

Haywood County emissions data obtained from the USEPA’s 2002 National Emissions Inventory (NEI) are presented in Table 3–1. The county data include emissions from point sources, area sources, and mobile sources. *Point sources* are stationary sources that can be identified by name and location. *Area sources* are point sources whose emissions are too small to track individually, such as a home or small office building, or are diffuse stationary sources, such as wildfires or agricultural tilling. *Mobile sources* are any kind of vehicle or equipment with a gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and non-road. *On-road* mobile sources consist of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. *Non-road* mobile sources include vehicles such as aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA 2008).

Table 3–1. Haywood County Baseline Emissions

Source Type	Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOCs
Point Sources	193	1457	101	6	206
Non-Road and Mobile Sources	11,199	3,880	6,157	273	1,386
Total	11,392	5,337	6,257	279	1,592

Key: CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ = particulate matter with a diameter of less than or equal to 10 microns; SO₂ = sulfur dioxide; VOCs = volatile organic compounds.

Source: USEPA 2002.

Regional Climate

Climate is important to air quality because weather conditions determine the potential for the atmosphere to disperse emissions of air pollutants. The climate in the region of the proposed project is characterized by mild summers with average temperatures typically in the 70s and cold winters with temperatures usually in the upper 30s. Diurnal ranges in temperature tend to be moderate in the summer and fairly limited in the winter. Rainfall is distributed relatively evenly throughout the year, with December getting the most precipitation (NCDC 2002).

Tennessee averages around 50 days of thunderstorms per year, some of which can be quite severe (LSC 2007). Tornadoes are possible throughout the state; west Tennessee is slightly more vulnerable. On average, the state has 15 tornadoes per year (NCDC 2004). Tornadoes and other extreme weather conditions could be of concern for the proposed project, though no more so than for any building or facility currently in existence or being considered for construction in the region. Precipitation at the site averages approximately 51 inches per year (USDA 1995). Average annual snowfall is approximately 6 inches.

Greenhouse Gases

Greenhouse gases are chemical compounds in the Earth’s atmosphere that trap heat. Gases exhibiting greenhouse properties come from both natural and manmade sources. Water vapor, carbon dioxide, methane, and nitrous oxide are examples of greenhouse gases that have both natural and manmade sources, while other gases, such as those used for aerosols, are exclusively manmade. In the United States, greenhouse gas emissions come mostly from energy use. Greenhouse gas emissions are driven largely by economic growth, fuel used for electricity generation, and weather patterns affecting heating and cooling needs. Energy-related carbon dioxide emissions resulting from petroleum and natural gas represent 82 percent of total U.S. manmade greenhouse gas emissions (EIA 2008).

3.3.2 Environmental Consequences

The focus of the air quality analysis is on installation and construction activities, which would generate most of the emissions associated with the proposed project, and any minor emissions anticipated from the operation of the Solar Farm and Information and Welcome Center. Construction activities would entail emissions from heavy construction machinery, tractor-trailer rigs, and contracted employees’ personal vehicles. To evaluate the air emissions and their projected impact on the region, the emissions associated with the project activities were compared with Haywood County’s total emissions on a pollutant-by-pollutant basis using the 2002 NEI data (USEPA 2002). If total emissions of any pollutant equal 10 percent or more of the region’s emissions for that specific pollutant, there could be potential adverse impacts on air quality. This 10 percent criterion approach is used in the USEPA’s General Conformity Rule as an indicator for impact analysis for nonattainment and maintenance areas. To provide a more conservative evaluation, emissions were compared with the individual county (i.e., Haywood) instead of the Air Quality Control Region. Although Haywood is currently an attainment area for all criteria

pollutants (USEPA 2010b), the General Conformity Rule’s applicability threshold was carried forward to determine the level of effects under the National Environmental Policy Act (NEPA) of 1969.

The U.S. Department of Defense–developed Air Conformity Applicability Model (ACAM) was utilized to provide a level of consistency with respect to emissions factors and calculations. Air emissions estimated using ACAM were compared with the established 10 percent criterion for Haywood County, as represented in the USEPA’s 2002 NEI (USEPA 2002). Emissions generated from construction activities were the focus of the air quality analysis because they are the most likely source of emissions associated with the proposed project; however, operational emissions were calculated as well.

3.3.2.1 Proposed Solar Farm Project

Installation and Construction Emissions

Installation and construction of the proposed Solar Farm and Information and Welcome Center would result in short-term air quality impacts, such as dust generated by clearing and grading activities, exhaust emissions from gas- and diesel-powered equipment, and vehicular emissions associated with the commuting of workers. In this analysis, it was assumed that best management practices (BMPs) and appropriate controls (e.g., wetting, covers) would be used to control fugitive dust. To develop the air quality analysis of installation and construction emissions, certain assumptions were developed. It was assumed that the entire site (104 acres) would be graded and that 20 percent of the area would be paved. The size of the Information and Welcome Center was estimated at 15,000 square feet. Installation and construction activities were assumed to occur within 365 days with grading activities representing 50 percent of that. Estimates of air emissions for the proposed project installation and construction activities are shown in Table 3–2.

Table 3–2. Installation and Construction Emissions

Emission Activities	Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOCs
Grading Equipment	1.25	4.71	0.39	0.48	0.50
Grading Operations	0.00	0.00	79.27	0.00	0.00
Acres Paved	0.00	0.00	0.00	0.00	0.01
Mobile Equipment	6.63	15.80	1.27	1.95	1.44
Residential Architectural Coatings	0.00	0.00	0.00	0.00	0.06
Nonresidential Architectural Coatings	0.00	0.00	0.00	0.00	1.82
Stationary Equipment	44.93	1.16	0.03	0.06	1.68
Workers’ Trips	68.45	3.40	0.57	2.49	3.14
Total	121.26	25.07	81.53	2.49	8.65
Haywood County Emissions	11,392	5,337	6,257	279	1,592
<i>Percentage of County Emissions</i>	<i>1.06</i>	<i>0.47</i>	<i>1.30</i>	<i>0.89</i>	<i>0.54</i>

Key: CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ = particulate matter with a diameter of less than or equal to 10 microns; SO₂ = sulfur dioxide; VOCs = volatile organic compounds (i.e., engine combustion, paints, surface coatings, solvents, asphalt paving).

As shown in Table 3–2, the total installation emissions would not exceed the applicability thresholds and would be less than 10 percent of regional emissions. Impacts on regional air quality would include

short-term, temporary, and localized increases in criteria pollutants during installation activities. These increases would not exceed the applicability thresholds (i.e., USEPA *de minimus* threshold levels for which a conformity determination must be performed, for various criteria pollutants in various areas); thus, minor adverse impacts are expected from the installation activities. BMPs associated with PM₁₀ (particulate matter with a diameter of less than or equal to 10 microns) would be employed to minimize blowing dust.

No impact to the regional climate would be associated with the installation or construction of the proposed project. The use of construction equipment is expected to cause some increase in greenhouse gas (GHG) emissions. The combustion of fossil fuels is considered the primary source of carbon dioxide (CO₂) emissions based on the fuel's carbon content. To a lesser degree, mobile sources emit methane and nitrous oxide during fossil fuel consumption. Construction equipment emits approximately 22.37 pounds of carbon dioxide per gallon of diesel and 19.54 pounds per gallon of gasoline (USEPA 2009). These emission rates can be decreased with less idling and improved maintenance of equipment. The USEPA has released guidelines for the proposed reporting of greenhouse gases (USEPA 2009; 74 *Federal Register* [FR] 68), but there are currently no laws or standards for greenhouse gas emissions.

The CEQ released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA. The draft guidance includes a presumptive effects threshold of 25,000 metric tons of CO₂ equivalent emissions from an action (CEQ 2010). The GHG emissions associated with the Solar Farm project are well below the CEQ threshold.

Operational Emissions

The generation of electricity through the use of emission-free PV arrays is expected to have a net beneficial impact on the emission of combustion-related pollutants. Though data are not available at this time to quantify this impact, the generation of electricity using solar power is expected to offset the need to generate electricity through traditional means, i.e., through combusting fossil fuels (McLamb 2009).

Operation of the Solar Farm would include the use of one 200-kilowatt (kW) diesel-powered emergency generator, which would run approximately 15 minutes per week for maintenance, and in emergency conditions. Emissions associated with day-to-day operation of the Information and Welcome Center would consist of mobile emissions from worker and visitor vehicles, as well as idling semi-tractor trailers. Fourteen permanent employees would be required for the operation of the Information and Welcome Center. Table 3–3 provides annual operational emissions associated with the emergency generator and worker commutes compared with Haywood County baseline emissions. The estimated emissions from idling semi-tractor trailers was based on all 32 truck parking spots being occupied by idling vehicles for an 8-hour period. Total operational emissions (1) would not exceed the applicability thresholds (*de minimis* standards) and (2) would be less than 10 percent of regional emissions.

Table 3–3. Operational Emissions

Emission Activities	Emissions (tons/year)				
	CO	NO _x	PM ₁₀	SO ₂	VOCs
Mobile Sources					
Vehicles	26.06	3.15	15.97	0.19	3.37
Idling Semi-Tractor Trailers	9.71	5.76	0.27	--	1.30
Point Sources					
Emergency Generators	0.07	0.30	0.02	0.02	0.02
Total	35.84	9.21	16.26	0.21	4.69
Haywood County Emissions	11,392	5,337	6,257	279	1,592
<i>Percentage of County</i>	<i>0.31</i>	<i>0.17</i>	<i>0.26</i>	<i>0.08</i>	<i>0.29</i>

Emissions					
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Key: CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ = particulate matter with a diameter of less than or equal to 10 microns; SO₂ = sulfur dioxide; VOCs = volatile organic compounds.

Greenhouse gases that would be emitted from the operation of the Solar Farm and the Information and Welcome Center would include any use of emergency generators and emissions related to vehicle use. Impacts on local or regional air quality from operation of the Solar Farm through implementation of the proposed project would be minor.

Mobile Source Air Toxics

On February 3, 2006, the Federal Highway Administration (FHWA) released “Interim Guidance on Air Toxic Analysis in NEPA Documents” (“Interim Guidance”) [FHWA 2006]. The purpose of this guidance is to advise on when and how to analyze Mobile Source Air Toxics (MSAT) in the NEPA process for highways. This is interim guidance because MSAT science is still evolving. As the science progresses, FHWA will update the guidance. A basic analysis of the potential MSAT emissions impacts of this project was completed in accordance with FHWA’s “Interim Guidance.”

The qualitative assessment presented below has been prepared in accordance with FHWA’s “Interim Guidance,” derived in part from a study conducted by the FHWA, entitled “A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives” (Claggett and Miller 2006). FHWA’s “Interim Guidance” groups projects into the following categories:

- No analysis for projects without any meaningful potential MSAT effects.
- Qualitative analysis for projects with low-potential MSAT effects.
- Quantitative analysis for projects with high MSAT effects.

Examples of projects with low-potential MSAT effects include minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street, or where design year traffic projections are less than 140,000 to 150,000 Average Annual Daily Traffic (AADT).

The highest design year volume AADT associated with the proposed project is estimated to be 52,650. These volumes would be substantially lower than the FHWA criterion. The proposed project therefore meets the definition of a project with low-potential MSAT effects, for which the following analysis is presented.

For the proposed project, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT). According to the USEPA’s MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Emissions would likely be lower than present levels in the design year as a result of the USEPA’s national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of vehicle mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future in nearly all cases.

Under the proposed project, there may be localized areas (i.e., Information and Welcome Center) where ambient concentrations of MSATs could be higher than under the No Action Alternative. However, as

discussed above, the magnitude and duration of these potential increases cannot be accurately quantified due to the inherent deficiencies of current models.

In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the proposed project could be higher relative to the No Action Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). However, on a regional basis, the USEPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause regional MSAT levels to be lower than today.

Substantial construction-related MSAT emissions are not anticipated for this project as installation and construction is not planned to occur over an extended building period. However, installation and construction activity may generate temporary increases in MSAT emissions in the project area.

3.3.2.2 No Action Alternative

There would be no new emissions or changes in air quality over current activities at the project site under the No Action Alternative.

The project would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing-facility, or any other factor that would cause an increase in emissions impacts relative to the No Action Alternative. As a result, the VMT for the No Action Alternative would be the same as the proposed project.

3.4 NOISE

Noise is defined as any unwanted sound. Defining characteristics of noise include sound level (amplitude), frequency (pitch), and duration. Each of these characteristics plays a role in determining the intrusiveness and level of impact of the noise on a noise receptor. The term "noise receptor" is used in this document to mean any person or animal that hears or is affected by noise.

Sound levels are recorded on a logarithmic decibel (dB) scale, reflecting the relative way in which the ear perceives differences in sound energy levels. A sound level that is 10 dB higher than another would normally be perceived as twice as loud, while a sound level that is 20 dB higher than another would be perceived as four times as loud. Under laboratory conditions, the healthy human ear can detect a change in sound level as small as 1 dB. Under most non-laboratory conditions, the typical human ear can detect changes of about 3 dB.

3.4.1 Affected Environment

Ambient noise at the proposed project site consists mostly of rural or natural sounds (e.g., wind and birds), as well as manmade noise from agricultural practices and the adjacent I-40. The site is also located near some other roads in which traffic noise contributes to the ambient noise levels. Generally, noise levels in these types of areas range from 45 to 55 decibels A-weighted (Cavanaugh and Tocci 1998). There are no schools, churches, or hospitals within 2 miles of the site, and the nearest residence is approximately 0.25 miles north of the project site. The area surrounding the project area is dominated by agriculture.

3.4.2 Environmental Consequences

Noise impacts related to installation of the solar panels and construction of the Information and Welcome Center were analyzed by comparing the expected noise levels with a baseline level and its possible effects on people in the area. Construction noise was evaluated for a single construction-site and may be applied to each site. Typical construction equipment was assumed to be used (see Table 3-4).

For purposes of analysis, it was assumed that the primary sources of noise during these activities would be truck and vehicle traffic, heavy earth-moving equipment, and other construction equipment or infrastructure powered by internal combustion engines particularly related to the Information and Welcome Center construction.

Table 3–4. Maximum Noise Levels at 50 Feet for Common Construction Equipment

Equipment Type	Maximum Noise Level (L_{max}) at 50 Feet (dBA, slow)
Compactor (ground)	80
Dozer	85
Dump Truck	84
Excavator	85
Generator	82
Grader	85
Pickup Truck	55
Warning Horn	85
Crane	85

Key: dBA = decibels A-weighted.

Source: USDOT FHwy 2006.

Using the FHWA’s Roadway Construction Noise Model, construction equipment was assumed for construction activities to give noise levels at various distances from the project site. Noise levels were evaluated for receptors in 100-foot increments. Noise abatement measures were not considered in this analysis for a worst-case scenario. The same types of equipment were assumed to be used on each construction-site. Noise levels were calculated as an equivalent noise level (average acoustic energy) over an 8-hour period ($L_{eq(8)}$). The maximum noise level (L_{max}) shows the noise level of the loudest piece of equipment, which is generally the driver of the $L_{eq(8)}$ noise level.

3.4.2.1 Proposed Solar Farm Project

Construction noise would cause a temporary and short-term increase to the ambient sound environment within the affected area. Potential noise sources would include variable pitch and volumes from vehicles and equipment involved in site clearing and grading, creating and/or placing of engineered structures, and conducting interior/exterior finish work. Table 3–5 shows the noise levels expected at receptor distances in 100-foot increments.

Table 3–5. Noise Levels at Specific Distances from the Construction Site

Distance from Construction Site (feet)	Maximum Noise Level (L_{max}) dBA	Equivalent Noise Level ($L_{eq(8)}$) dBA
100	79.0	81.7
200	73.0	75.7
300	69.4	72.2
400	66.9	69.7
500	65.0	67.8

Key: dBA = decibels A-weighted.

Construction noise would cause a temporary and short-term increase to the ambient sound environment. Workers associated with construction activities would be expected to wear appropriate hearing protection as required by the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.). Sustained

exposure to noise levels exceeding 80 dB may result in hearing loss. Personnel within the 500-foot range may be annoyed by the elevated noise levels as it may interfere with conversation and other activities.

Once the proposed project is installed, the Solar Farm would not contribute to the ambient noise of the area. The primary source of noise associated with the operation of the Information and Welcome Center would be from vehicle traffic, which would be similar to other interstate visitor centers.

Implementation of the proposed project would moderately increase the ambient noise levels of the previously undeveloped area. These changes in ambient noise associated with operations are not expected to adversely impact any sensitive receptors. Since there are no sensitive land uses in the project area, the project would not result in any noise impacts.

3.4.2.2 No Action Alternative

Noise from vehicle traffic, agricultural activities, and the natural environment would continue under the No Action Alternative. The land would remain undeveloped and continue to be used for agricultural purposes, and no changes to existing noise levels would occur. The No Action Alternative would have no effect on noise levels at the project site.

3.5 GEOLOGY AND SOILS

3.5.1 Affected Environment

Geology

The area of west Tennessee in which the project site is located is part of the Gulf Coastal Plain that is commonly called the Mississippi Embayment. This embayment is a down-warped trough of Paleozoic-age rocks pitching gently to the south, whose axis roughly parallels the Mississippi River (USGS 1933). This trough is filled with sediments of Cretaceous and Tertiary age. The Tertiary sediments are unconsolidated, irregularly bedded sands, locally interbedded with lenses and beds of clay, silty clay, lignitic clay, and lignite. The Tertiary-age formations nearest to the surface in the vicinity of the site are the Claiborne and Wilcox formations, which may be more than 400 feet in thickness (Hardeman, Miller, and Swingle 1966). These sediments are exposed at the surface in the southeasternmost corner of Haywood County. Elsewhere within the county, including the project site, these formations are overlain by alluvial deposits of Pliocene and Pleistocene age composed of sand, silt, and clay, and loess of Pleistocene age (Miller and Maher 1972). The Pleistocene-age loess is present at the surface at the project site and consists of silt, silty clay, and minor sand, generally colored gray and yellowish-brown. The loess deposits, which vary in thickness, range from 4 to 20 feet in thickness in Haywood County (USDA 1995). This semi-consolidated material was deposited by north winds during the Pleistocene Epoch. Some re-working of the loess by stream systems has probably occurred since the original deposition (Miller and Maher 1972).

The Mississippi River Valley marks the area of Tennessee and the eastern United States with the greatest earthquake activity. This zone (i.e., New Madrid seismic zone) is located within an ancient, failed, intraplate rift in which faulting is present and extremely complex, and largely without surface expression. Since 1973, a total of 108 earthquakes have been recorded within a radius of 62 miles of the project site. These generally have magnitudes in the range of 2.5 to 3.5 (USGS 2010). The nearest local earthquake with an estimated magnitude of 4.4 to 4.8 occurred in 1923 and was centered approximately 30 miles west of the site. At least four earthquakes with epicenters located within 20 miles of the project site have been recorded between 1699 and 1979 (Templeton and Spencer 1980). The intensities of these earthquakes have been magnitude 5.4 or below at their epicenters. Earthquakes of this intensity are widely felt, can cause damage to personal property (e.g., broken dishes, some fallen plaster), but generally result in only slight damage to structures.

Soils

The primary soil association units (General Soil Map Units) across the project site consist of the Loring-Memphis-Adler soil association. Loring-Memphis-Adler association soils generally occupy nearly level-to-rolling topography, are moderately well drained, and consist of loamy soils that formed in thick deposits of loess and in alluvium on dissected uplands and narrow floodplains. Slopes range from 0 to 12 percent for this soil association (USDA 1995).

Although the soils of this area are generally considered to be of the Loring-Memphis-Adler association, Adler soils are not present within the boundaries of the proposed project site. The predominant soils at the proposed project site are of the Collins and Loring series. Loring soils are generally found on undulating-to-rolling hilltops and hillsides. They are very deep, moderately well drained, loamy soils that have a fragipan (dense, cemented layer) in the subsoil. Although Adler soils are commonly found on nearly level floodplains in areas of this soil association, Collins silt loam occupies the drainage ways at the proposed project site. Memphis soils are found in undulating-to-rolling areas on the higher hilltops and hillsides. They are very deep, well drained, loamy soils. Convent silt loam, Grenada silt loam, and Routon silt loam are of minor extent within the site boundaries.

Farmland Protection Policy Act

Prime farmland soils, as defined by the U.S. Department of Agriculture (USDA), are those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and are available for agriculture (NRCS 2010). They have the quality, growing season, and moisture supply needed to economically produce sustained high yields of crops. Prime farmland soils may presently be in use as cropland, pastureland, range land, forestland, or other uses, but do not include soils under urban or built-up areas. The conversion of these soils to industrial and other nonagricultural uses essentially precludes farming them in the foreseeable future. The concern that continued conversion of prime farmland to nonagricultural use would deplete the Nation’s resources of productive farmland prompted enactment of the 1981 Federal Farmland Protection Policy Act (FPPA) [7 U.S.C. 4201 et seq.]. This act set guidelines that require all Federal agencies to identify prime farmland proposed to be converted to nonagricultural use and evaluate the impact of the conversion. Form AD-1006, Farmland Conversion Impact Rating, is used to determine whether a site is farmland subject to the FPPA. This impact rating is based on soil characteristics, as well as site assessment criteria, such as agriculture and urban infrastructure, support services, farm size, compatibility factors, on-farm investments, and potential farm production loss to the local community and county.

The majority of the proposed project site is currently used for agricultural purposes with some wooded areas. The cultivated farmland within the site has most recently been planted in cotton, corn, and soybeans. Soil map units within the proposed project site boundaries that are considered to be prime farmland soils include Collins silt loam, Loring silt loam, and Routon silt loam (USDA 1995). These soil units occupy approximately 20 percent of the proposed project site.

Table 3–6 provides a summary of farming in Haywood County based on the agriculture census data from the USDA for 2007 and a comparison of the 2007 data with the data from 1997.

Table 3–6. Acreage of Farmland and Farming Trends in Haywood County, Tennessee

	Number of Farms, 2007	Percentage of Total Area in Farms, 2007	Land in Farms, 2007 (acres)	Average Size of Farm (acres)	Change from 1997 to 2007		
					Number of Farms	Land in Farms (acres)	Average Size of Farm (acres)
Haywood County	491	62.8	214,336	437	+131	+2,352	-152

Source: USDA 2009.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Solar Farm Project

Under the proposed project, minimal effects to on-site geology and soils are anticipated as a result of construction and operation of the Solar Farm and Information and Welcome Center. The entire project site, as outlined in Figure 3–1, would be cleared and graded to prepare the site. Hazards posed by geological conditions are expected to be minor, and, in general, foundation materials are suitable for light buildings in most places (Parks and Lounsbury 1975). In dry weather, the loess can be easily moved with light machinery at relatively low cost. Large areas can be readily leveled or contoured with bulldozers and land graders. Relatively small volumes of borrow material, including sand and gravel aggregate, may be required for site grading and foundation construction, but these materials would be obtained from local off-site sources. These structures, which would be placed on floating slabs or spread footings, would suffer little settlement distress, although some settling may occur as a result of inadequate compaction, poor drainage, or concrete placement in wet seasons. Although liquefaction of sands during a major seismic event is possible, there may actually be some attenuation or damping of effects by the loess during the passage of earthquake waves (Parks and Lounsbury 1975). Studies conducted in the Memphis area suggest that the loess has a low susceptibility to liquefaction (Van Arsdale and Cox 2000).

Potentially affected soils are generally stable and acceptable for standard construction techniques. Shrink-swell potential for the soils present at the site is considered to be low, which correlates to a change of less than 3 percent (USDA 1995). Excavation and grading activities would result in minor, short-term, localized increases in erosion and sedimentation. The creation of new impervious surface would also result in an increase in storm water runoff and potential soil erosion. Although some new impervious surface would be associated with the solar array, the majority would be created by the Information and Welcome Center facility, parking areas, interstate ramps, and access roads. However, the employment of sound construction techniques, including use of effective soil erosion and sediment control BMPs, would minimize the potential for increased soil erosion, roadway flooding, and associated potential water quality impacts from installation and construction activities. Sound construction techniques include, but are not limited to, adherence to existing laws and regulations (e.g., National Pollutant Discharge Elimination System Permit for Discharges of Stormwater Associated with Construction Activities, which requires submittal of a stormwater pollution prevention plan describing the practices to be used to reduce pollutants in stormwater discharges from the construction-site and the erosion prevention and sediment controls to be implemented during construction), employment of safety practices, use of quality materials, and minimization of errors. Soil stabilization measures and vegetation management measures would reduce the erosion potential from operation of the facility.

A portion of the proposed project site contains prime farmland soils, which, if the project proceeds, would be converted to nonagricultural use, essentially precluding farming in the foreseeable future. The potential impacts on prime farmland soils at the project site were evaluated using Form AD-1006, Farmland Conversion Impact Rating, with NRCS consultation. The assessment included summarizing the total acres of prime farmland to be converted directly and indirectly by the proposed project and assigning a total score for the rating process. The proposed project received a total score of 174, which slightly exceeds the threshold value of 160. Projects with total, combined scores below 160 do not require further analysis. Projects receiving scores totaling 160 or more may have the potential to adversely affect important farmlands. They require that agency personnel consider: (1) use of land that is not farmland or use of existing facilities; (2) alternative sites, locations, and designs that would serve the proposed purpose but convert either fewer acres of farmland or other farmland that has a lower relative value; and (3) special siting requirements of the proposed project and the extent to which an alternative site fails to satisfy the special siting requirements as well as the originally selected site. However, the FPPA does not require federal agencies to alter projects to avoid or minimize farmland conversion. Appendix A contains a copy of the completed Form AD-1006 from NRCS. The state has selected the site for this project; DOE had no role in this decision. The project would convert approximately 0.02 percent

of the farmland in Haywood County to a passive renewable energy facility. This land is already partially impacted by the adjacent interstate highway. The state determined that other sites were not suitable, and the impacts of this minor loss of prime farmland are not significant.

3.5.2.2 No Action Alternative

Under the No Action Alternative, the proposed facility would not be constructed. Therefore, no project-related impacts on geological or soil resources would result. The existing pastureland would remain, and periodic planting and harvesting are expected to continue.

3.6 WATER RESOURCES

3.6.1 Affected Environment

Groundwater

The principal aquifers in the region include, in descending order from the ground surface, the Cockfield Formation, the Memphis Sand, and the Fort Pillow Sand Formation (TVA 2008). All three aquifers occur in Tertiary-age geologic deposits overlain by alluvial deposits of Pliocene and Pleistocene age composed of sand, silt, and clay, and loess of Pleistocene age (Parks and Carmichael 1990a; Parks and Carmichael 1990b).

The Cockfield Formation is the principal source of water in the region for domestic and farm water supplies. The Memphis Sand aquifer is a major source of public and industrial water in western Tennessee (Parks and Carmichael 1990b). It is the source of water for all of the municipalities surrounding the proposed project site, including Brownsville, Ripley, Covington, and Stanton. The Fort Pillow Sand Formation is present throughout Haywood County and most of western Tennessee (TVA 2008). It is a potentially important aquifer in the region but currently is not widely used because of the availability of shallower groundwater in most areas.

The Haywood Utility District operates eight water wells and provides water to Brownsville Water Department and Stanton Water Services (Webbers 2003). Total groundwater withdrawals by Brownsville in 2008 were reported to be 2.7 million gallons per day (MGD), with a capacity of 4.0 MGD (TDECD 2009). The historical groundwater use for Brownsville and other surrounding municipalities indicates regional growth in groundwater withdrawals from the Memphis aquifer of approximately 3 percent per year since 1953 (TVA 2008).

A geotechnical exploration of the Solar Farm project site was completed in September 2010. The study included 30 soil test borings to depths of about 25 feet below the surface. During drilling operations, groundwater was not encountered. Delayed water level measurements indicated that groundwater was present at depths ranging from 18 feet to 22 feet in four of the borings. Groundwater levels are expected to fluctuate with changing climatic conditions.

Surface Hydrology

The project site is located in the watershed of Big Muddy Creek, a tributary to the Hatchie River. The confluence with Big Muddy Creek is about 3 miles downstream of the project site, and the Hatchie is more than 8 miles downstream from the project site. Drainage from the project site flows about 3 miles north into an unnamed tributary to Big Muddy Creek. Big Muddy Creek is on the Tennessee 303(d) list of impaired waters due to physical substrate habitat alterations caused by channelization of streams in the watershed (TDEC 2008).

Surveys conducted by the Tennessee Department of Environment and Conservation (TDEC) Division of Water Pollution Control in September 2009 (TDEC 2009) identified three streams within the project area

(see Figure 3–2). According to TDEC, the hydrology of all three streams has been moderately altered by past agricultural use at the site. Although all three are classified as streams, aquatic organisms (fish, crustaceans, benthic macroinvertebrates, and mollusks) were only present in Channel 3 at the time of the survey. Table 3–7 shows the length of each channel and other selected characteristics of the streams at the project site.

During a field reconnaissance of the project area conducted by the Tennessee Department of Transportation (TDOT) in April 2010, an additional intermittent stream (Channel 4) was identified. Two small ponds (less than 1 acre) were also identified adjacent to the southwestern corner of the project site.



Figure 3–2. Streams and Ecological Areas

Table 3–7. Selected Characteristics of Streams at Project Site

Stream Channel	Length (linear feet)	Aquatic Organisms Present	Past Hydrologic Alteration
Channel 1	1, 843	None observed	Moderate
Channel 2	2, 353	None observed	Moderate
Channel 3	3,151	Fish, crustaceans, benthic macroinvertebrates, mollusks	Moderate
Channel 4 ^a	352	None observed	Moderate
Total	7,347		

^a Identified during Tennessee Department of Transportation field reconnaissance (April 2010).

Source: TDEC 2009.

Wetlands

National Wetland Inventory data indicated the presence of a forested wetland near the northwestern corner of the project site (USFWS 2009). However, a wetland delineation conducted by Brophy-Heineke & Associates in August 2009 indicated that there were no jurisdictional wetlands on the project site (ACI 2009).

Floodplains

Flood Insurance Rate Maps for Haywood County, Tennessee, indicate that there are no special flood hazard areas subject to inundation by the 1 percent annual chance flood on the proposed project site (FEMA 2008). The closest floodplain designated by the Federal Emergency Management Agency is associated with the Big Muddy Creek and Drainage Canal, approximately 3 miles downstream from the site.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Solar Farm Project

Installation and Construction

Surface Water – No long-term, adverse water quality impacts are expected to affect any streams as a result of the proposed project. Construction associated with the Information and Welcome Center could have a direct impact up to 225 linear feet of Channel 1 and 361 linear feet of Channel 2 from the potential installation of culverts. The potentially impacted streams are highly degraded because of channelization, lack of riparian habitat, sediment deposition, and erosion from unstable banks. Installation of the solar array could also indirectly impact these channels due to the increase in surface soil exposure and potential for increased storm water runoff. Much of the water would be expected to be re-absorbed in the soil beneath the panel, although the rate might be decreased. The increase in storm water runoff could increase stream channel flow speed resulting in additional bank erosion and potentially increase probability of flooding. Water quality could be further degraded through increased turbidity and siltation from soil and streambank erosion, runoff, and resuspension of sediments. Contaminant runoff from installation and construction equipment and materials may also adversely affect water quality. The Information and Welcome Center facility, parking areas, interstate ramps, and access roads would also result in new impervious surface and an increase in storm water runoff. The potential impacts on water quality in each flowing channel could occur at the point of installation and construction activities, as well as several hundred feet downstream.

Overall impacts on water quality should be minor and temporary if erosion, runoff, and sedimentation are controlled. Without adequate engineering controls, impacts on water quality would occur. Impacts would be most evident from the onset of installation and construction until disturbed areas are stabilized and revegetated. Potential impacts on water quality should be eliminated within a few weeks to a few months after construction is completed. Impacts on water quality would be minimized by implementing standard construction methods that control stormwater runoff and sediment and soil erosion, prevent soil compaction, and reduce non-point source pollution. During the construction of the project, strict adherence to all applicable provisions of a stormwater pollution prevention plan would also be followed.

Efforts to further minimize impacts on the affected streams would continue throughout the design, permitting, and construction process and erosion and sediment control plans would be included in the project construction plans. TDOT would also implement its Standard Specifications for Road and Bridge Construction, which includes erosion and sediment control standards.

Alterations to streams or other aquatic sites designated as waters of the United States or waters of the state require either individual or general Aquatic Restoration Permits from the State of Tennessee for activities such as installing culverts and utility crossings; individual or nationwide 404 permits from the U.S. Army Corps of Engineers for projects that include the discharge of dredged or fill material into waters of the

U.S. including wetlands; and, where applicable, a TVA 26a permit or letter of no objection. Permit requirements may include compensatory on- or off-site mitigation through the Tennessee Stream Mitigation Program. Construction projects disturbing one or more acres of land require storm water control permits issued by the State of Tennessee pursuant to the National Pollutant Discharge Elimination System. If, during the project development process and final design for the Information and Welcome Center, it is determined that impacts to water resources are unavoidable, TDOT would comply with these and any other applicable permit requirements. These requirements would mitigate any adverse impacts to surface water.

Groundwater – Hazardous materials that could potentially contaminate groundwater would not be used or stored at the site. However, during installation and construction, there would be a small chance of a spill of diesel fuel or hydraulic fluid from installation and construction equipment. These risks would be low due to the small amounts of these materials that would be present on-site; these risks would be further mitigated by implementation of proper emergency response plans and deployment of equipment to quickly contain and clean up any accidental spills.

Operations

Operation of the proposed facilities would require maintenance of the grounds, roadways, and solar infrastructure. This would require periodic mowing and possibly herbicide use to control vegetation around roads and solar arrays. Herbicide use would be controlled in accordance with regulatory requirements and manufacturers' recommendations to avoid introduction of herbicides into the streams or migration into groundwater at the site. Properly installed and maintained storm water control measures (i.e., detention basins) would minimize the impacts of storm water runoff from impervious surfaces. Potential impacts would also become less likely as vegetation covers and stabilizes the site. The on-site sanitary wastewater system would be operated to prevent any adverse impacts to surface or groundwater resources.

Installation of a new groundwater well to provide non-potable water for washing the solar arrays would not have any adverse impact on groundwater. It is expected that the well would draw between 5,800 and 11,620 gallons of water per year from the Memphis sand aquifer. Water from the well would be transported to the solar modules in a truck- or trailer-mounted poly tank or tanker. Nonhazardous wastewater from cleaning the PV modules would be re-absorbed into the ground under the modules. As an alternative to connecting to the public water system, TDOT is considering installation of a well at the site to furnish potable water to the Information and Welcome Center. The well is expected to draw, on average, 10,000 gallons per day (gpd), with a peak draw of 40,000 gpd. For comparison, total groundwater withdrawals by Brownsville in 2008 were reported to be 2.7 MGD.

Wetlands and Floodplains

Three forested wetland areas on the proposed transmission route connecting the Solar Farm to the Dancyville Substation could be minimally impacted (see Figure 2–2). Two of the wetlands are located along a 6.6-mile section of existing CEC ROW that would be rebuilt. The remaining wetland is located on Camp Ground Road where new line construction would be required.

The first wetland is located on Joyners Campground Drive west of Joyners Campground. This wetland is associated with the Muddy Creek Drainage Canal. The large, forested wetland is located on both sides of the road. The existing transmission line crosses the wetland in the ROW of a 161-kV transmission line owned and maintained by TVA. The TVA/CEC ROW is already cleared and maintained.

The second wetland is located on the east side of Yum Yum Road about 800 feet north of the intersection with Hebron Road. This forested wetland appears to be hydrologically isolated. The existing transmission line follows the road beside this wetland.

The third wetland is located on Camp Ground Road about 0.4 miles southeast of the intersection with Albright Road and immediately northwest of a 500-kV TVA transmission line ROW. The wetland is located on both sides of the road and is hydrologically associated with an unnamed tributary to the Muddy Creek Drainage Canal. Part of the wetland has been disturbed by construction of a large pond on the southwest side of the road. The proposed connector line would require new construction within the road ROW.

Wetland impacts are based on National Wetland Inventory data. On-the-ground wetland delineations would be required for any required permit applications. Potential impacts would result from improvements to the transmission line within the existing 6.6-mile ROW and construction within a 2.5-mile section of new ROW. Due to CEC requirements all construction would be conducted along existing roads within the road ROW. To the extent possible existing poles would be used but some new poles would be needed for both the existing and new ROW sections. Wetland impacts are summarized in Table 3–8. Wetland impacts would be limited to vegetation clearing and/or pole replacement. No wetlands would be converted to non-wetland habitat. DOE determined that the proposed action is not a wetland or floodplain action as defined in 10 CFR Part 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements and accordingly no wetland or floodplain assessment was required.

Impacts to the wetland on Joyners Campground Drive would be minimal since the CEC ROW is located within a maintained TVA ROW. CEC-owned poles are located along the road shoulder and may not require replacement.

Impacts to the wetland on Yum Yum Road would also be minimal since the CEC ROW is located along the road’s existing ROW. CEC-owned poles are located along the road shoulder and may not require replacement.

Impacts to the wetland on Campground Road would include potential clearing of up to 0.80 acre of forested wetland. To the extent possible new power poles would be placed in non-wetland areas along the Camp Ground Road shoulder.

Table 3–8. Wetland Impacts Summary

Wetland Location	Proposed Activity	Affected wetland area	Impact	Comments
Joyners Campground Drive	Overbuild on existing line	1,400 linear feet (~0.80 acre)	Previously cleared and maintained by TVA, and CEC; Possible light clearing in ROW; possible pole replacement	Existing CEC ROW, Existing TVA ROW (161-kV)
Yum Yum Road near Hebron Road	Underbuild on existing line	340 linear feet (~0.20 acre)	Possible light clearing in ROW; possible pole replacement	Existing CEC ROW
Camp Ground Road near Albright Road	New Construction	500 linear feet (~0.29 acre)	ROW clearing and pole installation	New ROW on Camp Ground Road
Total	-	2,240 linear feet (~1.29 acres)	-	All impacts anticipated to be minor

3.6.2.2 No Action Alternative

The Solar Farm and Information and Welcome Center would not be built under the No Action Alternative. The site would likely not be developed for any other purpose and could continue to be used for agriculture.

3.7 BIOLOGICAL RESOURCES

3.7.2 Affected Environment

Biological resources, as described in this section, include native or naturalized plants and animals and their habitats. Protected and sensitive biological resources include specific habitats and the plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service or TDEC or that are otherwise protected under Federal or state law.

Existing Habitat

Existing habitat at the project site includes a mix of agricultural and natural habitat (see Figure 3–2). Most of the site is highly disturbed from past and current agricultural activities and contains relatively small areas of natural vegetation. In 2009, most of the site was intensively managed to produce crops of cotton, soybeans, and corn. Natural vegetation is limited to the margins of the site and primarily consists of small patches of deciduous forest, planted loblolly pine, and upland shrub communities. Dominant vegetation within the pastureland areas and along the edge of the cultivated fields includes broomsedge, Japanese honeysuckle, daisy fleabane, bulbous buttercup, and bull thistle. The forested and shrub/scrub areas primarily occur in small fragmented tracts within the agricultural fields, along the stream corridors and fence rows located within the project area. The forested areas include mixed upland hardwood forest in various stages of succession and planted loblolly pine concentrated in a narrow strip on the southeastern side of the site along the I-40 ROW. Dominant canopy species include American elm, slippery elm, and sweetgum. Common sub-canopy species include tree, shrub, and vine species such as red buckeye, mayapple, sourwood, grapevine, eastern red cedar, Chinese privet, and Japanese honeysuckle. The forest floor consists of herbaceous species that include wild onion, daisy fleabane, river birch broomsedge, poison ivy, bulbous buttercup, and bull thistle. These clusters of semi-natural habitat are of low quality because of their small size, past disturbance, and scattered distribution across the site.

Wildlife around the project site includes species that adapt well to disturbance and the presence of humans and that are typically found in rural, agricultural areas of western Tennessee. Examples include small rodents, groundhogs, birds such as starlings and pigeons, opossums, raccoons, small reptiles, white-tailed deer, and turkey.

Threatened and Endangered Species

No federally listed threatened or endangered species are known to occur within the project area. A TDEC database search was conducted by TDOT in April 2010 to ascertain if any state-protected species are known to occur within a 1- to 4-mile radius of the project area. Collection records from TDEC indicate that no state-listed species occur within 1 mile of the proposed project. However, one state-listed threatened species, the prairie false foxglove, was recorded to be known to exist within 4 miles of the project area. This species and its associated habitat were not identified during field reconnaissance conducted by TDOT-contracted biologists in April 2010.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Solar Farm Project

New facilities and utility infrastructure improvements for the proposed Solar Farm and Information and Welcome Center would be located in previously disturbed, cultivated areas of the site. Very little undisturbed land would be affected by the proposed project. The installation and operation of the Solar Farm and Information and Welcome Center would occur on the site currently mostly occupied by cotton, soybean, and corn fields. Approximately 21 acres of lower-quality deciduous forest and shrub habitat within the project site and the tree line along I-40 would be removed as part of the project site preparation.

Animals and plants that occur on and in the vicinity of the project site are those adapted to human disturbance and impacted environments. Displacement and mortality of individual wildlife may occur during project construction activities. Although roadway mortality is generally not believed to substantially affect animal populations under normal conditions, if the population is experiencing other sources of stress such as disease or habitat degradation, then traffic-related mortality can contribute to the demise of the population. Since the Solar Farm is adjacent to an existing interstate, noise is already a factor in these habitats.

The proposed route for the connection to the CEC distribution grid would require some limited tree trimming and clearing within the 6.6-mile existing ROW and tree removal within a 2.5-mile section of new ROW. Tree trimming and removal will occur within 12.5 feet of pole centerlines (25 feet total). Standard tree-clearing practices would be conducted by CEC as part of the utility connection activities.

Threatened and Endangered Species

The activities associated with the proposed project would not have any indirect or direct effects on any threatened or endangered species. Copies of the correspondence between TDOT and the U.S. Fish and Wildlife Service regarding potential threatened and endangered species and habitats at the project site are included in Appendix A.

3.7.2.2 No Action Alternative

No adverse impacts on biological resources or changes in the baseline conditions would occur as a result of the No Action Alternative, since the project would not be built.

3.8 CULTURAL RESOURCES

In accordance with section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.), TDOT's cultural resource staff surveyed the project site in compliance with the regulations set forth in Title 36 of the *Code of Federal Regulations*, Part 800. The purpose of this survey was to identify any resources either included in or potentially eligible for inclusion in the National Register of Historic Places (NRHP). The area surveyed included land needed for the proposed project, additional ROW, as well as areas that could possibly be affected by changes in air quality, noise levels, setting, and land use.

3.8.1 Affected Environment

Archaeological Survey

TDOT archaeologists researched Tennessee Division of Archaeology site records for the proposed project area. The records search indicated no previously recorded archaeological sites within or in the immediate vicinity of the proposed project. TDOT archaeologists also conducted a field survey at the site that included a pedestrian survey and limited shovel testing. The survey encountered no artifacts or other evidence of archaeological resources at the site. The TDOT archaeologist determined that the likelihood of any undetected archaeological resources at the site is very low.

Architectural/Historical Survey

TDOT historians reviewed the survey records of the Tennessee Historical Commission to determine if any previous architectural surveys had identified any historic properties in the area. The Tennessee Historical Commission has surveyed properties in Haywood County, but has not conducted a survey of the project site, and no properties listed in the NRHP are located on the project site. TDOT historians conducted a field review of the area for potential historic resources. Although access to I-40 would be through a closed system, TDOT historians surveyed a wide area of over one mile in each direction from

the project site. TDOT historians did not identify any properties within this area that merited further evaluation of NRHP eligibility. No properties in the project area of potential effect are currently included in the NRHP nor have any been determined to be eligible for inclusion. The field survey mentioned above did not identify any previously unrecorded cultural resources that required further NRHP evaluation.

3.8.2 Environmental Consequences

TDOT contacted the Haywood County Mayor, Franklin Smith; American Indian tribes or representatives; and individuals or organizations that might be interested in the proposed project. In addition, DOE contacted the TN-SHPO and federally recognized tribes in the area. Copies of the correspondence between DOE, TDOT, and the TN-SHPO and a list of representatives, organizations, and individuals contacted are presented in Appendix A.

3.8.2.1 Proposed Solar Farm Project

No properties in the project area of potential effect are currently included in the NRHP nor have any been determined to be eligible for inclusion. Therefore, no impact would occur on historic, archaeological, or American Indian resources as a result of the proposed project. The TN-SHPO has concurred with the determination and finding that no historic properties would be affected by the Solar Farm project.

In the unlikely event of an unexpected discovery of cultural deposits during installation/construction of the proposed project, work would cease in the area of discovery, an appropriate TN-SHPO authority and archaeologist would be contacted, and measures would be taken to identify and protect the resource.

3.8.2.2 No Action Alternative

No impact would occur on historic, archaeological, or American Indian resources (if any) as a result of the No Action Alternative.

3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.9.1 Affected Environment

The region of influence (ROI) for this analysis includes Haywood and Fayette Counties and the city of Brownsville. The proposed Solar Farm and Information and Welcome Center site is located along I-40 near the border between these two counties. Fayette County is also included in the Metropolitan Statistical Area (MSA) for Memphis, Tennessee (OMB 2009).

Demographic and Economic Characteristics

The largest industry in Haywood County is agriculture. Haywood County is the largest cotton-producing county in Tennessee. In 2008, Haywood County produced 189,000 bales of cotton on 103,000 acres. Soybeans and corn are Haywood County's second and third largest produced crops. Agriculture and agribusinesses contributed more than \$130 billion to Haywood County in 2004 (Haywood County 2009).

Table 3–9 summarizes population, per capita income, and wage and salary employment in Haywood and Fayette Counties from 2003 to 2007, the last year for which U.S. Bureau of Economic Analysis figures are available. In the region, population has increased at an average rate of about 2 percent per year, while employment rose from 26,847 in 2003 to 31,723 in 2007. Per capita income grew from \$25,592 to \$30,145 over the same period, generating a total county income of \$1.7 billion in 2007. For comparison, the Memphis MSA included a population of 1,279,120 and total employment of 821,449 in 2007 (BEA 2009).

Table 3–10 shows the estimated distribution of minority populations in Fayette and Haywood Counties in 2008. For the purposes of this analysis, a minority population consists of any geographic area in which minority representation is greater than the national average of 30.7 percent. Minorities include individuals classified by the U.S. Census Bureau as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic or Latino, and those classified under “two or more races.” Hispanics may be of any race and are excluded from the totals for individual races to avoid double counting. Based on 2008 Census Bureau estimates, minorities represented 31.0 percent of the total Fayette County population and 54.4 percent of the total Haywood County population, compared with the national average of 30.7 percent. Black or African-American residents represented 26.6 percent of the population in Fayette County and 49.2 percent of the population in Haywood County (Census 2009).

Table 3–9. Demographic and Economic Characteristics: Haywood and Fayette Counties, Tennessee

County	2003	2004	2005	2006	2007	Annual Growth 2003–2007 (percentage)
Haywood						
Population	19,459	19,573	19,381	19,256	19,129	-0.43
Per capita income (\$)	21,750	21,725	23,025	24,275	24,126	2.63
Total employment	8,396	8,503	8,531	8,867	8,815	1.22
Fayette						
Population	32,026	33,140	33,993	35,730	37,135	3.77
Per capita income (\$)	27,926	27,991	29,952	31,870	33,247	4.46
Total employment	18,451	19,459	20,835	21,650	22,908	5.56
Region Total						
Population	51,485	52,713	53,374	54,986	56,264	2.24
Per capita income (\$)	25,592	25,663	27,437	29,209	30,145	4.18
Total employment	26,847	27,962	29,366	30,517	31,723	4.26

Source: BEA 2009.

Table 3–10. Estimated Racial or Ethnic Distribution for Solar Farm Region of Influence Population: 2008

Race or Ethnic Group	Fayette County		Haywood County	
	Number	Percentage	Number	Percentage
Not Hispanic or Latino				
White	26,343	69.0	8,674	45.6
Black or African American	10,158	26.6	9,364	49.2
American Indian or Alaska Native	52	0.1	22	0.1
Asian	484	1.3	37	0.2
Native Hawaiian and Other Pacific Islander	3	0.0	3	0.0
Two or More Races	369	1.0	98	0.5
Hispanic or Latino ^a	764	2.0	826	4.3
Total	38,173	100.0	19,024	100.0

^a May be of any race. Those classified as Hispanic or Latino are excluded from other categories to avoid double counting.

Source: Census 2009.

Because the proposed project would include a relatively small land area, impacts may be limited to the area immediately surrounding the site. Therefore, it is also important to examine the three census tracts closest to the facility. These include Tract 9808 in Haywood County and Tracts 602 and 603 in Fayette County. Although current estimates are not available at the tract level, as of the 2000 census, minority populations represented 55.3 percent of the total in Tract 9808, 38.4 percent in Tract 602, and 58.1 percent in Tract 603 (Census 2000a). For comparison, minorities represented 21.0 percent of the population in Tennessee (Census 2000a). No federally recognized American Indian groups live within 50 miles of the proposed project site.

According to the 2000 census, 12.4 percent of the U.S. population and 13.5 percent of the Tennessee population had incomes below the poverty level in 1999 (Census 2000b). In this analysis, a low-income population consists of any census tract in which the proportion of individuals below the poverty level exceeds the national average. Within the ROI, 14.3 percent of the population in Fayette County and 19.5 percent of the population in Haywood County had incomes below the poverty level in 1999. Among the census tracts closest to the site, 21.0 percent of the population in Tract 9808, 13.0 percent in Tract 602, and 16.9 percent in Tract 603 had incomes below the poverty level (Census 2000b).

3.9.2 Environmental Consequences

3.9.2.1 Proposed Solar Farm Project

This section assesses the potential socioeconomic impacts of the proposed project.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires agencies to identify and address disproportionately high and adverse human health or environmental effects its activities may have on minority and low-income populations. Even though minority communities are located near the proposed Solar Farm site, no high and adverse human health impacts are anticipated as a result of the construction or operational phases of the proposed project, and therefore no disproportionate impacts on minority or low-income populations are expected.

Employment and Income

It is anticipated that the Solar Farm project would create fewer than 20 direct, full-time-equivalent jobs. This figure represents a negligible increase (less than 1 percent) over 2007 total employment in the ROI, as shown in Table 3–10. Haywood and Fayette Counties are also within commuting distance of the Memphis MSA, and employees could commute from this wider area. The new employment would represent an even smaller change (less than 0.1 percent) compared with 2007 employment in the Memphis MSA. As with most building projects, the associated construction employment would be limited and temporary and does not represent a permanent change in local employment. For Stage 1 of the Information and Welcome Center, TDOT estimated that 20 workers per day would be needed for the entire 365-day construction period. For the Solar Farm, it is estimated that about 17 workers per day would be needed for the entire 7-month construction period. At its peak, the project might employ up to 50 workers during the installation of the solar array. Even at the peak of installation and construction, the combined employment impact of the project would represent a negligible change (less than 0.1 percent) compared with 2007 employment levels in the Memphis MSA. During most of the project, the average level of construction employment is expected to be much lower.

Indirect employment impacts are expected to be similarly small. Changes in regional income and economic activity due to the proposed project would depend on the actual compensation paid, but are expected to be proportional to the number of jobs generated and provide, at most, minor economic benefits to the ROI.

Population

Because the small number of jobs estimated to be created due to the proposed project could be filled from the local workforce, no impact on population in the ROI is anticipated.

3.9.2.2 No Action Alternative

Under the No Action Alternative, there would be no major change in anticipated population, employment, or income, and no disproportionate effect on minority or low-income populations within the ROI.

3.10 UTILITIES

3.10.1 Affected Environment

Brownsville Utilities provides the city of Brownsville and parts of Haywood County with electricity, water, wastewater, natural gas, and propane utilities. Additional electricity is provided to Haywood County by CEC and Southwest Tennessee Electric Membership Corporation (STEMC). No utility infrastructure is located on the proposed project site.

Electricity

No electricity infrastructure is currently present on the proposed project site. Electricity in the area is distributed via 13.2-kilovolt (kV) lines by CEC, which purchases its electricity from TVA. The two closest substations to the project site are Longtown Substation, located to the southwest, and Dancyville Substation, located to the southeast. TVA power line ROWs (500-kV and 161-kV) are located within the potentially affected area south of I-40 and the project site.

Natural Gas

Natural gas in the area is supplied by Brownsville Utilities. The natural gas is purchased from the Tennergy Corporation and is transported via Williams Pipeline. No natural gas lines are located on the Solar Farm property or in the immediate vicinity. The closest natural gas tie-in is located between I-40 Exits 42 and 47 at Douglas Road.

Potable Water

Potable water in the vicinity of the project site is provided by Brownsville Utilities. Brownsville's water source is groundwater from a sand aquifer. Water is pumped from the aquifer via eight groundwater wells, and the utility department operates water treatment plants in Brownsville and Stanton. The capacity of the Stanton plant is 0.7 MGD. Current consumption is approximately 0.09 MGD. The Stanton plant has two storage tanks (75,000 gallons and 250,000 gallons). No water lines are located on the project site or in the immediate vicinity. The closest water line tie-in is located between I-40 Exits 42 and 47 at Douglas Road.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Solar Farm Project

Electricity

Electricity generated by the Solar Farm would be transmitted directly to the CEC grid. Power would be provided by CEC to the Information and Welcome Center. The monthly demand from the Information and Welcome Center is estimated to be 50,000 kilowatt-hours, with a peak demand of 81 kW. All heating and hot water in the Information and Welcome Center would be provided by electricity. This additional

demand from either CEC or STEMC is expected to be negligible because both suppliers have sufficient capacity.

The initial generating capacity of the Solar Farm would be approximately 5 megawatts (MW), with future expansion, as feasible, based on-site conditions and revenue received from power generation. Electricity from the solar array would enter the CEC distribution system. A proposed 9.1-mile route has been selected to connect the Solar Farm with the Dancyville Substation. The UTRF and CEC would rebuild, re-conductor, and extend existing overhead distribution lines from the substation to the project site. Additional details on the selected route and upgrades are presented in Section 2.1.1.2.

Power generated by the Solar Farm would be purchased by TVA, which currently has approximately 300 kilowatts of solar-generating capacity (TVA 2009). TVA would purchase the power through a Power Purchase Agreement negotiated with the UTRF.

Natural Gas

No natural gas would be required or supplied to the project site to support the Solar Farm or Information and Welcome Center.

Potable Water

Potable water usage for the Information and Welcome Center is anticipated to be 10,000 gpd, with a peak of approximately 40,000 gpd. It is assumed that a new water supply line would be installed to connect with the existing water supply provided by Brownsville Utilities. To make this connection, a new line would need to run from the nearest supply point, located between I-40 Exits 42 and 47 at Douglas Road, to the project site. As an alternative to connecting to the public water system, TDOT is considering installation of a well at the site to furnish potable water to the Information and Welcome Center. The well is expected to draw, on average, 10,000 gpd, with a peak draw of 40,000 gpd. Potable water use may be reduced by incorporating renewable and sustainable building designs, such as harvesting rainwater and storing it in an underground cistern.

Non-potable Water

A groundwater well would be needed on the Solar Farm site to provide water for washing the solar modules. The solar array would be washed once per year. The estimated number of gallons that would be needed to wash 5 MW worth of panels would range from 5,800 to 11,620 gallons (approximately one-quarter to one-half gallon per panel; 4,648 modules in each 1-MW block). Approximately 2,000 modules could be washed per day.

Wastewater

It is anticipated that the sanitary wastewater generated from the Information and Welcome Center (10,000 gpd, with a peak of 40,000 gpd) would be treated on-site, and no connection to the public sanitary sewer system would be required. The Information and Welcome Center would apply a decentralized on-site treatment using such methods as a re-circulating sand filter with a subsurface treatment and disposal system, spray/drip irrigation, constructed wetlands, or a packaged treatment plant. It is also expected that waterless urinals and self-composting toilets would be incorporated into the building design. Leachate from the toilets would either be distributed in landscaped areas via a subsurface drip irrigation system, or a traditional septic field would be utilized. The applicable permit would be obtained prior to the installation and operation of this system. Nonhazardous wastewater from cleaning the PV modules would be re-absorbed into the ground under the solar array.

3.10.2.2 No Action Alternative

If the No Action Alternative is implemented, there would be no impact on utilities since there is no existing utility infrastructure located at the proposed project site. However, not constructing the Solar Farm would prevent the direct and indirect benefits associated with solar PV electricity production from being realized.

3.11 TRANSPORTATION

3.11.1 Affected Environment

Existing roads near the project site include the following (see Figure 3–3):

- **Interstate 40.** This four-lane section of I-40 is a major east/west route connecting the Memphis metropolitan area with middle and eastern Tennessee. It is classified as a Rural Interstate, with access control by TDOT. It also carries significant truck traffic, as it is the main east/west route for goods movement by truck.
- **Camp Ground Road.** Camp Ground Road is a two-lane highway with traffic volumes of less than 100 vehicles per day.
- **Allbright Road.** Allbright Road is a two-lane road with low traffic volumes. The site is currently accessed from Allbright Road. Allbright Road currently crosses I-40 via an overpass.



Figure 3–3. Transportation Routes

Table 3–11 describes Level of Service (LOS) characteristics. LOS “A” is considered free-flow conditions, while LOS “F” represents congested conditions, with varying levels in between. Agency policies should dictate what an acceptable LOS is for a particular highway, but LOS C is often considered to be acceptable, whereas LOS D may not be acceptable.

The AADT for I-40 is currently 25,900 (year 2009). The AADT is projected to be 36,800 by the year 2011 and 52,650 by the year 2031 (TDOT 2010).

Table 3–11. Levels of Service Classifications and Conditions

LOS	Traffic Flow Conditions
A	Free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
B	Reasonably free-flow operations. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to the driver is still high.
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension because of the additional vigilance required for safe operation.
D	Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
E	At lower boundary, the facility is at full capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
F	Breakdowns in traffic flow. The number of vehicles entering the highway section exceeds the capacity or ability of the highway to accommodate that number of vehicles. There is little or no room to maneuver. The driver experiences poor levels of physical and psychological comfort.

Key: LOS = Level of Service.

Source: TRB 2000.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Solar Farm Project

The project site would be accessed via Allbright Road during installation and construction; after the Solar Farm and Information and Welcome Center are complete, Allbright Road would be closed on the south side of I-40 and the northern boundary of the project site. Following installation, a controlled maintenance access to the project site from Allbright Road would be constructed. Access to and from the Information and Welcome Center would only be provided from I-40 via exit ramps, and there would be no break in the ROW access to adjacent properties or roads.

Installation and Construction

Project installation and construction would include additional trips on the local transportation network based on additional construction employees, material deliveries, and equipment deliveries. The potential impacts during installation and construction would likely be minimal due to the existing spare capacity of the roadway network. Short-term traffic via Camp Ground Road to Allbright Road would increase slightly during installation of the Solar Farm and construction of the Information and Welcome Center.

Operations

When installation and construction of the project is completed, vehicular traffic would have direct access to the project site from I-40. I-40 would not be negatively impacted by the traffic associated with the proposed project. Allbright Road would be closed on the south side of I-40 and the northern boundary of the project site. Camp Ground Road is a two-lane highway with fewer than 100 vehicles per day; therefore, substantial spare capacity exists on this roadway to accommodate future traffic.

The following assumptions were also made to determine the traffic volumes that would be accessing the project site from I-40 (TDOT 2010):

- The number of estimated visitors to the Information and Welcome Center would be 800,000 per year (all from current pass-by trips).
- There would be approximately 2.25 persons per vehicle.
- The Information and Welcome Center would be open 365 days per year.
- The proportion of traffic during the peak hour would be 0.15.
- The vehicle composition would comprise 77 percent passenger cars, 3 percent vehicles with trailers, 10 percent trucks, and 10 percent buses.

Based on these assumptions, the Information and Welcome Center driveway is expected to have 487 vehicles per day (westbound direction only) and 88 vehicles per hour (peak hour volume) [TDOT 2010]. Given the additional travel on the ramps and driveway for the Information and Welcome Center, VMT in the project area would increase under the proposed project despite the fact that traffic volumes along I-40 would not change. The additional travel distance through the Information and Welcome Center would increase the VMT for the years 2011 and 2031 under the proposed project.

I-40 is classified as a Rural Interstate. The existing LOS is A. The LOS is projected to decrease to LOS B in the year 2011 and LOS C in the year 2031 because of regional growth. Therefore, I-40 would operate at an acceptable LOS under the proposed project up to the year 2031.

The LOS for the merge/diverge ramp operations for the Information and Welcome Center was also evaluated. The analysis showed that both the merge and diverge ramps would operate at a LOS B in the year 2011 and a LOS C in the year 2031. Based on this analysis, traffic operations are at an acceptable LOS for the on and off ramps for the Information and Welcome Center.

In summary, as shown by the traffic analysis, the addition of access to and from the Solar Farm and Information and Welcome Center would have a negligible impact on interstate or ramp traffic operations.

3.11.2.2 No Action Alternative

Under the No Action Alternative, the project would not be implemented. Consequently, there would be no impact on traffic or transportation.

I-40 is classified as a Rural Interstate. The existing LOS is A. The LOS is projected to decrease to a LOS B in the year 2011 and a LOS C in the year 2031 due to regional growth. Therefore, I-40 would operate at an acceptable LOS under the No Action Alternative through the year 2031.

3.12 WASTE MANAGEMENT

3.12.1 Affected Environment

The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901 et seq.). In general, hazardous materials include substances that, because of their quantity; concentration; or physical, chemical, or infectious characteristics; may present substantial danger to public health or the environment when released into the environment.

Storage and usage of hazardous materials are regulated by a variety of statutes, including the Emergency Planning and Community Right-to-Know Act (42 U.S.C. 116 et seq.) and RCRA. Hazardous wastes that are regulated under RCRA are defined as any solid, liquid, contained gaseous, or semisolid waste or any combination of wastes that exhibits one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity or is listed as a hazardous waste under Title 40 of the *Code of Federal Regulations*, Part 261.

On August 6, 2009, as part of a Phase I environmental site assessment, a registered environmental property assessor conducted a site visit at the project site. Three areas of previous solid waste dumping were found at the project site during the visit. The dumping did not appear to be recent but included numerous old tires, several empty agricultural chemical containers, empty and rusted 55-gallon barrels, miscellaneous pieces of metal, and other debris. Two of the areas included miscellaneous debris and old roofing shingles. There was no visible evidence that the dumped waste was hazardous, but the finding was characterized as a solid waste disposal issue (ACI 2009). It is assumed that these solid wastes would be removed as part of the project.

Solid waste in Haywood County is managed by the Haywood County Solid Waste Department located just outside of Brownsville. The Department has a Transfer Station and a Class III–IV landfill (Table 3–12). The Class III–IV landfill accepts construction and/or demolition scrap and yard waste. Household and municipal waste is accepted by the Transfer Station where it transported to an out of county landfill.

Table 3–12. Local Landfill Capacity

Facility Information	Haywood County Landfill
Location	Brownsville, Haywood County, Tennessee
Acreage	200 acres
Estimated Life Expectancy	Over 100 years
Average Throughput	6,500 tons per year
Permitted Waste Types	Construction and/or demolition scrap and yard waste
Tipping Fee (\$/ton)	Approximately \$36.00 construction and demolition

Source: Neal 2010.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Solar Farm Project

Nonhazardous Waste Management

Installation and construction would result in the generation of nonhazardous solid wastes, including construction materials for buildings and concrete and asphalt debris. The estimated maximum volume of waste to be generated during the installation of the Solar Farm would be 200 cubic yards. The estimated maximum volume of waste to be generated during the construction of the Information and Welcome Center would be 60 cubic yards. Additionally, 2,050 cubic yards of material associated with the demolition of the Allbright Road bridge across I-40 would be generated. Construction waste would be generated over the 365-day life of the project. Management of construction debris would include recycling and reuse when possible. The remaining construction debris would be transported to the Haywood County Landfill for disposal.

Installation and construction activities would comply with Federal, state, and local statutes and regulations related to solid waste. It is not anticipated that land-clearing and grading activities or construction of any basins, channels, and ponds would generate a need for disposal of soil and woody waste. The grading plan incorporates a design allowing for reuse of all excavated or graded soil. Topsoil

would be handled separately to ensure its reuse for final grade finish, where possible. Woody wastes would either be chipped and re-used on-site as mulch or burned in place under an open burning permit if applicable.

Project operations and maintenance would also generate nonhazardous solid wastes typical of solar PV power generation facilities. These wastes would include wood, metal bands, cardboard packing material, and other miscellaneous solid wastes. These materials would be collected for recycling or transfer to a landfill site in accordance with applicable regulatory requirements.

Hazardous Waste Management

Installation of the Solar Farm and construction of the Information and Welcome Center would be conducted using normal installation/construction methods, which would limit, to the extent possible, the use of hazardous materials. Petroleum, oil, and lubricants would be used in the operation and maintenance of heavy construction equipment and vehicles, and there would also be some use of paints, solvents, and cleaners. Otherwise, only nonhazardous waste would be generated from installation and construction activities.

No hazardous materials would be used as part of operational and maintenance activities of the Information and Welcome Center. The PV panels in the solar array may contain hazardous materials and, although the panels are sealed under normal operating conditions, there is the potential for environmental contamination if damaged or improperly disposed of during decommissioning.

In all cases, hazardous materials would be stored and handled in accordance with all Federal, state, and local regulations and codes. Incompatible materials would be stored in separate storage and containment areas. Containerized hazardous materials would be stored in original containers appropriately designed for the individual characteristics of the contained material. Maintenance and service personnel would be trained to handle these materials.

Additionally, BMPs that prevent or minimize releases to the environment would be used in all chemical storage areas, and any released regulated materials would be immediately cleaned up, managed, and properly disposed of in accordance with all applicable standards. Spills on highways are a potential source of water quality degradation and a possible public health hazard. The Tennessee Emergency Management Agency (TEMA) has the responsibility and authority for coordination of all state and local agencies during accidents involving hazardous materials.

3.12.2.2 No Action Alternative

Under the No Action Alternative, the project would not be implemented. Consequently, there would be no impacts on waste management.

3.13 PUBLIC AND OCCUPATIONAL HEALTH AND SAFETY

This section addresses public health and safety associated with current and proposed operations at the proposed facility, as well as installation and construction activities associated with the proposed project. Public health issues include emergency response and preparedness to ensure operational mishaps do not pose a threat to public health. Safety issues related to facility operations include occupational (worker) safety in compliance with Occupational Safety and Health Administration (OSHA) standards; these safety standards are also applicable to installation and construction activities.

3.13.1 Affected Environment

The project site is located on land previously used for agriculture. Since public access is restricted, there are no current public health and safety issues. The Phase I environmental site assessment conducted in 2009 (ACI 2009) did not identify any public health hazards associated with the property.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Solar Farm Project

Implementation of the proposed project would slightly increase the short-term safety risk associated with contractors constructing the proposed facilities at the proposed site. However, as part of normal operations, contractors would be required to establish and maintain a safety plan for installation and construction activities in compliance with OSHA requirements. Typical best practices for site safety would serve to minimize any potential safety risks in this regard. Examples of these practices include (1) implementing procedures to ensure that equipment guards, housekeeping, and personal protective equipment are in place; (2) establishing programs and procedures for lockout, right-to-know, confined space, hearing conservation, forklift operations, etc.; (3) conducting employee safety orientations; (4) performing regular safety inspections; and (5) developing a plan of action for any identified hazards.

For members of the public, no unique or serious public health and safety hazards have been identified that would result from the operation of the Solar Farm or the Information and Welcome Center. It is expected that access to the Solar Farm array would be restricted and controlled through the use of fencing or other measures. Visitors utilizing the Information and Welcome Center would be exposed to hazards that could cause slips, trips, and falls that are typically present at any public facility.

Emergency response would include the Tennessee Highway Patrol and local law enforcement, fire, and emergency responders from Haywood County and, if necessary, the City of Brownsville. Emergency responders would access the Information and Welcome Center from the interchange access road. The Solar Farm could also be accessed via the local road network and the access road for the site. TEMA has the responsibility and authority for coordination of all state and local agencies in the case of any accidents on the site property involving hazardous materials. Staff at the Information and Welcome Center would be trained on the proper response in case such an accident were to occur.

3.13.2.2 No Action Alternative

The No Action Alternative would not result in any additional public health and safety impacts within or adjacent to the Solar Farm project area beyond the scope of normal conditions and influences at these locations.

3.14 INTENTIONAL DESTRUCTIVE ACTS

DOE requires consideration of the impacts of intentional destructive acts (acts of sabotage or terrorism) in its EAs and environmental impact statements. Installation, construction, and operation of the proposed project would not involve the transportation, storage, or use of radioactive, explosive, or toxic materials. However, the PV panels in the solar array may contain hazardous materials and, although the panels are sealed under normal operating conditions, there is the potential for environmental contamination if damaged. The project would offer a minimally attractive target of opportunity for an intentional destructive act. In the unlikely event an attack were to occur, its consequences would be unlikely to have an adverse impact on human life, health, or safety. An intentional destructive attack could cause a loss of the power contributed to the grid. This loss of power would result in only a minor nuisance because it is a small part of the overall generation capacity in the region. Measures to control public access such as fencing would minimize the potential for an intentional destructive act to occur.

4 CUMULATIVE IMPACTS

Cumulative impacts are those that may result from the incremental impacts of an action when considered additively with the impacts of other past, present, and reasonably foreseeable future actions. Cumulative impacts are considered regardless of the agency or person undertaking the other actions (40 *Code of Federal Regulations* [CFR] 1508.7; CEQ 1997) and can result from the combined or synergistic effects of actions that are minor when considered individually over a period of time.

Some commentors have asserted that the proposed West Tennessee Megasite is a reasonably foreseeable future action pertinent to the analysis of cumulative impacts for this project. The West Tennessee Megasite is a proposed industrial site that might be developed by the State of Tennessee (Haywood County 2010b). It was certified by TVA in 2006 as an automotive Megasite and certified by the Commissioner of the Tennessee ECD as a State Megasite in 2009.

The West Tennessee Megasite contains approximately 3,840 acres owned by the State of Tennessee and Haywood County. The core site contains 1,741 acres; 636 acres would be a rail corridor, 470 acres would be a supplier park/environmental mitigation area, and an additional 993 acres of buffer area lie south of the core site. Figure 4–1 shows the location of the proposed West Tennessee Megasite in relation to the location of the proposed West Tennessee Solar Farm (Solar Farm) and Tennessee Department of Transportation Information and Welcome Center. The West Tennessee Megasite property boundary is located approximately 1,030 feet from the northwest corner of the Solar Farm boundary.

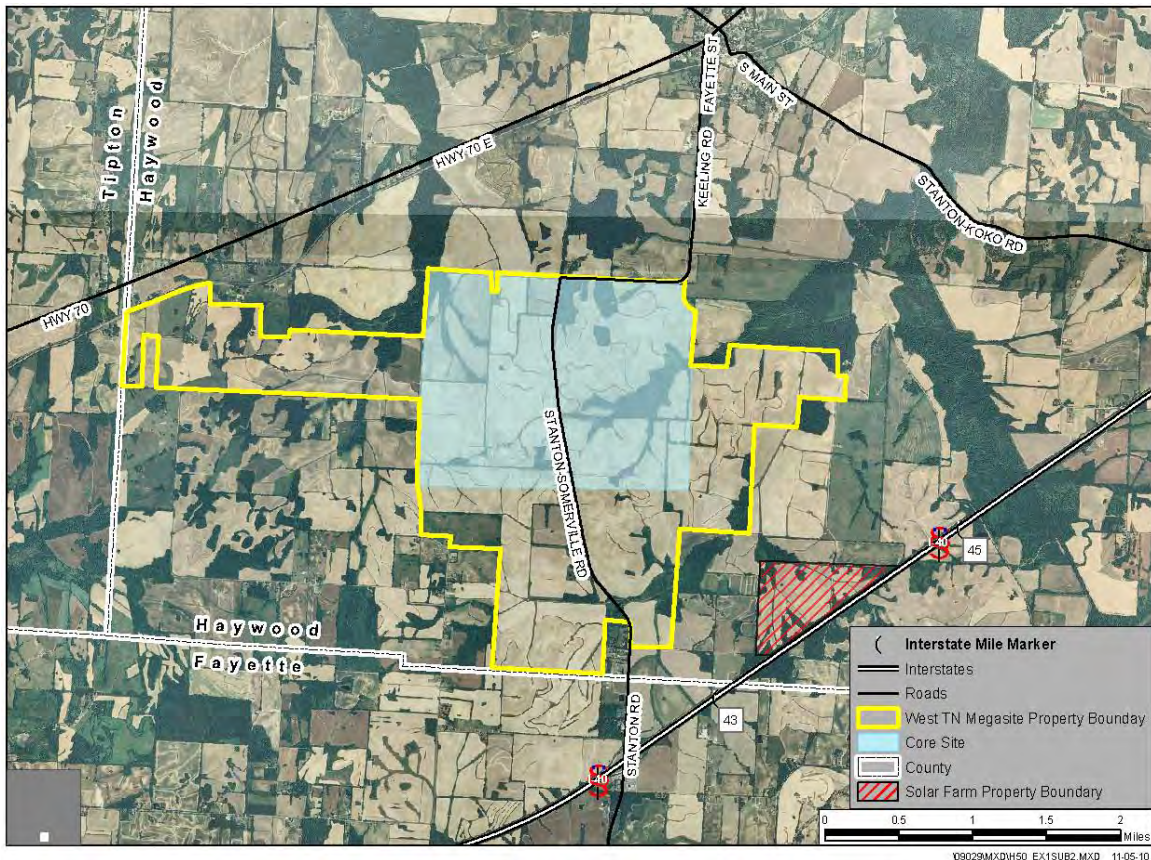


Figure 4–1. Proximity of the Solar Farm and Information and Welcome Center Project Site to the West Tennessee Megasite

DOE has determined the West Tennessee Megasite is not a Connected Action based on the definition provided in 40 *CFR* 1508. Neither the Megasite nor the Solar Farm would automatically trigger the other.

Similarly, neither requires the other to be undertaken previously or simultaneously. Finally, they are not interdependent parts of a larger action that depends on the larger action for their justification. This EA focuses on the additive impacts to the region from the proposed Solar Farm and Information and Welcome Center, in accordance with the scope of this analysis. Impacts from development of the proposed West Tennessee Megasite are highly speculative at this time as there is no construction underway and it is not clear whether or when the Megasite might be developed. Therefore, the contributions of the Megasite's development to cumulative impacts in the region have been assessed in a qualitative manner to the extent possible.

At this time, no industry has been selected for the West Tennessee Megasite. The installation and construction of the Solar Farm and the Information and Welcome Center are scheduled to begin in 2011. The Solar Farm is scheduled to be substantially completed in the first quarter of 2011 and to be connected to the local utility system in the second quarter of 2011. Stage 1 of the Information and Welcome Center is scheduled to be completed in September 2012. The Solar Farm and Information and Welcome Center are expected to be completed before development of the West Tennessee Megasite might begin.

The cumulative impacts of the Solar Farm and the proposed West Tennessee Megasite on the various environmental resources are expected to be minor and are discussed below.

4.1 LAND USE AND VISUAL RESOURCES

The property associated with the proposed West Tennessee Megasite is currently designated as forestry, agriculture, and residential. The property is currently being used mainly for agricultural purposes. Updates to the Haywood County Zoning Map would be required to make the proposed land use of the Megasite consistent with the county regulations. Construction and operation of the Megasite would convert the land use from agriculture to industrial.

With regard to visual impacts, the construction and operation of the Megasite would substantially alter the visual landscape during the life of the Solar Farm project. The property would be converted from an agricultural setting to a setting of a standard vehicle production facility or other large industrial complex.

The conversion of the small amount of farmland for development of the Solar Farm and Information and Welcome Center would be dwarfed by the much larger conversion required to develop the West Tennessee Megasite, so the Solar Farm project contribution to cumulative impacts would be minimal.

4.2 AIR QUALITY

Impacts on air quality from the installation of the Solar Farm and construction of the Information and Welcome Center would be temporary and minor in nature. The majority of increased emissions would occur as a result of fossil fuel combustion by construction vehicles and commuting workers' vehicles. In the event that the Solar Farm would be installed and Information and Welcome Center constructed at the same time, the short-term, concurrent construction of the proposed project and development of the West Tennessee Megasite could lead to elevated emissions of criteria pollutants in the region, but these effects would be minor, localized, and temporary. Therefore, the contribution to cumulative impacts would be negligible.

Operational emissions associated with the Solar Farm and Information and Welcome Center are not likely to contribute adversely to any long-term cumulative impacts. In fact, the use of emission-free alternative energy generated by the Solar Farm would likely serve to offset emissions from electricity that is currently generated by conventional power plants. Similarly, increased energy consumption (and associated emissions) by the Megasite could be mitigated to an extent by the use of clean energy generated by the Solar Farm.

4.3 NOISE

Noise caused by installation of the proposed Solar Farm and construction of the Information and Welcome Center would lead to temporarily elevated noise levels in the immediate vicinity of the project area. However, since there are no sensitive noise receptors in the area, the cumulative impacts would not be significant.

Installation and construction noise associated with the proposed Solar Farm and Information and Welcome Center would not accumulate with other similar noise sources such as Megasite development because other projects would be spatially and temporally separated. Because the Solar Farm would be directly adjacent to I-40, there would be no increase in the regional noise levels caused by traffic.

4.4 GEOLOGY AND SOILS

The cumulative impacts of the present agricultural community, Solar Farm and Information and Welcome Center, and the West Tennessee Megasite could produce increased erosion and sedimentation and thereby contribute to changes in the water quality of surrounding streams. Additional infrastructure (roads and utilities), producing additional sedimentation, may also be necessary for industrial development. However, the Solar Farm and Information and Welcome Center would adhere to regulatory and permitting requirements, including those for stormwater discharges associated with construction activity and associated best management practices for soil erosion and sediment control, which would minimize soil loss and water quality impacts associated with the proposed project. The small amount of Prime Farmland that would be lost to the Solar Farm project would be dwarfed by the much larger conversion required to develop the West Tennessee Megasite, so the Solar Farm contribution to cumulative impacts would be minimal.

4.5 WATER RESOURCES

The cumulative impacts of the ongoing agricultural practices in the region, the proposed Solar Farm and Information and Welcome Center, the West Tennessee Megasite and infrastructure (e.g., roads and utilities and railroad spurs) needed to support additional industrial development could produce increased erosion and sedimentation that could degrade the water quality of surrounding streams, ponds, and wetlands. In addition, increased runoff can contribute to increased channel flow speed resulting in bank erosion. These factors could also result in the loss of aquatic resources (streams and ponds) by channelization or culvertization and the loss of wetlands by draining and filling. Regulatory and permitting requirements associated with the Clean Water Act (33 U.S.C. 1251 et seq.) and the Tennessee Water Quality Control Act (T.C.A. 69-3-101) would control activities that could result in water quality impacts and loss of aquatic and wetland habitat and require mitigation to compensate for unavoidable impacts on these sensitive resources. The contribution that the proposed project would have on any cumulative impact on water resources would be negligible because runoff and sedimentation would be controlled through the use of best management practices on the proposed project site.

4.6 BIOLOGICAL RESOURCES

The cumulative impacts of the proposed Solar Farm and Information and Welcome Center, the West Tennessee Megasite, and new infrastructure (e.g., roads and utilities and railroad spurs) needed to support additional industrial development could result in the loss of natural habitat in the region, including forests and upland shrub communities. Because only a small amount of natural habitat would be disturbed by the Solar Farm, compared to that disturbed by the much larger Megasite, the cumulative impact on biological resources from the Solar Farm and Information and Welcome Center would be minimal.

4.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Environmental Justice

Information on potential impacts (adverse or beneficial) to minority and low-income populations from the West Tennessee Megasite is not available at this time. However, no high and adverse human health impacts are anticipated as a result of the installation or operational phases of the proposed Solar Farm and Information and Welcome Center. As a result, the proposed Solar Farm and Information and Welcome Center are not expected to add to any cumulative effects on minority or low-income populations that development of the Megasite might produce.

Employment and Income

In an analysis conducted in 2007, the University of Memphis estimated that the construction of an auto assembly plant (that could serve as the anchor for the Megasite) in Haywood County could create over 16,000 direct, short-term jobs, while operation of the plant could create roughly 2,000 permanent, direct jobs (UM 2007). Even though no industry has decided to develop and occupy the West Tennessee Megasite, these auto assembly plant estimates are used as the basis for this analysis. This would represent a 6 percent increase in employment compared with the region's total employment in 2007. Over the period from 2003 to 2007, employment in the region grew by more than 4 percent annually. If the employment increase occurred in a single year, it could represent a significant increase in employment. However, if the change occurred over 2 or more years, it may be accommodated as part of the normal growth process. Moreover, the study expected that the automotive plant would rely on labor from the surrounding area in addition to local labor. The increase would represent a change of less than 1 percent compared with employment in the nearby Memphis Metropolitan Statistical Area (MSA), which is within commuting distance of the region.

The small number of full-time jobs (15) associated with the Solar Farm and Information and Welcome Center represents a negligible change (less than 1 percent) compared with the 2007 total employment in the region. Haywood and Fayette Counties are also within commuting distance of the Memphis MSA, and employees could commute from this wider area. The new employment would represent an even smaller change (less than 0.1 percent) compared with 2007 employment in the Memphis MSA.

The University of Memphis' analysis also estimated that the auto plant could create an additional 5,000 indirect jobs throughout the state, but only some of these jobs would be located in the region of influence (ROI) [UM 2007]. Indirect jobs are jobs generated by the purchases a business makes from other businesses. The fraction of indirect jobs that would be located in the ROI would depend on the locations of major suppliers for the auto plant. Based on the very small direct employment impact of the proposed Solar Farm and associated Information and Welcome Center, no measurable indirect impacts are expected; therefore, any increased employment would have no effect on cumulative impacts.

Based on the 2007 analysis, auto plant operations at the Megasite could generate an additional \$216.5 million in labor income annually. This would represent a 12.7 percent increase for the region compared with 2007. Additional changes in regional income due to the proposed Solar Farm and Information and Welcome Center would depend on the actual compensation paid but are expected to be negligible based on the small number of jobs generated.

Population

The increases in employment and income associated with an auto plant could result in some population increase for the ROI. The size of the population increase would depend on the extent to which workers prefer to commute from surrounding communities or find homes within the two-county area. The rate of

population growth would also affect potential impacts. As shown in Table 3–9, the average population growth for the region was 2.2 percent from 2003 to 2007. Significantly faster growth could strain local resources, such as water, waste, and sewage disposal, and could result in secondary environmental effects.

Neither the proposed Solar Farm nor the Information and Welcome Center is expected to affect the rate of population change, because the small increase in labor demand created by the project can likely be met from the local communities.

4.8 UTILITIES

The proposed Solar Farm and Information and Welcome Center would have a negligible cumulative impact on utilities. Utility use is expected to be minimal in relation to total regional use and would not have an adverse impact on the existing utility infrastructure or capacity. The Solar Farm would produce 5–10 megawatts of power that would be fed to the TVA grid through local utility distribution lines. The proposed West Tennessee Megasite could become a large consumer of utilities if it is fully developed, and it would require the construction of new utility infrastructure to connect with existing utility service providers. However, the existing utility capacity of Brownsville Utilities, TVA, Southwest Tennessee Electric Membership Corporation, and the natural gas service provider is expected to be sufficient to support the Solar Farm, Information and Welcome Center, West Tennessee Megasite, and existing utility customers.

4.9 TRANSPORTATION

The West Tennessee Megasite would be expected to impact State Route 222. State Route 222 accesses Interstate 40 (I-40) through Exit 42. This exit is south of the proposed Solar Farm and Information and Welcome Center access. Access to and from the Information and Welcome Center would only be provided from I-40 via exit ramps, and there would be no break in the right-of-way (ROW) access to adjacent properties or roads. Due to regional growth, the Level of Service (LOS) of I-40 in the vicinity of the project area is projected to decrease to a “B” in the year 2011 and a “C” in the year 2031. LOS for the merge/diverge ramp operations for the Information and Welcome Center would be the same as the LOS for I-40. The cumulative contribution of the proposed project in relation to traffic would be negligible.

5 LIST OF AGENCIES AND PERSONS CONTACTED

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Clinton Neal	Director, Haywood County Solid Waste Department	Haywood County, Tennessee	Haywood County Class III-IV Landfill Capacity
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Wherley, Patricia NEPA Program Manager B.S. Geography	NEPA Technical Advisor		30 years, NEPA project management and execution

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Van Arsdale, R., and R. Cox, 2000. *Surficial Geologic Liquefaction Susceptibility Mapping in Shelby County, Tennessee*, University of Memphis, USGS External Research Award No. 00HQGR0031.

Webbers, A. 2003. *Public Water-Supply Systems and Associated Water Use in Tennessee, 2000*, Water Resources Investigation Report 03-4264, U.S. Geological Survey and Tennessee Department of Environment and Conservation, Division of Water Supply, Nashville, Tennessee.

Tennessee Code Annotated

T.C.A. 69-3-101 et seq., Water Quality Control Act, as amended,

Tennessee Public Laws

Tennessee Public Chapter No. 554

United States Code

7 U.S.C. 4201 et seq., Farmland Protection Policy Act.

16 U.S.C. 470 et seq., National Historic Preservation Act.

29 U.S.C. 651 et seq., Occupational Safety and Health Act of 1970.

33 U.S.C. 1251 et seq., Clean Water Act of 1972.

42 U.S.C. 116 et seq., Emergency Planning and Community Right-to-Know Act of 1986.

42 U.S.C. 4321 et seq., National Environmental Policy Act of 1969.

42 U.S.C. 6901 et seq., Resource Conservation and Recovery Act of 1976.

42 U.S.C. 9601 et seq., Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.

U.S. Public Laws

P.L. 109-58, Energy Policy Act of 2005.

P.L. 110-140, Energy Independence and Security Act of 2007.

P.L. 111-5, American Recovery and Reinvestment Act of 2009.

Appendix A
Consultations and Coordination

United States Department of Agriculture



Natural Resources Conservation Service
235 Oil Well Road
Jackson, Tennessee 38305

Date: February 1, 2010

Mr. Allen Motley
151 Lafayette Drive
Oak Ridge, Tennessee 37830

Re: West Tennessee Solar Farm, Haywood County

Mr. Motley:

Enclosed is the completed AD-1006 Farmland Conversion Impact Rating for the above-mentioned project.

If you have any additional questions, please contact me at (731) 668-0700.

A handwritten signature in cursive script, appearing to read "Charles L. Davis".

Charles L. Davis
Resource Soil Scientist

Helping People Help the Land

An Equal Opportunity Provider and Employer

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request		January 13, 2010	
Name Of Project		West Tennessee Solar Farm		Federal Agency Involved	
				Department of Energy	
Proposed Land Use		Solar Farm		County And State	
				Haywood County, TN	
PART II (To be completed by NRCS)		Date Request Received By NRCS			
		01/15/2010			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).					
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
Major Crop(s)		Farmable Land In Govt. Jurisdiction		Acres Irrigated	
COTTON CORN SOYBEANS		Acres: 273,110 % 80		N/A	
Name Of Land Evaluation System Used		Name Of Local Site Assessment System		Average Farm Size	
HAYWOOD CO.		NA		589	
				Amount Of Farmland As Defined in FPPA	
				Acres: 123,940 % 36	
				Date Land Evaluation Returned By NRCS	
				02/01/2010	
PART III (To be completed by Federal Agency)		Alternative Site Rating			
A. Total Acres To Be Converted Directly		Site A	Site B	Site C	Site D
		104			
B. Total Acres To Be Converted Indirectly		0			
C. Total Acres In Site		104	0.0	0.0	0.0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		36			
B. Total Acres Statewide And Local Important Farmland		NA			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		0.02			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		64			
PART V (To be completed by NRCS) Land Evaluation Criterion					
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		94			
PART VI (To be completed by Federal Agency)					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use		15	15		
2. Perimeter In Nonurban Use		10	10		
3. Percent Of Site Being Farmed		20	19		
4. Protection Provided By State And Local Government		20	0		
5. Distance From Urban Builtup Area		15	15		
6. Distance To Urban Support Services		15	15		
7. Size Of Present Farm Unit Compared To Average		10	0		
8. Creation Of Nonfarmable Farmland		10	0		
9. Availability Of Farm Support Services		5	5		
10. On-Farm Investments		20	1		
11. Effects Of Conversion On Farm Support Services		10	0		
12. Compatibility With Existing Agricultural Use		10	0		
TOTAL SITE ASSESSMENT POINTS		160	80	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	94	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	80	0	0
TOTAL POINTS (Total of above 2 lines)		260	174	0	0
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Reason For Selection:					

(See instructions on reverse side)

This form was electronically produced by National Production Services Staff

Form AD-1006 (10-83)



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
SUITE 900 - JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334

November 18, 2009

Mary Jennings
U.S. Department of Interior
Fish and Wildlife Service
446 Neal Street
Cookeville, TN 38501

SUBJECT: Interstate 40 Interpretive Center at Albright Road.
No project numbers have been assigned at this point

Dear Ms. Jennings:

The Tennessee Department of Transportation proposes to construct the access roads for the subject project. A Project Location Map is attached showing the proposed activity in orange and green. In compliance with the Fish and Wildlife Act of 1958, and the Endangered Species Act of 1973 (as amended), we are requesting a list of threatened or endangered species that may be present in the vicinity of the proposed construction.

Please include in your reply the entire project description as listed in the subject line of this request. Your assistance in the preparation of this project is greatly appreciated. If you need additional information, please contact me at 615-532-3880.

Sincerely,

Matt Richards
TDOT Biologist

No significant adverse impacts to wetlands
or federally listed endangered or threatened
species are anticipated from this proposal.

Field Supervisor Date
U. S. Fish and Wildlife Service
Cookeville, TN 38501

xc: Reading File
Project File



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION**
SUITE 900, JAMES K. POLK BUILDING
506 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653
E-mail: Martha.Carver@state.tn.us
www.state.tn.us/transport

December 28, 2009

Mr. E. Patrick McIntyre
Deputy State Historic Preservation Officer
Tennessee Historical Commission
Clover Bottom Mansion
2941 Lebanon Road
Nashville, TN 37214

SUBJECT: Architectural Assessment for West Tennessee Solar Farm Interpretive
Center and I-40 Access, Haywood County

Dear Mr. McIntyre:

Enclosed is an architectural and historical assessment the above referenced project. It is the opinion of TDOT that there are no National Register listed or eligible properties within the project area. On behalf of the Federal Highway Administration, we request your review of this report pursuant to regulations contained within 36 CFR 800.

We look forward to your comments. Thank you for your help in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Martha Carver".

Martha Carver
Historic Preservation Manager

Enclosure

cc: Joe Matlock



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION**
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

December 28, 2009

SUBJECT: Architectural Assessment for West Tennessee Solar Farm Interpretive Center and I-40 Access, Haywood County

To Whom it May Concern:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to provide funds for the West Tennessee Solar Farm Interpretive Center and I-40 access in Haywood County.

Pursuant to regulations set forth in "36 CFR 800: Protection of Historic Properties" historic preservation specialists from TDOT surveyed the general project area in an attempt to identify National Register-included or eligible properties which could be impacted by the proposed project. Historians from TDOT did not inventory any National Register eligible or listed properties that they believe the proposed project could impact.

The enclosed report discusses TDOT's survey findings. You are receiving this report because you have been identified by TDOT as a Haywood County party or individual with historic preservation interests. The Advisory Council on Historic Preservation Regulations specify that members of the public with interests in an undertaking and its effects on historic properties should be given reasonable opportunity to have an active role in the Section 106 process. As such, TDOT would like to give you the opportunity to participate in that process. If you feel that commenting on such projects is outside the interests of your organization, please notify me and I will remove your name from our list.

If you have any comments on historic issues related to this project, please write me. Federal regulations provide that you have thirty days to respond from the receipt of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Holly M. Barnett".

Holly M. Barnett, Historic Preservation Specialist

Enclosure

cc: Mr. E. Patrick McIntyre, TN-SHPO

PUBLIC INVOLVEMENT

On December 15, 2009, TDOT wrote to the local government official, Franklin Smith, and asked him for information about the project and asked if he wished to be a consulting party in the Section 106 review process. To date, TDOT has received no responses related to architectural resources.

On , TDOT wrote to ? Native American tribes or representatives asking each for information regarding the project and if he would like to participate in the Section 106 review process as a consulting party. To date, TDOT has received no responses related to architectural resources. Attachment Two contains copies of relevant correspondence.

Lisa LaRue-Stopp
United Keetoowah Band of Cherokee Indians

Mekko Gary Bucktrot
Kialegee Tribal Town

Gingy Nail
Chickasaw Nation

Joyce Bear
Muscogee (Creek) Nation

Terry Cole
Chocotaw Nation of Oklahoma

Kim Jumper
Shawnee Tribe

Robin Dushane
Eastern Shawnee Tribe of Oklahoma

TDOT has prepared a list by counties of historic groups, county historians, and other such individuals or organizations that might be interested in proposed projects. TDOT regularly updates and refines the list. TDOT will mail a copy of this report to the following groups and individuals. Attachment Two contains copies of relevant correspondence.

Renee Tavares
Historic Preservation Planner
Southwest Tennessee Development District
27 Conrad Drive, Suite 150
Jackson, TN 38305-2850

Mr. Lynn Shaw
Haywood County Historian
P.O. Box 207
Brownsville, TN 38012

Haywood County Mayor
Haywood County Courthouse
Brownsville, TN 38012

Sample Letter to Native
American Groups



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
THE ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-5257
Fax (615) 741-1098

December 11, 2009

Alabama-Quassarte Tribal Town
101 East Broadway
Wetumka, OK 74883
Attn: Ms. Augustine Asbury, Second Chief/NAGPRA Representative

SUBJECT: Section 106 Initial Coordination for Proposed West Tennessee Solar Farm Welcome & Education Center,
Brownsville vicinity, Haywood County, Tennessee

Dear Ms. Asbury:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to build a new Welcome and Education Center at the proposed 20-acre West Tennessee Solar Farm located near Brownsville in Haywood County. The project is located on the west side of I-40 at Albright Road near the Fayette County line. Funded separately from the solar farm project, this project would build a new interchange, access roads, parking lots, and a 10,000 square foot visitor's center facility. The property is currently used for agricultural purposes. Approximately 35 acres of additional right-of-way is needed for this project (maps attached).

The National Historic Preservation Act (NHPA) recognizes that federally funded undertakings, like the subject project, can affect historic properties to which your tribe attaches religious, cultural, and historic significance. In accordance with 36 CFR 800 regulations implementing compliance with Section 106 of the NHPA, I would like to know if you have information you could share with me about tribal concerns in the project area and if you wish to be a consulting party on the project? Early awareness of your concerns can serve to protect things of value to the tribe.

If you act as a consulting party you will receive cultural resource assessment reports and related documentation, be invited to attend project meetings with FHWA, TDOT, and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held, and be asked to provide input throughout the process. If you choose to not act as a consulting party at this time, you can do so at a later date simply by notifying me.

Please respond to me via letter, telephone (615-741-5257), fax (615-741-1098), or E-mail (Gerald.Kline@tn.gov). I respectfully request responses (email is preferred) to project reports and other materials within thirty (30) days of receipt if at all possible. Thank you for your assistance.

Sincerely,

Handwritten signature of Gerald Kline in cursive.

Gerald Kline
Transportation Specialist I
Archaeology Program Manager

Enclosure

cc Lisa LaRue-Stopp, United Keetoowah Band of Cherokee Indians
Gingy Nail, Chickasaw Nation
Terry Cole, Choctaw Nation of Oklahoma
Robin Dushane, Eastern Shawnee Tribe of Oklahoma
Mekko Gary Bucktrot, Kialegee Tribal Town
Joyce Bear, Muscogee (Creek) Nation
Kim Jumper, Shawnee Tribe

Sample Letter to Local
Government Official



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
THE ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3655
Fax: (615) 741-1098

December 15, 2009

Franklin Smith
Haywood County Mayor
1 North Washington, Courthouse
Brownsville, TN 38012

RE: Section 106 Early Consultation Notice for proposed Interpretive Center and I-40
Access, Haywood County

Dear Mayor Smith:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to construct the above referenced project. Its location is shown on the enclosed map.

The Advisory Council on Historic Preservation regulations stipulate that TDOT invite local government representatives to participate in the historic review process as a consulting party. TDOT would like to invite you, as the local government official, to participate as a consulting party for the proposed project.

If you choose to participate as a consulting party, you will receive copies of TDOT's environmental reports and will be invited to attend project-related meetings between TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held. As a consulting party, you should be prepared to attend any such meetings between TDOT and the TN-SHPO and provide a response to TDOT's reports in written form within 30 days upon receipt of the report. TDOT also wishes to seek your comments on the identification and evaluation of historic properties that the proposed project might impact.

If you would like to participate as a consulting party, please write to me at the above address. To facilitate our planning process, please respond within 30 days of receipt of this letter. Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Martha Carver".

Martha Carver
Historic Preservation Program Manager

Enclosure



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION**
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

December 28, 2009

SUBJECT: Architectural Assessment for West Tennessee Solar Farm Interpretive Center and I-40 Access, Haywood County

To Whom it May Concern:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to provide funds for the West Tennessee Solar Farm Interpretive Center and I-40 access in Haywood County.

Pursuant to regulations set forth in "36 CFR 800: Protection of Historic Properties" historic preservation specialists from TDOT surveyed the general project area in an attempt to identify National Register-included or eligible properties which could be impacted by the proposed project. Historians from TDOT did not inventory any National Register eligible or listed properties that they believe the proposed project could impact.

The enclosed report discusses TDOT's survey findings. You are receiving this report because you have been identified by TDOT as a Haywood County party or individual with historic preservation interests. The Advisory Council on Historic Preservation Regulations specify that members of the public with interests in an undertaking and its effects on historic properties should be given reasonable opportunity to have an active role in the Section 106 process. As such, TDOT would like to give you the opportunity to participate in that process. If you feel that commenting on such projects is outside the interests of your organization, please notify me and I will remove your name from our list.

If you have any comments on historic issues related to this project, please write me. Federal regulations provide that you have thirty days to respond from the receipt of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Holly M. Barnett".

Holly M. Barnett, Historic Preservation Specialist

Enclosure

cc: Mr. E. Patrick McIntyre, TN-SHPO



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Gary Fottrell
Federal Highway Administration
404 BNA Drive
Suite 508
Nashville, Tennessee 37217

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Mr. Fottrell:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

- Installation and operation of a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including required utility transmission lines;
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm;
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. The enclosed attachment includes figures showing the location of the proposed Solar Farm Project, additional information on the Solar Farm and Information and Welcome Center, and a conceptual site layout.

The Federal Highway Administration has been identified as an agency that may have an interest in the project because of its jurisdictional responsibilities and special expertise that may be applied to this project. With this letter, we extend to the Federal Highway Administration an invitation to become a cooperating agency with DOE in the development of the EA in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provision of the National Environmental Policy Act (NEPA).

Please respond to me in writing with an acceptance, or denial, of the invitation to be a cooperating agency within 30 days of the date of this letter. If you accept this invitation, please indicate what potential roles and responsibilities you would like to have in the process, as well as what staff and resources you could commit. DOE would discuss these items with you and memorialize them in a separate letter of understanding between our agencies.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Memphis District Engineer
Regulatory Branch
U.S. Army Corps of Engineers
167 North Main Street B-202
Memphis, Tennessee 38103-1894

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Sir:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

- Installation and operation of a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including required utility transmission lines;
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm;
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. The enclosed attachment includes figures showing the location of the proposed Solar Farm Project, additional information on the Solar Farm and Information and Welcome Center, and a conceptual site layout.

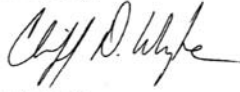
The U.S. Army Corps of Engineers has been identified as an agency that may have an interest in the project because of its jurisdictional responsibilities and special expertise that may be applied to this project. With this letter, we extend to the Corps of Engineers an invitation to become a cooperating agency with DOE in the development of the EA in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provision of the National Environmental Policy Act (NEPA).

Please respond to me in writing with an acceptance, or denial, of the invitation to be a cooperating agency within 30 days of the date of this letter. If you accept this invitation, please indicate what potential roles and responsibilities you would like to have in the process, as well as what staff and resources you could commit. DOE would discuss these items with you and memorialize them in a separate letter of understanding between our agencies.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

If you need further information on this request, please do not hesitate to call me at (304) 285-2098.

Sincerely,

A handwritten signature in black ink that reads "Cliff D. Whyte". The signature is written in a cursive style with a large, sweeping initial "C".

Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Mr. McIntyre:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

- Installation and operation of a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including required utility transmission lines;
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm,
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. The enclosed attachment includes figures showing the location of the proposed Solar Farm Project, additional information on the Solar Farm and Information and Welcome Center, and a conceptual site layout.

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.), TDOT cultural resource staff surveyed portions of the project site in compliance with the regulations set forth in Title 36 of the *Code of Federal Regulations*, Part 800. The purpose of this survey was to identify any resources either included in or potentially eligible for inclusion in the National Register of Historic Places (NRHP). The area surveyed included land needed for the proposed Information and Welcome Center, additional right-of-way, as well as areas that could possibly be affected by changes in air quality, noise levels, setting, and land use. This report was submitted to the Tennessee State Historic Preservation Office (TN-SHPO) on February 3, 2010.

TDOT historians also reviewed the survey records of the TN-SHPO to determine if any previous architectural surveys had identified any historic properties in the area and conducted a field review of the area for potential historic resources. TDOT historians surveyed a wide area of over

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

a mile in each direction from the project site but did not identify any properties within this area that merited further evaluation of NRHP eligibility.

No properties in the project area of potential effect are currently included in the NRHP nor have any been determined to be eligible for inclusion. The field survey mentioned above did not identify any previously unrecorded cultural resources that required further NRHP evaluation. The architectural and historical assessment report was submitted to the TN-SHPO on December 28, 2009.

This letter is intended to serve as informal consultation under Section 106 of the National Historic Preservation Act (as amended) and implementing regulations 36 CFR 800. In this regard, DOE solicits your recommendations and comments about the potential effects of this proposed action. Your input will be used in the preparation of the EA.

If you need further information on this request, please do not hesitate to call me at (304) 285-2098.

Sincerely,

A handwritten signature in black ink that reads "Cliff D. Whyte". The signature is written in a cursive, flowing style.

Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



September 15, 2010

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

Mr. Ryan Gooch
Department of Economic & Community Dev.
312 Rosa Parks Ave./10th
Nashville, Tennessee, 37243

RE: DOE, WEST TENNESSEE SOLAR FARM PROJECT, UNINCORPORATED, HAYWOOD COUNTY

Dear Mr. Gooch:

In response to your request, received on Friday, September 10, 2010, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process.

After considering the documents you submitted, we determine that THERE ARE NO NATIONAL REGISTER OF HISTORIC PLACES LISTED OR ELIGIBLE PROPERTIES AFFECTED BY THIS UNDERTAKING. We have made this determination either because: the undertaking will not alter any characteristics of an identified eligible or listed Historic Property that qualify the property for listing in the National Register, the undertaking will not alter an eligible Historic Property's location, setting or use, the specific location, scope and/or nature of the undertaking precluded affect to Historic Properties, the size and nature of the undertaking's area of potential effects precluded affect to Historic Properties, or, no National Register listed or eligible Historic Properties exist within the undertaking's area of potential effects. Therefore, we have no objections to your proceeding with your undertaking.

If your agency proposes any modifications in current project plans or discovers any archaeological remains during the ground disturbance or construction phase, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. If you are applying for federal funds, license or permit, you should submit this letter as evidence of consultation under Section 106 to the appropriate federal agency, which, in turn, should contact us as required by 36 CFR 800. If you represent a federal agency, you should submit a formal determination of eligibility and effect to us for comment. You may find additional information concerning the Section 106 process and the Tennessee SHPO's documentation requirements at <http://www.tennessee.gov/environment/hist/federal/sect106.shtm>. You may direct questions or comments to Joe Garrison (615) 532-1550-103. This office appreciates your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg

From: Joseph Garrison [Joseph.Garrison@tn.gov]
Sent: Friday, October 22, 2010 12:08 PM
To: Katie Southworth
Subject: Re: Fwd: Solar Farm EA

Ms. Southworth,

The DOE/consultant/applicant/whatever request for SHPO comment was sent to us consequent to the preparation of a NEPA document (EA). ECD's review request was sent consequent to the preparation of a Section 106 administratively complete review file.

The SHPO responded to the ECD's Section 106 request because we are obliged to do so as a consequence of the requirements of 36 CFR 800.2 through .7. We have no such obligation to reply to NEPA driven review requests unless they specifically state they are being sent to us with reference to 36 CFR 800.6(c), which states, "An agency official may use the process and documentation required for the preparation of an EA/FONSI or an EIS/ROD to comply with section 106 in lieu of the procedures set forth in Secs. 800.3 through 800.6 if the agency official has notified in advance the SHPO/THPO and the Council that it intends to do so...." I do not recall any such notification either by DOE or their surrogate.

Your agency has already submitted sufficient documentation to allow us to concur, on September 15, 2010, with your determination and finding that no Historic Properties would be affected by the West Tennessee Solar Farm. And your agency has been authorized to initiate Section 106 review of DOE-funded projects, programs, and activities by DOE under authority stated at 36 CFR 800.2 through .7. Given these facts, we believe that your agency has successfully completed Section 106 review for this undertaking, and we see no reason to comment further.

Thank you most sincerely for your continuing cooperation,

Joseph Y. Garrison, PhD
Review and Compliance Coordinator
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee
37243-0442

Joseph.Garrison@tn.gov
(615)532-1550-103 phone
(615)532-1549 fax

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Mary Jennings
United States Department of Interior
Fish and Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

SUBJECT: Informal consultation under Section 7 of the Endangered Species Act for the Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Ms. Jennings:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

- Installation and operation of a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including required utility transmission lines;
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm,
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. The enclosed attachment includes figures showing the location of the proposed Solar Farm project, additional information on the Solar Farm and Information and Welcome Center, a conceptual site layout, and a description of the exiting habitat at the project site.

This letter is intended to serve as informal consultation under Section 7 of the Endangered Species Act. In this regard, DOE requests an updated list of protected species and habitats that could potentially occur on or in the immediate vicinity of the parcel and solicits your recommendations and comments about the potential effects of this proposed action. Your input will be used in the preparation of the EA.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

If you need further information on this request, please do not hesitate to call me at (304) 285-2098.

Sincerely,

A handwritten signature in black ink that reads "Cliff Whyte". The signature is written in a cursive style with a large, prominent initial "C".

Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR - Morgantown, WV - Pittsburgh, PA



September 7, 2010

No significant impacts to wetlands are anticipated from this proposal. No federally listed endangered or threatened species, or habitat suitable for such species, are known to exist in the project area.

SEP 10 2010

CIPA 0763

Mary Jennings
United States Department of Interior
Fish and Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

[Signature] 10/7/10
Field Supervisor Date
U.S. Fish and Wildlife Service
Cookeville, TN 38501

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NATIONAL ENERGY TECHNOLOGY LABORATORY
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September 7, 2010

Chief Tarpie Yargee
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Yargee:

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If you would like to participate as a consulting party, please respond to me using the following contact information:

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: cliff.whyte@netl.doe.gov

To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, you will not receive reports related to this project unless you specifically request them at a later date. Thank you for your assistance.

Sincerely,



Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Governor Bill Anoatubby
Chickasaw Nation
P.O. Box 1548
Ada, OK 74821

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Governor Anoatubby:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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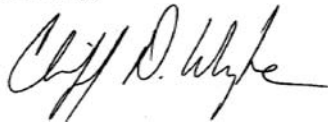
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U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
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Telephone: (304) 285-2098
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Sincerely,



Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



the Chickasaw Nation
Headquarters

Bill Anoatubby, Governor
Jefferson Keel, Lt. Governor

October 4, 2010

Mr. Cliff Whyte
US Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Building 1, MS B07
Morgantown, WV 26507-0880

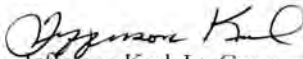
Dear Mr. Whyte:

We have received your notification regarding the proposed West Tennessee Solar Farm project in Haywood County, Tennessee.

This area is within the aboriginal homelands of the Chickasaw Nation and is an important area to us. We accept your request to be a consulting party regarding this project.

If you have any questions, please contact Ms. Gingy Nail, historic preservation officer at (580) 559-0817, gingy.nail@chickasaw.net or Ms. Julie Ray, historic preservation and repatriation manager at (580) 559-0825, julie.ray@chickasaw.net.

Sincerely,


Jefferson Keel, Lt. Governor
The Chickasaw Nation

jar



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Chief Glenna Wallace
Eastern Shawnee Tribe of Oklahoma
P.O. Box 350
Seneca, MO 64865

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Wallace:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: cliff.whyte@netl.doe.gov
Fax: (304) 285-4403

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Sincerely,



Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



9-13-10

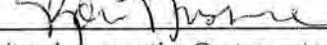
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September 7, 2010

Chief Glenna Wallace
Eastern Shawnee Tribe of Oklahoma
P.O. Box 350
Seneca, MO 64865

Through review of this project the Eastern Shawnee Cultural Preservation Office has concluded we are currently unaware of any specific Shawnee historical sites of significance within the project area. We require our office be contacted if inadvertent discoveries of cultural resources, including human remains, are uncovered as this project proceeds.


Cultural Preservation Director
culturalpreservation@estoo.net or 918 666 2435 ext 247

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

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Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Jennie Lillard
Kialegee Tribal Town
P.O. Box 332
Wetumka, OK 74883

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Ms. Lillard:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: cliff.whyte@netl.doe.gov
Fax: (304) 285-4403

To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, you will not receive reports related to this project unless you specifically request them at a later date. Thank you for your assistance.

Sincerely,



Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Chief A.D. Ellis
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Ellis:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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General Engineer
National Energy Technology Laboratory

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Chief Gregory Pyle
Choctaw Nation of Oklahoma
Drawer 1210
Durant, OK 74702

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Pyle:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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Cliff Whyte
General Engineer
National Energy Technology Laboratory

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Chairman Ron Sparkman
Shawnee Tribe
P.O. Box 189
Miami, OK 74354

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chairman Sparkman:

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Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Vernon Yarholar
Thlopthocco Tribal Town
P.O. Box 188
Okemah, OK 74859

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Mr. Yarholar:

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Cliff Whyte
General Engineer
National Energy Technology Laboratory

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NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

Chief George Wickliffe
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74465

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Wickliffe:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

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If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural assessment reports and related documentation, be invited to attend project meetings with DOE, TDOT, Federal Highway Administration (FHWA), and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

If you would like to participate as a consulting party, please respond to me using the following contact information:

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-2098
Email: cliff.whyte@netl.doe.gov
Fax: (304) 285-4403

To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, you will not receive reports related to this project unless you specifically request them at a later date. Thank you for your assistance.

Sincerely,



Cliff Whyte
General Engineer
National Energy Technology Laboratory

Enclosure



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



September 7, 2010

RECEIVED SEP 13 2010

Chief George Wickliffe
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74465

The United Keetoowah Band of Cherokee Indians in Oklahoma has no objection to the referenced project. However, if any remains, artifacts or other items are inadvertently discovered, please cease construction immediately and contact us at 918-456-6533 or by letter.

[Signature] 9-13-10
Use of Site for Tribal NAGPRA POC Date

SUBJECT: Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Chief Wickliffe:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) that will evaluate the potential impacts of the proposed West Tennessee Solar Farm project. The proposed project comprises the following:

- Installation and operation of a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm (Solar Farm) array, including required utility transmission lines;
- Construction and operation of the Tennessee Department of Transportation (TDOT) Information and Welcome Center adjacent to the Solar Farm;
- Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center.

The proposed project would be located in Haywood County, Tennessee, directly adjacent to Interstate 40 (I-40) between mile markers 43 and 45. The enclosed attachment includes figures showing the location of the proposed Solar Farm Project, additional information on the Solar Farm and Information and Welcome Center, and a conceptual site layout.

The 2001 Advisory Council on Historic Preservation regulations, 36 CFR 800, stipulate that Indian tribes that attach religious and cultural significance to properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties. DOE would like to invite you to participate as a consulting party for the proposed project. This letter is also DOE's request for comments on the identification of properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural assessment reports and related documentation, be invited to attend project meetings with DOE, TDOT, Federal Highway Administration (FHWA), and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

If you would like to participate as a consulting party, please respond to me using the following contact information:

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507



U.S. Department
of Transportation
**Federal Highway
Administration**

Tennessee Division
September 23, 2010

404 BNA Drive, Suite 508
Nashville, TN 37217
615-781-5770
615-781-5773
<http://www.fhwa.dot.gov/>

In Reply Refer To:
HPP-TN

Mr. Cliff Whyte
General Engineer
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507

Subject: Invitation to the Federal Highway Administration to become a Cooperating Agency
with the Department of Energy on an Environmental Assessment for the
Proposed West Tennessee Solar Project, Haywood County, Tennessee

Dear Mr. Whyte:

We are in receipt of your letter of September 7, 2010 extending an invitation to the Federal Highway Administration (FHWA) to become a cooperating agency with the Department of Energy on the Haywood County Solar Project. We understand that this invitation is extended as a result of our involvement with the Information and Welcome Center and the associated interstate entrance and exit ramps and parking areas. Since FHWA has prepared a Categorical Exclusion (CE) for these features as a separate action, and this CE will be incorporated by reference in your agency's Environmental Assessment (EA), we respectfully decline to be a Cooperating Agency on the EA. However, we do appreciate the opportunity to review the EA and have attached our comments. You may find the CE documentation on the consultant's ftp site at <https://ftp.pbworld.com/GetFile.aspx?fn=1799184429.zip>.

If you need further assistance, please call at any time.

Sincerely,

Gary Fottrell
Environmental Program Engineer

Enclosure



DRAFT ENVIRONMENTAL ASSESSMENT
WEST TENNESSEE SOLAR FARM PROJECT
HAYWOOD COUNTY, TENNESSEE

FHWA COMMENTS
9/23/10

1. Page 3, Section 1.1.2, Lines 42-44: "The Solar Farm would also have a significant public education mission to allow citizens and students to gain firsthand exposure to solar energy production to better understand its benefits." - How is this going to be accomplished? The TDOT Information and Welcome Center will only have space provided for static displays, and possibly a looped video. Will this education also occur on the Solar Farm property?
2. Page 7, Section 1.5, Lines 23-24 and Page 11, Section 2.1, Lines 9 and 10: "Development of educational programs regarding solar energy production, to be conducted at the Information and Welcome Center" - How is this going to be accomplished? The TDOT Information and Welcome Center will only have space provided for static displays, and possibly a looped video. This would be better stated "Development of educational displays regarding solar energy production, to be included in the Information and Welcome Center."
3. Page 11, Section 2.1, Lines 13-14: "funds may be used to support educational activities at the Solar Farm and the Information and Welcome Center." - What educational activities does this indicate will be conducted at the Informational and Welcome Center? Again, only static displays will be at the welcome center.
4. Page 13, Section 2.1.2, Lines 2-12: Please update the language in this section to reflect the new language in the TDOT CE document, which includes the removal of phrases such as "closed loop system" and "pull-through". As a suggestion, "...would be available. The Information and Welcome Center would initially provide for on and off movements only from westbound I-40. Access to and from the center will only be provided from I-40 via exit ramps, and there will be no break in the right-of-way access to adjacent properties or roads. The Information and Welcome Center is estimated to be 6,000 – 10,000 square feet in size. The parking lot would be designed to have segregated parking areas for westbound cars, tour buses, and trucks/recreational vehicles (RV's). The State of Tennessee..."
5. Page 13, Section 2.1.3, Lines 15-16: "Public education activities would occur at the proposed Information and Welcome Center." – What educational activities does this indicate will be conducted at the Information and Welcome Center? As a suggestion, ""The Solar Farm would have a significant education mission that would allow the public to gain firsthand exposure to solar energy production to better understand its benefits. Public education through the use of static displays would occur at the proposed Information and Welcome Center."

6. Page 13, Section 2.1.4.2: This section indicates that the Information and Welcome Center will be constructed in two phases. It then goes on to state that construction will occur over the duration of 365 days. Is this intended to indicate both phases? This is further discussed on Page 34, Section 3.9.2.1, Lines 34-35.
7. Page 13, Section 2.1.4.2, Lines 30 and 31: Suggest using "Construction would include interstate entrance and exit ramps for westbound travelers. The footprint of the interstate ramps...." And the last sentence of that paragraph, "The footprint of the interstate ramps would be approximately 2.4 acres."
8. Page 14, Section 2.1.5.2: This section indicates that the Information and Welcome Center will be staffed 24 hours a day, 7 days per week. Is this consistent with how the TDOT plans to operate the facility?



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Remediation
401 Church Street
4th Floor, L&C Annex
Nashville, TN 37243

October 14, 2010

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
360 Collins Ferry Road
P.O. Box 880, MS B07
Morgantown, WV 26507-0880
Cliff.Whyte@netl.doe.gov

RE: West TN Solar Draft EA Comments

Dear Mr. Whyte:

The Division of Remediation (DoR) has received your environmental review request, dated September 17, 2010, concerning the West TN Solar Draft EA Comments. After reviewing your map and our project files, we concluded that TDEC, Division of Remediation does not have any comments to provide on the Environmental Assessment for the West TN Solar Farm Project in Haywood County.

If you have any further questions, do not hesitate to contact Betty Maness, Project Manager at our Jackson Field Office at betty.maness@tn.gov or 731.512.1331.

Sincerely,


Andy Binford

RAB:BJM:mdd

cc: Jackson Field Office Files
Central Office Files #38.000
mary.parkman@tn.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
SAM NUNN
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA GEORGIA 30303-8960
October 15, 2010

Mr. Cliff Whyte
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
P.O. Box 880, MS B07
Morgantown, WV 26507-0880

**RE: EPA Review and Comments regarding the Draft Environmental Assessment (DEA)
for The West Tennessee Solar Farm Project Haywood County, Tennessee**

Dear Mr. Whyte:

EPA Region 4 reviewed the subject Draft Environmental Assessment (DEA) pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The purpose of this letter is to provide you with EPA's comments regarding potential impacts of the proposed project.

The DEA document describes the proposed Tennessee plans to install and operate a 5 to 10 megawatt photovoltaic array including the required utility transmission lines. As a connected action, a Tennessee Department of Transportation Information and Welcome Center would be constructed adjacent to the Solar Farm. The Solar Farm construction would take place pursuant to the American Recovery and Reinvestment Act (ARRA) of 2009. The DOE's proposed action is to allow Tennessee to use some of ARRA funds received through the State Energy Program (SEP) for construction and operation of the Solar Farm.

Based on the information provided in the EA, we support the project and believe the proposed Solar Farm will be able to demonstrate zero-carbon emission production of electricity with the associated benefits. We also see the opportunity to create jobs, educate the public on the benefits of solar energy and encourage future renewable-energy interest and investment. We think the proposed construction and operation of the entire facility does not appear to represent a significant impact to human health and the environment. The DEA states that the proposed Solar Farm array would be composed of a multi-acre, fixed ground-mounted PV solar array, which would deliver power to the local electrical grid. Power generated by the Solar Farm would be purchased by the Tennessee Valley Authority. The EPA is aware that the Information and Welcome Center and associated highway construction has been included in a TDOT D-List Categorical Exclusion and this DEA assessed the potential consequences of the proposed Solar Farm project.

Internet Address (URL) • <http://www.epa.gov>

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We recognize however, some aspects of construction and operation of the facility could result in potential impacts to the following:

- Environmental Justice
- Land Use and Visual Resources
- Air Quality
- Noise
- Geology and Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Waste Management

Environmental Justice – Region 4 EPA is aware of possible concern among local residents regarding the cumulative impacts associated with this project and the planned/connected actions associated with the accompanying West Tennessee megasite project. Section 4.7 pg. 49 addresses the cumulative impacts and indicates the information on the megasite development is not available at this time. We recommend additional communication and outreach to the EJ communities.

Land Use and Visual Resources – The project would require an amendment to the Haywood County Zoning map. The Solar Farm PV panels, and the Information and Welcome Center would be visible from I-40, and possible removal of forest and shrub cover may be required as part of the transmission line extension and project construction. We recommend using a construction and site preparation plan which would minimize ecological impacts.

Air Quality – It was noted Haywood County is an attainment area for all critical pollutants. Project construction will generate air pollutants and possible hazardous and solid wastes. Heavy construction equipment intermittently emits quantities of air pollutants via tailpipe emissions. Therefore, fugitive dust control, appropriate worker protection measures, and adherence to OSHA standards will be important measures during construction and operation of the facility. It is understood the proposed project meets the definition of a project with low potential Mobile Source Air Toxics (MSAT). To help minimize construction emissions, we recommend the use of reduced idling practices, cleaner fuels, and emission retrofits for construction equipment used by DOE contractors whenever feasible. The DOE may wish to discuss this further with EPA Region 4 (Dale Aspy at 404/562-9041).

Noise – EPA recognizes construction of the project would cause a temporary and short-term increase to the ambient sound environment, and once the facility is installed there will not be a significant contribution to the noise of the area. EPA recommends scheduling construction activity to minimize disturbance to the local community.

Geology and Soils – The DEA indicates the majority of the site is currently used for agricultural purposes, and approximately 20 percent of the project site is deemed as prime farmland soils. We understand this has been reviewed and deemed acceptable. However, local communities must be made aware of these findings.

Water Resources – There are three streams and two small ponds identified in the proposed project site. The DEA indicates no long-term adverse quality impacts are expected. We request minimization of impacts by implementing best management practices (BMPs), and methods to control runoff and sediment/soil erosion. It is noted there are no floodplains or wetlands present at this site.

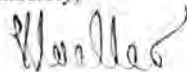
Biological Resources – It has been determined and noted there are no federally listed threatened or endangered species known to exist on site. Also, noted very little undeveloped land would be impacted by the project, however, minimization should be adhered to so that only lower-quality deciduous forest and shrub habitats be removed as part of project site preparation.

Cultural Resources – The DEA states the Tennessee SHPO has surveyed properties in Haywood County, but a site specific survey has not been conducted. However, TDOT has conducted a field review of the area and did not identify any potential properties, within this area, therefore no impact on historic, archaeological, or American Indian resources as a result of this project is expected. It appears there is not a SHPO final determination included with in this DEA. This should be part of the final document. If a find is located during construction, the local SHPO must be contacted before proceeding

Waste Management – The DEA notes that the PV panels in the solar array may contain hazardous materials. Although the panels are sealed, they must be treated using (BMPs) during construction and disposal during decommissioning to avoid environmental impacts. For those additional hazardous materials, such as petroleum, oils, lubricants, paints and solvents used during construction and operation of the facility, practices which prevent or minimize releases should meet all applicable Federal, State and local regulations and codes. Hazardous and solid waste management will need to meet all State and Federal regulations with waste appropriately transported to permitted disposal facilities.

Thank you for the opportunity to comment on this EA. If you have any questions, contact Bob Boedeker of my staff at (404) 562-9607.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management



REPLY TO
ATTENTION OF

Operations Division
Regulatory Branch

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894
October 20, 2010

Mr. Cliff Whyte
General Engineer
National Energy Technology Laboratory
3610 Collins Ferry Road, P. O. Box 880
Morgantown, West Virginia 26507

Dear Mr. Whyte:

This is in reference to your recent request for a jurisdictional determination for a 5 to 10-megawatt photovoltaic (PV) West Tennessee Solar Farm, including the required utility transmission lines. The project would be located directly adjacent to Interstate 40 between mile markers 43 and 45 in Haywood County, Tennessee, at approximate lat. 35.40686° and long. -89.38857° (see attached map). From reviewing the information submitted, it appears there are aquatic resources in the area of review and it is our preliminary jurisdictional determination (PJD) that there are wetlands or other waters of the United States that will be impacted by this project. As such, a permit will be required from the U.S. Army Corps of Engineers.

A PJD cannot be appealed. If you object to this PJD, please contact us for information about receiving an approved jurisdictional determination and information on the administrative appeals process. The PJD is included for your concurrence. If you agree with this PJD please sign the form and return it to the address listed above. If the PJD is not returned within 30 days of the date of this letter we will assume your concurrence. This PJD will remain valid for five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

The Memphis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete and return the enclosed business reply postcard or go to our Customer Service Survey found on our web site at <http://per2.nwp.usace.army.mil/survey.html>.

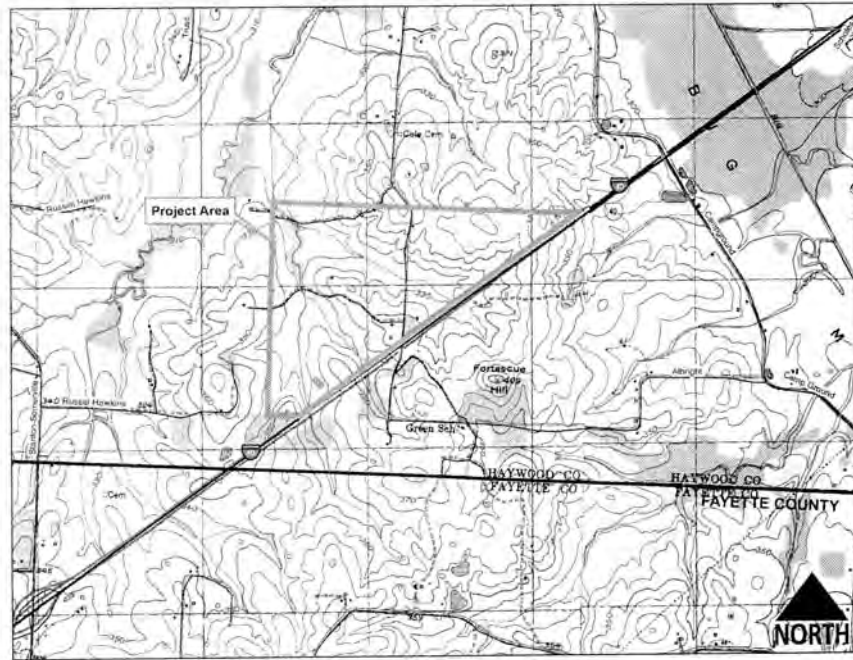
If you have questions concerning this determination, please reference File Number MVM-2010-495 and contact Randy Clark at the letterhead address or by telephone at (901) 544-0735.

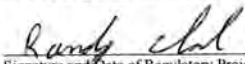
Sincerely,

A handwritten signature in black ink that reads "Tim H. Flinn".

Tim Flinn, P. E.
Eastern Section Chief
Regulatory Branch

Enclosures



PRELIMINARY JURISDICTIONAL DETERMINATION FORM			
This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:			
District Office	Memphis District	File/ORM #	MVM-2010-495
		PJD Date:	Oct 19, 2010
State	TN	City/County	Brownsville, Haywood County
Nearest Waterbody:	Big Muddy Creek		
Location: TRS, Lat/Long or UTM:	N35.40686° / W-89.38857°		
Name/Address of Person Requesting PJD	Mr. Cliff Whyte 3610 Collins Ferry Road P. O. Box 880 Morgantown, WV 26507		
Identify (Estimate) Amount of Waters in the Review Area:	Name of Any Water Bodies on the Site Identified as Section 10 Waters:		
Non-Wetland Waters:	Stream Flow:	Tidal:	
linear ft	width	acres	N/A
Wetlands:	acre(s)	Cowardin Class:	N/A
		<input checked="" type="checkbox"/> Office (Desk) Determination	
		<input type="checkbox"/> Field Determination:	Date of Field Trip:
SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):			
<input checked="" type="checkbox"/> Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: National Energy Technological Laboratory <input type="checkbox"/> Data sheets prepared/submitted by or on behalf of the applicant/consultant. <input type="checkbox"/> Office concurs with data sheets/delineation report. <input type="checkbox"/> Office does not concur with data sheets/delineation report. <input type="checkbox"/> Data sheets prepared by the Corps <input type="checkbox"/> Corps navigable waters' study: <input type="checkbox"/> U.S. Geological Survey Hydrologic Atlas: <input type="checkbox"/> USGS NHD data. <input type="checkbox"/> USGS 8 and 12 digit HUC maps. <input type="checkbox"/> U.S. Geological Survey map(s). Cite quad name: <input type="checkbox"/> USDA Natural Resources Conservation Service Soil Survey. Citation: <input type="checkbox"/> National wetlands inventory map(s). Cite name: <input type="checkbox"/> State/Local wetland inventory map(s): <input type="checkbox"/> FEMA/FIRM maps: <input type="checkbox"/> 100-year Floodplain Elevation is: <input type="checkbox"/> Photographs: <input type="checkbox"/> Aerial (Name & Date): <input type="checkbox"/> Other (Name & Date): <input type="checkbox"/> Previous determination(s). File no. and date of response letter: <input type="checkbox"/> Other information (please specify):			
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.			
 Signature and Date of Regulatory Project Manager (REQUIRED)		10-19-10 Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)	
EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:			
1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time. 2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court, and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.			

Appendix B
Public and Agency Comments and Responses

**FINAL ENVIRONMENTAL ASSESSMENT
WEST TENNESSEE SOLAR FARM PROJECT, HAYWOOD COUNTY, TENNESSEE**

COMMENTS AND RESPONSES

Through the course of the public meetings, consultation process, and public notice period, various comments were submitted for consideration. Because of the similarity and volume of comments, copies of the submissions are not included in this Environmental Assessment. Any party who desires an electronic or hard copy of the submitted comments may contact DOE and request these materials. DOE has summarized comments or selected specific comments that are representative for response.

DOE received several comments in the form of news articles or press releases that had been highlighted. While those comments were included in the administrative record, a specific response to each underlined item has not been included. These articles generally included one or more of the following themes:

- a. *The Haywood County (or West Tennessee) Megasite should be a connected action to the solar farm project.* DOE has directly addressed this concern in both the response to comments and in the text of the Final EA.
- b. *The solar farm project is not a good investment based on location, infrastructure availability, technology, or other factors.* In the State Energy Program, projects are selected by the states. DOE reviews the eligibility of projects selected by the states, but does not select the projects states fund.
- c. *Various politicians and State of Tennessee personnel are or have been involved with Genera Energy, LLC or other solar power businesses.* These comments are outside of the scope of the Environmental Assessment. The issuance of a FONSI does not exempt any party from complying with local, state, or federal requirements.

Additional comments were received that are not within the scope of DOE's Environmental Assessment. For example, DOE cannot address comments regarding the intent of the Tennessee Legislature. Such comments were addressed by the State of Tennessee. In some cases, both agencies provided a response.

**FINAL ENVIRONMENTAL ASSESSMENT
WEST TENNESSEE SOLAR FARM PROJECT, HAYWOOD COUNTY, TENNESSEE**

COMMENTS AND RESPONSES

<p>Bob Brooks October 16, 2010</p>	<p>COMMENT: <i>Thank you so much for recent info released in the Assessment of the West TN Solar Farm Project. However, I have not heard much on the actual process of applying for work in the construction and operation of the project and resource center. Where can one get and/or apply for possible employment in this project?</i></p> <p>STATE RESPONSE: Thank you for your comment. Your inquiry was forwarded to Signal Energy.</p>
<p>Gary Bullwinkel Public Meeting October 5, 2010</p>	<p>COMMENT: <i>This is a smoking mirrors demonstration that you have over a dozen people here who are getting paid by the federal government and state government and they absolutely do not want you to know anything about the megasite that they spent two million dollars to buy another 200 acres of land so they would not do any investigation or study on the megasite. The Legislature told them to put it on the megasite and they have refused to do it. We've got a young man -- a fine young man here that says a lot of gobble-d-goop, but it was supposed to be on the megasite. They spent 40 million dollars - four thousand acres. If they had that on the north portion of the megasite, it would be a mile and a half to the Highway 70 transmissions lines, but they're going all out of the way to go through eight miles of Fayette County, even sell it on Chickasaw Electric's right of way. TVA does not own that. TVA is driving this project, but TVA was not brought in as a cooperative agency. We've got several connecting agencies that's going on in these things and nothing is happening, but they've not done an economic analysis because it's a big waste of money, but when they do the rest center, when they do these they've got a lawyer that's the head of this project. Why? Because the solar panels are going to get out of order? No. Because they can't keep the stories straight and they need a lawyer to do it. Okay? So all this money that they spend on an annual basis for people to come look at this Solar Panel Farm is going to be wasted. If they wanted people to come look at the Farm, they could have put a sign down at Exit 42 and said, Solar Farm, one mile north, and that would have solved a lot of problems. Millions and millions of dollars -- nobody has come to us, nobody has come to Fredonia and said, "Gee, Gary, you sure do make a lot of noise a lot of these years." What is it that you think that we should study? What is it that we should be doing? What is it should we be looking at? Willie Taplin, your property is right next to the road and the things of the megasite. What do you think will happen to your property? Nobody has done that, but you spend millions of dollars to do a smoking mirrors thing and you say this really isn't there and the megasite really isn't there and it's not all about the megasite. It is about the megasite and the people should know and understand that. Most of the people in this room are taking ten dollars out of your pocket, putting five in theirs and now the rest of the people of Haywood County is begging for the other five back. It's not about jobs. It's about a boondoggle and misuse and abuse of federal - this is all borrowed money; all borrowed money.</i></p> <p>DOE RESPONSE: DOE has reviewed its Proposed Action and the information available regarding the Megasite. DOE has determined that the Megasite is not a Connected Action based on the definition in 40 CFR 1508. Neither the Megasite, nor the solar farm would automatically trigger the other. Similarly, neither requires the other to be undertaken previously or simultaneously. Finally, they are not interdependent parts of a larger action that depends on the larger action for their justification. As such, DOE has determined that the Megasite is not a Connected Action. Further, the solar farm is consistent with the goals of the State Energy Program and the American Recovery and Reinvestment Act. DOE and Tennessee have fulfilled the public notice and comment responsibilities and have addressed all resource areas, including environmental justice in the NEPA process.</p> <p>STATE RESPONSE: The West Tennessee Solar Farm is part of the Volunteer State Solar Initiative. It has been discussed, debated, and approved in public meetings by governmental</p>

**FINAL ENVIRONMENTAL ASSESSMENT
WEST TENNESSEE SOLAR FARM PROJECT, HAYWOOD COUNTY, TENNESSEE**

COMMENTS AND RESPONSES

	<p>authorities in Haywood County, Tennessee, the Fiscal Review Committee of the Tennessee General Assembly, and the Tennessee State Building Commission. This Environmental Assessment analyzes the potential impacts of the West Tennessee Solar Farm and the co-located Information and Welcome Center. The industrial Megasite is a separate, independent project and is addressed in the cumulative impacts section of this EA.</p> <p>From the outset, the West Tennessee Solar Farm has been envisioned as a demonstration project to educate Tennesseans and other visitors about the benefits of renewable energy and generate zero-carbon production of electricity. Demonstrating the zero-carbon production of electricity on a highly visible and significant scale is expected to encourage future renewable energy interest and investments.</p> <p>Tennessee retained Science Applications International Corporation (SAIC), a firm with knowledge and expertise in NEPA compliance, to assist with the EA process and ensure compliance. Additionally, while not required under the Environmental Assessment process, the State and DOE held both a public scoping session in November 2009 (which is addressed in Section 1.5.1 of the EA) and a public meeting in October 2010 to provide a local forum for input, questions, and comments.</p> <p>The State will not take action that will have an adverse environmental impact or limit the choice of reasonable project alternatives until the EA process is completed. This limitation has been included in all contracts and subcontracts that have been developed for the proposed project.</p>
<p>Gary Bullwinkel October 8, 2010</p>	<p>COMMENT: <i>State of Tennessee is not complying with legislative authorization regarding the West Tennessee Solar Farm.</i></p> <p>STATE RESPONSE: In Sections 4 and 39(b) of the 2009 Appropriations Act, the Tennessee General Assembly appropriated a total of \$81,990,100 (the sum of \$48,650,900 and \$33,339,200) to the Energy Division of the Tennessee Department of Economic and Community Development. 2009 Tenn. Pub. Acts Ch. 554. From this sum, Section 65, Item 4(a), earmarks \$62,482,000 to the Division of Energy from the state energy program federal grant provided pursuant to the American Recovery and Reinvestment Act of 2009. This amount was appropriated for the Volunteer State Solar Initiative.</p> <p>The section provides: “The solar energy initiative includes a Solar Institute at the Cherokee Farm site at the University of Tennessee in Knoxville and at Oak Ridge National Laboratory, a Solar Farm five-megawatt power generation demonstration project <i>at</i> the West Tennessee industrial Megasite in Haywood County, and other renewable energy activities approved by the U.S. Department of Energy.” (Emphasis added). Under Tennessee law, legislative intent is determined “from the natural and ordinary meaning of the statutory language within the context of the entire statute without any forced or subtle construction that would extend or limit the statute’s meaning.” <i>State v. Flemming</i>, 19 S.W.3d 195, 197 (Tenn. 2000). The preposition “at” has several meanings. These meanings include “in the location of”; “in the position of”; or “to or toward the direction of”. <i>Webster’s II New College Dictionary</i> 70 (2001).</p> <p>The cited language, therefore, does not require the Solar Farm to be located within the boundaries of the West Tennessee industrial Megasite in Haywood County. The proposed Solar Farm will be located on land no more than a few hundred yards from the Megasite boundary. This location is authorized under the cited language.</p>

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<p>Gary Bullwinkel October 22, 2010</p> <p>And</p> <p>Email of January 19, 2011</p>	<p>COMMENT: <i>Ineligibility of project for SEP ARRA and PVE funds because of extensive construction activities required for Solar Farm and Electrical Transmission facilities and land purchase.</i></p> <ul style="list-style-type: none"><i>Because the primary purpose of the Solar Farm is to generate electricity for sale to TVA for profit to the State of Tennessee, DOE/NETL through lax definition, administration, and project management is facilitating and financing for the State of Tennessee a newfound unregulated and undefined electric generation utility.</i><i>This project as presented and defined in the Draft EA does not qualify for ARRA funds. SEP PVE fund use does not allow land purchases, but Tennessee also chose to misallocate PVE funds for the purchase of the underlying land of the Solar Farm.</i><i>Also attached is the minutes from a Tennessee State Building Commission discussing the use of State Energy Program Federal PVE funds to actually purchase the Plat 40 Stuart land for the purpose of the Solar Farm and Welcome Center. Immediately thereafter, they discuss the partitioning and leasing of the land to other entities.</i> <p><i>Did your office or NETL make the decision to allow the use of SEP/PVE funds for the land purchase and the subsequent leasing or sale to other entities for non-related uses? Would not that questionable decision itself be subject to NEPA before it was allowed?</i></p> <p><i>When we wrote to this office last December concerning the extensive logging on the Plat 40 Stuart land, we were told DOE had nothing to do with the purchase nor with the contractual details. From these SBC minutes, it seems Tennessee coordinated closely with your office on that very purchase which would include the clause allowing the former owner to destroy wildlife and century old trees while your own NEPA process was already in place.</i></p> <p><i>PVE funds were collected from petroleum companies for violations harming the public in either price fixing or pollution incidents. The use of the funds are focused and are supposed to return a documented benefit to the public. Land purchases are precluded period, much less land purchases that are then parceled out to an applicant's varied designations.</i></p> <p>DOE RESPONSE: The Solar Farm project is eligible for ARRA SEP funds. The Solar Farm project was reviewed and is consistent with the requirements set out in 10 CFR Part 420 for the State Energy Programs.</p> <p>Tennessee did use PVE funds to purchase land for the Solar Farm Project. There are several types of PVE funds distributed to states. Not all of these funds are distributed through SEP grants, and therefore are not subject to the limitations and requirements set out in 10 CFR Part 420 for State Energy Programs. The PVE funds that Tennessee used to purchase the land for the solar farm came from the Stripper Well Settlement fund. While DOE is responsible for ensuring that states use these funds in a manner authorized by the court-approved settlement agreement that concluded this litigation, the funds are not federal in nature, are not distributed via SEP grants, and can be used for purposes that SEP funds cannot be used for. Accordingly, Tennessee could use these funds to purchase land prior to the completion of the NEPA process. It appears the minutes provided are referring to DOE's Stripper Well Committee, which ensures that Stripper Well PVE funds are used in accordance with the settlement agreement, and that any reference to SEP was in error.</p>
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<p>Gary Bullwinkel October 22, 2010 And email of January 19, 2011</p>	<p>COMMENT: <i>Mootness of Draft Environmental Assessment</i> <i>The timeliness and completeness of the EA has been rendered “moot” by the State of TN applying for a major waterworks USDA grant for the accompanying West Tennessee megasite. SSOE, a major auto assembly plant engineering firm, submitted a design to Tennessee and Haywood County in September 2010 for approval to file an application for USDA grant funds.</i></p> <p><i>Recently we received the attached letter from TN USDA to TN Econ Dev concerning the State of TN application for USDA funds for a major water/wastewater project for the West Tennessee Megasite. On Page 3 Paragraph 3 USDA informs the State of TN the environmental information provided regarding the plumbing project was insufficient and that the level of inquiry and study would have to be done on the Megasite as a whole with the possible consideration of an auto assembly plant as the industry to be considered.</i></p> <p><i>In the CEQ Regulations Part 1506, Section 1506.1 Limitations on Actions During NEPA Process, Federal agencies are required to closely consider and limit actions that might prejudice, limit reasonable alternatives or have an adverse environmental impact on the area under consideration.</i></p> <p><i>With that in mind, we respectfully ask you to inform the State of Tennessee that the "Decision" to release the funds for the Solar Farm is moot and that the funds cannot be used or expended until the USDA, TVA, FHWA, DOE, FWS, COE Environmental Assessment NEPA process is completed.</i></p> <p>DOE Response: DOE has reviewed the information regarding this project. The West Tennessee Solar Farm and the Haywood County Megasite (Megasite) are not connected actions for purposes of NEPA. Based on the proximity of the two projects, an analysis of the Megasite is included in the Cumulative Impacts section of the Environmental Assessment. However, these projects are independent actions.</p> <p>The information DOE has compiled in this Environmental Assessment is the best information available at this time. This information may be used, in whole or in part, by other agencies for the purposes of supplementing other analyses.</p> <p>DOE’s Proposed Action is to allow Tennessee to use its SEP ARRA funds to demonstrate the zero-carbon production of electricity. This EA was prepared to assess the potential consequences of the proposed Solar Farm project on the human environment, in accordance with the CEQ’s Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500–1508) and DOE’s “National Environmental Policy Act Implementing Procedures” (10 CFR 1021). The proposed West Tennessee Solar Farm and the industrial Megasite are separate, independent projects and therefore not connected actions under NEPA. The potential cumulative impacts of the solar farm and the development of the industrial Megasite are discussed in Section 4 of the EA.</p> <p>These separate projects involving different federal agencies need not be analyzed in the same NEPA document. While DOE takes no position on whether the mega-site would require preparation of an EIS, the fact that USDA or EPA believes the mega-site might require an EIS is not relevant to determining the level of NEPA review needed for the solar farm. Similarly, any decision that DOE may make as to whether to allow Tennessee to use its ARRA SEP funds for the solar farm would not prejudice decisions that USDA or another federal agency may make about the mega-site. The EA for the solar farm analyzes the cumulative impacts of the solar farm, the information and welcome center (a connected</p>
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	<p>action), and, to the extent possible given the uncertain nature of the plans for its development, the mega-site (an independent action). DOE presumes that the USDA or another federal agency will also analyze the cumulative impacts of these three projects when preparing the NEPA document for the mega-site.</p> <p>COMMENT: <i>This raises serious questions about either the competence or intentions of the State of Tennessee to fully comply with NEPA activities since they are performing the EA for DOE/NETL on the adjoining and connected Solar Farm.</i></p> <p>DOE and State RESPONSE: Tennessee retained Science Applications International Corporation (SAIC), a firm with knowledge and expertise in NEPA compliance, to assist with the EA process and ensure compliance. Additionally, while not required under the Environmental Assessment process, DOE and the State held both a public scoping session in November 2009 (which is addressed in Section 1.5.1 of the EA) and a public meeting in October 2010 to provide a local forum for input, questions, and comments. DOE is solely responsible for ensuring compliance with NEPA.</p> <p>COMMENT: <i>The Solar Farm is a connected action with the Megasite, not only because of its immediate proximity to the 4,000 acres of the purchased land but also for the following reasons:</i></p> <ul style="list-style-type: none">○ <i>TN Legislation dictates Solar Farm be located on West TN Megasite</i>○ <i>Plat 40 (200 acres of Louis Stuart) was optioned under megasite options</i>○ <i>Plat 40 (200 acres of Louis Stuart) furthers aims of megasite by purchasing land designated in TDOT and FHWA future plans for I-40 “Exit 44” and has reserved space for this Interstate access on this land.</i> <p>DOE RESPONSE: CEQ NEPA Regulations, 40 CFR § 1508.25(a)1, defines “connected actions” as actions that are “closely related and therefore should be discussed in the same impact statement.” Section 1508 further identifies three factors for determining connected actions. Actions are connected if they: “(i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; [or] (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.”</p> <p>STATE RESPONSE: The Solar Farm and the Megasite projects are not connected to each other under the definition of connected actions. The only relationship between these projects is that they are both located in the same area. No SEP-ARRA funds are requested for the Megasite. There is no link between the power or revenue generated at the Solar Farm with the Megasite.</p> <p>The State will not take action that will have an adverse environmental impact or limit the choice of reasonable project alternatives until the EA process is completed. This limitation has been included in all contracts and subcontracts that have been developed for the proposed project.</p> <p>Public Chapter 554 directed that the proposed West Tennessee Solar Farm be developed in Haywood County near the Megasite, not on the Megasite. The tract of land for the proposed solar farm was purchased in December 2009 under a purchase option finalized in September 2009. This purchase was a separate, independent transaction from the Megasite land acquisition. The only development to occur at the location of the proposed West Tennessee Solar Farm will be the development of the array, construction of the Information and</p>
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	<p>Welcome Center, and development of access to the site.</p> <p>Access to the solar farm and the Information and Welcome Center will be through a closed-loop interchange from Interstate 40 to the site. Vehicles will not be able to access local roads from the Solar Farm. There will be no interstate access to the industrial Megasite from I-40 through the Solar Farm site. Any conceptual renderings that show a proposed “Exit 44” at the Solar Farm site are inaccurate and do not reflect current design plans.</p>
<p>Gary Bullwinkel October 22, 2010</p>	<p>COMMENT: <i>Inadequacy of Draft Environmental Assessment</i> <i>Lack of Reasonable Alternatives Analysis - It would seem possible the preparers’ intent was to define an outcome instead of preparing an Environmental Assessment to truly analyze and inform regarding the proposed project alongside identified Reasonable Alternatives.</i></p> <p>DOE RESPONSE: DOE is limited to either allowing or denying the State of Tennessee’s request to use ARRA State Energy Program funds for the project. The State of Tennessee chose this project for funding from its State Energy Program (SEP) grant under the American Recovery and Reinvestment Act. Accordingly, DOE’s role is limited to ensuring the project meets federal SEP requirements and is appropriately reviewed under NEPA. DOE’s consideration of reasonable alternatives is therefore limited to the project selected by the State of Tennessee and the No Action Alternative. The proposed action (to allow the state to fund the West Tennessee Solar Farm) and the No Action Alternative are analyzed in Environmental Assessment.</p> <p>COMMENT: <i>Land Use and Prime Farmland -Changing farmland and natural habitat to industrial zoning with its accompanying electric generation plant, parking lots, and visitor center does create a significant impact on the human environment and the natural environment.</i></p> <p>DOE RESPONSE: On November 15, 2010, the Haywood County Commission approved rezoning of the Solar Farm property from Forestry, Agricultural, and Residential (FAR) to Restricted Industrial (I-2). This rezoning was a local endeavor and not an action of the federal government. Section 3.5.2 discusses the potential environmental consequences of this project on Prime Farmland.</p> <p>COMMENT: <i>Air Quality - To dismiss the ongoing and cumulative impacts of the visitor traffic and extensive hours long haul trucks spend at rest stops with extended idling as “minor emissions” is not supported by current FHWA and EPA statistics nor common sense. Cars emit 20 times more pollutants idling than when they travel 30 miles per hour. Long haul diesel trucks use rest stops as vital resting places but often leave their trucks idling to provide needed cooling or heating while they stop for their required 8-10 hours after driving long distances. With the expectations of up to 1,200,000 visitors, the ongoing and cumulative effects of air pollution represent a far more significant impact on the local environment than the temporary pollution of the construction phase and the minor impact of worker commutes.</i></p> <p>DOE RESPONSE: The EA addresses air quality in Sections 3.3 and 4.2. Estimated emissions from idling semi-tractor trailers have been added to the analysis.</p> <p>STATE RESPONSE: The air quality analysis for Federal-aid transportation projects must address 1) transportation conformity (including hot-spot analyses if the project is in a CO or PM nonattainment area) and 2) Mobile Source Air Toxics (MSATs). Both of these areas were addressed in the categorical exclusion issued by the Federal Highway Administration.</p>

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	<p><u>COMMENT:</u> <i>Biological Resources - How can bulldozing over 21 acres of “low-quality deciduous forest” into burn piles have no adverse impact on those plants and animals? How can entire tree and canopy removal of over 8.5 miles of right-of-way not affect many classes of animals and plant species?</i></p> <p><u>DOE RESPONSE:</u> The EA found that the Proposed Action, the development of the West Tennessee Solar Farm and the Information and Welcome Center, would result in no adverse impacts to any threatened or endangered species or critical habitat. Animals and plants that occur in the project area are those adapted to human disturbance and impacted environments. Displacement and mortality of individual wildlife may occur during project installation/construction activities. Although roadway mortality is generally not believed to substantially affect animal populations under normal conditions, if the population is experiencing other sources of stress such as disease or habitat degradation, then traffic-related mortality can be more prevalent. Since the project area is adjacent to an existing interstate, noise is already a factor within existing habitats.</p> <p><u>COMMENT:</u> <i>Waste Water Management, Water Resources, and Storm Water Runoff - 10,000 to 40,000 gallons of sewage can have tremendous adverse impacts especially on a cumulative basis. How will this sewage be handled with only intermittent 303(d) stream beds available for dumping? Could it even be permitted without a TMDL analysis being prepared? Could the systems above be permitted at all? Under what circumstances and what happens under great stress conditions?</i></p> <p><u>DOE RESPONSE:</u> The development of West Tennessee Solar Farm and the Information and Welcome Center would be a 200-acre development. Section 3.10 addresses utility needs associated with the West Tennessee Solar Farm, including wastewater management. It is anticipated that the sanitary wastewater generated from the Information and Welcome Center would be treated on-site, and no connection to the public sanitary sewer system would be required. This method is used in other Welcome Centers in Tennessee. The Information and Welcome Center would apply a decentralized on-site treatment using such methods as a re-circulating sand filter with a subsurface treatment and disposal system, spray/drip irrigation, constructed wetlands, or a packaged treatment plant. The applicable permit would be obtained prior to the installation and operation of this system. Nonhazardous wastewater from cleaning the PV modules would be re-absorbed into the ground under the solar array.</p> <p><u>COMMENT:</u> <i>Storm Water Discharges - Because of the placement of 20 acres of panels, many road access ways and the extensive parking lots, sidewalks, and rooftops of the Solar Farm and Welcome Center, storm water management is a critical area of pollutant management for this project. Yet there is no analysis, quantification of pollutants, documentation of expected storm levels nor the slightest indication of the design and layout of mitigating drainage and abatement solutions.</i></p> <p><u>DOE RESPONSE:</u> The EA addresses storm water discharges in Section 3.6.2. There are no regulated pollutants expected to be used at the site. The project proponent will be required to comply with all applicable regulatory requirements imposed by the appropriate agencies.</p> <p><u>COMMENT:</u> <i>Environmental Justice Issues - Has anyone in DOE/NETL or the State of Tennessee done anything to answer or consider the facts of these scoping comments? The issues concerning Environmental Justice go far beyond mere employment or noise pollution.</i></p>
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	<p><u>DOE RESPONSE:</u> The West Tennessee Solar Farm and the Information and Welcome Center, would be located on a 200-acre tract of land in Haywood County that is currently in agricultural use. Section 3.9 of the EA addresses Socioeconomic and Environmental Justice. Input provided during the scoping process was considered during the preparation of the EA.</p> <p><u>COMMENT:</u> <i>Utilities/Power Transmission - The EA in the Electricity subsection states that over 8.5 miles of transmission lines will be routed through Fayette County but no impact study will be done until DOE ARRA funds are released. To find an impact you must look. CEQ regulations require a “hard look” at environmental impacts BEFORE findings are made. There are many things wrong with this activity but for NEPA purposes a complete analysis must be made before any final agency decision is made. How can an EA be split into two parts, given a FONSI for the entire EA, and then use the ARRA funds released to do the rest of the EA impact study? And then use the funds to construct a new transmission line over 8.5 miles of Fayette County properties.</i></p> <p><u>DOE RESPONSE:</u> Section 3.10.2.1 addresses transmission and has been revised and expanded since the release of the Draft EA to incorporate additional information from the recently completed system impact study. The system impact study was a utility engineering technical and quantitative analysis of the local electrical system and not intended to be an analysis of potential environmental impacts. The utility connection to the CEC distribution grid would require some limited tree trimming and clearing within the 6.6 mile existing ROW and tree removal within a 2.5 mile section of new ROW. Tree trimming and removal is estimated at 12.5 feet from pole centerline or 25 feet total. Standard tree-clearing practices would be conducted by CEC as part of the utility connection activities and would not be under the direction or control of the Solar Farm project.</p> <p><u>COMMENT:</u> <i>Cumulative Impacts – Cumulative impacts are dismissed continually in the body of the report as not being significant because of the temporary effects of construction and installation or because of the benign operational impact of the Solar Farm. Other cumulative impacts of the impending megasite development, combined with the cumulative impacts of the privately owned Pilot Oil Truck Stop and other private businesses of Exit 42, point to an ever increasing load of pollutants, both air and waterborne, in the immediate region of the Fredonia, Hebron, Stanton, and Douglass communities. With increasing road building, traffic, and other industrial development, the impacts will be tremendous to the area and will affect the minority populations tremendously and adversely. Having a job as a janitor at the rest stop or local factory does not help the family health problems or degrading socio-economic effects engendered by being exposed to a constant stream of dangerous pollutants in your air and water. The conclusions of the preparers that the Solar Farm and Welcome Center will not be additive to other cumulative impacts is wrong and wrong-headed.</i></p> <p><u>DOE RESPONSE:</u> Cumulative Impacts – Potential impacts associated with the proposed Megasite are highly speculative at this time and the Solar Farm is expected to be completed before any development of the Megasite might begin. Cumulative impacts were assessed in a qualitative manner to the extent that information was available.</p> <p><u>COMMENT:</u> <i>Lack of Coordinating Agencies - Significantly absent from these late and impossibly scheduled requests for coordinating agencies are letters to EPA, TVA, and USDA. Inviting Indian tribes in Oklahoma to coordinate seems a bit far-fetched especially when the minority populations of Fredonia and Douglass have been pounding on the door of NEPA for five</i></p>
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	<p><i>years asking to be let in.</i></p> <p>DOE RESPONSE: Lack of Coordinating Agencies – DOE coordinated with the U.S. Fish and Wildlife Service, Federal Highway Administration, U.S. Corps of Engineers, Tennessee Historical Commission, and nine Native American Tribes. The Federal Highway Administration and U.S. Corps of Engineers were invited to become Cooperating Agencies and the Native American Tribes were invited to be consulting parties. The State of Tennessee has also coordinated with the Tennessee Historical Commission and has been coordinating with the Tennessee Valley Authority regarding the Power Purchase Agreement. All of these agencies were also given the opportunity to provide comments on the draft EA.</p>
<p>Gary Bullwinkel October 27, 2010</p>	<p>COMMENT: <i>Yeah, check with TDOT, I'm sure they have extensive notes on their Title VI and EJ analysis.</i></p> <p>STATE RESPONSE: TDOT issued a Categorical Exclusion (CE) for the Information and Welcome Center in accordance with the NEPA requirements of the Federal Highway Administration and, in the CE, issues related to Environmental Justice were addressed. The conclusions reached were as follows: <i>Under Title VI analysis, if the proposed construction of the Information and Welcome Center discussed above occurs, this assessment finds no evidence or indication of discrimination on the basis of race, color, national origin, age, sex, or disability. Overall, the proposed project is not expected to have a disproportionate adverse impact on minority or low-income populations. In accordance with Title VI of the Civil Rights Act of 1964, TDOT would comply with Title VI to ensure that "No person shall be, on the grounds of race, color or national origin, excluded from participating in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal assistance."</i></p> <p>COMMENT: <i>Mr. Love ties TDOT, DOE, and TN SBC all together with the TDOT CE on pages 3-4 under the EJ section. In the Public Participation document, our scoping comments clearly spell out why the options and land purchase program was and is discriminatory.</i></p> <p>STATE RESPONSE: TDOT participated in the public scoping meeting held on November 19, 2009, in cooperation with DOE and ECD in order to share with the attendees the scope of the Information and Welcome Center project to be undertaken adjacent to the West Tennessee Solar Farm, as is referenced in the Categorical Exclusion (CE) document. TDOT was not involved in the land purchase program for this project.</p> <p>COMMENT: <i>The State of Tennessee says they will use FHWA Highway Enhancement funds for the solar visitor center but those funds are for official Scenic Highway Projects. Again, that doesn't seem to matter.</i></p> <p>STATE RESPONSE: Funding for the Information and Welcome Center was approved by the Federal Highway Administration (FHWA) on June 11, 2010, by amendment of the Statewide Transportation Improvement Program.</p>
<p>Gary Bullwinkel November 1, 2010</p>	<p>COMMENT: <i>Am attaching some photos taken along Joyners Campground Road in North Fayette County on October 31, 2010. This road between Yum Yum Rd and Highway 76 has been identified as the primary choice for transmission lines routing from the Solar Farm along the existing Chickasaw Electric distribution routing and right of ways. In our comments, we pointed out that any impact studies of the transmission are scheduled AFTER funds are released and that</i></p>

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	<p>would be improper. Given the location of poles IN this wetland area AND for this exact point to be the location of a major traversing of an existing TVA transmission line (note the location of the TVA transmission tower IN the wetland), it is obvious that a hard look at the impact on these wetlands has not been done. Wetlands and TVA traversing involve two other federal agencies directly. We see nothing in the Draft EA concerning this area at all. One of the photographs is a picture of these same distribution lines a mile or so west where Joyner's Campground meets Yum Yum Rd. This is our property (Gail and Gary Bullwinkel) and we are very concerned about the environmental consequences of rewiring or installing a new network of poles and wires on our property to facilitate the University of Tennessee's new electrical generation venture. We and our children spend a good deal of our time up and down Joyner's Campground road for recreation, bike riding, and worship services at the adjoining (to the wetland) Methodist campground. For this historic and environmentally sensitive area to be not be studied and analyzed in detail regarding the placement of transmission lines is disturbing and not in keeping with NEPA intent or practice. Please add this information to your comments section on the Draft EA.</p> <p>DOE RESPONSE: Section 3.10.2.1 and Section 3.6.2.1.3 addresses transmission and has been revised and expanded since the release of the Draft EA to incorporate additional information from the recently completed system impact study. The system impact study was a utility engineering technical and quantitative analysis of the local electrical system and not intended to be an analysis of potential environmental impacts. The State will obtain all required permits prior to work being performed on-site or to establish electrical grid connectivity to the Solar Farm array.</p>
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<p>Nick Crafton Public Meeting October 5, 2010</p>	<p><u>COMMENT:</u> <i>Is Phase 1 westbound access only into the solar farm? Is phase 1 the only part that is funded? Where is the funding for phase 2?</i></p> <p><u>DOE and STATE RESPONSE:</u> Stage 1 access to the Information and Welcome Center at the West Tennessee Solar Farm will be westbound access only. Stage 1 design and construction is funded the Federal Highway Administration (FHWA) and the Tennessee Department of Transportation (TDOT) as set forth in the Statewide Transportation Improvement Plan (STIP) per amendment approved by FHWA on June 11, 2010. Stage 2, eastbound access, is not yet programmed and no budget or schedule has been established for this portion of the project.</p> <p><u>COMMENT:</u> <i>Who will respond to emergencies at the Information and Welcome Center?</i></p> <p><u>DOE RESPONSE:</u> Emergency response would include the Tennessee Highway Patrol and local law enforcement, fire, and emergency responders from Haywood County and, if necessary, the City of Brownsville. Emergency responders would access the Information and Welcome Center from the interchange access road. The Solar Farm could also be accessed from via the local road network and the access road for the site. The Tennessee Emergency Management Agency has the responsibility and authority for coordination of all state and local agencies in the case of any accidents on the site property involving hazardous materials. Staff at the Information and Welcome Center would be trained on the proper response in case such an accident were to occur.</p> <p><u>COMMENT:</u> <i>Will Haywood County be able to collect any real estate property taxes? Is Haywood County going to receive any sales tax from the site?</i></p> <p><u>STATE RESPONSE:</u> The University of Tennessee is an agency of the State of Tennessee and is exempt from real property taxes.</p> <p><u>COMMENT:</u> <i>If it is closed loop, what is the potential associated with this billboard that is going to be up and down the expressway?</i></p> <p><u>STATE RESPONSE:</u> All signage along Interstate 40 would be designed and installed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) subject to Federal Highway Administration (FHWA) approval.</p> <p><u>COMMENT:</u> <i>Can Brownsville and Haywood County have any economic development in this vicinity or is it all going to be westbound, Exit 42, Fayette County taxes collected on the sales tax for the corn dog and soda pop that might be spent?</i></p> <p><u>DOE RESPONSE:</u> Economic development of specific areas is speculative. This project is not anticipated to hinder economic development in any area.</p>
<p>Nick Crafton 38069-1 October 21, 2010</p>	<p><u>COMMENT:</u> <i>As required by National Environmental Policy Act (NEPA), the EA process should examine SEVERAL reasonable ALTERNATE Locations to meet the objectives of American Recovery and Reinvestment Act (ARRA, 'Stimulus Act'). EACH ALTERNATE LOCATION should be evaluated for both positive and negative impacts to determine the most likely successful project site(s).</i></p>

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	<p>STATE RESPONSE: DOE and the State followed the NEPA Environmental Assessment process as required. Section 2.3 addresses Alternatives Considered but Eliminated.</p> <p>DOE RESPONSE: DOE is limited to either allowing or denying the State of Tennessee’s request to use ARRA State Energy Program funds for the project. The State of Tennessee chose this project for funding from its State Energy Program (SEP) grant under the American Recovery and Reinvestment Act. Accordingly, DOE’s role is limited to ensuring the project meets federal SEP requirements and is appropriately reviewed under NEPA. DOE’s consideration of reasonable alternatives is therefore limited to the project selected by the State of Tennessee and the No Action Alternative. The proposed action (to allow the state to fund the West Tennessee Solar Farm) and the No Action Alternative are included in Environmental Assessment.</p>
<p>Nick Crafton 38069-2 October 21, 2010</p>	<p>COMMENT: While evaluating reasonable alternatives to meet these goals, the EA should indicate how many permanent FTE’s will be available to the 38,069 workforce. The EA should also indicate what type of jobs are anticipated by sector.</p> <p>DOE RESPONSE: Sections 2.1.5.1 and 2.5.2 of the Environmental Assessment address permanent FTEs.</p>
<p>Nick Crafton 38069-3 October 21, 2010</p>	<p>COMMENT: While evaluating reasonable alternatives to meet the ARRA goals for State Energy Programs (SEP), the Environmental Assessment (EA) should indicate best engineering estimates of annual 'sale' of (net? of use) electricity generated by the proposed Solar Electric Power Plant onto the grid (ex: \$ 1 MM per year). The total capital investment should be estimated by the EA (ex: \$ 29 MM). The EA should demonstrate the economic recovery period (ex: 29 years) to break even.</p> <p><i>FOR EXAMPLE: If the proposed Solar Electric Power Plant comes online during this governor's remaining term (say 2011), the economic recovery "break-even" would occur in the year 2039.</i></p> <p>DOE RESPONSE: DOE determined Tennessee’s plan to create the Volunteer State Solar Initiative was eligible for funding from the U.S. Department of Energy under the American Recovery and Reinvestment Act (ARRA) though the State Energy Program (SEP) in September 2009. The West Tennessee Solar Farm is part of the Volunteer State Solar Initiative and will serve as a demonstration site for educational purposes for the public and students to learn about the benefits of renewable energy. Demonstrating the zero-carbon production of electricity on a highly visible and significant scale is expected to encourage future renewable energy interest and investments. Calculating a cost recovery period based on the operation project is not a requirement of NEPA, the ARRA, or the SEP.</p>
<p>Nick Crafton 38069-4 October 21, 2010</p>	<p>COMMENT: During the scoping meeting, Paula Flowers, V.P. of Genera Energy, LLC, stated a stated goal of 'the project' was demonstration of the LATEST..... NEXT GENERATION TECHNOLOGY for solar power and energy storage. Yet the proposed project was described as FLAT panel (as opposed to engineered profile), FIXED mount (as opposed to sun tracking or even tilt angle) photovoltaic solar panels. This technology has been around for at least three decades. Because there appear to be NO moving parts, the Environmental Assessment should evaluate what is LATEST technology to be DEMONSTRATED.</p> <p><i>Just after the EA Scoping Meeting, Paula Flowers said that Genera Energy, LLC has NO EXPERIENCE with the construction or operation of any type of solar energy facility.</i></p>

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	<p>DOE RESPONSE: As required under the SEP, the West Tennessee Solar Farm will be developed using commercially available technology.</p> <p>STATE RESPONSE: The Department of Economic and Community Development has contracted with the University of Tennessee to oversee the development, installation, and operation of the West Tennessee Solar Farm. The University of Tennessee, through the University of Tennessee Research Foundation, has selected Signal Energy to serve as the design/build lead for the project following a highly competitive RFQ/RFP process. General Energy is not involved with the development, installation, or operation of the West Tennessee Solar Farm.</p>
<p>Nick Crafton 38069-5 October 21, 2010</p>	<p>COMMENT: It has been over five years (2004) since McCallum Sweeny Consulting announced a potential 1,720 acre "I-40 Advantage Automotive Megasite" in S.W. Haywood County Zip Code 38069. And YET, the CERTIFIED GROWTH PLANS (including 'Transportation Plan' and 'Land Use Plan') for Haywood and Fayette Counties have not been revised according to T.C.A. 6-58-101 et. seq. to include ANY INDUSTRIAL ACTIVITY such as a 20-acre Solar Array, a Solar Electric Power Plant, or a 4,000+ acre Megasite Industrial Park. The Environmental Assessment (EA) must evaluate and address the standing procedures for promulgating Comprehensive Growth Plans to accommodate any and all proposed action(s).</p> <p>STATE RESPONSE: The Haywood County Commission approved rezoning of the Solar Farm project site for operation of the solar array and Information and Welcome Center on November 15, 2010.</p>
<p>Nick Crafton 38069-6 October 21, 2010</p>	<p>COMMENT: The skilled conservation practices of farmers in the region have managed the open-space landscape into very sustainable production of food and fiber. Agricultural production here (mostly non-livestock) contributes to National Food Security and is an important contribution to Tennessee's economy and assists with international trade balance for the United States (to feed the world!!). None of the cropland in the proposed footprint(s) requires artificial irrigation to be productive. The groundwater (said to be a recharge zone of the Memphis Sands Aquifer) is therefore unaltered by existing farm production techniques. The Environmental Assessment (EA) must describe how the loss of PRIME FARMLAND will be mitigated.</p> <p>DOE RESPONSE: This EA examines the potential environmental impacts of the proposed Solar Farm project and the No Action Alternative. The EA addresses impacts to prime farmland in Section 3.5.1.</p>
<p>Nick Crafton 38069-7 October 21, 2010</p>	<p>COMMENT: With 1,500 MW of peaking power (CT) and intermediate (CC) electric generation, Haywood County will already be doing its part for 'clean energy' from a rural county of 20,000 people. The Environmental Assessment (EA) should evaluate Potential Impact of the proposed co-located activities (Solar Array, Solar Electric Power Plant, Roadside Visitor's Center, and 4,000+ acre Megasite Industrial Park) on the current compliance of Haywood County with NAAQS. Of particular interest for MODELING will be the combined, collective, and collateral effect of CT, CC, Existing Industrial (Technor-Apex and other stationary sources), new additional vehicle miles, and vehicle idle at the site of ALL proposed actions (to include the co-located 4, 000+ acre Megasite Industrial Park).</p> <p>A duly diligent EA must evaluate whether the proposed action(s) will give rise to a new NON-ATTAINMENT STATUS for the Jackson Metropolitan Statistical Area (MSA). See attached diagrams 1999-'01 and 2000-'02. The EA must also evaluate the ECONOMIC COSTS for</p>

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	<p><i>Jackson-Madison and Chester Counties in Non-Attainment status for Ozone.</i></p> <p>DOE RESPONSE: The EA addresses air quality in Sections 3.3 and 4.2.</p>
<p>Nick Crafton 38069-8 October 21, 2010</p>	<p>COMMENT: According to the USGS Topo Series, there are at least 9,000 feet (1.7 miles) of very apparent 'blue-line' perennial streams on this proposed Solar Project alone. The deforestation for Interstate visibility will remove sustainable woodlands which are currently sequestering carbon. The land shaping will obviously disrupt the perennial streams. These surface water impacts are cumulative to the drastic increase in impervious surface area from the proposed action(s) as well as the co-located 4,000+ acre Megasite Industrial Park.</p> <p><i>The Environmental Assessment (EA) must evaluate additional alternate sites for the proposed action which have a more natural landform to support the proposed action(s). (Such as the hayfield on the north side of Interstate 40 near Mile Marker 31.5 at N35° 19' 04" W089° 34' 26.3 " in Loosahatchie Canal Watershed?) or BETTER YET a redevelopment of a "brownfield" with EXISTING Transportation, Utility and Wastewater INFRASTRUCTURE!!</i></p> <p>DOE RESPONSE: The EA addresses potential impact to water resources in Section 3.6. The Tennessee Department of Environment and Conservation has identified 7,347 linear feet of stream channel on the tract of land of the proposed West Tennessee Solar Farm (Table 3-7). Development of the West Tennessee Solar Farm and the associated Information and Welcome Center could directly impact about 586 feet of stream channel on the property. The proposed location for the solar farm project was not a federal decision. State Energy Projects are selected by the state.</p> <p>STATE RESPONSE: The State will obtain all required permits prior to work being performed on site which could impact surface waters.</p>
<p>Nick Crafton 38069-9 October 21, 2010</p>	<p>COMMENT: The Tennessee Department of Economic and Community Development (ECD) has chosen to co-locate the Federal ARRA 'Stimulus' project(s) for U.S. Department of Energy (DOE) State Energy Program (SEP) grant(s) onto a long sought 4,000+ acre Megasite Industrial Park. By their own account (press clippings and official websites), ECD is (November 2009) using the Solar Array, Solar Electric Power Plant, and Solar Technology Visitor's Center as a roadside attraction to market a VERY RURAL LANDSCAPE to Major Industry (and Spin-off) to transform the region, despite the obvious lack of the most basic infrastructure. Regardless of October 2009 initiative to claim that the properties are separate, A DULY DILIGENT Environmental Assessment (EA) must consider the CUMULATIVE, COMBINED, and COLLATERAL impacts of the proposed actions: including the proposed Solar Array, the Solar Electric Power Plant, the roadside Visitor's Technology Center, and the 4,000+ acre Megasite Industrial Park .</p> <p>DOE RESPONSE: The proposed West Tennessee Solar Farm and the industrial Megasite are separate independent projects and therefore not connected actions under NEPA. The potential cumulative impacts of the solar farm and the industrial Megasite are addressed in Section 4 of the EA.</p>
<p>Nick Crafton 38069-10 October 21, 2010</p>	<p>COMMENT: The Rural landscape associated with the Hatchie Scenic River has benefited from extraordinary Stewardship for many years. It has received NATIONAL recognition as the last major unchannelized river system in West Tennessee and is designated by the Tennessee Department of Environment and Conservation as a Scenic River. It is also particularly useful as a reference for water quality criteria in the Ecoregion. The attached image shows that the Haywood</p>

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	<p><i>and Hardeman portions have been 'stewarded' particularly well under both private and public ownership. It is visible from space. The proposed project(s) Solar array, Solar Electric Power Plant, Roadside Visitor's Center, and 4000+ acre Megasite Industrial Park will be the initial (unplanned) intrusion of Industrial Sprawl into the sustainable systems that have allowed a tremendous resource to flourish. This is a landscape that is VERY DESERVING of all the protections afforded by current law and not a cursory, expedient effort. A DULY DILIGENT Environmental Assessment (EA) MUST be a COMPREHENSIVE evaluation of the COMBINED, CUMMULATIVE, and COLLATERAL effects of the proposed action(s).</i></p> <p><i>While I have personally been entrusted (by my ancestors) with but a small portion of this landscape, I know that all of this watershed is ".....lovely, dark, and deep."</i></p> <p>DOE RESPONSE: The proposed West Tennessee Solar Farm and the industrial Megasite are separate independent projects and therefore not connected actions under NEPA. The potential cumulative impacts of the solar farm and the industrial Megasite are addressed in Section 4 of the EA.</p>
<p>Nick Crafton 38069-11 October 21, 2010</p>	<p>COMMENT: <i>But for the Interstate Right-of-Way slicing the Rural Zip 38069, there is LITTLE EXISTING INFRASTRUCTURE to support the proposed action(s) of the Mega Solar Industrial Complex (Solar Array, Solar Electric Power Plant, Roadside Technology Visitor's Center, and 4,000+ acre Megasite Industrial Park). As explored in the Askew, Hargraves, Harcourt and Associates, Inc. (A2H) Regional Strategic Economic Development Plan (August 2008), there are DRASTIC INFRASTRUCTURE needs for the project location in this rural area of 1,100 homes spread over 125 square miles. The Environmental Assessment (EA) must address the same issues found in Section V Transportation (Road & Rail), and Section VI Utility Infrastructure (Water Supply, Sanitary Wastewater Treatment, Gas and Electric Substations and Gas-Electric transmission) of that report. The EA must RE-EXAMINE however, the Cost Estimates and Budget in Section XI of A2H. (Note: the A2H Plan introduced December 2008 has never been adopted by ANY public governing body.)</i></p> <p>DOE RESPONSE: The development of the West Tennessee Solar Farm and the Information and Welcome Center would be a 200-acre development. Section 3.10 addresses utility needs associated with the West Tennessee Solar Farm.</p>
<p>Nick Crafton 38069-12 October 21, 2010</p>	<p>COMMENT: How many jobs will be created by the Proposed Action? Does the program meet SEP goals?</p> <p>DOE RESPONSE: Sections 2.1.5.1, 2.5.2, and 9.9.2.1 contain estimates of the number of temporary and full-time jobs created by the proposed project.</p>
<p>Nick Crafton 38069-13 October 21, 2010</p>	<p>COMMENT: <i>In the absence of a promulgated transportation plan, Tennessee Economic and Community Development (ECD) has co-located the proposed action site within the Megasite Industrial Complex, which called for Significant Impacts to Federal and State Highway alignments (see Askew, Harcourt, Hargraves and Associates, Inc. (A2H), August 2008) As presented by Steve Allen, Tennessee Department of Transportation (TDOT) at the scoping meeting, Albright Road overpass would be demolished to create a 6-mile detour for county road traffic.</i></p> <p>DOE RESPONSE: This EA analyzes the potential impacts of the development of the West Tennessee Solar Farm and the Information and Welcome Center and not the industrial Megasite. The solar farm and the industrial Megasite are separate independent</p>

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	<p>projects and therefore not connected actions under NEPA. The potential cumulative impacts of the solar farm and the development of the industrial Megasite are addressed in Section 4 of the EA.</p> <p>STATE RESPONSE: The demolition of Albright Road/I-40 overpass bridge does not create a 6-mile detour for local residents. There are few residents in the area and all are located at the north end of Albright Road near Campground Road. Campground Road is the primary local road serving the area and is not impacted by the demolition of Albright Road.</p>
<p>Nick Crafton 38069-14 October 21, 2010</p>	<p>COMMENT: <i>There is no wastewater treatment service (Publicly Owned Treatment Works, POTW) in the immediate vicinity of the site co-located for the proposed action(s) in the Hatchie Scenic River Watershed. The alternatives for wastewater transport and treatment were summarized in the Askew, Harcourt, Hargraves and Associates, Inc. (A2H) August 2008. Haywood County Mayor A. Franklin Smith, III publicly endorsed the pumping of raw sewage by directional boring under the Hatchie Bottoms a distance of 14 miles to the Brownsville Wastewater Treatment facility.</i></p> <p>DOE RESPONSE: Wastewater treatment for the solar farm and the Information and Welcome Center, is analyzed in Section 3.10.2 of the EA.</p>
<p>Nick Crafton 38069-21 October 22, 2010</p>	<p>COMMENT:</p> <ul style="list-style-type: none"> • <i>TDOT should follow the NEPA process before using FHWA funds.</i> • <i>The Final EA should include a comprehensive analysis of impacts to surface waters during all phases of construction (not just demolition), perhaps an NPDES 3510-2D or 2F Permit instead of a Tennessee Stormwater General Permit(s) for Construction Activity.</i> • <i>The SWPPP should be integrated with the other components of the proposed action (solar array, building, parking, ramps) into the comprehensive Mitigation Action Plan.</i> <p>STATE RESPONSE: Thank you for your comments. TDOT followed the NEPA process as required by FHWA for the use of federal funds. FHWA issued a Categorical Exclusion (CE) on September 20, 2010, for the development of the Information and Welcome Center. The EA addresses surface water in Section 3.6.2.1.1 on page 29. TDOT either has or will acquire all permits required from regulatory agencies in order to implement construction of the Information and Welcome Center.</p>
<p>Nick Crafton 38069-22 October 22, 2010</p>	<p>COMMENT: <i>The United States Department of Agriculture (USDA) has received an application (30 Sep 2010 deadline) for a 3.0 MGD wastewater collection and wastewater treatment system. As yet, Stakeholders 38069 have not been able to review the USDA application (includes engineering, environmental reports and concept materials), but the volume of materials indicates a level of detail that may be very specific to the preparation of a Final EA, Environmental Impact Statement and Mitigation Action Plans. The Final EA must identify the combined, cumulative and collateral impacts of Megasite as proposed actions. The USDA should be invited (as FHWA and USACE on 7 Sep 2010) as a 'cooperating agency' with DOE in accordance with 40 CFR 1501.6 of CEQ Regulations for Implementing NEPA. The draft EA page 47 lines 3-6 properly state that "Cumulative impacts are considered regardless of the agency or person undertaking the other actions." Final EA, EIS and MAP must follow 40CFR 1508.7. The SSOE plans presented 20 Sep 2010 in Haywood County indicated a footprint OVERLAPPING the proposed solar array.</i></p>

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	<p>DOE RESPONSE: The proposed solar farm and Information and Welcome Center plans to treat wastewater on-site as discussed in Section 3.10. The West Tennessee Solar Farm will not be connected to the infrastructure proposed in the USDA grant. This project is not related to the West Tennessee Solar Farm; as such, USDA was not invited as a cooperating agency.</p> <p>Access to the solar farm and the Information and Welcome Center will be through access ramps via an interchange from Interstate 40 to the site. Vehicles will not be able to access local roads from the Solar Farm site. There will be no interstate access to the industrial Megasite from I-40 through the Solar Farm site. Any conceptual renderings that show such a proposed interchange are inaccurate and do not reflect current design plans.</p>
<p>Nick Crafton 38069-23 October 22, 2010</p>	<p>COMMENT: <i>The Environmental Impact Statement must use ALL due diligence to MODEL the Regional Air quality impairment BEYOND just the construction, 15 minutes of emergency generator, and highway to INCLUDE VEHICLE IDLE of the proposed project. The model must be comprehensive to include the current and ANTICIPATED Point Sources, in order to predict if the proposed action will create a NONATTAINMENT AREA!!!! See also this same comment made since May 2009 in the 38069 - 7 at Scoping.</i></p> <p>DOE RESPONSE: Air Quality impacts for the Solar Farm, and the Information and Welcome Center, are addressed in Sections 3.3 and 4.2 of the EA.</p>
<p>Nick Crafton 38069-24 November 6, 2010</p>	<p>COMMENT: <i>The Final EA the EIS and MAPs should perhaps include more details from Paula Flowers, Vice President of Genera Energy, LLC, and from Mike Kopp, Spokesman for Silicon Ranch, Corporation to "...be announced within the next 60 days."</i></p> <p>STATE RESPONSE: Paula Flowers is the Project Director for the University of Tennessee Research Foundation; Genera Energy and its affiliates have no involvement with the solar farm. Silicon Ranch has no involvement with the proposed project. Signal Energy of Chattanooga was selected as the lead design/build firm for the solar farm.</p>
<p>Nick Crafton 38069-25 November 6, 2010</p>	<p>COMMENT: <i>There is little discussion in the Draft EA regarding reasonable site alternatives to assure the basic goals of the ARRA or SEP. There is little to NO EXISTING infrastructure at the single proposed site. In fact, as an affront to efficiency, the proposed activity include DEMOLITION of a highway overpass just to "improve roadside visibility' at a cost of \$ 781,000.00.</i></p> <p><i>The EIS should describe how every piece of infrastructure at this location must be built FROM SCRATCH into a rural (sustainable) landscape of PRIME FARMLAND. There is no wastewater collection or wastewater treatment available.</i></p> <p><i>The Final EA, the EIS and MAPs should perform a duly diligent analysis of at least a few reasonable alternatives to assure the statutory goals of ARRA (economic efficiency).</i></p> <p>DOE RESPONSE: The West Tennessee Solar Farm is part of the Volunteer State Solar Initiative. DOE determined the Volunteer State Solar Initiative is eligible for SEP funding in September 2009. DOE believes that the State's use of its SEP funds is consistent with the State Energy Program.</p>

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	<p>STATE RESPONSE: The lack of existing infrastructure to serve this facility is typical of conditions that are encountered in rural areas throughout Tennessee. The Tennessee Department of Transportation (TDOT) has successfully developed numerous Rest Areas similar to the facility proposed through the installation of on-site wastewater treatment systems. The demolition of the bridge along Albright Road over I-40 is necessary in order to accommodate the construction of the Information and Welcome Center.</p>
<p>Nick Crafton 38069-26 November 7, 2010</p>	<p>COMMENT: <i>The Final EA, the Environmental Impact Statement (EIS and any Mitigation Action Plans (MAPs) should include simple economic analyses which do not appear in the draft EA. It is unfortunate that even after 17 months (since May 2009) details of the Power Purchase Agreement with TVA are YET unavailable. Public can only hope that a duly diligent EIS will demonstrate the economic feasibility versus formula grant Goals of the ARRA and SEP programs.</i></p> <p><i>A complete economic analysis for each Alternative (Electric Sub-station Utility Upgrade alternatives and Water / Wastewater alternatives) should appear in the Environmental Impact Statement (EIS) in order to comply with Tennessee Division of Water Pollution Control 'Anti-Degradation' regulations which must demonstrate positive economic value to a project's environmental impacts. (Combined, Cumulative, and Collateral impacts as required per 40 CFR 1508.7 and CEQ 1997).</i></p> <p>STATE RESPONSE: The Power Purchase and Interconnection agreements are under development with the Tennessee Valley Authority and Chickasaw Electric Cooperative.</p>
<p>Rita Harris Public Meeting October 5, 2010</p>	<p>COMMENT: <i>I am based in Memphis. I don't live in Fredonia. I don't live in this area, but I have been working with the folks in the Fredonia community and as I was looking at your brochure it mentioned that there were no impacts to cultural or -- what was the exact term social, economic, environmental justice, cultural resources and there were no adverse effects on minority or low-income population. I know that from the very beginning of the talk about the megasite, which you all are saying technically this is not a part of, but, actually, it is. It's on the fence line of it. There have been oppositions from the Fredonia community, which is a historically African American community and I would say that the majority of the folks there are not happy with this. I heard you also say that the Solar Farm is one and a half miles from the megasite, but when you talk about the core of the megasite, that's really some tricky language because the core of the megasite and the boundary of the megasite are two different things.</i></p> <p><i>The actual footprint of the megasite is actually on the fence line of the Solar Farm and I guess my main concern. I have two main concerns: That it is disturbing the Fredonia community. It's like, you know, the folks' feelings, their comments, their opposition that they have raised for months or really years, has been totally ignored.</i></p> <ul style="list-style-type: none"> • <i>My concern is the jobs. I saw somewhere there are going to be 15 jobs that are involved. I mean, that's really a huge amount of jobs. Is there some sort of an agreement to have local labor used versus bringing in labor from outside of this area, outside of this county? I'm really concerned about that and I have a feeling that the answer is that the labor probably won't come from this area, but, again, 15 jobs is really not a whole lot of jobs. I guess when you consider power lines and highway area and all of this that has to be built, it may go beyond the 15 jobs, but as we have seen in most of these kinds of operations the people that live in the community that you say is going to benefit, they really don't reap any benefit, you know.</i> • <i>They are really going to be hurt by having all of this sprawl encroached on their property and they absolutely love living in the rural area, but I will make further comments, written, and send them in.</i>

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	<p><u>DOE RESPONSE:</u> Section 3.9 of the EA addresses Socioeconomic and Environmental Justice aspects of the proposed project. The Solar Farm is adjacent to the proposed Megasite property. While the boundary lines between the Megasite and the Solar Farm are approximately 200 yards apart, the distance from the location of the Solar Farm to the “core site” is approximately 1.5 miles. The “core site” is the location within the property where development may take place. Jobs are addressed in Section 3.9.2.1.</p>
<p>Joe Ing Public Meeting October 5, 2010</p>	<p><u>COMMENT:</u> <i>I just want to reiterate what I said back in November, how much we appreciate Governor Bredesen and his efforts to bring improvement to West Tennessee. The Solar Farm is going to have, not only I said at that time a positive impact on the people of Haywood County, but as the story grows and people learn more about it, its going to be West Tennessee, the entire state.</i></p> <p><i>I appreciate y’all being here. We appreciate it. We want it right here in Haywood County.</i></p> <p><u>STATE RESPONSE:</u> Thank you for your comments.</p>
<p>Stephen Smith SACE October 19, 2010</p>	<p><u>COMMENT:</u> <i>We fully support the West Tennessee Solar Farm as a significant step towards the widespread adoption of clean energy technologies throughout Tennessee and the Southeast. This project will not only provide utility scale, environmentally friendly clean energy, but also accelerate solar energy into becoming an economic engine for the state of Tennessee, and help bring down the barriers to widespread solar energy deployment.</i></p> <p><i>The installation of this Solar Farm showcases the state’s commitment to solar energy deployment, strengthening markets for Tennessee’s current solar industry and attracting additional investments in these markets. By demonstrating the state’s commitment to strong solar markets and supply chains, the West Tennessee Solar Farm will create additional jobs for Tennessee’s communities.</i></p> <p><i>By helping to create the economies of scale and potentially increase the efficiency of solar photovoltaic technologies, the West Tennessee Solar Farm will accelerate the market penetration of solar technologies, thereby creating clean energy markets that will strengthen local and regional economies.</i></p> <p><i>In addition to the economic benefits to Tennessee’s solar markets and supply chains, the West Tennessee Solar Farm has environmental benefits for Tennessee. The energy generated by the Solar Farm will offset between 13 and 15 million pounds of carbon dioxide emissions, as well as significant amounts of other air pollutants such as mercury, sulfur oxides and nitrogen oxides that would otherwise be emitted by conventional energy sources.</i></p> <p><i>The Solar Farm will serve as a model for the state’s utility community, dispelling many of the misconceptions that have historically hindered the adoption of these technologies.</i></p> <p><u>STATE RESPONSE:</u> Thank you for your comments.</p>
<p>Thomas Tripp Big Frog Mtn October 21, 2010</p>	<p><u>COMMENT:</u> <i>It is with a great concern that we comment on the plan of such a large portion of the State of Tennessee's ARRA stimulus to be spent in such a way as described in the Environmental Assessment to fund the Solar Farm project. The environmental impact study which determined the project to have very little socio-economic impact during these times of high unemployment is indication of the lack of proper consideration by the State on the unemployment problems both short and long term that could be improved by proper use of the stimulus funds. This Solar Farm plan is not enabling the socio-economic effects as did the funding that was allocated to</i></p>

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	<p><i>the Tennessee Solar Institute for grants that did indeed create local employment and on on-the-job training for many coming into employment in the solar industry in our State.</i></p> <p><i>We do not agree that there are good reasons presented to invest the ARRA funds into developing the Solar Farm that will only become in essence one tourist attraction that will never be seen by nor provide any benefit to the vast majority of Tennessean's. The application of these funds in one large project does not serve the best intentions of the government's stimulus efforts to create long term industry development nor employment opportunities across the State.</i></p> <p><i>This funding could be better applied across the State in stimulating many more solar installations; could enable much larger total installed capacity of generation; could enable much greater numbers of residents and business owners to see local applications of these solar technologies in action as well as employ many more persons that are currently being trained in Technical schools to enter into this technological field across the State.</i></p> <p><u>DOE RESPONSE:</u> The West Tennessee Solar Farm is part of the Volunteer State Solar Initiative. DOE determined the Volunteer State Solar Initiative is eligible for SEP funding in September 2009. DOE believes that the State's use of its SEP funds is consistent with the State Energy Program.</p> <p><u>STATE RESPONSE:</u> The Tennessee Solar Initiative will use SEP ARRA funds to demonstrate the zero-carbon production of electricity on a highly visible and significant scale to create jobs, educate the public on the benefits of solar energy, encourage future renewable energy interest and investments across Tennessee and throughout the region, reduce greenhouse gas emissions, and increase renewable energy generation through the development of the West Tennessee Solar Farm.</p>
<p>Heinz Mueller, Chief U.S. EPA</p>	<p><u>COMMENT:</u> <i>Environmental Justice – Region 4 EPA is aware of possible concern among local residents regarding the cumulative impacts associated with this project and the planned/connected actions associated with the accompanying West Tennessee megasite project. Section 4.7 pg. 49 addresses the cumulative impacts and indicates the information on the megasite development is not available at this time. We recommend additional communication and outreach to the EJ communities.</i></p> <p><u>DOE RESPONSE:</u> DOE and the state conducted a public scoping meeting on November 19, 2009, and a public comment meeting on October 5, 2010, specifically for this purpose. The public notice appeared in three newspapers and on the Internet. Both events were well attended. DOE does not believe the Megasite project constitutes a connected action for purposes of NEPA. It appears to be a speculative action that could result in minor cumulative impacts if it were to become a reality. The EA analyses the Megasite in this context.</p> <p><u>COMMENT:</u> <i>Land Use and Visual Resources – the project would require an amendment to the Haywood County Zoning map. The solar Farm PV panels, and the Information and Welcome Center would be visible from I-40, and possible removal of forest and shrub cover may be required as part of the transmission line extension and project construction. We recommend using a construction and site preparation plan which would minimize ecological impacts.</i></p> <p><u>DOE RESPONSE:</u> The purpose of the Information and Welcome Center is to provide a broad view of the Solar Farm and removal of trees and shrubs is necessary to enhance that view. DOE understands that landowners salvaged timber from their land before conveying it</p>

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	<p>to the state for the Solar Farm (Tennessee did not use SEP funds to acquire this land). As to possible clearing for transmission lines, these lines are a connected action as to which DOE has no regulatory authority or financial involvement. The local utility will decide what efforts, if any, are needed to minimize impacts.</p> <p>COMMENT: <i>Air Quality – It was noted Haywood County is an attainment area for all critical pollutants. Project construction will generate air pollutants and possible hazardous and solid wastes. Heavy construction equipment intermittently emits quantities of air pollutants via tailpipe emissions. Therefore, fugitive dust control, appropriate worker protection measures, and adherence to OSHA standards will be important measures during construction and option of the facility. It is understood the proposed project meets the definition of a project with low potential Mobile Source Air Toxics (MSAT). To help minimize construction emissions, we recommend the use of reduced idling practices, cleaner fuels, and emission retrofits for construction equipment used by DOE contractors whenever feasible. The DOE may wish to discuss this further with EPA Region 4 (Dale Aspy at 404/562-9041).</i></p> <p>DOE RESPONSE: As this is not a DOE project, there will be no construction equipment operated by DOE at the site. DOE has provided your comments to the state and will encourage Tennessee to consider your recommendations. Best Management Practices will be used to minimize construction emissions, especially fugitive dust.</p> <p>COMMENT: <i>Noise – EPA recognizes construction of the project would cause a temporary and short-term increase to the ambient sound environment, and once the facility is installed there will not be a significant contribution to the noise of the area. EPA recommends scheduling construction activity to minimize disturbance to the local community.</i></p> <p>DOE RESPONSE: There are no sensitive noise receptors in the immediate vicinity of the Solar Farm site that would be adversely impacted by noise during installation and construction activities. Workers associated with construction activities would be expected to wear appropriate hearing protection as required by the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.).</p> <p>COMMENT: <i>Geology and Soils – The DEA indicates the majority of the site is currently used for agricultural purposes, and approximately 20 percent of the project site is deemed as prime farmland soils. We understand this has been reviewed and deemed acceptable. However, local communities must be made aware of these findings.</i></p> <p>DOE RESPONSE: The public was given the opportunity to provide comments on the findings in the draft EA at the public meeting held on October 5, 2010, and during the 30-day public comment period. No comments were received from the Natural Resources Conservation Service.</p> <p>COMMENT: <i>Water Resources – There are three streams and two small ponds identified in the proposed project site. The DEA indicates no long-term adverse quality impacts are expected. We request minimization of impacts by implementing best management practices (BMPs), and methods to control runoff and sediment/soil erosion. It is noted there are no flood plains or wetlands present at this site.</i></p> <p>STATE RESPONSE: TDOT has committed to using applicable erosions and sediment control measure to minimize the potential for adverse impacts to surface water resources.</p>
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	<p>Additionally, all applicable permits will be obtained prior to any construction activities.</p> <p>COMMENT: <i>Biological Resources – It has been determined and noted there are no federally listed threatened or endangered species known to exist on site. Also, noted very little undeveloped land would be impacted by the project, however, minimization should be adhered to so that only lower-quality deciduous forest and shrub habitats be removed as part of project site preparation.</i></p> <p>DOE RESPONSE: This comment has been noted and provided to the State.</p> <p>COMMENT: <i>Cultural Resources – The DEA states the Tennessee SHPO has surveyed properties in Haywood County, but a site specific survey has not been conducted. However, TDOT has conducted a field review of the area and did not identify any potential properties, within this area; therefore no impact on historic, archaeological, or American Indian resources as a result of this project is expected. It appears there is not a SHPO final determination included within this DEA. This should be part of the final document. If a find is located during construction, the local SHPO must be contacted before proceeding.</i></p> <p>DOE RESPONSE: DOE and the State have now received a response from the Tennessee SHPO concurring with the determination and finding that no historic properties would be affected by the Solar Farm project. A copy of the correspondence from the SHPO is included in the final EA.</p> <p>COMMENT: <i>Waste Management – The DEA notes that the PV panels in the solar array may contain hazardous materials. Although the panels are sealed, they must be treated using (BMPs) during construction and disposal during decommissioning to avoid environmental impacts. For those additional hazardous materials, such as petroleum, oils, lubricants, paints and solvents used during construction and operation of the facility, practices which prevent or minimize releases should meet all applicable Federal, State and local regulations and codes. Hazardous and solid waste management will need to meet all State and Federal regulations with waste appropriately transported to permitted disposal facilities.</i></p> <p>DOE RESPONSE: EPA’s comment regarding waste management refers to the need for hazardous and solid waste management practices to comply with all federal, state, and local regulations and codes. The draft EA and final EA both state these requirements. Please note that if DOE decides to allow Tennessee to use its SEP funds for this project after completing the NEPA process, DOE has no authority over the project, or the State, except to audit its use of SEP funds. Accordingly, DOE will have no role in decommissioning the facility.</p>
<p>Gary Fottrell, Environmental Program Engineer, Federal Highway Administration</p>	<p>COMMENT: <i>Page 3, Section 1.1.2, Lines 42-44: "The Solar Farm would also have a significant public education mission to allow citizens and students to gain first hand exposure to solar energy production to better understand its benefits." – How is this going to be accomplished? The TDOT Information and Welcome Center will only have space provided for static displays, and possibly a looped video. Will this education also occur on the Solar Farm property?</i></p> <p>DOE RESPONSE: Text has been added to the section to better describe the educational opportunities associated with the Solar Farm and the Information and Welcome Center.</p> <p>COMMENT: <i>Page 7, Section 1.5, Lines 23-24 and Page 11, Section 2.1, Lines 9 and 10: "Development of educational programs regarding solar energy production, to be conducted at</i></p>

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<p><i>the Information and Welcome Center" – How is this going to be accomplished? The TDOT Information and Welcome Center will only have space provided for static displays, and possibly a looped video. This would be better stated "Development of educational displays regarding solar energy production, to be included in the Information and Welcome Center."</i></p> <p><u>DOE RESPONSE:</u> The text has been revised.</p> <p><u>COMMENT:</u> Page 11, Section 2.1, Lines 13-14: “funds may be used to support educational activities at the Solar Farm and the Information and Welcome Center.” – What educational activities does this indicate will be conducted at the Informational and Welcome Center? Again, only static displays will be at the welcome center.</p> <p><u>DOE RESPONSE:</u> The text on educational opportunities has been revised.</p> <p><u>COMMENT:</u> Page 13, Section 2.1.2, Lines 2-12: Please update the language in this section to reflect the new language in the TDOT CE document, which includes the removal of phrases such as ‘closed loop system’ and ‘pull-through’. As a suggestion, “...would be available. The Information and Welcome Center would initially provide for on and off movements only from westbound 1-40. Access to and from the center will only be provided from 1-40 via exit ramps, and there will be no break in the right-of-way access to adjacent properties or roads. The Information and Welcome Center is estimated to be 6,000 – 10,000 square feet in size. The parking lot would be designated to have segregated parking areas for westbound cars, tour buses, and trucks/recreational vehicles (RV’s). The State of Tennessee...”</p> <p><u>DOE RESPONSE:</u> The text has been revised to be consistent with the TDOT CE document.</p> <p><u>COMMENT:</u> Page 13, Section 2.1.3, Lines 15-16: "Public education activities would occur at the proposed Information and Welcome Center. What educational activities does this indicate will be conducted at the Information and Welcome Center? As a suggestion, “The solar Farm would have a significant education mission that would allow the public to gain firsthand exposure to solar energy production to better understand its benefits. Public education through the use of static displays would occur at the proposed Information and Welcome Center.”</p> <p><u>DOE RESPONSE:</u> The suggested text has been incorporated into Section 2.1.3.</p> <p><u>COMMENT:</u> Page 13, Section 2.1.4.2: This section indicates that the Information and Welcome Center will be conducted in two phases. It then goes on to state that conduction will occur over the duration of 365 days. It is intended to indicate both phases? This is further discussed on page 34, Section 3.9.2.1, Lines 34-35.</p> <p><u>DOE RESPONSE:</u> The text has been revised to better describe the two phases of the Information and Welcome Center construction and schedule.</p> <p><u>COMMENT:</u> Phase 13, Section 2.1.4.2, lines 30 and 31: Suggest using “Construction would include interstate entrance and exit ramps for westbound travelers. The footprint of the interstate ramps,...” and the last sentence of that paragraph, “The footprint of the interstate ramps would be approximately 2.4 acres.”</p> <p><u>DOE RESPONSE:</u> The suggested changes have been incorporated into Section 2.1.4.2.</p>

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	<p><u>COMMENT:</u> <i>Page 14, Section 2.1.5.2: This section indicates that the Information and Welcome Center will be staffed 24 hours a day, 7 days per week. Is this consistent with how the TDOT plans to operate the facility?</i></p> <p><u>STATE RESPONSE:</u> TDOT has confirmed that this information is correct.</p>
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