



**HABITAT CONSERVATION PLAN FOR THE  
TRI-STATE II SOLAR PROJECT**

Decatur County, Georgia

August 9, 2024

Prepared for:  
Tri-State II Solar Project, LLC  
422 Admiral Boulevard  
Kansas City, Missouri 64106

Prepared by:  
Stantec Consulting Services Inc.  
6800 College Boulevard, Suite 750  
Overland Park, Kansas 66211

## HABITAT CONSERVATION PLAN

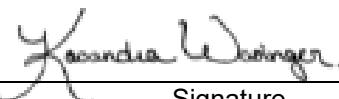
Tri-State II Solar Project

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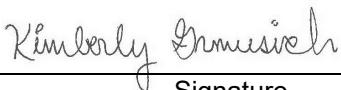


Signature

Kassandra Wasinger, Wildlife Biologist

Printed Name

Prepared by:



Signature

Kimberly Grmusich, Wildlife Biologist

Printed Name

Approved by:



Signature

David Bender, Associate Project Manager

Printed Name

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

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## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

Acronyms / Abbreviations

## **Acronyms / Abbreviations**

ABRP	The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve
AC	alternating current
ac	acre(s)
Applicant	Tri-State II Solar Project, LLC
BMPs	best management practices
CFA	Conservation Focus Area
CFR	Code of Federal Regulations
ESA	Endangered Species Act of 1973
FR	Federal Register
ft	feet
GADNR	Georgia Department of Natural Resources
GPS	global positioning system
ha	hectare(s)
HCP	Habitat Conservation Plan
in	inch(es)
IPaC	Information for Planning and Consultation
ITP	Incidental Take Permit
MCM	Minimum Conservation Measure
mi	mile(s)
MW	megawatt(s)
NRCS	Natural Resources Conservation Service
O&M	operations and maintenance
Panhandle region	Panhandle Representative Region
Project	Tri-State II Solar Project
PV	photovoltaic
Tri-State II Solar	Tri-State II Solar Project, LLC
U.S.	United States
USFWS	United States Fish and Wildlife Service

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

1 Introduction

# **1      Introduction**

Tri-State II Solar Project, LLC (Tri-State II Solar or the Applicant), a wholly owned subsidiary of Savion, LLC, is developing the Tri-State II Solar Project (the Project) in Decatur County, Georgia. The Project will include the construction and operation of a 79-megawatt (MW) solar facility and associated infrastructure on approximately 788 acres (ac). The Project is within the range of the eastern indigo snake (*Drymarchon couperi*; the Covered Species), a species protected under the Endangered Species Act (ESA). Based on the presence of suitable habitat and the proximity to known eastern indigo snake records, the Project site is likely occupied by the species and proposed Project activities have the potential to incidentally take the eastern indigo snake. As a result, Tri-State II Solar has prepared this Habitat Conservation Plan (HCP) to manage risk associated with federally listed species, and as a supporting document in an Incidental Take Permit (ITP) application under Section 10(a) of the ESA (Section 10(a)(1)(B)). This HCP was developed in coordination with the U.S. Fish and Wildlife Service (USFWS) and the Georgia Department of Natural Resources (GADNR) (Appendix A). The HCP is a conservation and mitigation plan agreed to by Tri-State II Solar (the Applicant) and the USFWS in support of an ITP application for authorizing unavoidable incidental take of the eastern indigo snake.

## **1.1    Purpose and Need**

The implementing regulations of the ESA (50 Code of Federal Regulations [CFR] Parts 13 and 17) provide the conditions under which the USFWS may issue an ITP for the take of ESA-protected wildlife. The purpose of the Project is to provide renewable energy to the local power grid, which will contribute to the development of a more diverse and sustainable power system. In doing so, Tri-State II Solar will not intentionally harm threatened or endangered wildlife. However, due to the potential to incidentally take the eastern indigo snake during proposed Project activities in the first 10 years of the project, Tri-State II Solar is seeking an ITP to allow for the Project to proceed in a lawful manner. Therefore, Tri-State II Solar has prepared this HCP to demonstrate how Tri-State II Solar will meet the five issuing requirements for an ITP:

1. The taking will be incidental.
2. The Applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
3. The Applicant will ensure that adequate funding for the HCP will be provided.
4. The taking will not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild.
5. Other measures, if any, required under subparagraph Section 10(2)(A)(iv) of the ESA will be met.

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

1 Introduction

## **1.2 Permit Description**

### **1.2.1 DURATION**

Tri-State II Solar is seeking an ITP with a duration of 10 years to allow for construction of the solar facility as well as operation and maintenance for a duration of time suitable to measure effects on the Covered Species (defined in Section 1.2.3). The highest risk of take is anticipated to occur during the construction phase when gopher tortoise (*Gopherus polyphemus*) burrows will be excavated, large equipment is being used, and there is an influx of vehicle traffic onsite. Eastern indigo snakes rely on gopher tortoise burrows for shelter (refugia), nesting, and breeding purposes (USFWS 2019a); therefore, impacts to burrows have the potential to take eastern indigo snakes that utilize the Plan Area (defined in Section 1.2.2). This risk extends to the first few years of the operations and maintenance phase when eastern indigo snakes in the vicinity may return to the Plan Area in search of previous refugia or foraging opportunities.

Additionally, vegetation re-establishment and maintenance efforts (i.e., continued use of large equipment) would occur at an increased level for the first few years of operations but lessen over time.

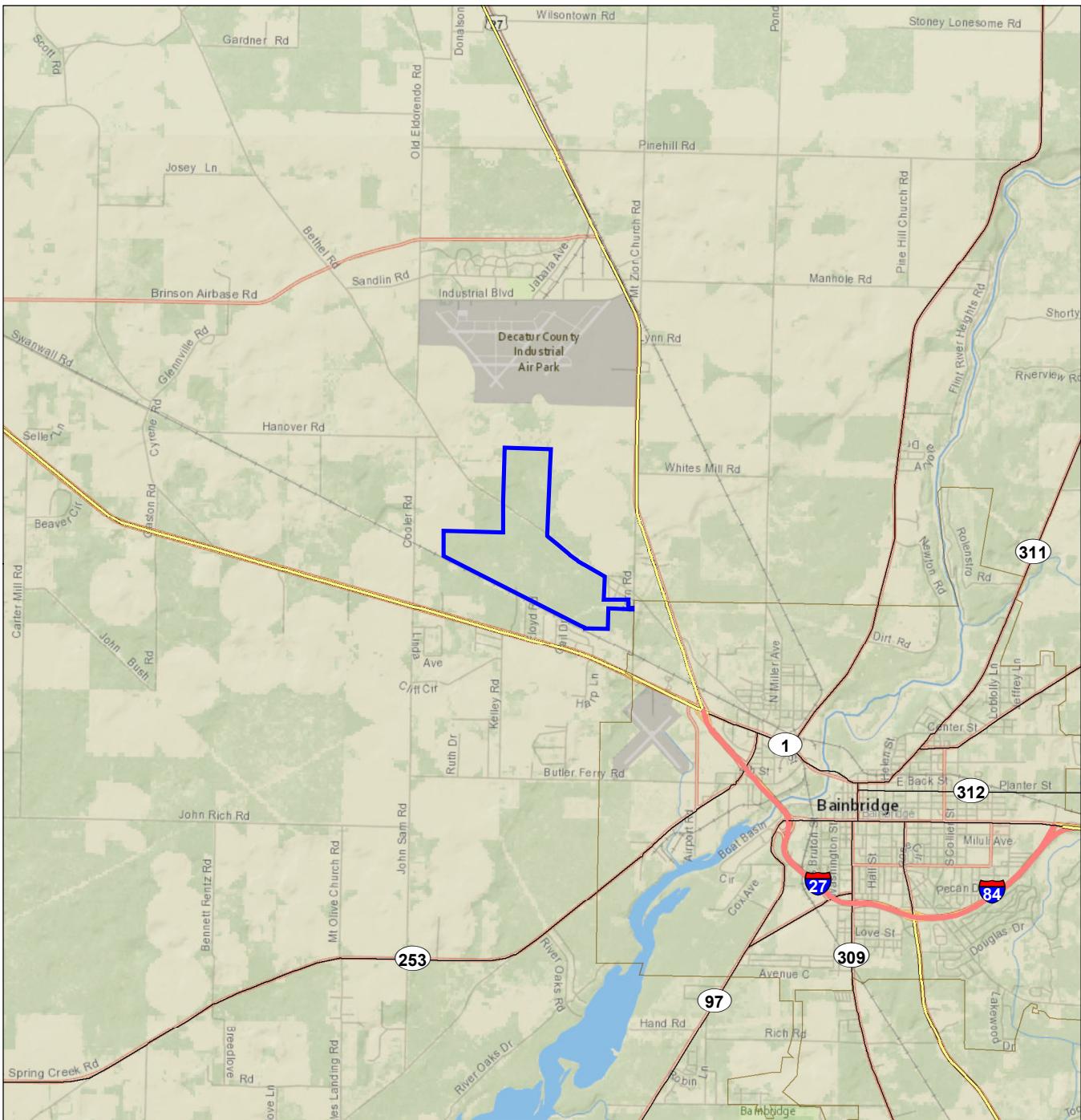
### **1.2.2 PLAN AREA AND PERMIT AREA**

The Plan Area includes all areas where Covered Activities (defined in Section 2.1) will occur, incidental take (i.e., take that occurs as a result of or during otherwise legal activities) will be authorized, and the HCP will be implemented. Activities related to this HCP occurring outside of the Plan Area include the commitment of funds to the Wildlife Foundation of Florida – Eastern Indigo Snake Conservation Fund. Funds deposited by Tri-State II Solar will be applied outside of the Plan Area at the discretion of the USFWS and the Eastern Indigo Snake Conservation Fund's management board. Therefore, the areas where the funds will be applied are not included in the Plan Area.

As a result of the conservation funds being applied outside of the Plan Area, the Plan Area and Permit Area are synonymous in this HCP. All incidental take and Covered Activities will occur within the Plan Area (Figure 1-1), which encompasses all Project infrastructure.

### **1.2.3 COVERED SPECIES**

The “Covered Species” included in this HCP is the eastern indigo snake, which is listed as threatened under the ESA as of the date of this HCP. There is potential for take of eastern indigo snakes during gopher tortoise relocation activities, vegetation clearing, infrastructure construction, vegetation management, and vehicle traffic on access roads during construction and operations (see Section 2.1 for more details). As of the date of this HCP, there is no critical habitat designated for the eastern indigo snake; therefore, there is no federally designated critical habitat within the Plan Area (USFWS 2024a).



**Legend**  
+ Plan Area

0 0.75 1.5 Miles  
 (At original document size of 8.5x11)  
 1:95,040



 **Stantec**

Project Location Prepared by KW on 2022-04-08  
 Decatur Co., GA TR by SR on 2022-04-14  
 IR by DB on 2022-04-14

Client/Project Tri-State II Solar Project, LLC  
 Tri-State II Solar Project

Figure No.

1-1

Title

**Plan Area**

Page 1 of 1

**Notes**  
 1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet  
 2. Data Sources: Tri-State II Solar, Esri  
 3. Background: National Geographic World Map

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

1 Introduction

### 1.2.4 SPECIES CONSIDERED BUT EXCLUDED

Other federally protected, and/or federally proposed, candidate, or petitioned species under the ESA occurring or with the potential to occur in the Plan Area were considered but excluded from inclusion in this HCP. These species include the whooping crane (*Grus americana*), alligator snapping turtle (*Macrochelys temminckii*), fat three ridge (*Amblema neislerii*), Gulf moccasinshell (*Medionidus penicillatus*), oval pigtoe (*Pleurobema pyriforme*), purple bankclimber (*Elliptoideus sloatianus*), shinyrayed pocketbook (*Lampsilis subangulata*), monarch butterfly (*Danaus plexippus*), and Florida torreya (*Torreya taxifolia*). All were excluded either because the Plan Area does not contain their preferred habitat, they do not occur within the Plan Area, or they are not currently protected under the ESA. These species were identified in coordination with the USFWS, including the Information for Planning and Consultation (IPaC) system (Appendix B; USFWS 2024b) and USFWS pers. comm.

The Project is in the range of the whooping crane; however, whooping cranes in southern Georgia are part of an experimental population (non-essential). The species will utilize a variety of inland habitats ranging from wetlands and open water features to agricultural fields (USFWS 2024d). Based on the absence of preferred habitat (Terracon 2016a, 2016b), whooping cranes are not expected to be impacted by Project construction or operations. Alligator snapping turtles occur in southeastern Georgia and are a federally proposed threatened species. The species is typically found in deeper water sources such as large streams, rivers, impoundments, and oxbows, but will also occupy associated shallower water sources in early summer such as wetlands and swamps. Habitat is also associated with the availability of structures (e.g., undercut banks, log jams, submerged trees, stumps, deep holes) (USFWS 2021; GADNR 2024). Based on the absence of preferred habitat (Terracon 2016a, 2016b), alligator snapping turtles are not expected to be impacted by Project construction or operations.

The monarch butterfly is a federal candidate species for listing under the ESA with a wide range across the U.S. During the breeding season, adult monarchs require milkweed (*Asclepias* spp.) as an obligate host species to lay their eggs and provide food for larvae. During breeding and migration, adults will also utilize a variety of nectar sources for feeding (USFWS 2020). Suitable habitat in the form of milkweed or nectar-bearing plants may be present in the Plan Area although a site-specific survey has not been completed for these species. Tri-State II Solar will adhere to best management practices (BMPs) in their vegetation management plan, such as using native seed mixes for vegetation reestablishment during construction and using targeted herbicide treatments when feasible, to help reduce impacts to and benefit the species.

There are five federally listed mussel species that occur in Decatur County: fat threeridge (endangered), Gulf moccasinshell (endangered), oval pigtoe (endangered), purple bankclimber (threatened), and shinyrayed pocketbook (endangered). These species are not expected to be impacted by Project construction or operations because (1) designated critical habitat (i.e., Spring Creek) does not occur within the Study Area; (2) no streams or associated wetlands are present within the Study Area (Terracon 2016b); and (3) erosion control and soil stabilization BMPs will be implemented as per the Project's Storm Water Pollution Prevention Plan to prevent downstream impacts to water quality (Terracon 2016a, 2016b).

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

### 1 Introduction

One federally endangered tree, the Florida torreya, was also identified through the IPaC review. The mixed pine habitat that occurs within the Project has been harvested several times for timber and the surrounding land use includes developed areas and row crop agriculture; as a result, there is no habitat (i.e., cool and shady ravines along rivers) for the Florida torreya within the Project.

Four species proposed or under review for listing under the ESA were considered but excluded from evaluation of this HCP, including the eastern diamondback rattlesnake (*Crotalus adamanteus*), gopher frog (*Lithobates capito*), southern hognose snake (*Heterodon simus*), and tricolored bat (*Perimyotis subflavus*) (GADNR 2024; USFWS 2024c). Additionally, the gopher tortoise was considered but excluded from evaluation based on the USFWS's determination in October 2022 that members of the Eastern Distinct Population Segment (i.e., the segment including the Plan Area) did not meet criteria for listing under the ESA. The decision is currently in litigation. Gopher tortoise and eastern diamondback rattlesnake were documented within the Plan Area during site surveys (see Section 3.5.1) and are listed as state-threatened and Species of Greatest Conservation Need (SGCN) in Georgia (GADNR 2015). Southern hognose snake (state-threatened) and gopher frog (SGCN) have not been documented during site surveys but also have the potential to occur based on the availability of suitable habitat (i.e., xeric, sandy soils with longleaf pine [*Pinus palustris*] forest and burrows). Listing of the tricolored bat under the ESA (also a SGCN in Georgia) is anticipated in 2024 and the Project is within the species' overall range. However, the Project does not fall within the USFWS's Area of Interest for the species, and it does not appear on the official IPaC-generated species list which uses a combination of known occurrence records in recent years to identify where the species may be present (USFWS 2024e, 2024f, pers. comm.). Tri-State II Solar will follow BMPs for tree-roosting bat species and avoid tree clearing activities during the pup season (May 1 – July 15; USFWS 2024g) and impacts are not anticipated.

Covered Activities at the Project will include the excavation and backfilling of gopher tortoise burrows in the Plan Area (see Section 2.1), which has the potential to incidentally take other species of concern. However, this activity is to be implemented in conjunction with measures intended to avoid or minimize take of eastern indigo snake (see Section 5.2.2). These conservation measures will also contribute to the avoidance and minimization of potential take of other species of concern. Additionally, Tri-State II Solar has elected to relocate gopher tortoises and other species of concern (as present) from the Plan Area, in coordination with the GADNR, as an avoidance and minimization strategy for these species. However, this conservation measure is not included as a covered activity or part of the requested ITP. Should any of the proposed, candidate, or under review species become listed under the ESA during the life of the Project, Tri-State II Solar will further evaluate whether operations and maintenance are likely to cause take and whether an ITP is warranted.

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

2 Project Description

## 2 Project Description

The Project is a proposed 79-MW alternating current (AC) ground-mounted photovoltaic (PV) solar facility in Decatur County, Georgia, adjacent to the northwestern corner of Bainbridge, Georgia (Figure 1-1). The Project boundary is synonymous with the Plan Area and Permit Area and encompasses approximately 788 ac. Project construction is proposed to begin in the third quarter of 2026 and reach commercial operations in the third quarter of 2027. The substation will interconnect in the south to a 115-kilovolt overhead transmission line. Project construction will include permanent and temporary access roads, PV solar panel arrays, direct current to AC power inverters, tracking materials, low/medium voltage transformer and power conditioning equipment, potential battery energy storage capabilities, electrical interconnection switching station, temporary laydown yards, medium-voltage underground collection lines, substation, and perimeter security fencing. The PV panels will be installed on a single-axis tracking mounting system and will be dark blue or black in color. The Project's life span is expected to be 30 to 40 years; at the end of the Project's life, the Project will either be recommissioned or decommissioned. Decommissioning would involve the removal of all Project structures, facilities, and access roads; the site would be restored to pre-construction site conditions.

Prior to construction, gopher tortoise burrows (eastern indigo snake refugia) within the Plan Area (i.e., Permit Area; Section 1.2.2) will be excavated and backfilled (see Sections 5.2 and 5.4). Temporary and permanent vegetation clearing will occur as needed for Project infrastructure. Construction will involve the grading of permanent and temporary access roads, temporary laydown yards, inverter locations, and the substation pad. Concrete foundations will be poured for the substation, switching station, skid/inverters, and control room. Installation of the PV panel arrays will include a racking system on top of I-beam/tubular steel foundations. Access road, drives, and parking areas will be surfaced with gravel. Perimeter fencing will be installed. Underground collection lines to transport electricity from the solar panels to the substation will be installed via trenching. Upon completion of construction, temporary features will be removed and seeded with a native grass seed mix. The areas underneath the solar panels will also be revegetated after construction. When feasible, topsoil will be consolidated and redistributed in areas that harbor native plant species, thus preserving the seedbank.

During Project operations, the access roads and drives will be used to inspect and service the facility as needed. Vegetation under and around the panels will be maintained via mowing and weed eating. More extensive repairs, such as panel replacement, may include additional ground disturbance as needed.

### 2.1 Covered Activities

"Covered Activities" are activities that Tri-State II Solar has determined may result in incidental take of eastern indigo snakes that are (1) otherwise lawful, (2) non-Federal actions, and (3) under the direct control of the permittee. Covered Activities include the excavation and backfilling of gopher tortoise burrows within the Plan Area during the construction phase as this activity has the potential to cause direct take of eastern indigo snakes. Additional Covered Activities that may cause direct take during the construction, operations, and maintenance phases include vehicle traffic, large equipment operation used during vegetation clearing and management activities, and infrastructure construction. Indirect take may

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

2 Project Description

also occur from these Covered Activities due to disturbance. Indirect take may occur from the loss of overwinter shelter sites (burrows) and breeding habitat as a result of Project development.

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

# 3 Environmental Setting and Biological Resources

## 3.1 Land Use and Topography

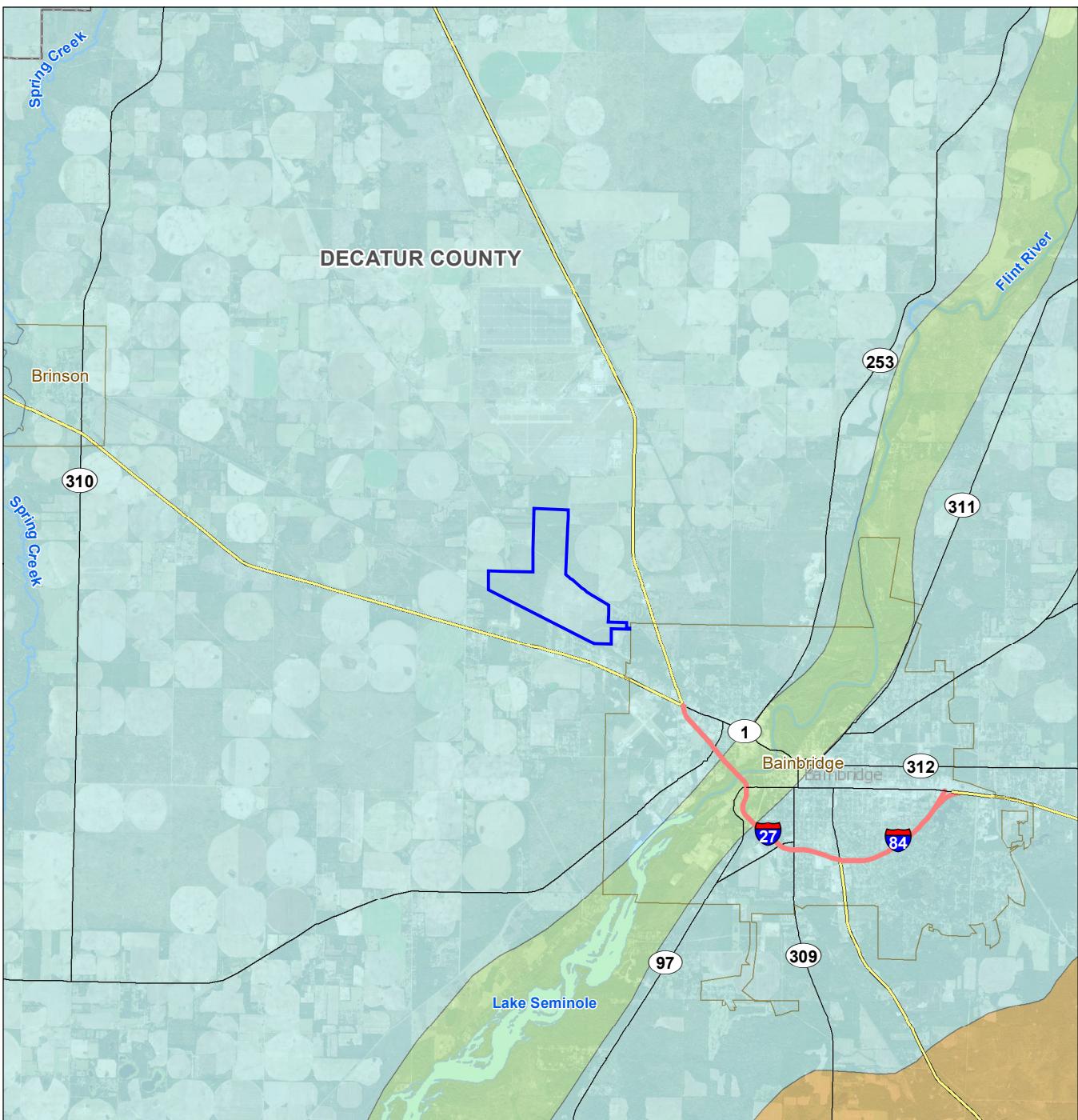
The Plan Area is in the Dougherty Plain Level IV Ecoregion (Figure 3-1) (Griffith et al. 2001). This ecoregion covers much of the Flint River drainage in southwestern Georgia and southeastern Alabama. The region is characterized as irregular plains historically dominated by southern mixed forest. Common crops in the region include corn, peanuts, cotton, pecans, soybeans, and sorghum (Griffith et al. 2001). Approximately 3 miles (mi) east and 4 mi south of the Plan Area is the Southeastern Floodplains and Low Terraces Ecoregion (Figure 3-1). This ecoregion in southern Decatur County occurs in the Lake Seminole basin and the Flint River floodplain. The elevation in the floodplain is around 80 feet (ft) above sea level, while the Project is between 105 and 130 ft above sea level (Figure 3-2). The Southeastern Floodplains and Low Terraces are part of the lowlands where eastern indigo snakes generally spend the summer months (June – August), and the Project is in the uplands, where eastern indigo snakes generally spend the winter months (see Section 3.4).

## 3.2 Geology and Soils

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), the dominant soil type within the Plan Area is Blanton loamy sand, 0 to 5% slopes (Figure 3-3) (USDA NRCS 2020). There are seven additional soil types within the Plan Area (Table 1). Grady sandy loam (0 to 2% slopes, frequently ponded) soils are predominantly hydric, and Ocilla loamy fine sand (0 to 2% slopes) are partially hydric. All remaining soil types in the Plan area are non-hydric.

**Table 1** NRCS Soil Types within the Plan Area

Soil Type	Acres within Plan Area	Proportion of Plan Area
Blanton loamy sand, 0 to 5 percent slopes	710	90%
Troup loamy sand, 0 to 5 percent slopes	44	6%
Grady sandy loam, 0 to 2 percent slopes, frequently ponded	10	1%
Blanton loamy sand, 5 to 12 percent slopes	10	1%
Nankin loamy fine sand, 2 to 5 percent slopes	7	<1%
Bonneau loamy sand, 0 to 5 percent slopes	3	<1%
Ocilla loamy fine sand, 0 to 2 percent slopes	3	<1%
Lucy loamy sand, 0 to 5 percent slopes	1	<1%



#### Legend

- + Plan Area
- EPA Level IV Ecoregion
- Dougherty Plain
- Southeastern Floodplains and Low Terraces
- Tifton Upland

#### Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: TriState II Solar, Esri, EPA, USGS
3. Background: 2019 NAIP

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 (At original document size of 8.5x11)  
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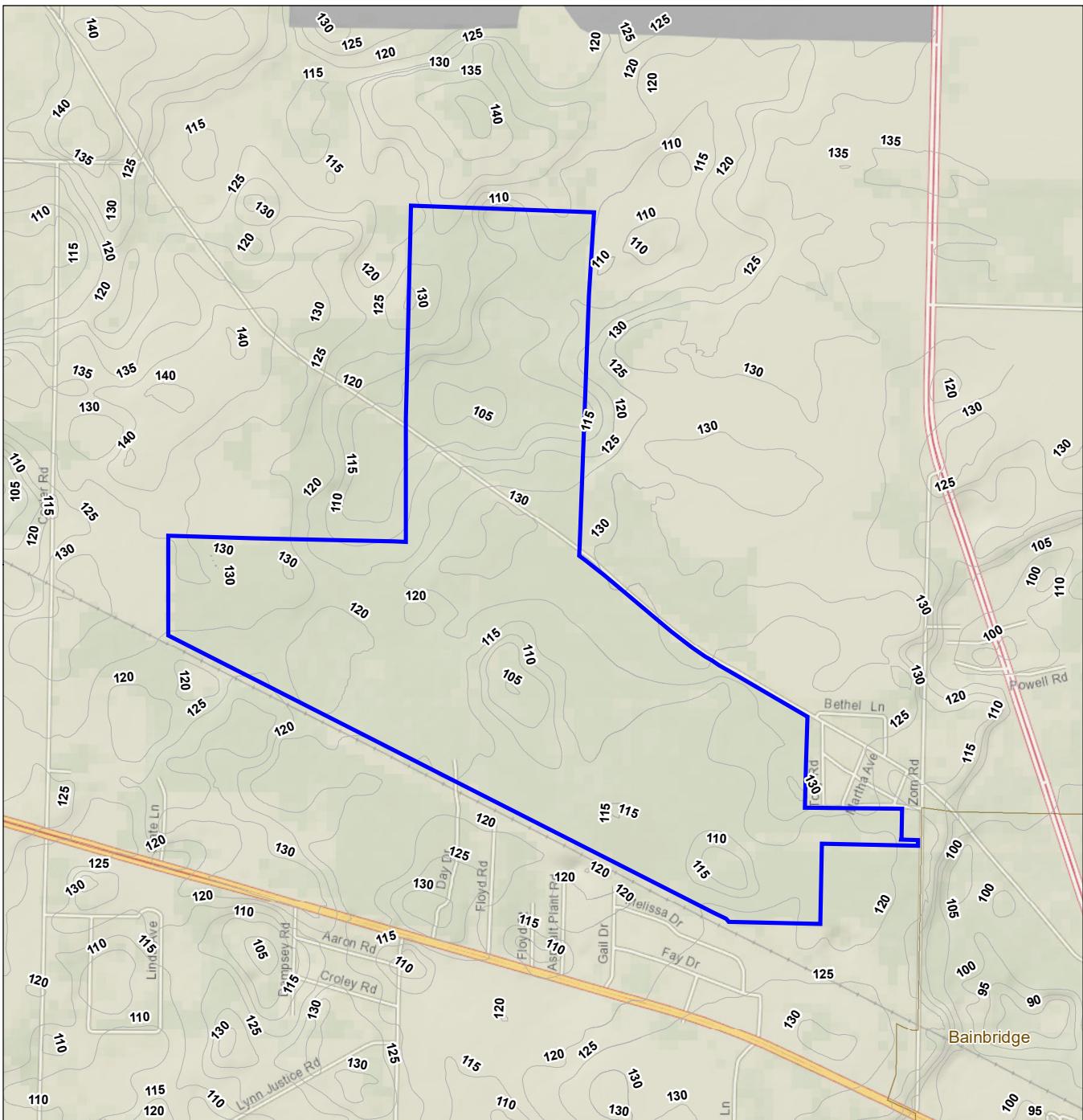
Project Location  
 Decatur Co., GA  
 Prepared by KW on 2022-04-11  
 TR by SR on 2022-04-14  
 IR by DB on 2022-04-14

Client/Project  
 Tri-State II Solar Project, LLC  
 Tri-State II Solar Project

193707946

Figure No.  
**3-1**

Title  
**EPA Level IV Ecoregions**



**Legend**

- Plan Area** (blue square)
- 5-ft Contour** (thin black lines)

0 1,000 2,000  
Feet  
(At original document size of 8.5x11)  
1:24,000



 **Stantec**

Project Location: Prepared by KW on 2022-04-11  
Decatur Co., GA  
TR by SR on 2022-04-14  
IR by DB on 2022-04-14

Client/Project: Tri-State II Solar Project, LLC  
Tri-State II Solar Project

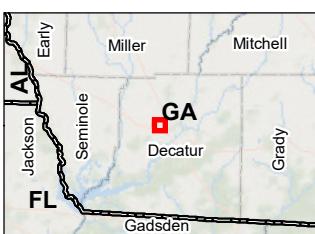
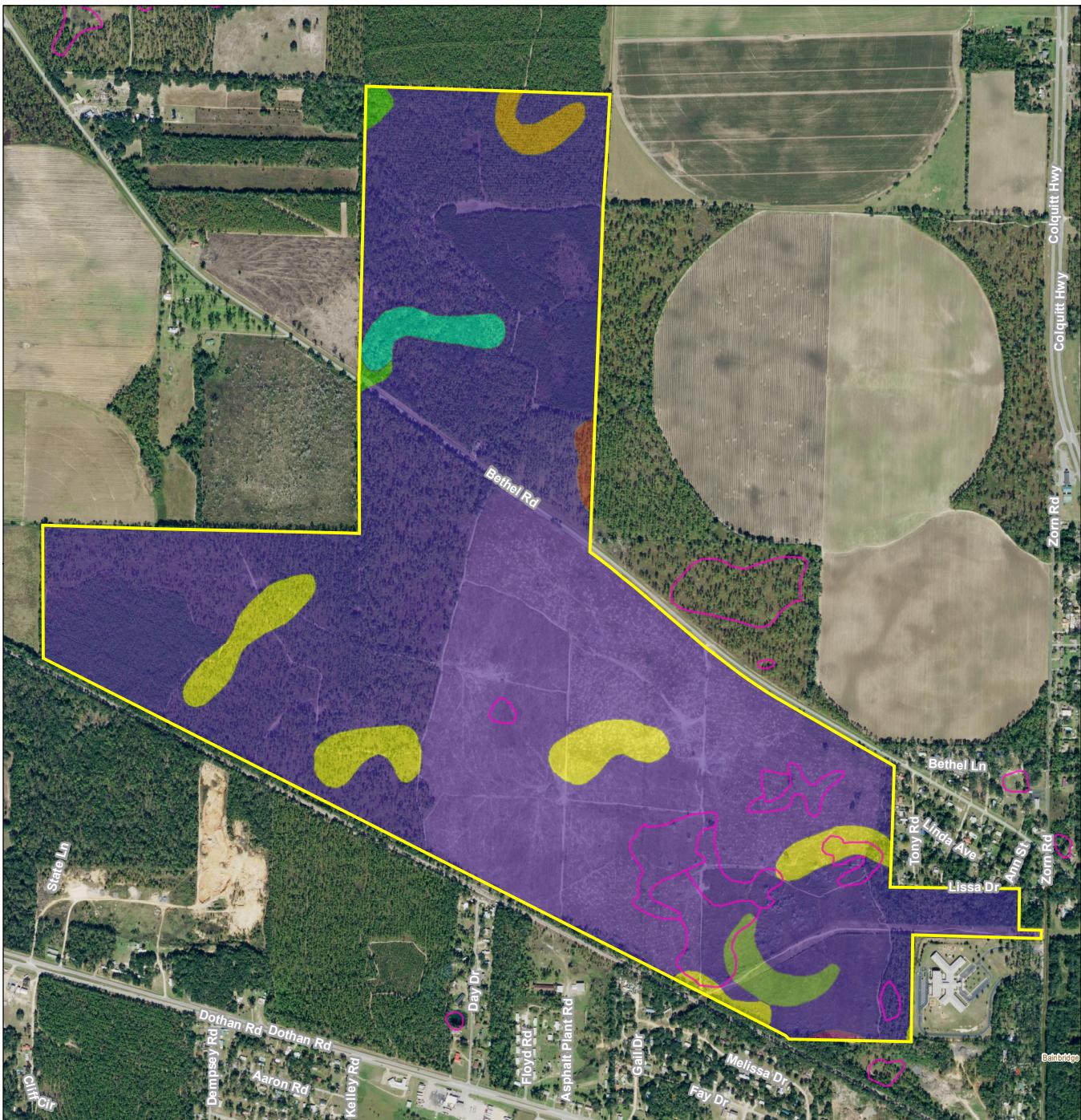
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Figure No.  
**3-2**  
Title  
**Topography**

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**Notes**

- Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
- Data Sources: Tri-State II Solar, Stantec, Esri, NRCS
- Background: National Geographic World Map



#### Legend

- Plan Area
- National Wetlands Inventory Feature
- NRCS Soils**
- Blanton loamy sand, 0 to 5 percent slopes
- Blanton loamy sand, 5 to 12 percent slopes
- Bonneau loamy sand, 0 to 5 percent slopes
- Grady sandy loam, 0 to 2 percent slopes, frequently ponded
- Lucy loamy sand, 0 to 5 percent slopes
- Nankin loamy fine sand, 2 to 5 percent slopes
- Ocilla loamy fine sand, 0 to 2 percent slopes
- Troup loamy sand, 0 to 5 percent slopes

#### Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: Tri-State II Solar, Esri, NRCS, NADS, USFWS
3. Background: 2019 NAIP

0 750 1,500 Feet  
(At original document size of 8.5x11)  
1:18,000



 **Stantec**

Project Location  
Decatur Co., GA  
Prepared by KW on 2022-04-11  
TR by SR on 2022-04-14  
IR by DB on 2022-04-14  
193707946

Client/Project  
Tri-State II Solar Project, LLC  
Tri-State II Solar Project

Figure No.  
**3-3**  
Title

**NRCS Soils and National Wetland Inventory Features**

Page 1 of 1

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

### **Blanton Loamy Sand, 0-5% Slopes**

This very deep, well-drained soil covers approximately 90% of the Plan Area. It is characteristic of uplands between the valleys of adjacent watercourses (interfluves). It has a thick, sandy surface layer that is dark brown loamy sand. Subsurface layers are yellowish and/or brownish. Depth to root-restricting layer is more than 60 inches (in), and the seasonal high-water table is 4 to 6 ft below the surface from December through March. The surface and subsurface layers have rapid permeability with low available water capacity. This soil type is predominantly used for pasture or forestland; it is poorly suited for cropland because of its low available water capacity and low nutrient holding capacity. It is well suited for forestland productivity of loblolly pine (*Pinus taeda*), longleaf pine, and slash pine (*Pinus elliottii*). It is well suited for dwellings and roads/streets (USDA NRCS 2001).

### **Troup Loamy Sand, 0-5% Slopes**

Characteristic of interfluves, this soil type is very deep and somewhat excessively drained. It covers approximately 6% of the Plan Area. The surface layer is 8 in thick and consists of brown loamy sand. Depth to the root-restricting layer is more than 60 in and is more than 6 ft to the seasonal high-water table. The surface and subsurface layers are rapidly permeable, while the subsoil is moderately permeable. Land use on this soil type is predominantly cropland (moderately suited) and forestland (well suited) (USDA NRCS 2001).

### **Grady Sandy Loam, 0-2% Slopes, Frequently Ponded**

This very deep, poorly drained soil type occurs in depressions and covers approximately 1% of the Plan Area. This soil type has a 6 in surface layer of dark gray sandy loam. The depth to the root-restricting layer is very deep the seasonal high-water table ranges from 2 ft above the surface to 1 ft below the surface. This soil has slow permeability and moderate or high available water capacity. It is suited for forestland and wildlife habitat (USDA NRCS 2001).

### **Blanton Loamy Sand, 5-12% Slopes**

This soil type is found on hills and covers approximately 1% of the Plan Area. This soil type is the same as Blanton loamy sand, 0-5% slopes (see above) but with steeper slopes (USDA NRCS 2001).

### **Nankin Loamy Fine Sand, 2-5% Slopes**

This very deep, well-drained soil type occurs on hills and covers less than 1% of the Plan Area. This soil type has a 6 in surface layer of brown loamy fine sand and clay subsoils. The depth to the root-restricting layer is more than 60 in with more than 6 ft to the seasonal high-water table. This soil has moderately slow permeability and moderate available water capacity. Primary uses of this soil type include pasture and cropland (USDA NRCS 2001).

### **Bonneau Loamy Sand, 0-5% Slopes**

Characteristic of interfluves, this soil type is very deep and well drained. It covers less than 1% of the Plan Area. The surface layer is 10 in thick and consists of dark grayish brown loamy sand. The depth to the

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

root-restricting layer is more than 60 in, and the seasonal high-water table is 3.5 to 5 ft below the surface from December through March. The surface and subsurface layers are rapidly permeable, while the subsoil is moderately permeable. This soil type is predominantly used for cropland, pasture, and forestland. Crops include cotton, peanuts, corn, soybeans, small grains, and truck crops. Loblolly pine, longleaf pine, and slash pine are dominate forestland species (USDA NRCS 2001).

### **Ocilla Loamy Fine Sand, 0-2% Slopes**

This soil type is found on stream terraces and covers less than 1% of the Plan Area. The soil is very deep and somewhat poorly drained. The 3-in thick surface layer is dark brown loamy fine sand with moderate permeability. The depth to the root-restricting layers is more than 60 in with a depth to the seasonal high-water table of 1 to 2.5 ft, apparent, from December through April. This soil type is well suited for pasture and forestland and is moderately suited for cropland (USDA NRCS 2001).

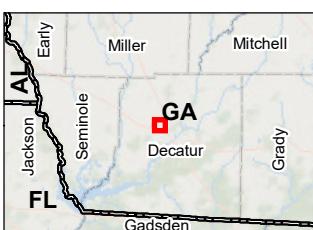
### **Lucy Loamy Sand, 0-5% Slopes**

This soil type is found on hills and covers less than 1% of the Plan Area. The soil is very deep and well drained. The 7-in thick surface layer is dark grayish brown loamy sand. The depth to the root-restricting layers is more than 60 in with a depth to the seasonal high-water table of more than 6 ft. This soil type is predominantly used for cropland, pasture, and forestland (USDA NRCS 2001).

## **3.3 Vegetation**

Historically, southwest Georgia was dominated by the longleaf pine forest-grassland ecosystem. This ecosystem is fire dependent, and longleaf pine trees are well-adapted to fire. A naturally managed longleaf pine forest has a diverse herbaceous understory (up to 30 groundcover plant species per acre) and few slash pines or loblolly pines. Much of the original longleaf pine forest has been degraded by fire suppression and logging or converted and fragmented by agriculture and development (Way 2006).

The Plan Area is a former pine plantation, and as such, the landscape is a mosaic of mixed pine forest in varying growth stages ranging from saplings to mature trees. Site-specific surveys were performed within a larger Study Area that encompasses the Plan Area, as displayed in Figure 3-4. The Study Area contains approximately 863 ac of mixed pine forest habitat and 16 ac of developed features, including roads, a homestead, a railroad right-of-way, and a transmission line corridor. The Plan Area contains 774 ac of mixed pine forest habitat and 14 ac of developed features (Figure 3-4). Forested tracts in the Plan Area have experienced varying levels of silvicultural management (e.g., fire and selective cutting) resulting in conditions ranging from recently cleared forests with open sandhill habitat to areas with a closed canopy and dense deciduous undergrowth. Several low maintenance two-track roads also occur.



#### Legend

- Plan Area
- Study Area
- Land Cover
- Mixed Pine Forest
- Other

0 750 1,500 Feet  
(At original document size of 8.5x11)  
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 **Stantec**

Project Location  
Decatur Co., GA  
Prepared by KW on 2022-04-13  
TR by SR on 2022-04-13  
IR by DB on 2022-04-13

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Client/Project  
Tri-State II Solar Project, LLC  
Tri-State II Solar Project

193707946

Figure No.  
**3-4**

Title

**Project Habitat Types**

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

### 3.4 Wildlife

Longleaf pine forest-grassland ecosystems are home to a diverse community of plants and animals unique within the U.S. This ecosystem contains more breeding bird species than any other southeastern forest type, approximately 60% of the amphibian and reptile species found in the southeast U.S., and numerous state- or federally threatened and endangered species, including the red-cockaded woodpecker, gopher tortoise, flatwoods salamander (*Ambystoma cingulatum*), and striped newt (*Notophthalmus perstriatus*) (Way 2006). Common species observed on-site include white-tailed deer (*Odocoileus virginianus*), armadillo (*Dasypus novemcinctus*), and rabbits (*Leporidae* spp.).

The eastern indigo snake is a non-venomous, large-bodied snake with blue-black coloration. It is the longest snake in North America, reaching up to 8.5 ft in length. Historically, their range included Florida, the coastal plain of southern Georgia, extreme southern Alabama, and extreme southeastern Mississippi. Currently their range is limited to portions of Florida and southern Georgia. Historic records of eastern indigo snakes include Decatur and Seminole counties in southwestern Georgia (Enge et al. 2013; USFWS 2019a).

Southern Decatur County is within the rare, or very local portion of the species' range (USFWS 2019a), and only two eastern indigo snake occurrences have been documented in proximity to the Plan Area within the past 10 years (USFWS, pers. comm.). One occurrence was documented in 2013, approximately 7 mi west of the Plan Area and adjacent to Spring Creek in Seminole County. The most recent record is from October 2020, when a deceased individual was documented 7 mi southwest of the Plan Area on State Highway 253 (USFWS pers. comm.; see Section 4.1). This individual was the first record of eastern indigo snake to occur in Decatur County since the 1980's (USFWS, pers. comm.); therefore, the species is still considered rare.

Eastern indigo snakes are diurnal (i.e., active during the day) and feed primarily on other snakes, turtles, small mammals, amphibians, birds, and lizards. Habitat use of the eastern indigo snake varies seasonally. Preferred habitat often includes upland habitat types (e.g., longleaf pine sandhills, scrub, pine flatwoods), but the species will also use lowland and human-altered habitats. The breeding season is between October and February. Eggs are laid between April and June and then hatch between August and September (USFWS 2019a). In the Plan Area, eastern indigo snakes may be present throughout the year but would have an increased potential to use gopher tortoise burrows as winter refugia between October and April (USFWS 2011, 2019a). They depend on gopher tortoise burrows for breeding, nesting, and shelter during the winter months, and have been documented exhibiting den site fidelity, often returning to the same gopher tortoise burrow sites each winter (Stevenson et al. 2003, 2009). The primary risk to the species' survival is habitat loss and fragmentation from roads and land use changes, such as urbanization. They are also susceptible to vehicle collisions on roadways (USFWS 2019a).

### 3.5 Site Specific Surveys

Pre-construction on-site surveys that were completed include:

- Threatened and endangered species evaluation (Terracon 2016a)

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

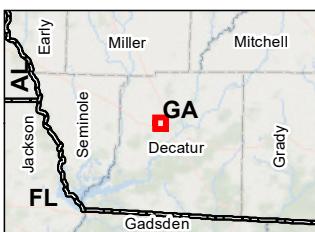
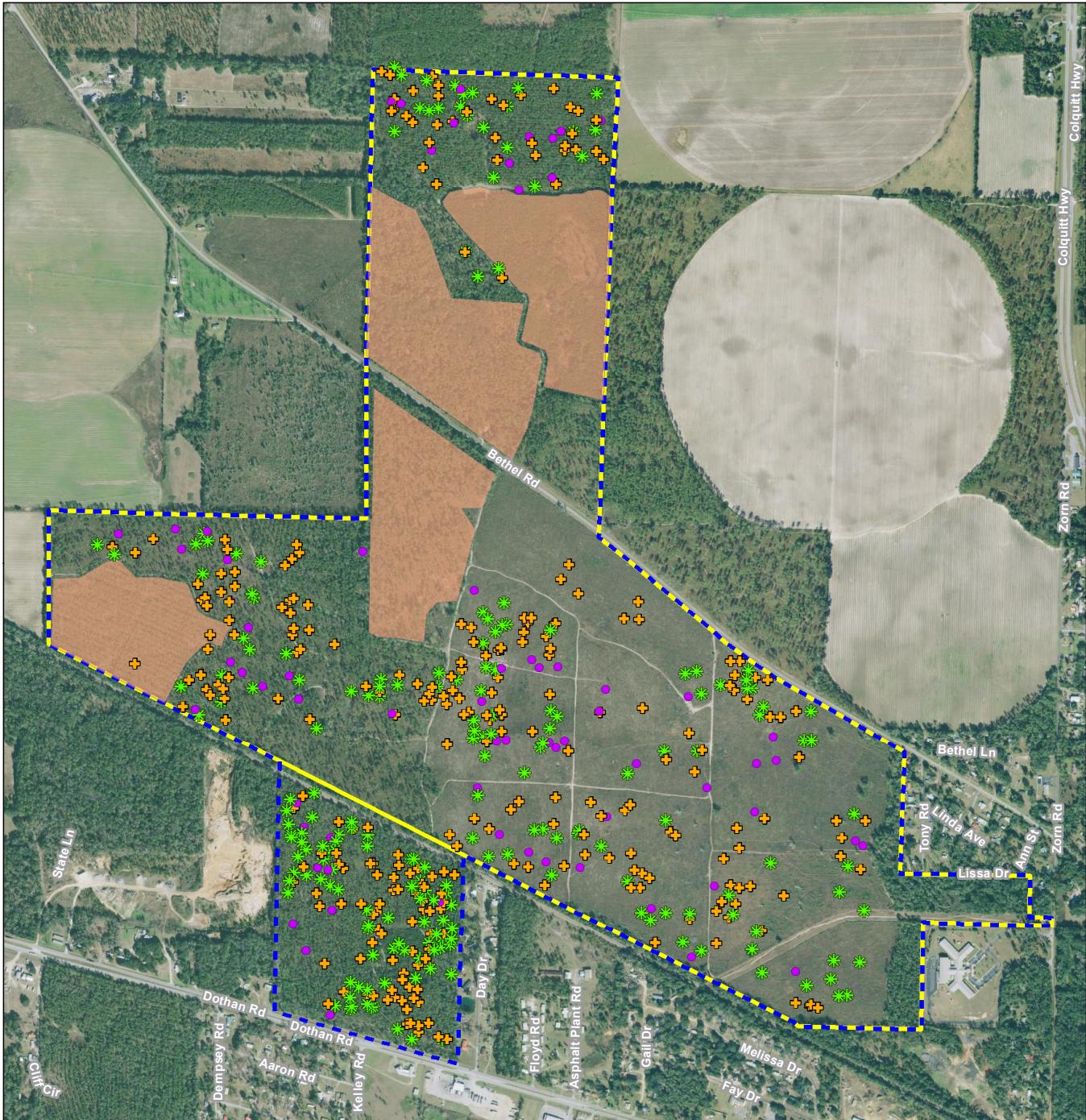
- Gopher tortoise burrow mapping (Terracon 2020a; Stantec 2021)
- Eastern indigo snake survey (Stantec 2021)
- Wetland delineations (Terracon 2016b)
- Cultural surveys (Terracon 2020b; SEARCH 2020)

### 3.5.1 EASTERN INDIGO SNAKE SURVEYS

Prior to field surveys, Tri-State II Solar performed a desktop assessment and used publicly available data, including National Agricultural Imagery Program aerial imagery and NRCS soil survey data to identify potentially suitable habitat for eastern indigo snakes within the designated Study Area, which encompassed the Plan Area (see Appendix C for site-specific reports). Potential habitat for the eastern indigo snake, or “survey areas” identified approximately 700 ac of mixed pine forest and recently cleared forest areas.

Due to the association of eastern indigo snakes with gopher tortoise burrows during winter months, the USFWS recommended concentrating snake surveys in portions of the Study Area with burrows (Appendix A). Initial gopher tortoise mapping surveys were completed for the Project in June 2020 and included approximately 362 ac of the Study Area that contained suitable habitat characteristics (i.e., soils and vegetation) for gopher tortoise (Terracon 2020a). During the June 2020 surveys, 134 gopher tortoise burrows were recorded. Additional surveys were performed in late 2020 and early 2021 to document all burrows in suitable habitat within the Study Area (Figure 3-5; Stantec 2021). Initial survey efforts did not include the southwestern parcel of the Study Area (approximately 91 ac located between railroad tracks and Dothan Road; Figure 3-5) based on the proposed Project design at the time; however, this portion was surveyed in February 2021 to complete gopher tortoise burrow coverage of the greater Study Area and has since been removed from the Plan Area.

A total of 568 gopher tortoise burrows were documented within the Study Area during the 2020-2021 surveys. Approximately 34% of the burrows (n=192) were observed in the east-central portion of the Study Area in recently cleared longleaf pine forest. These sandy, previously upland forested areas were still being utilized by tortoises, potentially due to silvicultural management practices that reduced canopy cover and promoted the growth of wiregrass (*Aristida stricta*) in the understory. The majority of burrows (remaining 66%) were observed in mixed pine habitat with moderate canopy cover and herbaceous cover. However, burrows were not observed in forest stands with crowded or completely shaded understories (densely planted pine); stands with dense pine, heavy windfall, and thick vegetative cover; forest stands that lacked native vegetation due to human management practices and invasive encroachment; or cleared areas planted with row crops for hunting purposes (approximately 174 ac; Figure 3-5) (Stantec 2021). As of the completion of all pre-construction surveys in February 2021, 400 gopher tortoise burrows were located within the Plan Area, and 600 ac of the total 774 ac of mapped mixed pine forest were considered potentially suitable habitat for eastern indigo snake. Of the 400 gopher tortoise burrows mapped within the Plan Area, 129 were documented as active, 210 were documented as inactive, and 61 were documented as abandoned based on evidence of activity surrounding the mouth



#### Legend

- Plan Area
- Study Area
- Low Quality/Unsuitable Habitat

#### 2020-2021 Gopher Tortoise Burrow Location

##### Status

- Abandoned
- Active
- Inactive

##### Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: Tri-State II Solar, Terracon, Stantec, Esri, NADS
3. Background: 2022 NAIP

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Project Location  
Decatur Co., GA

Prepared by SR on 2022-08-31  
TR by SR on 2022-04-14  
IR by DB on 2022-04-14

Client/Project  
Tri-State II Solar Project, LLC  
Tri-State II Solar Project

193707946

Figure No.

3-5

Title

Gopher Tortoise Burrow Locations

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

3 Environmental Setting and Biological Resources

and apron of the burrows at the time. The remaining 168 gopher tortoise burrows identified during surveys were located in the southwestern parcel, outside of the Plan Area.

Tri-State II Solar's eastern indigo snake survey methods were developed based on the *Survey Protocol for the Eastern Indigo Snake, Drymarchon couperi, in North and Central Florida* (USFWS 2011), and adapted per the guidance supplied in the USFWS technical correspondence for the Project based on current survey protocols at the time of completion (Appendix A). The USFWS approved the survey methods via correspondence in late November 2020 and during a subsequent meeting on December 2, 2020 (see Appendix A). Five replicate presence/absence visual encounter surveys for the eastern indigo snake were performed within the Plan Area between November 20, 2020 and January 20, 2021 (Stantec 2021). At least three of the five survey days were performed in high quality weather conditions (i.e., high temperatures between 60 - 70 degrees Fahrenheit preceded by several cold days).

Biologists conducted pedestrian transects within survey areas between 0900 and 1600 and searched for eastern indigo snakes or signs such as shed skin or scat. In addition, biologists documented potential refugia including gopher tortoise burrows, stumps, and log piles. During the first replicate and during subsequent replicates in areas with high burrow density, biologists walked structured parallel transects to ensure full coverage of the survey area. In areas with low burrow density, biologists walked meandering transects to each burrow, taking different paths each round to increase coverage. Densely planted young pine plantations with 100% canopy closure and heavy windfall were not expected to support gopher tortoise burrows and were considered unsuitable habitat; therefore, these areas were not sampled (Stantec 2021). Surveys for indigo snakes ceased after one round of pedestrian transect surveys in other portions of the Plan Area without burrows that were considered low quality/unsuitable habitat for the eastern indigo snake but continued within remaining potentially suitable habitat.

A 10-meter radius was walked around each documented burrow or refugia to search more intensively for eastern indigo snakes that may be basking. Data were collected using ArcGIS Collector and Eos Positioning Systems Arrow 100 or Trimble R1 GNSS receivers capable of submeter accuracy (Stantec 2021). A total of 393 person-hours and a total of 294 mi of pedestrian transects were completed within the Study Area and no eastern indigo snakes or sign were detected (Stantec 2021). However, since eastern indigo snakes are difficult to detect, negative survey results do not necessarily prove absence. The species is likely to occur in the Plan Area based on proximity to known records and the presence of suitable habitat. Catch per unit effort for eastern indigo snakes in the primary portion of their range has been shown to be 1 in 14 person-hours (Hyslop et al. 2009) and because the Plan Area is within the rare or very local portion of the species' range, it is expected that additional search time and scoping each burrow with a camera may be required to detect an indigo snake. A combination of negative survey results and the site's location within a rare or very local population range suggests the density of eastern indigo snakes within the Plan Area is likely low. No eastern indigo snakes were observed in the southwestern parcel of the Survey Area during the subsequent gopher tortoise burrow survey in February 2021; however, this survey was completed within one day and took place immediately after a controlled burn performed by the landowner.

Above-ground refugia observed within the Plan Area included log piles and sheet metal. Underground refugia included mammal burrows, stump holes, and holes beneath exposed tree roots. Incidental reptile

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

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observations included eastern hognose snake (*Heterodon platirhinos*), eastern racer (*Coluber constrictor*), eastern garter snake (*Thamnophis sirtalis*), eastern diamondback rattlesnake, eastern coachwhip (*Coluber flagellum*), green anole (*Anolis carolinensis*), eastern fence lizard (*Sceloporus undulatus*), gopher tortoise, and eastern box turtle (*Terrapene carolina*). No amphibian species were observed.

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

4 Take Assessment

# **4 Take Assessment**

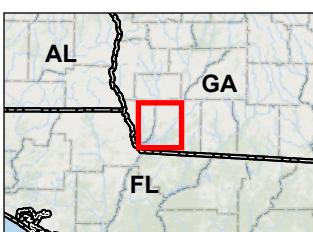
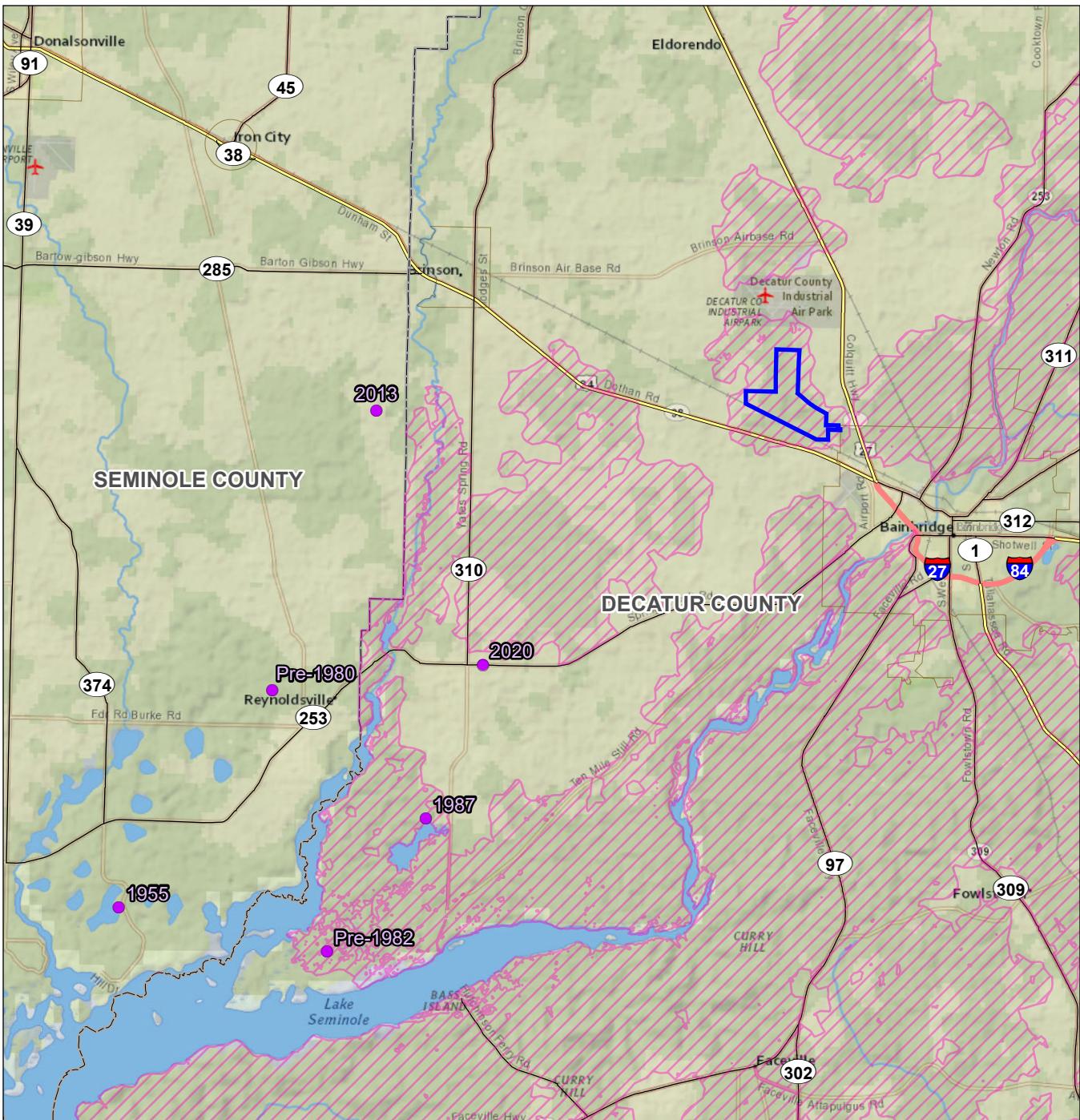
This section evaluates the potential biological impacts on the Covered Species as a result of the Covered Activities, including construction, operations, and maintenance. Tri-State II Solar has determined that the Covered Activities may result in take of indigo snakes because the species is known to occur in the vicinity and Project activities are expected to impact 600 ac of the species' overwintering shelter, nesting, and breeding habitat (i.e., impacts to gopher tortoises and their burrows). However, the number of impacted individuals is expected to be low due to the rarity of the species in this part of the species' range. Tri-State II Solar is requesting an ITP for take of three eastern indigo snakes and one clutch of eggs over a period of 10 years. A duration of 10 years would include construction of the solar facility as well as ongoing operation and maintenance activities and would provide sufficient time for measuring effects from Project development on the Covered Species (discussed further in Section 1.2.1, above). An evaluation of potential effects over the duration of the ITP assumes the implementation of the avoidance and minimization measures as described in Section 5.2.

## **4.1 Anticipated Take**

### **4.1.1 EASTERN INDIGO SNAKE POPULATION ECOLOGY IN SOUTHWEST GEORGIA**

Eastern indigo snake populations are divided into four representative regions: the Panhandle, North Florida, Peninsular Florida, and Southeast Georgia (USFWS 2019a). The Panhandle representative region (referred to as Panhandle region from this point forward) includes the Florida panhandle, southern Alabama, and Mississippi, as well as Decatur and Seminole counties, Georgia. It is thought that indigo snakes occurring in Decatur and Seminole counties may be a northerly extension of populations occurring in the Florida panhandle (USFWS 2019a). Eastern indigo snake records for the State of Florida from 2001-2012 included 578 records from 47 counties; however, few records were observed within the panhandle and distribution is considered rare throughout the Panhandle region (Enge et al. 2013; USFWS 2019a). Recent records of indigo snakes within the Panhandle region are largely concentrated around The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve (ABRP), a designated repatriation site for the eastern indigo snake established in 2017 (discussed below). The rarity of the eastern indigo snake in southwest Georgia is supported by historical records, where five of the seven observations were made prior to 1987, and the remaining two occurrences were documented within the past 10 years (Figure 4-1; USFWS pers. comm.). All seven sightings occurred in proximity to Spring Creek and Lake Seminole (Figure 4-1).

Due to the rarity of the eastern indigo snake in the Panhandle region, two on-going repatriation projects were initiated in an effort to recover the eastern indigo snake population in the western portion of its range. One repatriation project is located at the U.S. Forest Service's Conecuh National Forest in Covington County, Alabama (103 mi west of the Plan Area) and the other is at ABRP in Liberty County, Florida (approximately 35 mi southwest of the Plan Area) (USFWS 2019a). Prior to repatriation at ABRP, the most recent occurrence of indigo snake within the Florida panhandle was recorded in 2011 at the



**Notes**

- Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
- Data Sources: Tri-State II Solar, Esri, USFWS, USGS
- Background: National Geographic World Map

Stantec

Project Location  
Decatur Co., GA  
Prepared by KW on 2022-04-14  
TR by SR on 2022-04-14  
IR by DB on 2022-04-14

Client/Project  
Tri-State II Solar Project, LLC  
Tri-State II Solar Project

Figure No.  
**4-1**

Title  
**Mapped Conservation (Population)  
Units and Local Records for  
Eastern Indigo Snake**

Page 1 of 1

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

4 Take Assessment

Eglin Air Force Base (USFWS 2019a), approximately 120 mi southwest of the Plan Area. The most recent record (2020) was a juvenile male that had been killed by a vehicle along State Highway 253, approximately 7 mi southwest of the Plan Area (USFWS, pers. comm.). ABRP provides high quality, preferred habitat for the eastern indigo snake as it is primarily comprised of upland longleaf pine forest and wiregrass habitat with gopher tortoise burrows and adjacent steeplehead streams and ravines (TNC 2021a). As of 2022, 106 snakes have been released at this repatriation site (TNC 2020, 2021b, 2022). A study by Piccolomini (2020) showed that indigo snakes released in 2017 and 2018 at the ABRP showed high site fidelity, with home range size averaging from 11.3 hectares (ha; 28.2 ac) for females and 20.9 ha (51.6 ac) for males, with only one snake observed traveling greater than 1 mi from the release location.

Winter home ranges for wild populations of eastern indigo snake tend to be less than 25 ac, whereas home range size between spring and autumn can be up to 3,700 ac (USFWS 2019a). Hyslop et al. (2014) found that annual indigo snake home ranges (across all seasons) in eastern Georgia averaged between 340 – 378 ha (840 – 934 ac), with female home ranges between 33 – 354 ha (82 – 875 ac) and male home ranges between 140 – 1,528 ha (346 – 3,776 ac). In the same study, Hyslop et al. (2014) estimated each individual's home range overlapped with  $\geq 6$  other home ranges.

Recent studies have also shown that habitat patch connectivity is an important predictor for the ability of an area to support indigo snake populations. Estimated patch sizes for viable populations ranged from 4,000 to 14,000 ha (10,000 to 35,000 ac) (USFWS 2019a). Patch size requirement estimates from central Florida have shown that areas less than 1,012 ha (2,500 ac) are too small to support even two eastern indigo snakes (Bauder et al. 2018). Home range size estimates from Hyslop et al. 2014 for the Southeast Georgia representative region occurred at Fort Stewart, a military base with adjacent private lands and a high proportion of contiguous forested habitat. Indigo snakes in the same study had the largest reported home range size across all representative regions, which is likely due to the habitat connectivity associated with the Fort Stewart study site.

### 4.1.2 EASTERN INDIGO SNAKE POPULATION ECOLOGY IN THE PLAN AREA

Given that indigo snakes that occur in southwest Georgia are likely a northerly extension of the population that occurs within the Florida panhandle (USFWS 2019a), that most of the current records within the Florida panhandle are associated with the ABRP repatriation site (USFWS 2019a), and that most indigo snakes that occur within the ABRP show high site fidelity (Piccolomini 2020), it is anticipated that few of the introduced snakes would travel 35 mi north to overwinter at the Project. Studies have demonstrated that on-site detectability of eastern indigo snakes increases during the mating season due to breeding movements (e.g., searching for mates, mate competition, breeding, basking) (Bauder et al. 2017) and that survey catch per unit effort is one per 14 person-hours in highly suitable habitat (Hyslop et al. 2009; USFWS 2019a). Stantec performed five consecutive rounds of visual encounter surveys during the winter for a total of 393 person-hours of on-transect search time within the Plan Area but did not observe eastern indigo snake or their signs during any of the on-site surveys (Section 3.5.1; Stantec 2021). Survey methodology was based on guidance available at the time of surveys and was approved by the USFWS during correspondence (Appendix A). Due to the cryptic nature of eastern indigo snakes, negative survey efforts do not necessarily indicate absence from a site; however, if eastern indigo snakes

## HABITAT CONSERVATION PLAN

Tri-State II Solar Project

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were present at high densities within the Plan Area, it is predicted that some evidence would have been observed during the survey effort. Therefore, on-site survey efforts demonstrated that indigo snakes are likely rare within the Plan Area.

In northern portions of their range, eastern indigo snakes are primarily associated with gopher tortoise burrows in xeric sandhill habitats during the winter months (USFWS 2019a). The Plan Area contains approximately 600 ac of suitable xeric sandhill habitat (considered mixed pine forest with dry, coarse, sandy soils and contains gopher tortoise burrows) and 400 gopher tortoise burrows (Section 3.5.1) that could potentially serve as winter habitat for the Covered Species. Based on habitat suitability models derived from Bauder et al. (2022), the Plan Area is fully located within a mapped conservation (population) unit for eastern indigo snake as displayed in Figure 4-1. Conservation units represent areas potentially capable of supporting viable populations when comparing data on historical distribution and annual movement to mapped land cover, vegetative communities, and connectivity factors (Bauder et al. 2022). Although the Plan Area contains a high density of tortoise burrows and suitable habitat for eastern indigo snake, it is adjacent to the City of Bainbridge and the habitat is becoming isolated with time. Habitat within and surrounding the Plan Area is already largely fragmented by human development (i.e., roads, homes, a school, and a railroad corridor). Additionally, significant amounts of cropland surround the Plan Area and there is little to no remaining connectivity for suitable habitat to additional undisturbed forested/xeric sandhill habitat in the vicinity, creating potential migration barriers for traversing indigo snakes. Incidental take of eastern indigo snake may occur in the Plan Area based on the proximity of existing records, unavoidable impacts to potential shelter (i.e., gopher tortoise burrow excavation), and the removal of suitable habitat. However, the level of take is expected to remain low due to the low density and rarity of the species in the region. This determination is supported by the negative survey results from onsite surveys (Section 3.5.1).

### 4.1.3 TAKE ESTIMATE RATIONALE

Accurately tracking and estimating indigo snake populations has proven difficult due to low densities and the cryptic nature of the species, and as a result, robust population estimates for all regions are not available (USFWS 2019b). For the reasons described in the preceding paragraphs, the eastern indigo snake is considered rare within the Panhandle region and the species is also anticipated to be rare within the Plan Area. Due to the lack of established risk models or population densities for the species in the region, Tri-State II Solar, in coordination with the USFWS, has agreed to use habitat to determine the number of eastern indigo snake that may be taken either directly or indirectly by the Covered Activities and to develop the compensatory mitigation contribution amount to the Wildlife Foundation of Florida – Eastern Indigo Snake Conservation Fund to mitigate potential unavoidable impacts to the species (see Section 5.4).

Due to the lack of information for the Panhandle region, the best available information on home range size in Georgia was used to calculate the number of indigo snakes that may be using suitable habitat within the Plan Area. The Hyslop et al. (2014) study occurred in the Southeast Georgia representative region, which is where the majority of current eastern indigo snake records occur. Populations within the Southeast Georgia representative region are also considered highly resilient based on existing population factors (i.e., extent and connectivity) and habitat factors (i.e., fragmentation, road density, habitat type),

## HABITAT CONSERVATION PLAN

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whereas populations in the Panhandle region are considered rare or very local and population resiliency has been rated between low and extirpated (USFWS 2019a, 2019b). Based on the difference in geography, population factors, connectivity, and habitat factors, the lower average reported by Hyslop et al. (2014) for indigo snake home range (i.e., 340 ha [840 ac]) was used for estimating potential use in the Plan Area.

Project construction is expected to clear approximately 600 ac of habitat (discussed in Section 4.1.2). Assuming indigo snakes in the Project region have home ranges of 340 ha (840 ac) and each home range overlaps with 6 other home ranges (the minimum documented by Hyslop et al. [2014]), then there are an estimated 0.007 eastern indigo snakes per acre of suitable habitat. Therefore, if home range size is used to determine the density estimate, approximately five eastern indigo snakes have the potential to inhabit the Plan Area.

There are no available estimates of indigo snake density during the winter months within the Panhandle region. If winter habitat home ranges of 10 ha (25 ac; USFWS 2019a) are considered with the potential of 6 snakes with overlapping home ranges, there are an estimated 0.24 eastern indigo snakes per acre of suitable habitat. Therefore, if winter home range is used to determine the density estimate, approximately 144 snakes have the potential to inhabit the Plan Area. However, on-site surveys did not document eastern indigo snakes (Section 3.5.1), and the population in southwest Georgia is considered very rare or local; therefore, the probability of 144 eastern indigo snakes occurring in the 600 ac of potential habitat in the Plan Area is unlikely. The annual home range estimate of determining occupancy is a more likely scenario for the Plan Area, which would result in an estimate of five snakes. However, the Plan Area also has several limiting characteristics relative to eastern indigo snake abundance including the isolation of habitat, surrounding development, moderate habitat quality, and distance to the nearest documented indigo snake sightings. Therefore, an estimate of five snakes is still considered overly conservative in light of the specific circumstances of the Plan Area and a lower density of snakes is expected. Assuming an eastern indigo snake home range in the Plan Area overlaps with three additional home ranges (as opposed to six) due to limiting factors, there is an estimated 0.004 snakes per acre of suitable habitat and approximately three eastern indigo snakes have the potential to inhabit the Plan Area. Tri-State II Solar is assuming three individuals is a more reasonable estimate of occupancy for the Plan Area.

Gopher tortoise burrows within the Plan Area will be excavated and backfilled prior to Project land-clearing activities. This action is expected to result in eastern indigo snake take due to the permanent loss of suitable shelter and nesting habitat. It also has the highest potential to result in direct take of eastern indigo snake; therefore, burrows will be scoped prior to excavation activities to ensure they are not occupied as part of conservation measures to avoid and minimize take of both eastern indigo snake and gopher tortoise (Section 5.2.2.). Burrow excavation will take place within the Plan Area from the May through August time frame which coincides with the nesting and hatching season for eastern indigo snake (i.e., April through September; Section 3.4), and burrow excavation is expected to take place when there is the potential for nests to be present. Male indigo snake home ranges are typically larger than females and show overlap in northern portions of their range (Hyslop et al. 2014). Therefore, if there are an estimated three eastern indigo snakes within the Plan Area, it may be assumed two are male and the other is female. If one female occupies the Plan Area and eastern indigo snakes lay one clutch of eggs per year, there is additional potential for burrow excavation to impact one indigo snake nest, if any.

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Project operations are not anticipated to result in the incidental take of nests. Due to the potential for a breeding female to inhabit the Plan Area, Tri-State II Solar estimates the anticipated take for the duration of the ITP is three adults, two of which are male, one of which is female, and one clutch of eggs.

Tri-State II Solar has estimated eastern indigo snake take based on its occurrence in the vicinity of the Plan Area and the unavoidable impacts to 600 ac of occupied habitat. The estimate of take was also based, in part, on the rarity of the species in the Panhandle region, the continuing fragmentation and degradation of suitable habitat, and the lack of observations within the Plan Area during onsite surveys. Tri-State II Solar is implementing avoidance and minimization measures throughout the duration of the ITP to reduce potential impacts of Project construction and operation to the Covered Species (Section 5.0). An assessment of potential effects to the Covered Species is discussed in further detail in Section 4.3.1.

## **4.2 Alternatives to Take**

### **4.2.1 NO-ACTION ALTERNATIVE**

Under this alternative, Tri-State II Solar would not develop the proposed site or would modify the Project to entirely avoid take of Covered Species. Landowners would likely continue to use the Plan Area for timber harvest to generate income. There is also potential for partially cleared pine forest in the Plan Area be converted to cropland based on trends in the region. Additionally, there would be potential for landowners to seek out other land-leasing opportunities from energy development to generate additional income. Modifying the Project to entirely avoid take of eastern indigo snakes would be the same as terminating the Project because the Project would have to be moved to an entirely new location outside of southeastern Georgia to avoid eastern indigo snake habitat and associated take.

Terminating the Project would be detrimental to the environment because it would eliminate a potential source of clean renewable energy; detrimental to the transmission grid because it would eliminate planned utility upgrades to be provided by Tri-State II Solar; detrimental to Decatur County because it would eliminate economic benefit brought by increased tax revenue; and detrimental to participating private landowners because it would eliminate economic benefit brought by landowner payments. In addition, terminating the Project would be counter-productive to the elements of the ESA that allow for economic development while still conserving species. The Project is not anticipated to result in jeopardy to listed species or critical habitat and there are few, if any, other environmental constraints for the Project. If the Project is not built, there is potential for the continued conversion of pine forest habitat (i.e., eastern indigo snake habitat) to cropland in the Plan Area and vicinity.

### **4.2.2 REDUCED PROJECT AREA ALTERNATIVE**

Under a reduced Project area alternative, Tri-State II Solar would restrict the Project area to recently cleared forested areas with open sandhill habitat (i.e., the east-central portion of the Plan Area; approximately 336 ac). This alternative would reduce the amount of cleared mixed pine forest habitat in the vicinity for Project development, and the number of gopher tortoise burrows that would be excavated and collapsed during Project construction. Consequently, this action would result in the removal of less

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acreage of suitable habitat for eastern indigo snake (336 ac, compared to 600 ac) and potentially decrease the level of take.

This alternative would remove the economic benefits of the Project and impact the participating landowner by reducing their economic benefits. Furthermore, if the Project is not built in these densely forested areas, there is potential for the landowners to continue clearing the areas (i.e., additional eastern indigo snake habitat) for other income/economic incentives. Eliminating construction in the densely forested areas would also remove approximately 452 ac of buildable space from the Project. This alternative would reduce the footprint of PV solar panel arrays, and in turn, decrease the amount of potential renewable energy generation from the Project. The reduced amount of energy generation would make the Project economically infeasible and would ultimately be the same as terminating the Project.

### **4.3 Assessment of Effects**

#### **4.3.1 EFFECTS OF ANTICIPATED TAKE**

Potential effects the Project and HCP could have on Covered Species are evaluated below. The potential for take cannot be avoided if the Project remains at the proposed site because the Covered Activities in the occupied area cannot be avoided. Effects may be beneficial or detrimental to the Covered Species and may be short-term or long-term. This assessment is based on the anticipated take described in Section 4.1 and incorporates the avoidance and minimization measures described in Section 5.2.

Take of eastern indigo snakes in the Plan Area is not anticipated to exceed three adult or juvenile snakes and up to one clutch of eggs over the 10-year duration of the ITP. This assumption is based on the Project's location in a portion of the snake's range where it is considered rare or very local and given that no eastern indigo snakes were observed within the Study Area during the rigorous pre-construction surveys. Direct take of adult or juvenile eastern indigo snakes has the potential to occur via incidental mortality from Project-related vehicles including construction equipment, cars/trucks used by employees, and/or tractors used for mowing vegetation during operations. The highest risk of direct take for adults, juveniles, and egg clutches is expected to occur during the excavation and backfilling of gopher tortoise burrows. The potential for direct take is expected to decline following construction because the operations phase is not expected to include burrow excavation and will include less vehicle traffic. Tri-State II Solar will implement avoidance and minimization measures throughout the life of the ITP to reduce the potential for take of the Covered Species within the Plan Area. Scoping burrows prior to excavation activities to ensure they are unoccupied will aid in the avoidance and minimization of potential direct take during construction. Avoidance and minimization measures will also include educating Project staff on the identification of eastern indigo snakes and reporting protocols, as well as specific measures for each phase (i.e., design, construction, operation) of Project development (see Section 5.0). In addition, Tri-State II Solar will implement BMPs and training materials for the life of the Project. Tri-State II Solar will also contribute funds to the Wildlife Foundation of Florida – Eastern Indigo Snake Conservation Fund to mitigate potential unavoidable impacts to the Covered Species (Section 5.4). Take of up to one clutch of eggs may occur; however, any egg clutches found during burrow excavation will be collected by a USFWS-approved individual and transported to a USFWS-approved conservation/rehabilitation

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organization as instructed by the USFWS (see Section 5.3), where the eggs can be incubated, and the hatchlings can be released into the wild.

Indirect take in the form of breeding and wintering habitat loss will also occur during construction and will consist of the excavation of gopher tortoise burrows and the clearing of potential habitat within the Plan Area. The clearing of approximately 600 ac of mixed pine forest habitat with gopher tortoise burrows for Project construction will result in the permanent loss of winter and breeding habitat in the form of shelter. However, the loss of suitable foraging habitat will be temporary because, after construction is complete, the areas under the solar panels will be replanted with a low growth, native grass and forb seed mix and snakes likely will be free to move through the Project's fences (see Section 5.2.1). Eastern indigo snakes will have access to habitat underneath the panels for foraging. The potential effects of the Covered Activities to local populations of eastern indigo snakes are anticipated to be small, and the conservation program has been designed to minimize the impacts to ensure that throughout construction and the first few years of operations do not further contribute to the species decline in the Panhandle region.

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# 5 Conservation Program

The following sections outline the measures Tri-State II Solar will undertake to avoid, minimize, and mitigate for impacts to the Covered Species to the extent possible.

## 5.1 Biological Goals and Objectives

Tri-State II Solar has committed to implementing avoidance, minimization, and mitigation measures within the Plan Area to contribute to the survival and recovery of the eastern indigo snake while still allowing for solar energy development. The USFWS's recovery strategy for the eastern indigo snake is based upon supporting the resiliency (population size and growth), redundancy (multiple populations), and representation (genetic and ecological diversity within and among populations) of the species (USFWS 2019a). The eastern indigo snakes in the Plan Area region are likely an extension of the Florida Panhandle populations (see Section 4.1). By minimizing the potential for take at the Project through on-site training and monitoring for the duration of the ITP, Tri-State II Solar is helping sustain the eastern indigo snake population that occurs in southwest Georgia, which contributes to the resiliency, redundancy, and representation of the species as a whole. Following relevant BMPs as provided in the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2024h) and the *Recommended Practices for the Responsible Siting and Design of Solar Development in Georgia, Version 2.0* (Georgia Utility Scale Solar Siting Initiative Partnership 2024) is also intended to minimize potential take (impacts), and specific measures implemented by Tri-State II Solar are described below. In addition, the contribution to the Wildlife Foundation of Florida – Eastern Indigo Snake Conservation Fund is intended to offset the impacts of the unavoidable potential take of three eastern indigo snakes and one clutch of eggs; these funds may be applied anywhere within the species' range as part of a wide-reaching effort to recover the eastern indigo snake (see Section 5.4).

## 5.2 Measures to Minimize Impacts

### 5.2.1 DESIGN

The following conservation measures will be incorporated into the design of Project infrastructure:

- Tri-State II Solar will utilize small-wildlife permeable perimeter fencing with a minimum of 4-in x 4-in openings at ground level to allow for eastern indigo snake movement throughout the site.
- Tri-State II Solar will install a native grass and forb seed mix throughout the Plan Area where possible, including within the fence line and around the solar panels to provide suitable foraging habitat for wildlife.

### 5.2.2 CONSTRUCTION

The following conservation measures will be implemented prior to the onset of construction activities:

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- Tri-State II Solar or its environmental consultant will conduct trainings with all construction staff to discuss identification of the snake, its protected status, procedures to follow if an eastern indigo snake is observed (see below), and the civil and criminal penalties associated with take. These trainings will occur throughout the duration of the ITP as needed when new construction staff or employees are brought on staff. An educational brochure including color photographs of the snake will be given to all construction staff and additional copies will be provided to the construction superintendent to make available in the onsite construction office. The contact information for the USFWS, GADNR, and a Tri-State II Solar or subcontractor subject matter expert will be provided on the reference posters and brochures.
- Tri-State II Solar or its contractors will post educational posters about eastern indigo snakes and their protected status in the Project office. The posters must be clearly visible to all construction staff and will remain at the Project office for the life of the Project.
- Gopher tortoise burrows will be excavated and backfilled prior to vegetation clearing and grubbing. All gopher tortoise burrows will be scoped with a burrow cam prior to excavation to ensure no eastern indigo snakes or clutches of eggs are present. In the event that an eastern indigo snake (live or dead) or a clutch of eggs is observed within the Plan Area during gopher tortoise burrow excavation, all ground disturbance activities will cease within 300 ft of the snake's (or clutch's) location until the USFWS and GADNR field offices have been contacted and further instructions are received (see Section 5.3). All staff will be instructed to avoid bothering or harassing the snake and to allow it to leave the area on its own as it chooses. If the live snake vacates the area on its own, work may resume immediately. Any clutches of potential eastern indigo snake eggs will be collected by a USFWS-approved individual to be transported to an approved conservation/rehabilitation organization as instructed by the USFWS. Tri-State II Solar, the USFWS, and/or the GADNR will communicate immediately upon the discovery. The agencies will develop a strategy to address indigo snakes that don't vacate on their own or clutches of eggs in a timely manner so construction may resume as soon as possible, preferably within 24 hours. Tri-State II Solar understands the agencies will use their best efforts to respond promptly so as to allow construction to resume as soon as possible.

The following conservation measures will occur during or at the close of construction activities:

- Periodically during construction activities, Tri-State II Solar or its designated agent shall visit the Project to observe the condition of the environmental information posters, brochures, and HCP and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are observed.
- In the event that an eastern indigo snake (live or dead) is observed at the Project during construction, all ground disturbance activities will cease within 300 ft of the snake's location until the USFWS and GADNR field offices have been contacted and further instructions are received (see Section 5.3). A live snake in the path of vehicles or on frequently used access roads may be moved away from the road by USFWS staff or by a USFWS-approved individual after the snake has been reported to the USFWS and GADNR and instructions have been received. Snakes will only be handled by individuals approved by the USFWS to do so. If the live snake vacates the area on its own, work may resume immediately. Tri-State II Solar, the USFWS, and/or the GADNR will communicate immediately upon the discovery and the agencies will develop a strategy to address the indigo snake in a timely manner so construction may resume as soon as possible, preferably within 24 hours. Tri-State II Solar understands the agencies will use their best efforts to respond promptly so as to allow construction to resume as soon as possible.

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- Tri-State II Solar and its engineering, procurement, and construction contractors will clear the land in a methodical and prescribed fashion to allow wildlife to move out of the way of construction.
- During vegetation clearing activities, an on-site observer trained in eastern indigo snake identification will inspect the equipment to be used for the presence of indigo snakes and review the area to be cleared for habitat suitability and the potential presence of indigo snakes.
- To minimize the potential for direct mortality of eastern indigo snakes from construction vehicles, a visual survey will occur prior to clearing and grubbing to ensure no snakes are present. Speed limits will be restricted to 20 miles per hour or less, which will allow drivers to stop for eastern indigo snakes, if observed. Additionally, a biologist will be present during other construction activities that could impact eastern indigo snakes, such as clearing debris and burning. Piles of debris should only be lit on fire from one side to allow wildlife to escape away from the fire on the other side.
- When establishing erosion control during construction activities, 100% natural fiber, net-free rolled erosion control blankets will be used to aid in the avoidance of wildlife entanglement.

### 5.2.3 OPERATIONS

The following conservation measures will be implemented for the duration of the ITP, and then continued for the life of the Project:

- Tri-State II Solar or its environmental consultant will conduct trainings with all on-site staff and contractors conducting regular maintenance activities to discuss identification of the snake, its protected status, and what to do if an eastern indigo snake is observed within the Project. These trainings will continue annually throughout the duration of the ITP and as needed when new employees are hired. In addition, applicable penalties that may be imposed if state and/or federal regulations are violated will be discussed. An educational brochure including color photographs of the eastern indigo snake will be given to all construction and operations staff and additional copies will be available for contractors and visitors to the Project site.
- On-site staff and contractors will be informed that in the event that an indigo snake (live or dead) is observed on the Project site, activities within 300 ft of the snake's location will cease until the USFWS and GADNR field offices have been notified and instructions are received (see Section 5.3). The contact information for the USFWS, GADNR, and a Tri-State II Solar or subcontractor subject matter expert will be provided on the reference posters and brochures. If the live snake vacates the area on its own, work may resume immediately. Tri-State II Solar, the USFWS, and/or the GADNR will communicate immediately upon the discovery and the agencies will develop a strategy to address the indigo snake in a timely manner so operations may resume as soon as possible, preferably within 24 hours. Tri-State II Solar understands the agencies will use their best efforts to respond promptly to allow operations to resume as soon as possible.
- Tri-State II Solar will maintain vegetation throughout the facility. Maintenance staff will be instructed in eastern indigo snake identification (see above) and will be alert for snakes while performing their duties, staff training will be made available and additional training materials will be provided for the life of the Project.

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- Tri-State II Solar will maintain vegetation primarily through mechanical means and will avoid using broad applications of herbicides/pesticides that could potentially harm eastern indigo snakes or their prey.
- To avoid impacts to wildlife and maximize success of native planting, during the first year of mowing, vegetation will not be mowed below a height of 6 inches. Herbicide application will be in the form of spot-spraying when possible.
- Tri-State II Solar and its contractors will only use 100% natural fiber, net-free rolled erosion control blankets to aid in the avoidance of wildlife entanglement.

### 5.3 Monitoring and Reporting

Tri-State II Solar will undertake compliance monitoring during Covered Activities to identify take, should it occur, and determine if take at the Project has the potential to exceed or is exceeding take limits (Section 5.5). During construction, a biologist approved by the USFWS and/or GADNR will be present on site (or on-call) to monitor for snakes and to assist in the event a snake is observed. Eastern indigo snake sightings (dead or alive) will be reported to the USFWS and GADNR immediately during construction, but within 24 hours during operations. A biologist will also be present during burrow excavation to monitor for snakes or egg clutches. Whether or not eastern indigo snakes are observed during burrow excavation or construction activities, a monitoring report will be submitted to the appropriate USFWS Field Office within 60 days of the end of construction.

As described in Section 5.2, construction and operations staff will be trained in the identification of eastern indigo snakes and to report any sightings to the site manager. Observations made by on-site staff will be reported via a Wildlife Incident Reporting Form (Appendix D). The location of the snake will either be marked on a map, or the global positioning system (GPS) location of the snake will be recorded. A photograph of the snake will be taken from a distance, if possible, without disturbing the snake. The sighting will be reported to the site manager immediately and a pre-identified subject matter expert to confirm the sighting is an eastern indigo snake. The site manager will coordinate with Tri-State II Solar to contact the USFWS and GADNR and report the sighting immediately during construction and within 24 hours during operations. Whether or not eastern indigo snakes are observed, a yearly monitoring report will be submitted to the appropriate USFWS Field Office within 60 days of the end of the calendar year.

Tri-State II Solar will implement the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2024h; Appendix E) for the life of the Project to avoid and minimize impacts during successive years. Posters will be designed based on recommendations provided by the USFWS (2024h). Vegetation will be monitored within the fence line and managed according to the needs of the Project (vegetation height will be maintained below 14 in). A summary of the vegetation and management will be included in the annual report and will include a section on the maintenance schedule, activities that occurred (mowing frequency, spraying requirements) as well as a statement on the overall percent coverage of vegetation.

### 5.4 Measures to Mitigate Unavoidable Impacts

Population size estimates for the eastern indigo snake in the Panhandle region are limited; therefore, Tri-State II Solar, in coordination with the USFWS, has agreed to use land value cost in Georgia to determine

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compensation for impacts of the anticipated take. As approved in the HCP for the eastern indigo snake from the Tri-State Solar Project (also Decatur County; 88 FR 10932, Feb. 22, 2023 [USFWS 2023b]), Tri-State II Solar used a conservation strategy represented by a ratio calculated based on the number of acres lost, the proximity to Conservation Focus Areas (CFAs; USFWS 2019b), the proximity of documented records, and habitat quality (i.e., quality of nesting or breeding habitat, quality of vegetation) as a result of the Covered Activities for the Covered Species (see Table 2). As a mitigation option, ITP applicants can provide funds through a USFWS-approved conservation fund for the protection of the Covered Species, or they can pursue permanent protection of a USFWS-approved area of suitable habitat for the Covered Species. Minimization measures, including planting native vegetation within the fence to maintain foraging habitat, are intended to ultimately benefit the local population.

### **5.4.1 EASTERN INDIGO SNAKE MITIGATION RATIOS**

In coordination with USFWS and GADNR, Tri-State II Solar used a mitigation ratio rationale that incorporates the Project's location and habitat to determine compensatory mitigation for the Project. Table 2 describes the mitigation ratios used for this HCP. CFAs are critical for the recovery of the eastern indigo snake, and as a result are the basis for the separate mitigation categories. In addition, the mitigation ratio categories incorporate records for the eastern indigo snake in proximity to a project, which are based on the total linear movement of eastern indigo snakes in Georgia (USFWS 2019c) and the long-distance linear movement of the adult male eastern indigo snake (22.2 kilometers [13.8 mi]) (Stevenson and Hyslop 2010). These categories incorporate the potential for eastern indigo snakes to use habitat within the Plan Area while taking into account the location of the habitat as it relates to eastern indigo snake populations. Additionally, the mitigation ratios incorporate nesting, breeding, and sheltering habitat for eastern indigo snake (i.e., gopher tortoise burrows). The process does not include foraging habitat loss, but it does account for the increased probability of winter use, and breeding within gopher tortoise burrows. Habitat quality is further defined as:

High Quality:

- Viable gopher tortoise population
- Intact sandhill habitat with native vegetation
- Low abundance of invasive species

Moderate Quality:

- Viable gopher tortoise population (or numerous gopher tortoises and burrows present)
- May lack native vegetation and have invasive species
- Altered vegetation

Low (poor) Quality:

- Gopher tortoise present but few to sparse, possibly non-viable disjunct population
- Highly degraded sandhill vegetation

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**Table 2      Eastern Indigo Snake Mitigation Ratios**

Project Location/Proximity to Records and CFAs	High Habitat Quality (good quality nesting or breeding habitat)	Moderate Habitat Quality (fair quality nesting or breeding habitat)	Low Habitat Quality (highly degraded or poor nesting or breeding habitat)
Records within 5 miles of Project and within CFA	2	1	0.5
Records within 5 miles of Project and outside CFA	1	0.5	0.25
Records greater than 5 miles but less than 14 miles and within CFA	0.5	0.25	0
Records greater than 5 miles but less than 14 miles and outside CFA	0.25	0.125	0
	Depends on habitat connectivity and survey efforts		

The Project (Plan Area) is located within the 5 – 14 mi range from eastern indigo snake records and is outside of a CFA. Although not located within a CFA, the Plan Area is located within a conservation (population) unit for eastern indigo snake as mapped by Bauder et al. (2022). Habitat that will be lost by the Covered Activities (600 ac) currently supports a viable but isolated gopher tortoise population and contains pockets of wiregrass, which can be indicative of higher quality habitat conditions for eastern indigo snake. However, habitat in the Plan Area also contains poorly managed and altered vegetation, invasive species encroachment, and a lack of prescribed fire management to support healthy understory habitat based on conditions observed on-site during surveys from 2020 – 2021. Available habitat within the Plan Area is also becoming increasingly fragmented and isolated over time by roads and other land uses, and this fragmentation extends to the mapped population unit for eastern indigo snake that encompasses the Plan Area. Additionally, the combination of the Plan Area's location within a region of rare species' occurrence and the negative results found during on-site surveys suggests low density of eastern indigo snakes.

Based on the table and conditions described above, the impacted areas would fall into Moderate Habitat Quality and recommendations include a ratio of 0.125 to fully offset the total acreage. The Project will re-establish foraging habitat within the Plan Area boundary fence by planting native vegetation, which will benefit the eastern indigo snake. While the table does not account for foraging habitat, Tri-State II Solar will maintain the overall local conditions for foraging despite the loss of some winter and nesting habitat. Together, the acreage offsets plus the maintenance of foraging habitat will fully offset the impacts of the taking and benefit the population. Cost per acre of eastern indigo snake habitat in Georgia has been valued at approximately \$2,100 per acre (GADNR pers. comm.). To offset the impacts of the take of 600 ac of potential winter habitat for the eastern indigo snake, Tri-State II Solar will provide funds to be used in Georgia for the management or restoration of species' habitat, the purchase of occupied habitat, the purchase of development rights for occupied habitat, or a combination thereof. This will include the contribution of \$157,500.00 to the Eastern Indigo Snake Conservation Fund. The Eastern Indigo Snake Conservation Fund is managed by The Wildlife Foundation of Florida, which works to conserve and restore suitable and potential eastern indigo snake habitat through land protection and restoration,

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research, inventory and monitoring, and other activities as deemed necessary for the survival or recovery of the eastern indigo snake. Through coordination with USFWS and GADNR, it has been agreed that \$157,500.00 will be sufficient to provide offsets for the eastern indigo snake to compensate for the impacts of the incidental take requested by Tri-State II Solar.

### **5.5 Adaptive Management**

Adaptive management is a process by which management of resources can be improved based on learning from management outcomes. Tri-State II Solar is requesting an ITP for the take of up to three eastern indigo snakes and one clutch of eggs for the duration of the ITP (10 years). However, to decrease the possibility of exceeding the Project's take limit, Tri-State II Solar proposes the following management responses.

During construction, if an eastern indigo snake fatality is observed on construction roads, Tri-State II Solar will coordinate with the USFWS to review the circumstances associated with the fatality and determine whether additional management actions may be needed. These actions may include but are not limited to additional training of staff, patrols of Project roads by an approved biologist on a daily or weekly basis, decreasing vehicle speed even further on Project roads, and/or creating exclusion areas with drift fencing.

If no eastern indigo snake fatalities are observed during construction and the first snake fatality is observed within the Plan Area during operations, Tri-State II Solar will coordinate with the USFWS to review the circumstances associated with the fatality and determine whether additional management actions may be needed. These actions may include but are not limited to additional training of staff, patrols of Project roads prior to any on-site work, and/or a review of vegetation management practices. Noxious, invasive, and non-desirable vegetation will be controlled on an as-needed basis through mechanical and limited chemical application.

If an eastern indigo snake fatality is observed during construction and a second snake fatality is observed during operations, Tri-State II Solar will work with the USFWS to review the circumstances of both fatalities and review the assessment of take for the Project. The ITP may need to be modified to adjust take level and compensatory mitigation if additional take is anticipated. Sweeping areas planned for maintenance activity to ensure no indigo snakes are present prior to the activity will further reduce the potential for mortality. A survey of the Plan Area for eastern indigo snake activity may be warranted.

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# 6 Implementation and Funding of the HCP

## 6.1 Permit Holder Commitments

Tri-State II Solar commits to be solely responsible for implementing this HCP and meeting the terms and conditions of the requested ITP. The permit holder will allocate sufficient resources and personnel to ensure the HCP and ITP conditions are applied for the duration of the ITP. To achieve this, the permit holder will maintain coordination with the USFWS throughout the duration of the ITP.

### 6.1.1 HCP ADMINISTRATION

Tri-State II Solar, in coordination with the USFWS, will designate a Tri-State II Solar Subject Matter Expert as the HCP administrator. This individual will be tasked with implementing all commitments within the HCP.

### 6.1.2 IMPLEMENTATION SCHEDULE, COSTS, AND FUNDING ASSURANCES

The HCP implementation schedule is outlined in Table 3. Other measures may be implemented using adaptive management as needed (see Section 5.5).

**Table 3 Conservation Measures and Implementation Schedule for the Tri-State II Solar Project**

Conservation Measure	Implementation Schedule
Pre-construction eastern indigo snake presence/absence surveys	November 20, 2020 through February 28, 2021
Offset mitigation fund allocation	Distributed to the Wildlife Foundation of Florida –Eastern Indigo Snake Conservation Fund via certified check within 60 days prior to construction activities
On-site biological monitors during construction	Duration of construction activities
On-site annual incident reporting	60 days following December 31 of the first year of construction
Post-construction monitoring report	60 days after the close of construction

Section 10(a)(2)(B)(iii) of the ESA requires an applicant for an ITP to demonstrate adequate funding for the implementation of the HCP for the duration of the ITP. This includes implementation of minimization measures, monitoring protocols, compensatory mitigation, adaptive management, and changed circumstances. If the Applicant obtains an ITP from the USFWS, the Applicant agrees to guarantee all funding obligations under the ITP and this HCP. Tri-State II Solar, and any successor in interest, should notify the USFWS if the funding resources identified in this HCP materially change, including a discussion of the nature of the change. Funding or implementation of portions of the HCP will be provided prior to Project operations, unless otherwise indicated, and additional funding for conservation measures will be

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6 Implementation and Funding of the HCP

provided as the Project progresses (Table 3). The amount of financial assurance is based on the estimated HCP implementation costs for Years 1-10 of the ITP, including the monitoring, annual reporting, anticipated inflation rates, and adaptive management funding (Table 4). The amount of the financial assurance may be reduced over time commensurate with remaining financial obligations in the HCP by mutual agreement of the parties.

**Table 4      Habitat Conservation Plan Implementation Budget for the Tri-State II Solar Project**

Budget Item	First Year Cost	Annual Cost	Total over ITP Term	Cost Basis and Assumptions
HCP administration	\$15,000	\$10,000	\$105,000	Construction/O&M budget
Pre-construction snake surveys	\$NA	\$NA	\$180,000	Completed
Seeding and vegetation management	\$462,000 – \$903,000	\$185,000 - \$362,000	\$2.13M - \$4.16M	Construction/O&M budget
Small-wildlife friendly fencing	\$588,000	\$30,000	\$858,000	Construction/O&M budget
Construction and operations snake training and educational material for staff	\$8,000	\$1,000	\$17,000	Construction/O&M budget
On-site biological monitor during construction	\$35,000	--	\$35,000	Construction budget
Annual reporting	\$8,000	\$8,000	\$80,000	Construction/O&M budget
Adaptive management	\$10,000	\$10,000	\$100,000	Construction/O&M budget
Conservation funds	\$157,500	--	\$157,500	Payment 60 days prior to construction activities

Tri-State II Solar will fund the HCP and its administration by including the conservation measures in the Project's construction budget or annual operations and management (O&M) budget, as applicable. Upon issuance of the ITP, Tri-State II Solar will provide a letter from a designated corporate representative that certifies the HCP implementation costs have been included in the Project's construction and O&M budgets. Conservation funds will be provided via check or an ACH prior to undertaking the Covered Activities.

## 6.2    Unforeseen and Changed Circumstances

The "No Surprises" assurances define and clarify unforeseen circumstances and changed circumstances (63 Federal Register [FR] 8859-8873). Unforeseen circumstances are changes in the circumstance under which the HCP and ITP were written that affect the HCP and its effective implementation that could not be reasonably anticipated by the Applicant or the USFWS, and that result in substantial and adverse changes to the status of covered species. Changed circumstances are those which can be reasonably anticipated by the HCP developers and the USFWS and can be planned for in the HCP (63 FR 8870).

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

6 Implementation and Funding of the HCP

### **6.2.1 UNFORESEEN CIRCUMSTANCES**

Unforeseen circumstances are “changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that could not reasonably have been anticipated by plan or agreement developers and the [USFWS] at the time of the conservation plan’s or agreement’s negotiation and development, and that result in a substantial and adverse change in the status of the covered species” (50 CFR § 17.3). If unforeseen circumstances arise, the USFWS will not require, without written consent of the permittee, the commitment of additional mitigation in the form of land, water, or funds, nor will they require additional restriction on the use of land, water, or funds from any permittee who is adequately implementing or has implemented the approved HCP (63 FR 8868). If additional avoidance, minimization, or mitigation measures are deemed necessary to address unforeseen circumstances, and the permittee is properly implementing the HCP, the USFWS may require limited modifications to the conservation measure set forth in the HCP. These restrictions only apply to “species adequately covered by the conservation plan” (63 FR 8867).

If the unforeseen circumstances result in a significant negative effect on the Covered Species or could affect the permittee’s ability to effectively implement the HCP, Tri-State II Solar will discuss the unforeseen circumstances with the USFWS. Unless agreed upon by Tri-State II Solar, any additional mitigation measures must be limited to the obligations in the HCP and will not require the commitment of additional land, water, or funds by the permittee. The USFWS may request alterations or reallocation of existing commitments, provided these changes do not require additional land, water, or funds and will not impose additional restrictions on the use of land, water, or other natural resources otherwise available for development or use under the original terms of the HCP.

### **6.2.2 CHANGED CIRCUMSTANCES**

Changed circumstances are “changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that can reasonably be anticipated by plan or agreement developers and the [USFWS] and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events” (50 CFR §17.3). Tri-State II Solar and the USFWS anticipate there are few reasonably foreseeable circumstances that would potentially affect Tri-State II Solar’s ability to implement the HCP or adhere to the terms and conditions of the ITP. Should candidate species or species under review become listed under the ESA during the life of the Project, Tri-State II Solar will evaluate whether operations and maintenance are likely to cause take and whether an ITP or amendments to this HCP are warranted. Southern Georgia is known to be affected by hurricanes and flooding. Should the Project’s infrastructure be damaged by such an event and Tri-State II Solar chooses to rebuild or repair the Project, Tri-State II Solar will rebuild Project fences and re-seed within the fences according to the BMPs listed in Section 5.2. Rebuilding operations will also adhere to the monitoring and avoidance measures listed as part of original construction (Section 5.2.2).

Off-site mitigation in the HCP will be entirely covered by moneys provided to the Wildlife Foundation of Florida – Eastern Indigo Snake Conservation Fund. These funds will be provided in one lump sum. Once the funds have been transferred, the Eastern Indigo Snake Conservation Fund will be responsible for allocating those funds to eastern indigo snake conservation.

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

6 Implementation and Funding of the HCP

## **6.3 Permit Renewal, Transfer, and Amendments**

### **6.3.1 RENEWAL**

If stated on the permit, the ITP may be eligible for renewal before the term expires, and the permit will remain in effect while the USFWS evaluates the renewal request if the USFWS receives the request at least 30 days prior to the expiration (50 CFR 13.22). Alterations to the ITP as a result of the renewal may depend on whether mitigation has kept pace with impacts or if the status of Covered Species has changed. The USFWS may recommend the addition of new species or that the permittee undertake new surveys to inform changes to the HCP. Any renewed permit must satisfy all applicable statutory and regulatory requirements in force as of the date of the approval of the renewal request (USFWS and NOAA 2016).

### **6.3.2 TRANSFER**

If the Project comes under new ownership, transfer of the ITP to the new owner shall be governed by the regulations at 50 CFR Part 13 and will involve a joint submission of an assumption agreement or a memorandum of understanding by Tri-State II Solar and the new party to the USFWS field office involved in administering the ITP. The submission will include (1) each party's role and responsibility in funding and administering the HCP and ITP, (2) any outstanding obligations and how they will be completed, and (3) any proposed changes to the HCP and ITP reasonably necessary to accommodate the change in roles and responsibilities. The USFWS may approve the transfer of the ITP in whole or in part to a new party. The new party must meet the certification requirements of 50 CFR 13.25, which includes demonstrating the capacity for implementing the HCP (or the portion for which they are assuming responsibility), the legal ability to implement the HCP, and providing funding assurances (USFWS and NOAA 2016). As currently proposed, Tri-State II Solar Project, LLC will be the Applicant and if a sale or transfer occurs, the ITP and associated HCP will remain intact with the LLC.

### **6.3.3 AMENDMENTS**

Either the permittee or the USFWS may initiate amendments to the HCP, ITP, or any implementation-related documents. The USFWS will determine the level of review necessary to satisfy statutory and regulatory requirements (e.g., public notice, National Environmental Policy Act review, Section 7 analysis) consistent with its regulations and guidance. Activities which require a permit amendment and publication in the FR include, but are not limited to (USFWS and NOAA 2016):

- Addition of new species, listed or unlisted
- Increased level or different form of take for covered species
- Changes to funding that affect the ability of the permittee to implement the HCP
- Changes to covered activities not previously addressed
- Changes to covered lands
- Significant changes to the conservation strategy (including mitigation measures)

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

6 Implementation and Funding of the HCP

All amendments must satisfy Section 10 review requirements. Permit changes that do not substantively alter the take levels or Project activities may be made in coordination with the USFWS and without a formal amendment request (USFWS and NOAA 2016). Such amendments may include:

- Correcting insignificant mapping errors
- Slightly modifying avoidance or minimization measures
- Modifying annual reporting protocols
- Making changes to funding sources
- Changing the names or addresses of responsible officials.

### **6.3.4 RELINQUISHMENT**

Tri-State II Solar may choose to relinquish the ITP prior to its expiration by providing 30 days advance written notice to the USFWS as provided by 50 CFR §13.24. The ITP will be canceled only upon the determination of the USFWS that all outstanding monitoring, minimization, and mitigation measures have been implemented.

## **6.4 Enforcement and Suspension/Revocation**

The “No Surprises” assurances remain in effect as long as the permittee implements the ITP and HCP properly. If the USFWS becomes aware of a deficiency in implementation, they will provide written notice to the permittee within 60 days and will work with the permittee to resolve the non-compliance in accordance with USFWS guidelines. Deficiencies may include improper implementation of mitigation; take in excess of that authorized which is not being addressed through adaptive management and coordination with the USFWS; or activities not covered by the ITP that cause the take of listed species. The permittee will have the opportunity to address issues of non-compliance prior to the involvement of the USFWS Office of Law Enforcement. All parties involved will make a good faith effort to resolve non-compliance issues quickly and fully. The criteria for ITP suspension and revocation are found at 50 CFR 13.27. Suspension and revocation is a lengthy process and decisions are made at the regional office level. The permittee may object or appeal the USFWS’s actions during the process, and the USFWS is required to send certain communications related to the process of suspension and revocation to the permittee. The USFWS may seek civil or criminal penalties under the ESA for permit violations. Suspension and revocation should be the last step after every effort has been made to resolve the non-compliance issues (USFWS and NOAA 2016).

## **HABITAT CONSERVATION PLAN**

Tri-State II Solar Project

7 Concluding Summary

## **7     Concluding Summary**

Tri-State II Solar is seeking an ITP for the potential take of three eastern indigo snakes and one clutch of eggs in the first 10 years of the Project, which may occur in 600 ac of occupied habitat during construction and operation of the Project. Based on the Project evaluation detailed above, it is Tri-State II Solar's understanding that the Project's potential impacts to the eastern indigo snakes would be minimal. This understanding is based upon:

- The Project's location in a portion of the eastern indigo snake's range where it is considered rare or very local.
- No eastern indigo snakes were identified within the Plan Area or Study Area during the rigorous pre-construction field surveys conducted according to USFWS protocol.
- Implementation of avoidance and minimization measures during Project construction and operation for the eastern indigo snake within the Plan Area.
- After construction, Tri-State II Solar is planting a native grass mix in impacted areas to maintain the amount (and potentially increase the quality) of available foraging habitat for the eastern indigo snake.
- Tri-State II Solar will utilize small-wildlife permeable perimeter fencing with a minimum of 4-in by 4-in openings at ground level to allow for eastern indigo snake movement throughout the site.
- The contribution of \$157,500.00 to the Wildlife Foundation of Florida –Eastern Indigo Snake Conservation Fund.

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Appendix A      Consultation History

## **Appendix A    Consultation History**

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Appendix B IPaC Report

**Appendix B IPaC Report**

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Appendix C Reports

## **Appendix C Reports**

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Appendix D      Wildlife Incident Reporting Form

**Appendix D    Wildlife Incident Reporting Form**

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Appendix E Standard Protection Measures for the Eastern Indigo Snake

**Appendix E Standard Protection Measures for the Eastern  
Indigo Snake**