ENVIRONMENTAL ASSOCIATES INC.

ECOLOGICAL RESOURCES EVALUATION and IMPACT ASSESSMENT REPORT

Mercer County Community College Proposed Solar Park

West Windsor Township

Mercer County, New Jersey

Specializing in the Assessment and Management of the Natural Resources

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Mercer County Community College Proposed Solar Park

West Windsor Township

Mercer County, New Jersey

Prepared For:

Power Partners MasTec, LLC

9140 Arrowpoint Boulevard; Suite 200
Charlotte, North Carolina 28273

Prepared By:

Eastern States Environmental Associates, Inc.

November 14, 2011

ECOLOGICAL RESOURCES EVALUATION
and
IMPACT ASSESSMENT REPORT

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I. INTRODUCTION

This Ecological Resources Evaluation and Impact Assessment Report is prepared pertaining to the conducted research of the Project Site presently known as ***Mercer County Community College Proposed Solar Park*** in ***West Windsor Township, Mercer County, New Jersey*** (Project Site). Research of the selected natural resources associated with the Project Site and addressed in this report consisted of both literature review and field investigations conducted in November of 2011. The selected ecological resources addressed by this evaluation include vegetation and natural communities, wildlife, threatened and endangered species and wetlands. The impact assessment is based upon the evaluated ecological resources along with the proposed site plan designed in part by Power Partners Mas Tec, LLC. of Charlotte, North Carolina.

This report contains information pertaining to the selected ecological resources of concern and the anticipated impact to said resources as a result of the undertaking of the proposed development plan. This Ecological Resources Evaluation and Impact Assessment Report is provided for any individual or regulatory agency, commission, or board desiring a professional assessment of the resources addressed herein and the related impacts resulting from the proposed project.

II. PROJECT SITE LOCATION AND SPECIFICATIONS

This Project Site is located West Windsor Township, Mercer County and includes approximately 45 acres (Appendix A - Figure A1). This Project Site is situated in the eastern region of the Mercer County Community College (MCCC) Campus. The Project Site is bordered to the east by South Post Road, to the west by the MCCC Campus, to the south by private parcels along Old Trenton Road and to the north by Mercer County Park lands

The New Jersey State Plane Coordinates for the center of the Project Site are 451636 feet E and 518266 feet N as illustrated on the Princeton, New Jersey USGS Quadrangle Map (Appendix A - Figure A2).

III. SUMMARY OF PROPOSED PROJECT

The proposed project involves the installation of blocks of solar arrays positioned throughout the Project Site which will provide power for the MCCC campus. The proposed solar project will encompass approximately 45 acres. Since the majority of the Project Site consists of fallow agriculture fields, the proposed project will only require the removal of canopy and subcanopy vegetation trees within the narrow wooded hedgerows in the eastern region of the Project Site. Permanent herbaceous vegetation coverage will be established throughout the Project Site.

All engineering designs have been prepared in part by Power Partners Mas Tec, LLC. of Charlotte, North Carolina and are illustrated in detail on relevant site plan maps.

IV. SELECTED ECOLOGICAL RESOURCES OF THE PROJECT SITE

A. OVERVIEW OF EXISTING CONDITIONS

The majority of the Project Site consists of fallow agriculture fields. Forested areas are limited to narrow hedgerows in the eastern region of the Project Site along with the northern border. A wooded drainage corridor exists in the northern region of the Project Site. Emergent wetlands are determined to be associated with portions of the lower elevation lands in the northern region of the Project Site.

B. VEGETATION AND NATURAL COMMUNITIES

Field evaluations of the Project Site determined that various natural habitats are associated with the Project Site. Appendix A - Figure #A3 illustrates the location of the habitat types associated with the Project Site and adjacent lands within 200 feet of the Project Site. The natural habitats associated with the Project Site are described as follows.

Developed/Maintained (DM):

This designated area is characterized as those lands which are developed or otherwise significantly manipulated and maintained. Such lands are associated with the MCCC Campus which exists adjacent and to the west of the Project Site. Lands adjacent and to the north and east of the Property which are maintained by Mercer County Park as athletic fields are included in this habitat category. In addition, residential development which exists in the vicinity of the Project Site is included within this habitat category.

Upland Forest (UF)

A very limited area of this habitat exists on the Project Site. On-site, this habitat type is primarily limited to the narrow wooded hedgerows which exist in the eastern-central region of the Property. This habitat is also determined to exist along the northern border of the Project Site which is contiguous with an isolated patch of woodland adjacent and to the north of the Project Site. This habitat type is not determined to be part of a larger contiguous area of this habitat. The availability of this habitat type is generally limited throughout the region.

Canopy vegetation is generally high in coverage density (80-100% coverage) throughout this habitat. Subcanopy vegetation ranges from moderate to high in coverage density (60-100% coverage). Shrub layer vegetation is generally high in coverage density (80-100% coverage). Ground cover vegetation ranges from moderate to high in coverage density (60-100% coverage). Vegetation species predominantly occurring throughout this habitat are included in Table #4B.1.

TABLE #4B.1 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE UPLAND FOREST (UF) HABITAT

COMMON NAME	SCIENTIFIC NAME	STRATUM
Ash, White	Fraxinus americana	C, SC
Avens, White	Geum canadense	G
Cedar, Eastern Red	Juniperus virginiana	SC
Cherry, Black	Prunus serotina	S, SC
Grasses	Panicum spp.	G
Grasses	Graminacea family	G
Grasses	Poaceae family	G
Honeysuckle, Japanese	Lonicera japonica	G

TABLE #4B.1 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE UPLAND FOREST (UF) HABITAT		
COMMON NAME	**SCIENTIFIC NAME**	**STRATUM**
Maple, Red	Acer rubrum	C, SC
Mosses	Variable	G
Mustard, Garlic	Alliaria petiolata	G
Onion, Wild	Allium stellatum	G
Plaintain, Common	Plantago major	G
Poison Ivy	Toxicodendron radicans	G
Raspberry, Red	Rubus idaeus	S
Rose, Multiflora	Rosa multiflora	S
Sassafras	Sassafras albidum	C, SC, S
Violet, Common Blue	Viola papilionacea	G
Virginia Creeper	Parthenocissus quinquefolia	G
KEY:	C - Canopy SC - Subcanopy	S - Shrub Layer G - Ground Cover

Drainage Corridor (DC)

This natural habitat corridor is determined to consist of a rather narrow wooded corridor associated with a drainageway which originates at a stormwater outfall along the western perimeter of the Project Site and then flows in a northeasterly direction through the northern region of the Project Site. This drainage corridor was determined to consist primarily of forested habitat characteristics inclusive of a defined drainageway. This drainageway has been delineated as a jurisdictional wetland drainage.

Canopy vegetation is generally high in coverage density (80-100% coverage) throughout this drainage corridor. Subcanopy vegetation ranges from moderate to high in coverage density (70-100% coverage). Shrub layer vegetation is generally high in coverage density (80-100%

coverage). Ground cover vegetation ranges from moderate to high in coverage density (60-100% coverage). Vegetation species predominantly occurring throughout this habitat are included in Table #4B.2.

TABLE #4B.2 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE DRAINAGE CORRIDOR HABITAT (DC)

COMMON NAME	SCIENTIFIC NAME	STRATUM
Arrowwood	Viburnum dentatum	S
Ash, White	Fraxinus americana	C, SC
Blackberry	Rubrus alumnus	S
Blackhaw	Viburnum prunifolium	S
Cherry, Black	Prunus serotina	C, SC
Cinquefoil, Dwarf	Potentilla canadensis	G
Dogwood, Red-osier	Cornus stolonifera	S
Dogwood, Silky	Cornus amomum	S
Fern, Sensitive	Onoclea sensibilis	G
Grasses	Panicum spp.	G
Grasses	Graminacea family	G
Grasses	Poaceae family	G
Honeysuckle, Japanese	Lonicera japonica	G
Jewelweed	Impatens capensis	G
Maple, Boxelder	Acer negundo	SC
Maple, Red	Acer rubrum	C, SC
Mosses	Variable	G
Rose, Multiflora	Rosa multiflora	S
Rush, Soft	Juncus effusus	G
Rushes	Juncus spp.	G
Sedges	Carex spp.	G

TABLE #4B.2 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE DRAINAGE CORRIDOR HABITAT (DC)		
COMMON NAME	**SCIENTIFIC NAME**	**STRATUM**
Smartweed, Common	Polygonum hydropiper	G
Smartweed, Lady's Thumb	Polygonum persicaria	G
Violet, Common Blue	Viola papilionacea	G
KEY:	C - Canopy SC - Subcanopy	S - Shrub Layer G - Ground Cover

Wetlands (W)

Emergent wetlands are determined to be associated with portions of the low-lying lands in the northern region of the Project Site. These designated wetland areas are not determined to be expansive and are not determined to be part of an overall larger, contiguous wetland complex. Whereas these wetlands may be hydrologically connected to drainageways, these wetland areas are isolated in habitat continuity characteristics.

Canopy, subcanopy and shrub layer vegetation is generally nonexistent throughout these area. Ground cover vegetation is high in coverage density (100% coverage) throughout the wetland areas. Vegetation species predominantly occurring throughout this habitat are included in Table #4B.3.

TABLE #4B.3 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN WETLANDS HABITAT (W)

COMMON NAME	SCIENTIFIC NAME	STRATUM
Dogwood, Red-osier	Cornus stolonifera	S
Dogwood, Silky	Cornus amomum	S
Elderberry	Sambucus canadensis	S
Fern, Sensitive	Onoclea sensibilis	G
Goldenrod, Lance-leaved	Solidago graminifolia	G
Grasses	Panicum spp.	G
Grasses	Graminacea family	G
Grasses	Poaceae family	G
Jewelweed	Impatens capensis	G
Mosses	Variable	G
Reed Canarygrass	Phalaris arundinacea	G
Rush, Soft	Juncus effusus	G
Rushes	Juncus spp.	G
Sedges	Carex spp.	G
Smartweed, Common	Polygonum hydropiper	G
Smartweed, Lady's Thumb	Polygonum persicaria	G
Violet, Common Blue	Viola papilionacea	G
Willowherb, Hairy	Epilobium hirsutum	G

KEY: C - Canopy S - Shrub Layer
SC - Subcanopy G - Ground Cover

Early Succession Field (ESF)

This habitat type exists throughout the majority of the Project Site. The existence of this habitat results from once cultivated agriculture fields which have since been left fallow.

Canopy, subcanopy and shrub layer vegetation is non-existent throughout this habitat. Ground cover vegetation is generally high in coverage density (100% coverage). This habitat also exists as part of the MCCC Campus adjacent and to the southwest of the Project Site and is also intermixed throughout the Mercer County Park lands to the north and east of the Project Site. Vegetation species predominantly occurring throughout this habitat are included in Table #4B.4.

TABLE #4B.4 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE EARLY SUCCESSION FIELD (ESF) HABITAT

COMMON NAME	SCIENTIFIC NAME	STRATUM
Aster, Bush	Aster domosus	G
Aster, Heath	Aster ericoides	G
Avens, Rough	Geum laciniatum	G
Avens, White	Geum canadense	G
Bluestem	Andropogon gerardii	G
Cinquefoil, Dwarf	Potentilla canadensis	G
Clover, Red	Trifolium pratense	G
Clover, White	Trifolium repens	G
Fleabane, Daisy	Erigeron annuus	G
Foxtail	Setaria glauca	G
Goldenrod, Downy	Solidago puberula	G
Goldenrod, Early	Solidago juncea	G

TABLE #4B.4 VEGETATION SPECIES PREDOMINANTLY OCCURRING IN THE EARLY SUCCESSION FIELD (ESF) HABITAT

COMMON NAME	SCIENTIFIC NAME	STRATUM
Grasses	Panicum spp.	G
Grasses	Graminacea family	G
Grasses	Poaceae family	G
Honeysuckle, Japanese	Lonicera japonica	G
Horseweed	Erigeron canadensis	G
Onion, Wild	Allium stellatum	G
Pansy, Field	Viola bicolor	G
Plaintain, Common	Plantago major	G
Poison Ivy	Toxicodendron radicans	G
Queen Anne's Lace	Daucus carota	G
Rose, Multiflora	Rosa multiflora	S
Strawberry	Fragaria virginiana	G
Thistle, Common Sow	Sonchus asper	G
Thistle, Field Sow	Sonchus arvensis	G
Yarrow	Achillea millefolium	G

KEY: C - Canopy; SC - Subcanopy; S - Shrub Layer; G - Ground Cover

Agriculture - Cultivated (AG)

This land use does not exist on the Project Site; however, it exists immediately adjacent and to the southeast of the Project Site. This land use also occurs in abundance generally to the south of the Project Site.

Canopy, subcanopy and shrub layer vegetation is non-existent throughout this habitat. Dependent upon the time of the year, ground cover vegetation is either non-existent or high in coverage density (100% coverage).

C. JURISDICTIONAL FRESHWATER WETLANDS

1. FRESHWATER WETLANDS DETERMINATION

Pursuant to the New Jersey Freshwater Wetlands Protection Act (FWWPA), the field determination of freshwater wetland areas is based on a three (3) parameter system of assessment which is described in the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" developed by the Interagency Cooperative consisting of the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), the U.S. Soil Conservation Service (USSCS), and the U.S. Army Corps of Engineers (USACOE). This system of wetland assessment is currently accepted by the New Jersey Department of Environmental Protection (NJDEP). The three parameters of this system include:

1. Predominance of Hydrophytic Vegetation.
2. Occurrence of Hydric Soils.
3. Evidence of Hydrology.

According to said methodology, designated freshwater wetlands are those areas in which all three parameters are satisfied. However, certain circumstances may warrant a slight deviation regarding the requirements for wetland designation.

It is determined that jurisdictional wetlands are associated with the drainage corridor in the northern region of the Project Site along with portions of the lower elevation lands throughout the northern region of the Project Site. The proposed limits of jurisdictional wetlands were delineated by Birdsall Services Group of Eatontown, New Jersey. Application has been made to the NJDEP for a Wetlands Letter of Interpretation (LOI) which serves as the legal verification of wetlands and wetland transition areas (WTA) on a property. The NJDEP has assigned said Wetlands LOI application NJDEP File #: 1100-11-0002.1. As of the preparation date of this report, NJDEP review of the Wetlands LOI application remains pending.

2. WETLAND RESOURCE VALUE AND TRANSITION AREAS

As described in NJAC 7:7A-2.5, freshwater wetlands are divided into three classifications based on their determined resource value. Table #4C.1 illustrates the designation criteria utilized by the NJDEP in determining the Wetland Resource Value of a given wetland area.

TABLE #4C.1 WETLAND RESOURCE VALUE CLASSIFICATIONS

RESOURCE VALUE	CRITERIA FOR CLASSIFICATION
Exceptional Resource Value	• Discharge into FW-1 or FW-2 Trout Production Waters • Present or documented habitat utilized by threatened or endangered species
Ordinary Resource Value	• Do not satisfy criteria of Exceptional Resource Value • Isolated and more than 50% surrounded by development and less than 5000 sf in size • Man-made drainage ditches, detention facilities and swales
Intermediate Resource Value	• Those not defined as Exceptional or Ordinary Resource Value

As described in NJAC 7:7A-2.5, wetlands are divided into three classifications based on their determined resource value. Table #4.1 illustrates the designation criteria utilized by the NJDEP in determining the Wetland Resource Value of a given wetland.

Given the characteristics of the wetlands associated with the Project Site, it is anticipated that the NJDEP may classify all or the majority of the wetlands as intermediate resource value. Application has been made to the NJDEP for a Wetlands Letter of Interpretation (LOI) which serves as the legal verification of wetlands and wetland transition areas (WTA) on a property. The NJDEP has assigned said Wetlands LOI application NJDEP File #: 1100-11-0002.1. As of the preparation date of this report, NJDEP review of the Wetlands LOI application remains pending.

As described in NJAC 7:7A-6, 7, 16.6 and 16.7, the wetland transition area (WTA) distance required from a wetland boundary is determined by the Wetland Resource Value assigned to the particular wetland area. Table #4C.2 illustrates the WTA distances required of the various Wetland Resource Value Classifications.

TABLE #4C.2 WETLAND TRANSITION AREA DISTANCES

WETLAND RESOURCE VALUE	WETLAND TRANSITION AREA DISTANCE
Exceptional Resource Value	150 feet
Intermediate Resource Value	50 feet
Ordinary Resource Value	0 feet

Given the anticipated classification of all or the majority of the wetlands associated with the Project Site as intermediate resource value, it is anticipated that all or the majority of the wetlands will require a WTA distance of 50 feet. As of the preparation date of this report, NJDEP review of the Wetlands LOI application remains pending.

D. WILDLIFE HABITAT AND UTILIZATION POTENTIAL

The quality of a given area with regard to wildlife utilization is determined by the diversity of habitat types present, the amounts of such habitats, and the overall distribution of the various habitat types. Whereas species of wildlife are generally specific as to a particular type of habitat, an area which possesses a good diversity of quality habitats distributed in a manner which promotes plentiful transition areas, will generally possess a good diversity of wildlife species which utilize the area.

In accordance with the inventoried habitats associated with this Project Site, the ranges and preferred habitats of potentially occurring wildlife and threatened/endangered species were analyzed in relation to the geographic location of this area and to the habitat characteristics presently associated with this Project Site. Determinations were then made pertaining to the possibility of the occurrence of certain wildlife species in this area. Confirmation of wildlife and threatened/endangered species usage of the habitats associated with this Project Site was determined by actual sightings and/or observation of tracks, scats, vocal, and/or other apparent signs. Rocks and logs were overturned, inspected, and then replaced in the preferred habitats of amphibian and reptilian species during this inventory process.

Based upon the field evaluation of the types and quality of existing natural habitats associated with the Project Site, determinations were made as to those wildlife species which have a potential of utilizing said habitats. Tables #4D.1, 4D.2 and 4D.3 include a listing of those mammalian, reptilian/amphibian and avian wildlife species, respectively, determined to have a significant potential of utilizing the habitats associated with the Project Site. Notation is made regarding those wildlife species whose occurrence on the Project Site was confirmed during field investigations.

The field inventory and evaluation determined that the wildlife utilization of the Project Site may be high for those species, particularly avian species, whose suitable habitat includes that of early succession field. However, utilization by wildlife species which prefer other habitat types including woodland habitat will be limited on this Project Site due to the limited availability of said habitat. As discussed in Section IV-B (Selected Ecological Resources - Vegetation and Natural Communities) of this report, the majority of the Project Site consists of early succession filed habitat. Although a narrow forested upland hedgerow along with a forested drainage corridor exist on the Project Site, these habitats are limited in size and are generally isolated from any larger expanse of similar habitat type. The forested hedgerows do provide for habitat diversity; however, their limited size and isolated characteristics are determined to detract from

their wildlife utilization potential. It is determined that the forested drainage corridor which exists in the northern region of the Project Site does provide for habitat diversity and distribution along with providing of movement corridor and therefore should possesses a significant utilization potential for a variety of wildlife species.

TABLE #4D.1 MAMMALIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Bat, Big Brown	Eptesicus fuscus	UF, DC, W,
Bat, Evening	Nycticeius humeralis	UF, DC, W, ESF
Chipmunk, Eastern	Tamias straitus	**UF***, DC, W, ESF
Coyote	Canis latrans	UF, DC, W, ESF
Deer, White-tailed	Odocoileus virginianus	**UF*, DC*, W*, ESF***
Fox, Gray	Urocyon cinereoargenteus	UF, DC , W, ESF
Fox, Red	Vulpes vulpes	UF, **DC***, W, **ESF***
Mole, Eastern	Scalopus aquaticus	UF, DC, W, **ESF***
Mouse, Deer	Peromyscus maniculatus	UF, DC, W, ESF
Mouse, House	Mus musculus	UF, DC, W, ESF
Mouse, White-footed	Peromuscus leucopus	UF, DC, W, ESF
Myotis, Little Brown	Myotis lucifunus	UF, DC, W, ESF
Myotis, Small-footed	Myotis leibii	UF, DC, W, ESF
Opossum, Virginia	Didelphis virginiana	**UF***, **DC***, W, ESF
Rabbit, Eastern Cottontail	Sylvilagus floridanus	**UF*, DC*, W*, ESF***
Raccoon	Procyon lotor	**UF*, DC*, W*, ESF***
Rat, Norway	Rattus norvegicus	UF, DC, W, ESF
Shrew, Short-tailed	Blarina brevicauda	UF, DC, W, ESF
Skunk, Striped	Mephitis mephitis	UF, **DC***, **W***, ESF

TABLE #4D.1 MAMMALIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Squirrel, Gray	Sciurus carolinensis	**UF***, DC, W
Squirrel, Red	Tamiasciurus hudsonicus	UF, DC, W
Squirrel, Southern Flying	Glaucomys volans	UF, DC, W
Vole, Meadow	Microtus pennsylvanicus	UF, DC, W, **ESF***
Weasel, Long-tailed	Mustela frenata	UF, DC, W, ESF
Woodchuck	Marmota monax	**UF***, **DC***, W, **ESF***

KEY: **UF = Upland Forest Habitat** **DC = Drainage Corridor**
W = Wetlands **ESF = Early Succession Field**
*** = *Confirmed during site inspection***

TABLE #4D.2 REPTILIAN/AMPHIBIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Bullfrog	Rana catesbiana	DC, W
Frog, Green	Rana clamitans	**DC***, W
Frog, Northern Leopard	Rana pipiens	DC, W
Frog, Upland Chorus	Pseudacris triseriata	DC, W
Frog, Wood	Rana sylvatica	UF, DC, W
Peeper, Spring	Hyla crucifer	UF, **DC***, W
Salamander, Long-tailed	Eurycea longicauda	DC, W
Salamander, Red-backed	Plethodon cinereus	DC, W
Salamander, Two-lined	Eurycea bislineata	DC, W
Snake, Black Racer	Coluber constrictor	UF, DC, W, ESF
Snake, Black Rat	Elaphe obsoleta	UF, DC, W, ESF

TABLE #4D.2 REPTILIAN/AMPHIBIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Snake, Eastern Garter	Thamnophis sirtalis	**UF***, DC, W, ESF
Snake, Eastern Ribbon	Thamnophis sauritus	UF, **DC***, W, ESF
Snake, Northern Brown	Storeria dekayi	UF, DC, W, ESF
Snake, Northern Water	Natrix sipedon	UF, **DC***, W, ESF
Toad, American	Bufo americanus	UF, DC, W, ESF
Turtle, Eastern Box	Terrapene carolina	UF, **DC***, W, **ESF***
Turtle, Painted	Chrysemmys picta	DC, W
Turtle, Snapping	Chelydra serpentina	UF, DC, W, ESF
Turtle, Wood	Clemmys insculpta	DC, W

KEY: **UF = Upland Forest Habitat** **DC = Drainage Corridor**
W = Wetlands **ESF = Early Succession Field**
*** = *Confirmed during site inspection***

TABLE #4D.3 AVIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Blackbird, Red-winged	Agelaius phoeniceus	UF, **DC***, **W***, **ESF***
Blue Jay	Cyanocitta cristata	**UF***, **DC***, W, ESF
Bluebird, Eastern	Sialia sialis	UF, **DC***, **W***, **ESF***
Bobolink	Dolichonyx oryzivorus	UF, DC, W, ESF
Bunting, Indigo	Passerina cyanea	UF, DC, W, ESF
Cardinal, Northern	Cardinalis cardinalis	**UF***, **DC***, **W***, ESF
Chickadee, Black-capped	Parus atricapillus	**UF***, **DC***, **W***, ESF
Cowbird, Brown-headed	Molothrus ater	**UF***, **DC***, W, ESF

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TABLE #4D.3 AVIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Creeper, Brown	Certhia familiaris	UF, DC, W, ESF
Crow, American	Corvus brachyrhynchos	**UF*, DC*, W*, ESF***
Dove, Mourning	Zenaida macroura	**UF*, DC*, W*, ESF***
Finch, House	Carpodacus mexicanus	**UF***, DC, W, ESF
Finch, Purple	Carpodacus purpureus	UF, DC, W, ESF
Flicker, Common	Colaptes auratus	UF, **DC***, W, **ESF***
Flycatcher, Great-crested	Myiarchus crinitus	UF, DC, W, ESF
Flycatcher, Least	Empidonax minimus	UF, DC, W, ESF
Goldfinch, American	Carduelis tristis	UF, **DC*, W*, ESF***
Grackle, Common	Quiscalus quiscula	**UF*, DC*, W*, ESF***
Grosbeak, Evening	Hesperiphona vespertina	UF, DC, W, ESF
Grosbeak, Rose-breasted	Pheucticus ludovicianus	UF, DC, W, ESF
Hawk, Broad-winged	Buteo platypterus	UF, DC, W, ESF
Hawk, Cooper's	Accipiter cooperii	UF, DC, W, ESF
Hawk, Red-shouldered	Buteo lineatus	UF, DC, W, ESF
Hawk, Red-tailed	Buteo jamaicensis	**UF***, DC, W, **ESF***
Hawk, Sharp-shinned	Accipiter striatus	UF, **DC***, W, ESF
Junco, Northern	Junco hyemalis	UF, DC, W, ESF
Kingbird, Eastern	Tyrannus verticalis	UF, DC, W, ESF
Meadowlark, Eastern	Sturnella magna	UF, DC, W, ESF
Mockingbird, Northern	Mimus polyglottos	**UF*, DC***, W, ESF
Nuthatch, Red-breasted	Sitta canadensis	UF, DC, W, ESF
Nuthatch, White-breasted	Sitta carolinensis	**UF***, DC, W, ESF
Oriole, Northern	Icterus galbula	UF, DC, W, ESF
Ovenbird	Seiurus aurocapillus	UF, DC, W, ESF
Owl, Common Screech	Otus asio	UF, DC, W, ESF
Owl, Great-horned	Bubo virginianus	UF, DC, W, ESF

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TABLE #4D.3 AVIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE		
COMMON NAME	**SCIENTIFIC NAME**	**LOCATION ON SITE**
Pewee, Eastern	Contopus virens	UF, DC, W, ESF
Pheasant, Ring-Necked	Phasianus colchicus	UF, DC, W, ESF
Phoebe, Eastern	Sayornis phoebe	UF, DC, W, ESF
Redstart, American	Setophaga ruticilla	UF, DC, W, ESF
Robin, American	Turdus migratorius	**UF*, DC*, W*, ESF***
Sparrow, Chipping	Spizella passerina	UF, **DC***, W, **ESF***
Sparrow, Field	Spizella pusilla	UF, DC, W, ESF
Sparrow, Fox	Passerella iliaca	UF, DC, W, ESF
Sparrow, Grasshopper	Ammodramus savannarum	UF, DC, W, ESF
Sparrow, Henslow's	Ammodramus henslowii	UF, DC, W, ESF
Sparrow, House	Passer domesticus	**UF***, DC, W, **ESF***
Sparrow, Savannah	Passerculus sandwichensis	UF, DC, W, ESF
Sparrow, Song	Melospiza melodia	**UF*, DC*,** W, **ESF***
Sparrow, Tree	Spizella arborea	UF, DC, W, ESF
Sparrow, Vesper	Pooecetes gramineus	UF, DC, W, ESF
Sparrow, White-throated	Zonotrichia albicollis	**UF*,**DC*, **W*, ESF***
Starling, European	Sturnus vulgaris	**UF***, DC, W, **ESF***
Swallow, Barn	Hirundo rustica	UF, **DC***, W, **ESF***
Swallow, Tree	Iridoprocne bicolor	UF, **DC***, W, **ESF***
Tanager, Scarlet	Piranga olivacea	UF, DC, W, ESF
Thrasher, Brown	Toxostoma rufum	UF, DC, W, ESF
Thrush, Hermit	Catharus guttatus	UF, DC, W, ESF
Thrush, Wood	Hulocichla mustelina	UF, DC, W, ESF
Titmouse, Tufted	Parus bicolor	UF, **DC***, W, ESF
Towhee, Rufous-sided	Pipilo erythrphthalmus	**UF*, DC***, W, ESF
Turkey, Wild	Meleagris gallopavo	UF, DC, W, ESF
Veery	Catharus fuscescens	UF, DC, W

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TABLE #4D.3 AVIAN SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	LOCATION ON SITE
Vireo, Red-eyed	Vireo olivaceus	UF, DC, W
Vireo, Yellow-throated	Vireo flavifrons	UF, DC, W
Vulture, Turkey	Cathartes aura	UF, DC, W, **ESF***
Warbler, Black and White	Mniotilta varia	UF, DC, W, ESF
Warbler, Black-throated Blue	Dendroica caerulescens	UF, DC, W, ESF
Warbler, Black-throated Green	Dendroica virens	UF, DC, W
Warbler, Chestnut-Sided	Dendroica pensylvanica	UF, DC, W, ESF
Warbler, Golden-Winged	Vermivora chrysoptera	UF, DC, W, ESF
Warbler, Palm	Dendroica palmarum	UF, DC, W, ESF
Warbler, Yellow	Dendroica petechia	UF, DC, W, ESF
Warbler, Yellow-Rumped	Dendroica coronata	UF, DC, W, ESF
Waxwing, Cedar	Bombycilla cedrorum	UF, DC, W, ESF
Woodcock, American	Philohela minor	UF, DC, W, ESF
Woodpecker, Downy	Picoides pubescens	**UF***, **DC***, W, ESF
Woodpecker, Hairy	Picoides villosus	UF, DC, W, ESF
Woodpecker, Red-Bellied	Melanerpes carolinus	UF, DC, W
Woodpecker, Red-Headed	Melanerpes erythrocephalus	UF, DC, W
Wren, House	Troglodytes aedon	**UF***, **DC***, W, **ESF***
Yellowthroat	Geothypis trichas	**UF***, **DC***, **W***, ESF

KEY: **UF = Upland Forest Habitat** **DC = Drainage Corridor**
W = Wetlands **ESF = Early Succession Field**
*** = *Confirmed during site inspection***

E. THREATENED/ENDANGERED SPECIES SUPPORT POTENTIAL

An Endangered Species is referred to as a native fish, wildlife, or vegetation species which is threatened with extinction whenever its existence is endangered because of actual or threatened habitat destruction, drastic modification, and/or severe curtailment; over exploitation; disease; predation; and/or other factors. The survival of such species requires assistance. A Threatened Species is referred to as a native fish, wildlife, or vegetation species which may become endangered if conditions surrounding the species begin or continue to deteriorate.

During field inspections of the Project Site, no threatened or endangered species were observed nor was there any indication as to their occurrences. However, existing habitats associated with this Project Site were analyzed in accordance with the ranges and preferred habitats of certain endangered species to determine if the occurrence of certain threatened and/or endangered species on this Project Site is a possibility. Due to the overall rarity of these particular species, total absence of these species on the Project Site cannot be assumed based on the lack of their observation during this particular study. Similarly, their presence on the Project Site cannot be assumed just based on the availability of potential habitat and inclusion in the species' range.

Additionally, the endangered and threatened species database maintained by the New Jersey Natural Heritage Program (NJNHP) was consulted regarding the documented occurrence of such species on or in the vicinity of the Project Site (Appendix C). As of the preparation date of this report, the results of the NJNHP Database Review have not been received.

Table #4E.1 includes a list of threatened and endangered species known to occur within Mercer County and whose suitable habitat may exist on-site or immediately adjacent to the Project Site. The probability of occurrence of each threatened or endangered species as indicated

in Table #4E.1 was derived upon evaluation of the type and amount of relevant on-site habitats and comparison to the preferred habitat of the particular species. Availability of a more preferred or prime habitat of a particular species in the general region of the Project Site was also taken into consideration when determining the indicated probability of the species' occurrence.

TABLE #4E.1 THREATENED AND ENDANGERED WILDLIFE SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE OR VICINITY

SPECIES	STATUS	PREFERRED HABITAT ASSOCIATED WITH THE PROPERTY	PROBABILITY OF UTILIZATION OF HABITAT ASSOCIATED WITH THE PROPERTY
Cooper's Hawk (Accipiter cooperii)	ST (Breeding)	UF, DC	Low due to limited availability of suitable habitat. No nests observed.
Red-shouldered Hawk (Buteo lineatus)	SE (Breeding)	DC, UF	Low due to lack of suitable habitat.
Barred Owl (Strix varia)	ST	DC, UF	Low due to lack of suitable habitat.
Northern Harrier (Circus cyaneus)	SE (Breeding)	ESF	Low due to surrounding disturbances.
Upland Sandpiper (Bartramia longicauda)	SE	ESF	Low due to lack of preferred habitat
Great Blue Heron (Ardea herodias)	DC (Breeding)	DC, W	No rookeries on or adjacent to the property.
Bobolink (Dolichonyx oryzivorus)	ST (Breeding)	ESF, W	Low to Moderate given marginal habitat availability and surrounding disturbances.

TABLE #4E.1 THREATENED AND ENDANGERED WILDLIFE SPECIES POTENTIALLY ASSOCIATED WITH THE PROJECT SITE OR VICINITY

SPECIES	STATUS	PREFERRED HABITAT ASSOCIATED WITH THE PROPERTY	PROBABILITY OF UTILIZATION OF HABITAT ASSOCIATED WITH THE PROPERTY
Grasshopper Sparrow (Ammodramus savannarum)	ST (Breeding)	ESF, AG	Low to Moderate given marginal habitat availability and surrounding disturbances.
Savannah Sparrow (Passerculus sandwichensis)	ST	ESF, W	Low to Moderate given marginal habitat availability and surrounding disturbances.
Wood Turtle (Clemmys insculpta)	ST	DC, W, ESF	Low due to marginal habitat availability
Bog Turtle (Clemmys muhlenbergi	FE/SE	W	Low due to lack of preferred habitat characteristics

KEY:

ST = State Threatened
SE = State Endangered
FE = Federally Endangered
FT = Federally Threatened
U = Undetermined
UF = Upland Forest Habitat
DC = Drainage Corridor
W = Wetlands
ESF = Early Succession Field

As discussed in Section IV-B (Selected Ecological Resources - Vegetation and Natural Communities) of this report, the majority of the Project Site consists of early succession field habitat. Consequently, the utilization potential of the Project Site exists for those threatened and endangered species whose suitable habitat includes early succession field habitat. Utilization for threatened and endangered species which prefer other habitats types will be very limited on this Project Site. However, it is determined that the Project Site is not part of a large expansive tract of unmanipulated and undisturbed habitat. In fact, the majority of lands adjacent to this Project

Site are manipulated and maintained. Said immediately adjacent manipulations and disturbances serve to reduce the utilization potential afforded by the Project Site to threatened and endangered species.

F. WATER RESOURCES

1. DRAINAGE

The Project Site is located in the Assunpink Creek Watershed, Delaware River Drainage Basin. Drainage of the northern region of the Project Site is generally associated with a defined drainageway which originates at a stormwater outfall along the western perimeter of the Project Site and then flows in a northeasterly direction through the northern region of the Property. This drainage continues to the north of the Project Site and is ultimately associated with Lake Mercer within Mercer County Park. Lake Mercer was created on Assunpink Creek. Beyond Lake Mercer, Assunpink Creek continues to the west, southwest until its confluence with the Delaware River in the City of Trenton.

Application will be made to the NJDEP for a Flood Hazard Area Control Act (FHA) Verification to determine if any drainageway or riparian buffers are regulated by FHA on the Project Site.

2. AQUATIC RESOURCE and SURFACE WATER QUALITY

Assunpink Creek into which drainage of the Project Site and surrounding lands is ultimately associated is classified as an FW-2 Non Trout Water by the NJDEP. These classified waters are determined to be unable to support trout species throughout the year. Trout are generally used as indicator species of high quality waters because of the species' demand of well oxygenated,

minimal sedimentation impacted and overall high quality waters. The portion of Assunpink Creek ultimately associated with the drainage of the Project Site is not classified as a Category One water in accordance with Watershed Management regulations.

G. SOILS

The Soil Survey of Mercer County, New Jersey, prepared by the U.S. Soil Conservation Service (USSCS), was consulted with regard to the types of soils which exist on this Property along with certain characteristics and limitations generally associated with each of these soil types. The USSCS completed the mapping of the soils of Mercer County in 1965. Accordingly, soil conditions described in this publication refer to conditions in the county in 1965.

As depicted on Sheet #19 of the Soil Survey of Mercer County, New Jersey, six (6) soil types are found to be associated with the Property (Appendix A - Figure #A4). Some characteristics and limitations of these soils are described in Table #4G.1 and also in the following descriptions. As stated, the characteristics and limitations of the soils of the Property which are described in this report are general.

TABLE #4G.1 SELECTED CHARACTERISTICS AND LIMITATIONS OF ON-SITE SOIL TYPES.

Soil Type	Seasonal High Water (feet)	Limitations for:		
		Buildings	Roadways and Parking	Lawns and Landscaping
DwB	1 - 2.5 feet	Moderate	Moderate	Moderate
MoB	4.0+ feet	Slight	Moderate	Slight
Ot	0 - 1 foot	Severe	Severe	Severe
SrB	5+ feet	Slight	Slight	Slight
SrC	5+ feet	Moderate	Moderate	Moderate
SrC2	5+ feet	Moderate	Moderate	Moderate

Dragston and Woodstown sandy loam, 0 to 4% slopes (DwB):

Concurrent with available mapping, it was determined that this soil type occurs primarily in the northwestern region of the Project Site along with scattered occurrence in the eastern, central and southern regions. It appears that the majority of the areas of the Project Site mapped as being comprised of this soil type consist of a wooded drainage corridor along with fallow fields.

This soil type generally consists of deep, somewhat poorly drained soils formed in medium textured quartzose material that is underlain by beds of sand and loamy sand. Permeability is generally moderate. The seasonal high water table may be found at depths of 1 to 2.5 feet. In unlimed areas, this soil is generally very strongly to extremely acidic.

Relevant limitations of this soil type pertaining to various development activities as are follows:

TABLE #4G.2	LIMITATIONS OF DwB SOIL TYPE FOR BUILDING SITE DEVELOPMENT
Buildings with basements	Moderate due to seasonal high water table
Roads and parking areas	Moderate due to seasonal highwater table
Lawns and landscaping	Moderate due to seasonal high water table

Matapeake loam, 0 to 5% slopes (MoB):

Concurrent with available mapping, it was determined that this soil type occurs in the southern region of the Project Site. It appears that all areas of the Project Site mapped as being comprised of this soil type consist of fallow fields.

This soil type generally consists of deep, moderately well drained soils which were formed in a silty mantle that is underlain by sandy and gravelly materials. Permeability of the surface layer and subsoil is moderately slow. The seasonal high water table may be found at depths of 4.0+ feet. In unlimed areas, this soil is generally very strongly to extremely acidic.

Relevant limitations of this soil type pertaining to various development activities as are follows:

TABLE #4G.3	LIMITATIONS OF MoB SOIL TYPE FOR BUILDING SITE DEVELOPMENT
Buildings with basements	Slight
Roads and parking areas	Moderate due to frost action potential and wetness
Lawns and landscaping	Slight

Othello loam (Ot):

Concurrent with available mapping, it is determined that this soil type primarily occurs throughout the low-lying lands in the northern region of the Project Site along with scattered occurrence in the western region. The areas of the Project Site mapped as being comprised of this soil type presently consist of wetlands or fallow fields.

This soil type generally consists of deep, poorly drained soils formed in a silty mantle underlain by sand and gravel. Permeability is generally moderate to moderately slow. The seasonal high water table may be found at depths of 0 to 1 foot. In unlimed areas, this soil is generally very strongly to extremely acidic.

Relevant limitations of this soil type pertaining to various development activities as are follows:

TABLE #4G.4	LIMITATIONS OF Ot SOIL TYPE FOR BUILDING SITE DEVELOPMENT
Buildings with basements	Severe due to wetness
Roads and parking areas	Severe due to wetness
Lawns and landscaping	Severe due to wetness

Sassafras sandy loam, 2 to 5% slopes (SrB):

Sassafras sandy loam, gently undulating (SrC):

Sassafras sandy loam, 5 to 10% slopes, eroded (SrC2):

Concurrent with available mapping, it was determined that the SrB soil type occurs throughout the northern region of the Project Site; the SrC soil type occurs throughout the southern region; and the SrC2 soil type occurs in a limited area in the northeastern region of the

Project Site. It appears that all areas of the Project Site mapped as being comprised of these soil types consist of fallow fields. The wooded hedgerows associated with the Project Site are also determined to be comprised of these soil types.

These soil types generally consists of deep, well drained soils which were formed in deeply weathered nonglauconitic, quartzose medium to fine textured materials underlain by sand and gravel. Permeability of the surface layer and subsoil is moderate. The seasonal high water table may be found at depths of 5.0+ feet. In unlimed areas, these soils are generally very strongly to extremely acidic.

Relevant limitations of this soil type pertaining to various development activities as are follows:

TABLE #4G.5	LIMITATIONS OF SrB SOIL TYPE FOR BUILDING SITE DEVELOPMENT
Buildings with basements	Slight
Roads and parking areas	Slight
Lawns and landscaping	Slight

TABLE #4G.6	LIMITATIONS OF SrC SOIL TYPE FOR BUILDING SITE DEVELOPMENT
Buildings with basements	Moderate due to slope
Roads and parking areas	Moderate due to slope
Lawns and landscaping	Moderate due to slope

TABLE #4G.7 LIMITATIONS OF SrC2 SOIL TYPE FOR BUILDING SITE DEVELOPMENT	
Buildings with basements	Moderate due to slope
Roads and parking areas	Moderate due to slope
Lawns and landscaping	Moderate due to slope

V. ANTICIPATED IMPACTS TO SELECTED ECOLOGICAL RESOURCES

A. VEGETATION AND NATURAL COMMUNITIES

As described in Section IV-B (Selected Ecological Resources - Vegetation and Natural Communities) of this report, the Project Site was not determined to possess unique natural habitats. The majority of the Project Site was determined to consist of early succession field habitat. Woodland habitat is limited to the narrow hedgerow in the eastern region of the Project Site along with the drainage corridor in the northern region and the northern border of the Project Site. Emergent wetland habitat was determined to exist in portions of the northern region of the Project Site.

The undertaking of the proposed solar energy project will result in the alteration and disturbance to nearly all of the early succession field habitat associated with the Project Site. Said development will also result in the disturbance to the wooded hedgerow which exists in the eastern region of the Property. The wooded drainage corridor along with the emergent wetlands in the northern region of the Project Site will not be disturbed.

B. JURISDICTIONAL FRESHWATER WETLANDS

As described in Section IV-C (Selected Ecological Resources - Jurisdictional Freshwater Wetlands) of this report, jurisdictional wetlands are limited to the drainage corridor and portions of the low-lying lands in the northern region of the Project Site. The placement of solar panels is not proposed within the wetlands associated with the Project Site. As of the preparation date of this report, it is not known if any utility line or access crossing of the wetlands or WTA will be required. Should any disturbances to the wetlands or WTA be required, respective wetlands related permits or WTA Waivers must first be secured from the NJDEP pursuant to the Freshwater Wetlands Protection Act (FWWPA).

C. WILDLIFE HABITAT AND UTILIZATION POTENTIAL

As discussed in Section IV-D (Selected Ecological Resources - Wildlife) of this report, the Project Site was determined to possess a good wildlife utilization potential for those species whose suitable habitat includes early succession field habitat. Although forested habitat is associated with the narrow hedgerow in the eastern region of the Project Site along with the drainage corridor in the northern region, these areas are relatively limited in size and are not part of an overall larger forested habitat complex. However, these areas do provide for some habitat diversity on the Property.

The undertaking of the proposed project will result in the disturbance to the early succession field habitat throughout the Project Site and will thereby impact wildlife species presently and potentially utilizing said habitat. It is determined that the drainage corridor which exists in the northern region of the Project Site encourages wildlife utilization given the habitat diversity and wildlife movement provided by this corridor. This drainage corridor will not be disturbed as a result of the proposed project. The forested hedgerow in the eastern region of the Project Site will be removed thereby removing any wildlife utilization benefit present provided by this hedgerow.

In addition, wetland areas in the northern region of the Property will not be disturbed. Consequently, the wildlife utilization potential provided by this habitat; although limited, will not be significantly impacted by the proposed project

D. THREATENED AND ENDANGERED SPECIES SUPPORT POTENTIAL

As discussed in Section IV-E (Selected Ecological Resources - Threatened and Endangered Species) of this report, the NJNHP Database Review pertaining to the Project Site has not been received as of the preparation date of this report. It was determined that the early succession field habitat which comprises the majority of the Project Site does contain potential habitat for certain threatened/endangered grassland bird species although said utilization potential was not determined to be high due to various factors.

As discussed in Section V-B (Impacts - Wildlife) of this report, the undertaking of the proposed project will result in the disturbance to the early succession field habitat throughout the Project Site and will thereby impact any threatened and endangered species utilization potential afforded by said habitat. Threatened and endangered species utilization potential afforded by the other habitats existing within the Project Site were determined to be low. Accordingly, the disturbance or lack thereof of the other habitats associated with the Project Site is not anticipated to significantly impact the utilization potential afforded by these habitats for threatened and endangered species.

E. WATER RESOURCES

As described in Section IV-F (Selected Ecological Resources - Water Resources) of this report, drainage of the majority of the Project Site is directly associated with a drainageway which flows in a northeasterly direction through the northern region of the Project Site. This drainage is ultimately associated with Lake Mercer which exists to the north of the Project Site within Mercer County Park.

As of the preparation date of this report, an FHA Verification has not been secured for the Project Site.

The proposed project does not require disturbance to the drainageway for the establishment of any solar arrays.. Furthermore, the final design of the project will incorporate the maximum naturally vegetated buffers adjacent to any regulated drainageway. It is unknown at present if the final design of the proposed solar project will require any minor disturbances to the drainageway for the purpose of utility line or access road crossings. Should such crossings be required, said crossings will be designed in accordance with respective FHA and FWWPA rules and respective permits will be secured from the NJDEP.

F. SOILS

As described in Section IV-G (Selected Ecological Resources - Soils) of this report, with the exception of the Othello silt loam (Ot), the soil types present throughout the Project Site appear to be conducive to the type of development proposed. The Ot soil type possesses severe wetness limitations. However, this soil type appears to be limited to areas of the Project Site considered as wetlands. These such areas are not proposed for development.

VI. REFERENCES

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VI. APPENDICES

APPENDIX A

FIGURES

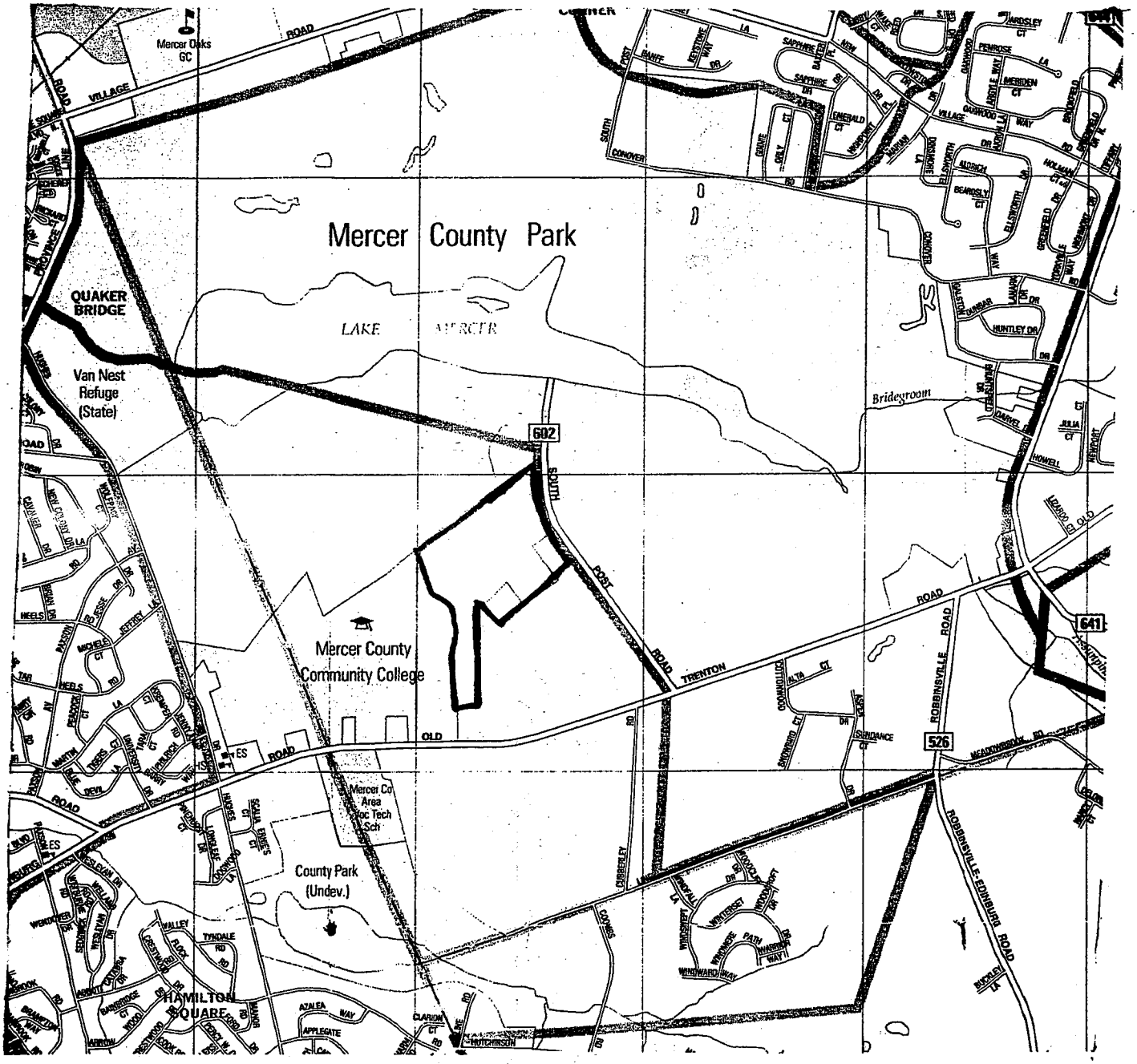

FIGURE #A1 Study Area location as depicted on the ***Mercer County, New Jersey Road Map (Hagstrom).***

Scale: 1" = 3800'

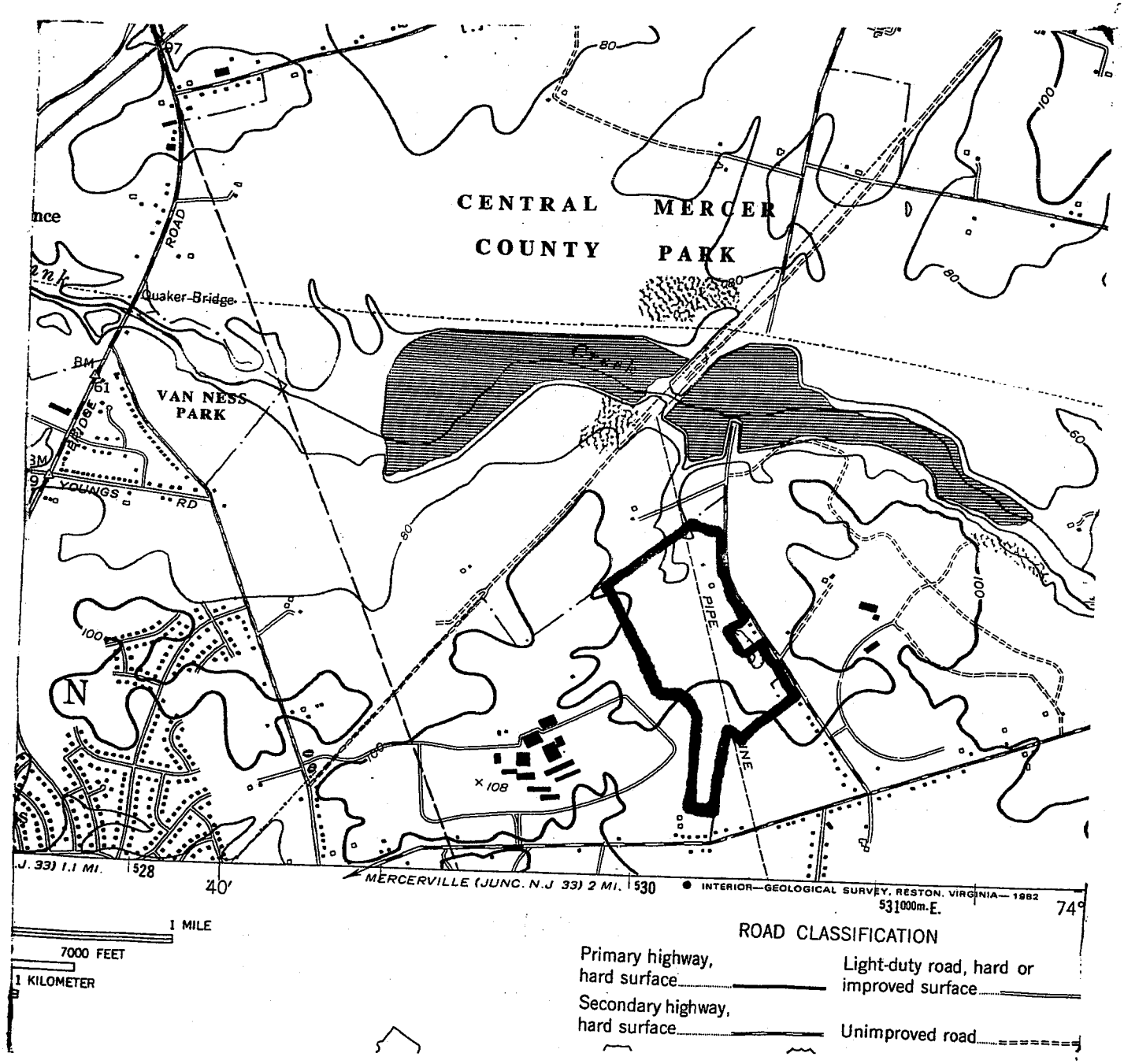

FIGURE #A2 Study Area location as depicted on the ***Princeton, New Jersey USGS Quadrangle Map.***

Scale: 1" = 2000'

Coordinates of Center of Property:

451636 feet E

518266 feet N

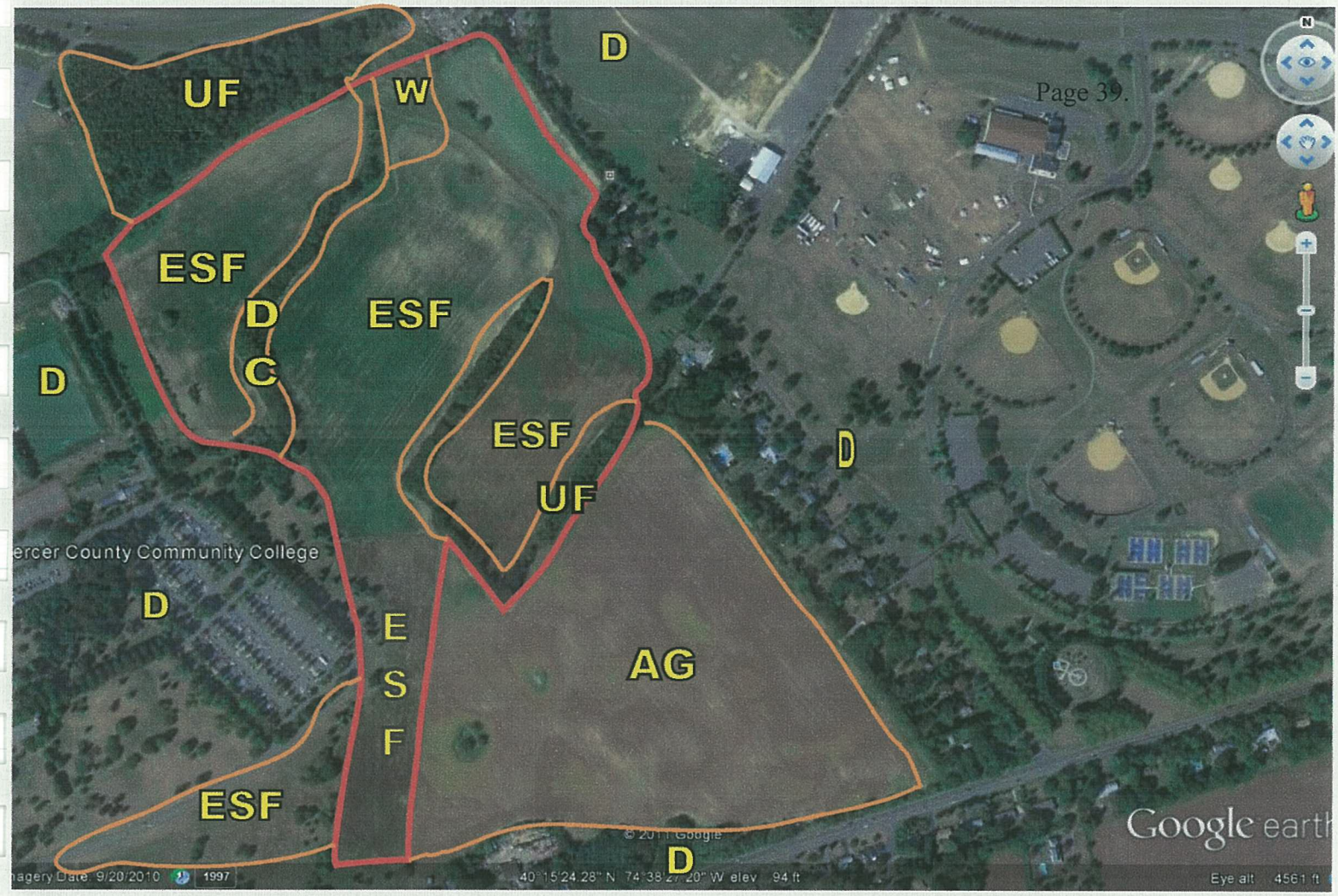

FIGURE #A3 ***Natural Habitats Associated with the Property***

D = Developed/Maintained
UF = Upland Forest Habitat
DC = Drainage Corridor
W =Wetlands
ESF =Early Succession Field Habitat

FIGURE #4A Subject Property location as depicted on ***Sheet #19 of the Mercer County, New Jersey Soil Survey (USSCS).***

APPENDIX B

NJDEP WETLANDS LETTER OF INTERPRETATION

Application has been made to the NJDEP for a Wetlands Letter of Interpretation (LOI) which serves as the legal verification of wetlands and wetland transition areas (WTA) on a property. The NJDEP has assigned said Wetlands LOI application NJDEP File #: 1100-11-0002.1. As of the preparation date of this report, NJDEP review of the Wetlands LOI application remains pending.

APPENDIX C

NJ NATURAL HERITAGE PROGRAM THREATENED/ENDANGERED SPECIES DATA REQUEST

The endangered and threatened species database maintained by the New Jersey Natural Heritage Program (NJNHP) was consulted regarding the documented occurrence of such species on or in the vicinity of the Project Site. As of the preparation date of this report, the results of the NJNHP Database Review have not been received.

APPENDIX D

PHOTOGRAPHS OF THE STUDY AREA

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PHOTOGRAPH #1

Early succession field habitat throughout the southern region of the Project Site.

PHOTOGRAPH #2

Early succession field habitat throughout the northern-central region of the Project Site.

PHOTOGRAPH #3

Early succession field habitat throughout the northwestern region of the Project Site.

PHOTOGRAPH #4

Forested drainage corridor which exists in the northwestern region of the Project Site.

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PHOTOGRAPH #5

Emergent wetlands in the northern region of the Project Site.

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PHOTOGRAPH #6

Wooded hedgerow in the central region of the Project Site.

APPENDIX E

PROFESSIONAL CREDENTIALS

EDWARD A. KUC
PROFESSIONAL CREDENTIALS and QUALIFICATIONS

EXPERIENCE:

***Principal Natural Resource Specialist*; Eastern States Environmental Associates, Inc., Effort, Pennsylvania**

Responsible for the coordination, supervision, and implementation of natural resource inventories and analyses (i.e. natural habitats and communities; terrestrial and aquatic vegetation, wildlife, fisheries, aquatics, endangered species habitats and utilization, and freshwater wetlands), environmental feasibility assessment, environmental impact analysis, natural resources protection and mitigation/restoration programs, and ecological management programs (i.e. terrestrial and aquatic habitats, fisheries and wildlife). Serve as chief representative of public and private clientele of the Association throughout the United States for matters including project design, regulatory compliance, regulatory permit applications and expert testimony. Represented clientele include various state governments, municipalities, utility authorities, boards of education, private corporations, land development organizations, conservation organizations and land owners.

***Natural Resource Specialist*; Environmental Associates, Inc., Rockaway, New Jersey**
Responsible for the coordination and supervision of the ecological staff and research projects consisting of natural resource inventories (habitat, vegetation, natural communities, wildlife, fisheries); freshwater wetlands inventory, analysis and functional assessment; environmental feasibility; environmental impact assessment; and environmental protection and natural resource mitigation/restoration programs. Responsible for the coordination and review of associated environmental reports and publications.

Research and Management Environmental Specialist; **New Jersey Department of Environmental Protection, Division of Fish, Game and Wildlife, New Jersey**

Fisheries Research/Management:
Responsible for collection and analysis of biological information pertaining to fishery population inventories, population reproduction, trout waters classification, fishery population introduction, anadromous species migration, and stream encroachment reviews. Provided recommendations for stream and riparian enhancement programs and fishery management.

Wildlife Research/Management:
Responsible for the capture of Black Bear and collection of biological information pertaining to individual and population condition, size, and reproduction. Responsible for the determination of population density and distribution of various furbearers in watersheds throughout New Jersey. Performed various laboratory procedures associated with the collection and analysis of information pertaining to the age composition, sex ratios, and condition of various furbearer populations. Check station supervisor responsible for the collection of biological information pertaining to the Whitetail Deer population. Responsible for the compilation and analysis of relevant whitetail deer harvest data for the determination of population condition and management objective revisions. Responsible for the trapping, banding and collection of biological information pertaining to various waterfowl species. Conducted nest, brood and habitat availability surveys pertaining to various waterfowl populations. Provided recommendations to wildlife conservation and management programs.

Research Biologist; **U.S.D.A. Forest Service, Clearwater National Forest, Orofino, Idaho**

Fishery Research/Management:
Responsible for analysis of stream condition; riparian habitat availability and quality; sport fishery populations; and salmonid spawning area potential. Implemented stream and riparian habitat enhancement projects and determined and performed corrective procedures for salmonid migration barriers. Performed various surveys to determine fish species density and size for impact evaluation of various land use activities.

Wildlife Research:
Responsible for habitat evaluation and population analysis for various large-game, non-game and endangered species. Responsible for the determination of various wildlife species' population dynamics and seasonal range distributions.

Forest Fire Management:
Member of Initial Attack Forest Fire Suppression Strike Team with extensive training in fire behavior, weather prediction and helicopter operations.

EDUCATION:

Rutgers University - Cook College; New Brunswick, New Jersey
Bachelor of Science degree in Natural Resource Management. Independent research in Fishery Science regarding the migration of American Shad (Alosa sapidissima) in the Delaware River. Received the New Jersey Chapter of The Wildlife Society Outstanding Student in Wildlife Sciences Award. President and Treasurer of the Rutgers University Chapter of The Wildlife Society.

RELEVANT PROFESSIONAL CERTIFICATION and TRAINING:

Professional Wetland Scientist Certificate #000835
Certification based upon recognition of professional requirements mandated by the Society of Wetland Scientists Certification Program and verified by the Society's Certification Review Panel.

Advanced Wetland Delineation
Interagency Cooperative Program Certificate: U.S. Fish and Wildlife Service, U.S. Soil Conservation Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers. Office of Continuing Education, Cook College - Rutgers University, New Brunswick, New Jersey.

Watershed Management
Office of Continuing Education, Cook College - Rutgers University, New Brunswick, New Jersey.

Wetlands Identification and Delineation Methodology
Interagency Cooperative Program Certificate: U.S. Fish and Wildlife Service, U.S. Soil Conservation Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers. Office of Continuing Education, Cook College - Rutgers University, New Brunswick, New Jersey.

Wetland Systems of the Northeast
Office of Continuing Education, Cook College - Rutgers University, New Brunswick, New Jersey.

PROFESSIONAL AFFILIATIONS:

The Wildlife Society; New Jersey Chapter
Past President and Executive Board

New Jersey Division of Fish, Game and Wildlife Conservation Corps Program
Black Bear Project Research Team

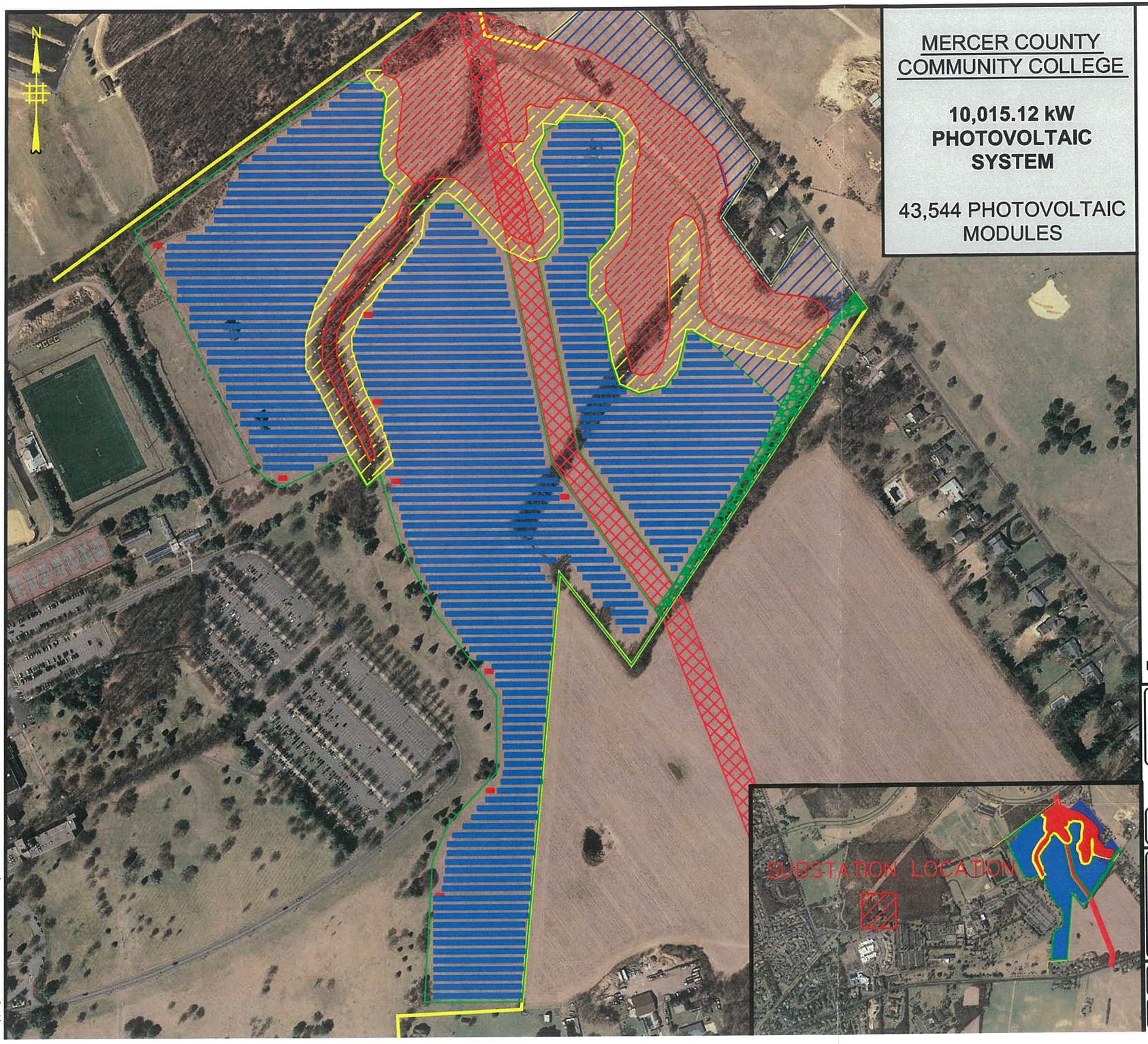
Member: The Wildlife Society (National, NJ Chapter)
American Fisheries Society
Society of Wetland Scientists
National Wildlife Federation
The Nature Conservancy
Audubon Society
Association of Urban Wildlife Managers

PUBLICATIONS:

Numerous technical reports and articles have been authored pertaining to various natural resource related topics and issues. A listing of these reports and articles is available upon request.

SEMINARS/PRESENTATIONS:

Numerous seminars and presentations have been conducted pertaining to a variety of environmental topics and issues including natural resource evaluation and impact assessment, natural resource mitigation and restoration, wetlands management and regulatory compliance, wildlife resource management, environmental careers, etc. Seminars and presentations have been provided to numerous audiences including universities, colleges, corporations, New Jersey Association of Municipal Engineers, New Jersey Board of Realtors, and various special interest organization.



MERCER COUNTY COMMUNITY COLLEGE

10,015.12 kW PHOTOVOLTAIC SYSTEM

43,544 PHOTOVOLTAIC MODULES

LEGEND

- –PHOTOVOLTAIC MODULE ARRAY
- –1 MW INVERTER
- –PROPERTY BOUNDS
- –FENCE
- –SUNOCO PETROLEUM R.O.W.
- –UNUSED AREA
- –WETLANDS
- –WETLANDS BUFFER
- –ACCESS EASMENT

PHOTO SOURCE – © 2010 BIRDSALL SERVICES GROUP

NOTES:

- 45 ACRES OF LAND SUBJECT TO CHANGE BASED ON L.O.I.
- TREES MUST BE REMOVED

IMAGE FROM NJDEP 2007 AERIAL ORTHOIMAGERY

MERCER COUNTY COMMUNITY COLLEGE

FIELD

1200 OLD TRENTON ROAD

SITUATED IN
WEST WINDSOR, NEW JERSEY

BIRDSALL SERVICES GROUP
ENGINEERS & CONSULTANTS

65 Jackson Drive
Cranford, NJ 07016
NJ Certificate of Authorization No. 24GA28060600

Tel.: 908.497.8900
Fax.: 908.497.9134
WWW.BIRDSALL.COM

Drawing Name: 08E-SP-1-MCCC Ground- R3-041411.dwg	Drawn GL	Designed	Checked	Released
Job No. BEI Job No.	Date 03/21/2011	Scale:(H) Horz. Scale (V) Vert. Scale		SP-1