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December 13, 2011

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

BELL BEND NUCLEAR POWER PLANT
FINAL RESPONSE TO ENVIRONMENTAL REQUESTS FOR ADDITIONAL INFORMATION TE 4.3-1, TE 4.3-2, TE 4.3-7, TE 4.3-10, MET 2.7-1, LU 4.1-1, LU 5.1-1 and LU 5.1-2
BNP-2011-229 Docket No. 52-039

Reference: Letter from U.S. NRC Document Control Desk to R.R. Sgarro (PPL), "Requests for Additional Information Related to the Environmental Review for the Combined License Application for Bell Bend Nuclear Power Plant," dated July 10, 2009

The purpose of this letter is to respond to several Environmental Report (ER) requests for additional information (RAIs) identified in the referenced NRC correspondence to PPL Bell Bend, LLC (PPL). These RAIs address environmental issues, as discussed in Part 3 of the Bell Bend Nuclear Power Plant Combined License Application (BBNPP COLA).

Enclosure 1 to this letter provides our responses to the following RAI Questions:

- TE 4.3-1,
- TE 4.3-2,
- TE 4.3-7,
- TE 4.3-10,
- MET 2.7-1,
- LU 4.1-1,
- LU 5.1-1, and
- LU 5.1-2

Enclosure 2 includes the General Air Conformity Analysis NO_x and VOC Emissions from Construction Activities report associated with the response to RAI /MET 2.7-1.

The enclosed RAI responses include revised COLA content where applicable. COLA impacts, as provided in response to these RAIs, will be reflected in our upcoming supplement that provides an updated Environmental Report for your use, and will also be made in a future revision of the COLA. This future revision of the COLA is a new regulatory commitment. Please be advised that the updated Environmental Report will reflect additional changes (i.e., for reasons other than the above RAIs) to these sections as well.

D102
NRO

Should you have questions or need additional information, please contact the undersigned at 570.802.8102.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 13, 2011

Respectfully,

Rocco R. Sgarro

RRS/kw

Enclosures: 1) Responses to Environmental Requests for Additional Information No. TE 4.3-1, TE 4.3-2, TE 4.3-7, TE 4.3-10, MET 2.7-1, LU 4.1-1, LU 5.1-1 and LU 5.1-2 Bell Bend Nuclear Power Plant

2) MET 2.7-1, General Air Conformity Analysis NO_x and VOC Emissions from Construction Activities, Bell Bend Nuclear Power Plant, October 2011

cc: (w/ Enclosures)

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Enclosure 1

Responses to Environmental Requests for Additional Information
No. TE 4.3-1, TE 4.3-2, TE 4.3-7, TE 4.3-10, MET 2.7-1, LU 4.1-1, LU 5.1-1 and LU 5.1-2
Bell Bend Nuclear Power Plant

RAI No. TE 4.3-1

ESRP 4.3.1

Summary:

Provide a discussion that evaluates potential impacts to the Susquehanna Riverlands Important Bird Area (IBA#50), the Wetlands Natural Area, and the Susquehanna Riverlands Environmental Preserve (SREP) (both east and west of the river).

Full Text (Supporting Information): This discussion should address potential impacts to nesting habitat, acreage of permanent habitat loss, and acreage of habitat conversions.

Response:

Susquehanna Riverlands Important Bird Area (IBA #50)

The Susquehanna Riverlands Important Bird Area (IBA #50) consists of approximately 2,111 acres (854.3 hectares) and includes approximately 956.6 acres (387.1 hectares) within the BBNPP Project Boundary (Table 1). The IBA # 50 boundary encompasses all of the Wetlands Natural Area and nearly all of the Susquehanna Riverlands Environmental Preserve (SREP) as illustrated in ER Figure 2.4-7. Approximately 198.0 previously undeveloped acres (80.1 hectares), or 9.4%, of IBA #50 within the BBNPP Project Boundary will be directly impacted as a result of construction of the BBNPP site, including 116.6 acres (47.2 hectares) of permanent habitat losses, 57.0 acres (23.1 hectares) of temporary habitat losses, and 24.5 acres (9.9 hectares) of permanent habitat conversions as detailed in Table 2 and ER Figure 4.3-2.

Permanent habitat losses include areas that will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed. Temporary habitat losses include laydown areas, construction parking, warehouses, the concrete batch plant, wetland mitigation, installation of water intake and discharge pipelines, and other construction-related facilities. Temporary habitat loss areas will be graded and revegetated following construction and allowed to revert to a natural state, and certain portions may be designated for wetland or other habitat mitigation. Permanent habitat conversions are forested areas that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.

Forested habitat (upland forest and palustrine forested wetlands) within IBA #50 will be reduced by 101.7acres (41.2 hectares), or 19.8% of IBA #50 forested land within the BBNPP Project Boundary (Table 1). Impacted forest habitat includes 67.2 acres (27.2 hectares) that will be permanently lost, 10 acres (4.0 hectares) that will be temporarily lost, and 24.5 acres (9.9 hectares) that will be permanently converted to scrub/shrub habitat (Table 2). Forest habitat breeding bird species determined to be common at the BBNPP site (ER Section 2.4.1) that will be negatively impacted include black-capped chickadee, tufted titmouse, blue jay, wood thrush, red-eyed vireo, ovenbird and scarlet tanager. An additional negative impact is likely to result from forest fragmentation due to the establishment of additional transmission lines and other forest clearings. Nest parasitism to forest interior species such as scarlet tanager, wood thrush, and eastern wood pewee from brown-headed cowbirds, which are relatively common at the BBNPP site, is likely to increase.

Upland and wetland scrub/shrub habitat will be increased by 24.5 acres (9.9 hectares) within IBA #50 as a result of vegetation management within transmission line corridors and under and adjacent to bridges. Some of the most common breeding bird species identified in upland scrub/shrub habitat at the BBNPP site (ER Section 2.4.1) which would be expected to be positively impacted include gray catbird, song sparrow, common yellowthroat, American goldfinch, indigo bunting, yellow warbler, eastern towhee, and northern cardinal.

Agriculture/former agriculture habitat will be reduced by 81.4 acres (32.9 hectares), or 33.7%, of IBA #50 agriculture/former agriculture within BBNPP Project Boundary including 39.4 acres (16.0 hectares) permanently lost and 41.9 acres (17.0 hectares) temporarily lost (Table 1). Based on surveys of the BBNPP site, some of the most common breeding birds most likely to be negatively impacted by the reduction of agricultural habitat include field sparrow, mourning dove, American crow and common grackle.

Susquehanna Riverlands Environmental Preserve (SREP)

The Susquehanna Riverlands Environmental Preserve consists of approximately 1,200 acres (486 hectares) on both sides of the Susquehanna River and includes approximately 333.2 acres (134.8 hectares) within the BBNPP Project Boundary (Table 3) as illustrated in ER Figure 2.4-7. Potential impacts to nesting birds due to construction in the SREP are restricted to two areas (ER Figure 4.3-2). A temporary laydown area will be located in the SREP to the north of the Recreation Area and water intake and discharge structures along with associated pipelines and a dredge pond will be installed to the west and south of the existing SSES Intake Structure. Additionally, as part of the construction of the BBNPP Intake Structure, the existing spillway weir and outlet on the North Branch of the Pennsylvania Canal will be removed and the northern portion of the Canal upstream of the outlet will be reconnected with the southern portion.

Temporary habitat loss for these areas will total 31.1 acres (12.6 hectares) with a majority of the temporary impacted land cover being agricultural land (Table 4). This total includes temporary wetland losses associated with wetland mitigation, and the installation of water intake and discharge pipelines. Permanent habitat losses will be restricted to 1.8 acres (0.7 hectares) of land at the location of the proposed BBNPP Intake Structure (Table 4). BBNPP construction is expected to have a minimal impact on the nesting habitat of the preserve as only 32.9 acres (13.3 hectares), or less than 3 percent of the area of the Preserve, will be directly impacted and most of that impact will be temporary as these areas will be revegetated after construction (Table 4).

Wetlands Natural Area

The Wetlands Natural Area (WNA) is located between the Susquehanna River and U.S. Route 11, and south of the BBNPP Intake Structure. It represents a portion of IBA #50 and is found within the southern portion of the SREP (ER Figure 2.4-7). Though the WNA is included inside of the BBNPP Project Boundary, little or no impact is anticipated to bird nesting habitat as there is no planned temporary or permanent habitat loss or conversion of land cover types as a result of construction within this area. Construction activities in the vicinity of the WNA will consist of the installation of the BBNPP Intake Structure and related facilities as described above for the SREP.

Table 1: Pre- and Post-Construction Land Cover within the Susquehanna Riverlands IBA # 50

Land Cover Type	Pre-Construction[1]		Total Impacts[2]		Total Additions[3]		Post-Construction[4]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	459.3	185.9	93.4	37.8	0.0	0.0	365.9	148.1
Upland Scrub/Shrub	34.3	13.9	11.0	4.5	17.6	7.1	40.9	16.5
Old Field/Former Agricultural	84.7	34.3	41.7	16.9	0.0	0.0	43.0	17.4
Agricultural	156.6	63.4	39.7	16.1	0.0	0.0	117.0	47.3
Palustrine Forested Wetlands	52.2	21.1	8.3	3.4	0.0	0.0	44.9	18.2
Palustrine Scrub/Shrub Wetlands	3.1	1.3	0.0	0.0	6.9	2.8	10.0	4.0
Palustrine Emergent Wetlands	13.0	5.3	3.0	1.2	0.0	0.0	12.3	5.0
Developed	101.4	41.1	8.4	3.4	177.7	71.9	270.8	109.6
Waterbodies	41.3	16.7	0.2	0.1	0.0	0.0	41.3	16.7
Streams	10.6	4.3	0.7	0.3	0.0	0.0	10.5	4.3
Total[5]	956.6	387.1	206.4	83.5	202.2	81.8	956.6	387.1

Notes:
[1]Acreage for land cover types is based on a combination of plant community and wetlands surveys and aerial photographs.
[2] Includes permanent and temporary losses, permanent conversions, and previously developed areas impacted by construction.
[3] Includes post-construction additions to developed areas, permanent conversions of forested land cover to scrub/shrub.
[4] Temporary losses to upland habitat have been included in the post-construction total for the "developed" land cover category. Although it is assumed that these areas would be revegetated and allowed to revert to a natural state following construction with certain portions potentially designated for wetland or other habitat mitigation. Post-construction acreages for wetlands, streams, and waterbodies are based on permanent losses only (see Table 2, Permanent Losses)
[5] Total represents areas within the BBNPP Project Boundary only.

Table 2: Construction Impacts to Plant Communities and Other Habitats within the Susquehanna Riverlands IBA # 50

Land Cover Type	Permanent Losses[1]		Temporary Losses[2, 3]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	66.8	27.0	9.0	3.6	17.6	7.1	n/a	n/a	93.4	37.8
Upland Scrub/Shrub	9.1	3.7	1.9	0.8	0.0	0.0	n/a	n/a	11.0	4.5
Old Field/Former Agricultural	17.5	7.1	24.2	9.8	0.0	0.0	n/a	n/a	41.7	16.9
Agricultural	21.9	8.9	17.8	7.2	0.0	0.0	n/a	n/a	39.7	16.1
Palustrine Forested Wetlands	0.4	0.2	1.0	0.4	6.9	2.8	n/a	n/a	8.3	3.4
Palustrine Scrub/Shrub Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Palustrine Emergent Wetlands	0.7	0.3	2.3	0.9	0.0	0.0	n/a	n/a	3.0	1.2
Waterbodies	0.0	0.0	0.2	0.1	0.0	0.0	n/a	n/a	0.2	0.1
Streams	0.1	0.0	0.6	0.2	0.0	0.0	n/a	n/a	0.7	0.3
Total for Plant Communities and Other Habitats	**116.6**	**47.2**	**57.0**	**23.1**	**24.5**	**9.9**	**0.0**	**0.0**	**198.0**	**80.1**
Developed	n/a	n/a	n/a	n/a	n/a	n/a	8.4	3.4	8.4	3.4
Total for all Land Cover Types									**206.4**	**83.5**

Notes:
[1] Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.
[2] Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.
[3] Temporary losses to wetlands and other regulated waters are related to wetland and stream mitigation activities and for construction of electrical ducts, raw water, blowdown and deicing lines.
[4] Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.
[5] Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.
[6] Total impacts do not include areas within the Susquehanna River that will be affected temporarily or permanently by construction activities.
n/a = not applicable

Table 3: Pre- and Post-Construction Land Cover within the Susquehanna Riverlands Environmental Preserve

Land Cover Type	Pre-Construction[1]		Total Impacts[2]		Total Additions[3]		Post-Construction[4]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	107.1	43.3	6.5	2.6	0.0	0.0	100.6	40.7
Upland Scrub/Shrub	4.0	1.6	0.1	0.0	0.0	0.0	3.9	1.6
Old Field/Former Agricultural	13.4	5.4	4.9	2.0	0.0	0.0	8.6	3.5
Agricultural	92.9	37.6	16.5	6.7	0.0	0.0	76.4	30.9
Palustrine Forested Wetlands	19.5	7.9	1.2	0.5	0.0	0.0	19.2	7.8
Palustrine Scrub/Shrub Wetlands	1.3	0.5	0.0	0.0	0.0	0.0	1.3	0.5
Palustrine Emergent Wetlands	7.2	2.9	3.0	1.2	0.0	0.0	6.5	2.6
Developed	40.4	16.4	2.0	0.8	30.9	12.5	69.3	28.1
Waterbodies	38.0	15.4	0.2	0.1	0.0	0.0	38.0	15.4
Streams	9.6	3.9	0.6	0.3	0.0	0.0	9.5	3.8
Total[5]	333.2	134.8	34.9	14.1	30.9	12.5	333.2	134.8

Notes:

[1] Acreage for land cover types is based on a combination of plant community and wetlands surveys and aerial photographs.

[2] Includes permanent and temporary losses, permanent conversions, and previously developed areas impacted by construction.

[3] Includes post-construction additions to developed areas, permanent conversions of forested land cover to scrub/shrub.

[4] Temporary losses to upland habitat have been included in the post-construction total for the "developed" land cover category. Although it is assumed that these areas would be revegetated and allowed to revert to a natural state following construction with certain portions potentially designated for wetland or other habitat mitigation. Post-construction acreages for wetlands, streams, and waterbodies are based on permanent losses only (see Table 4, Permanent Losses)

[5] Total represents areas within the BBNPP Project Boundary only

Table 4: Construction Impacts to Plant Communities and Other Habitats within the Susquehanna Riverlands Environmental Preserve

Land Cover Type	Permanent Losses[1]		Temporary Losses[2, 3]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	0.3	0.1	6.2	2.5	0.0	0.0	n/a	n/a	6.5	2.6
Upland Scrub/Shrub	0.0	0.0	0.1	0.0	0.0	0.0	n/a	n/a	0.1	0.0
Old Field/Former Agricultural	0.5	0.2	4.4	1.8	0.0	0.0	n/a	n/a	4.9	2.0
Agricultural	0.0	0.0	16.5	6.7	0.0	0.0	n/a	n/a	16.5	6.7
Palustrine Forested Wetlands	0.3	0.1	0.9	0.4	0.0	0.0	n/a	n/a	1.2	0.5
Palustrine Scrub/Shrub Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Palustrine Emergent Wetlands	0.7	0.3	2.3	0.9	0.0	0.0	n/a	n/a	3.0	1.2
Waterbodies	0.0	0.0	0.2	0.1	0.0	0.0	n/a	n/a	0.2	0.1
Streams	0.1	0.0	0.6	0.2	0.0	0.0	n/a	n/a	0.6	0.3
Total for Plant Communities and Other Habitats	**1.8**	**0.7**	**31.1**	**12.6**	**0.0**	**0.0**	**0.0**	**0.0**	**32.9**	**13.3**
Developed	n/a	n/a	n/a	n/a	n/a	n/a	2.0	0.8	2.0	0.8
Total for all Land Cover Types									**34.9**	**14.1**

Notes:
[1] Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.
[2] Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.
[3] Temporary losses to wetlands and other regulated waters are related to wetland and stream mitigation activities, and for the construction of electrical ducts, raw water, blowdown and deicing lines.
[4] Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.
[5] Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.
[6] Total impacts do not include areas within the Susquehanna River that will be affected temporarily or permanently by construction activities.
n/a = not applicable

COLA Impact:

No changes to the BBNPP COLA ER are required as a result of this RAI response.

RAI No. TE 4.3-2

ESRP 4.3.1

Summary:

Provide a table of pre-construction acreages for developed and undeveloped terrestrial and wetland habitats and all post-construction acreage conversions.

Full Text (Supporting Information): Provide both pre- and post-construction terrestrial and wetland habitat acreages in terms of upland forest, upland scrub/shrub, old field/former agriculture, agricultural, palustrine forested wetlands, palustrine scrub/shrub wetlands, and palustrine emergent wetlands. Include acreages for water bodies, developed areas, and for the areas defined as the Susquehanna Riverlands Environmental Preserve (SREP) and Wetlands Natural Area. Tabulate acreage conversions in terms of the habitat types and important areas described in the ER and above. For example, it is expected that a number of acres of upland forest would be converted to shrub/scrub habitat as a consequence of transmission corridor construction. Other construction features would result in the permanent conversion of this habitat to industrial, and still other temporary features might result in other conversions. This accounting will facilitate the evaluation of impacts to terrestrial and wetland habitats described within the OCA, SREP and the Wetlands Natural Area and will describe post-construction habitat acreages.

Current information in the ER: In section 4.3.1, it states that, "an estimate of all land areas, including both developed lands and undeveloped terrestrial habitats, that would be temporarily or permanently disturbed during construction of BBNPP and supporting facilities is provided in Table 4.1-1."

Table 4.1-1 describes both permanent and temporary construction features but does not describe, in terms of area, the impacts to previously developed land or undeveloped terrestrial habitats.

Table 2.2-1 presents generalized categories of land use acreages (clumped forest and wetland types).

Response:

Tables 1 through 6 are provided below which detail impacts to land cover within the BBNPP Project Boundary and to the previously identified important habitats. Table 1 provides details on permanent and temporary losses and permanent conversions for all land cover types found within the Project Boundary. Table 2 provides pre- and post-construction acreages for each land cover type within the BBNPP Project Boundary. Tables 3 and 5 provide details on permanent and temporary losses and permanent conversions for all land cover types found within the Important Bird Area (IBA) #50 and Susquehanna Riverlands Environmental Preserve (SREP), respectively. Tables 4 and 6 provide pre-construction and post-construction acreages for each land cover type within the IBA #50 and SREP, respectively. Pre- and post-construction acreages reported in Tables 4 and 6 are restricted to areas of the IBA #50 and SREP within the BBNPP Project Boundary. Areas outside of the BBNPP Project Boundary will not be impacted directly by construction-related activities. The acreages reported for the SREP include the Wetlands Natural Area (WNA), which is located to the south of the proposed BBNPP intake structure (ER Figure 2.4-7) in the southern portion of the SREP. The WNA is not expected to be

impacted directly by construction activities. ER Figure 4.3-1 illustrates the spatial extent of impacts within the BBNPP Project Boundary.

ER Section 4.3.1 will be revised to incorporate the land cover information presented in Tables 1 through 6 and, based on these tables, provide an estimate of all land areas, including both developed lands and undeveloped terrestrial habitats, that would be temporarily or permanently disturbed during construction of BBNPP.

Revisions to ER Table 2.2-1, including post-construction land-use changes, were addressed in the response to RAI LU 3.7-1 (ML103200240). It should be noted that in conformance with the guidance presented in NUREG 1555, land use information presented in ER Table 2.2-1 is based on the USGS land use classification system and USGS land use mapping data available for the site and region as supplemented by wetland field survey data (USGS, 2008). In contrast, the land cover information provided in ER 4.3.1 is based upon plant community and wetland field surveys of the BBNPP site as supplemented by aerial photography. As a result, the land use categories presented in ER 2.2 are defined differently from the land cover categories discussed in ER 4.3.1.

Reference Cited in the Response:

USGS, 2008. U.S. Geological Survey (USGS), Land Use and Land Cover Data, LULC Categories, Website: http://www.webgis.com/lulc_data/9_app.html, Date accessed, March 15, 2008.

Table 1: Impacts to Plant Communities and Other Habitats in Acres (Hectares) for Construction of Proposed BBNPP

Land Cover Type	Permanent Losses[1]		Temporary Losses[2, 3]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	148	59.9	49	19.8	25.2	10.2	n/a	n/a	222.2	89.9
Upland Scrub/Shrub	17.9	7.3	45.5	18.4	0	0	n/a	n/a	63.4	25.7
Old Field/Former Agricultural	119.2	48.2	49	19.8	0	0	n/a	n/a	168.2	68.1
Agricultural	82.8	33.5	65.4	26.5	0	0	n/a	n/a	148.2	60
Palustrine Forested Wetlands	0.5	0.2	3	1.2	7.9	3.2	n/a	n/a	11.3	4.6
Palustrine Scrub/Shrub Wetlands	0	0	0	0	0	0	n/a	n/a	0	0
Palustrine Emergent Wetlands	0.9	0.4	6.3	2.5	0	0	n/a	n/a	7.1	2.9
Waterbodies	0	0	0.2	0.1	0	0	n/a	n/a	0.2	0.1
Streams	0.1	0.1	2	0.8	0	0	n/a	n/a	2.1	0.9
Total for Plant Communities and Other Habitats	369.4	149.5	220.3	89.2	33	13.4	0	0	622.8	252
Developed	n/a	n/a	n/a	n/a	n/a	n/a	54.6	22.1	54.6	22.1
Total for all Land Cover Types									677.4[7]	274.1

Notes:
[1]Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.
[2]Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.
[3]Temporary losses to wetlands and other regulated waters are related to wetland and stream mitigation activities, and for construction of electrical ducts, raw water, blowdown, and deicing lines.
[4]Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.
[5]Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.
[6]Total impacts do not include areas within the Susquehanna River that will be affected temporarily or permanently by construction activities.
[7]Includes all areas within the 687 ac (278 ha) limit of disturbance (LOD) that will be impacted by construction activities. Approximately 9.6 ac (3.9 ha) of land within the LOD will not be impacted as a result of construction activities.

n/a = not applicable

Table 2: Pre- and Post-Construction Land Cover within the BBNPP Project Boundary

Land Cover Type	Pre-Construction[1]		Total Impacts[2]		Total Additions[3]		Post-Construction[4]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	772.3	312.5	222.2	89.9	0.0	0.0	550.1	222.6
Upland Scrub/Shrub	106.8	43.2	63.4	25.7	25.2	10.2	68.6	27.7
Old Field/Former Agricultural	242.5	98.1	168.2	68.1	0.0	0.0	74.3	30.1
Agricultural	332.7	134.6	148.2	60.0	0.0	0.0	184.5	74.7
Palustrine Forested Wetlands	112.8	45.6	11.3	4.6	0.0	0.0	104.4	42.3
Palustrine Scrub/Shrub Wetlands	9.4	3.8	0.0	0.0	7.9	3.2	17.3	7.0
Palustrine Emergent Wetlands	36.8	14.9	7.1	2.9	0.0	0.0	35.9	14.5
Developed	382.7	154.9	54.6	22.1	632.9	256.1	961.0	388.9
Waterbodies	43.3	17.5	0.2	0.1	0.0	0.0	43.3	17.5
Streams	15.6	6.3	2.1	0.9	0.0	0.0	15.5	6.3
Total[5]	2054.9	831.6	677.4	274.1	666.0	269.5	2054.9	831.6

Notes:
[1] Acreage for land cover types is based on a combination of plant community and wetlands surveys and aerial photographs.
[2] Includes permanent and temporary losses, permanent conversions, and previously developed areas impacted by construction.
[3] Includes post-construction additions to developed areas, permanent conversions of forested land cover to scrub/shrub, and restoration of wetlands subject to temporary losses.
[4] Temporary losses to upland habitat have been included in the post-construction total for the "developed" land cover category. Although it is assumed that these areas would be revegetated and allowed to revert to a natural state following construction with certain portions designated for wetland or other habitat mitigation. Post-construction acreages for wetlands, streams, and waterbodies are based on permanent losses only (see Table 1, Permanent Losses)

Table 3: Construction Impacts to Plant Communities and Other Habitats within the Susquehanna Riverlands IBA # 50

Land Cover Type	Permanent Losses[1]		Temporary Losses[2, 3]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	66.8	27.0	9.0	3.6	17.6	7.1	n/a	n/a	93.4	37.8
Upland Scrub/Shrub	9.1	3.7	1.9	0.8	0.0	0.0	n/a	n/a	11.0	4.5
Old Field/Former Agricultural	17.5	7.1	24.2	9.8	0.0	0.0	n/a	n/a	41.7	16.9
Agricultural	21.9	8.9	17.8	7.2	0.0	0.0	n/a	n/a	39.7	16.1
Palustrine Forested Wetlands	0.4	0.2	1.0	0.4	6.9	2.8	n/a	n/a	8.3	3.4
Palustrine Scrub/Shrub Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Palustrine Emergent Wetlands	0.7	0.3	2.3	0.9	0.0	0.0	n/a	n/a	3.0	1.2
Waterbodies	0.0	0.0	0.2	0.1	0.0	0.0	n/a	n/a	0.2	0.1
Streams	0.1	0.0	0.6	0.2	0.0	0.0	n/a	n/a	0.7	0.3
Total for Plant Communities and Other Habitats	**116.6**	**47.2**	**57.0**	**23.1**	**24.5**	**9.9**	**0.0**	**0.0**	**198.0**	**80.1**
Developed	n/a	n/a	n/a	n/a	n/a	n/a	8.4	3.4	8.4	3.4
Total for all Land Cover Types									**206.4**	**83.5**

Notes:
[1] Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.
[2] Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.
[3] Temporary losses to wetlands and other regulated waters are related to wetland and stream mitigation activities and for construction of electrical ducts, raw water, blowdown and deicing lines.
[4] Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.
[5] Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.
[6] Total impacts do not include areas within the Susquehanna River that will be affected temporarily or permanently by construction activities.
n/a = not applicable

Table 4: Pre- and Post-Construction Land Cover within the Susquehanna Riverlands IBA # 50

Land Cover Type	Pre-Construction[1]		Total Impacts[2]		Total Additions[3]		Post-Construction[4]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	459.3	185.9	93.4	37.8	0.0	0.0	365.9	148.1
Upland Scrub/Shrub	34.3	13.9	11.0	4.5	17.6	7.1	40.9	16.5
Old Field/Former Agricultural	84.7	34.3	41.7	16.9	0.0	0.0	43.0	17.4
Agricultural	156.6	63.4	39.7	16.1	0.0	0.0	117.0	47.3
Palustrine Forested Wetlands	52.2	21.1	8.3	3.4	0.0	0.0	44.9	18.2
Palustrine Scrub/Shrub Wetlands	3.1	1.3	0.0	0.0	6.9	2.8	10.0	4.0
Palustrine Emergent Wetlands	13.0	5.3	3.0	1.2	0.0	0.0	12.3	5.0
Developed	101.4	41.1	8.4	3.4	177.7	71.9	270.8	109.6
Waterbodies	41.3	16.7	0.2	0.1	0.0	0.0	41.3	16.7
Streams	10.6	4.3	0.7	0.3	0.0	0.0	10.5	4.3
Total[5]	956.6	387.1	206.4	83.5	202.2	81.8	956.6	387.1

Notes:
[1] Acreage for land cover types is based on a combination of plant community and wetlands surveys and aerial photographs.
[2] Includes permanent and temporary losses, permanent conversions, and previously developed areas impacted by construction.
[3] Includes post-construction additions to developed areas, permanent conversions of forested land cover to scrub/shrub.
[4] Temporary losses to upland habitat have been included in the post-construction total for the "developed" land cover category. Although it is assumed that these areas would be revegetated and allowed to revert to a natural state following construction with certain portions potentially designated for wetland or other habitat mitigation. Post-construction acreages for wetlands, streams, and waterbodies are based on permanent losses only (see Table 3, Permanent Losses)
[5] Total represents areas within the BBNPP Project Boundary only.

Table 5: Construction Impacts to Plant Communities and Other Habitats within the Susquehanna Riverlands Environmental Preserve

Land Cover Type	Permanent Losses[1]		Temporary Losses[2, 3]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	0.3	0.1	6.2	2.5	0.0	0.0	n/a	n/a	6.5	2.6
Upland Scrub/Shrub	0.0	0.0	0.1	0.0	0.0	0.0	n/a	n/a	0.1	0.0
Old Field/Former Agricultural	0.5	0.2	4.4	1.8	0.0	0.0	n/a	n/a	4.9	2.0
Agricultural	0.0	0.0	16.5	6.7	0.0	0.0	n/a	n/a	16.5	6.7
Palustrine Forested Wetlands	0.3	0.1	0.9	0.4	0.0	0.0	n/a	n/a	1.2	0.5
Palustrine Scrub/Shrub Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Palustrine Emergent Wetlands	0.7	0.3	2.3	0.9	0.0	0.0	n/a	n/a	3.0	1.2
Waterbodies	0.0	0.0	0.2	0.1	0.0	0.0	n/a	n/a	0.2	0.1
Streams	0.1	0.0	0.6	0.2	0.0	0.0	n/a	n/a	0.6	0.3
Total for Plant Communities and Other Habitats	**1.8**	**0.7**	**31.1**	**12.6**	**0.0**	**0.0**	**0.0**	**0.0**	**32.9**	**13.3**
Developed	n/a	n/a	n/a	n/a	n/a	n/a	2.0	0.8	2.0	0.8
Total for all Land Cover Types									**34.9**	**14.1**

Notes:
[1] Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.
[2] Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.
[3] Temporary losses to wetlands and other regulated waters are related to wetland and stream mitigation activities, and for the construction of electrical ducts, raw water, blowdown and deicing lines.
[4] Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.
[5] Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.
[6] Total impacts do not include areas within the Susquehanna River that will be affected temporarily or permanently by construction activities.
n/a = not applicable

Table 6: Pre- and Post-Construction Land Cover within the Susquehanna Riverlands Environmental Preserve

Land Cover Type	Pre-Construction[1]		Total Impacts[2]		Total Additions[3]		Post-Construction[4]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	107.1	43.3	6.5	2.6	0.0	0.0	100.6	40.7
Upland Scrub/Shrub	4.0	1.6	0.1	0.0	0.0	0.0	3.9	1.6
Old Field/Former Agricultural	13.4	5.4	4.9	2.0	0.0	0.0	8.6	3.5
Agricultural	92.9	37.6	16.5	6.7	0.0	0.0	76.4	30.9
Palustrine Forested Wetlands	19.5	7.9	1.2	0.5	0.0	0.0	19.2	7.8
Palustrine Scrub/Shrub Wetlands	1.3	0.5	0.0	0.0	0.0	0.0	1.3	0.5
Palustrine Emergent Wetlands	7.2	2.9	3.0	1.2	0.0	0.0	6.5	2.6
Developed	40.4	16.4	2.0	0.8	30.9	12.5	69.3	28.1
Waterbodies	38.0	15.4	0.2	0.1	0.0	0.0	38.0	15.4
Streams	9.6	3.9	0.6	0.3	0.0	0.0	9.5	3.8
Total[5]	333.2	134.8	34.9	14.1	30.9	12.5	333.2	134.8

Notes:
[1] Acreage for land cover types is based on a combination of plant community and wetlands surveys and aerial photographs.
[2] Includes permanent and temporary losses, permanent conversions, and previously developed areas impacted by construction.
[3] Includes post-construction additions to developed areas, permanent conversions of forested land cover to scrub/shrub.
[4] Temporary losses to upland habitat have been included in the post-construction total for the "developed" land cover category. Although it is assumed that these areas would be revegetated and allowed to revert to a natural state following construction with certain portions potentially designated for wetland or other habitat mitigation. Post-construction acreages for wetlands, streams, and waterbodies are based on permanent losses only (see Table 3, Permanent Losses)
[5] Total represents areas within the BBNPP Project Boundary only

COLA Impact:

Section 4.3.1 of the BBNPP COLA ER will be revised as shown below.

4.3.1 Terrestrial Ecosystems

This section describes the impacts of construction on the terrestrial ecosystem. The BBNPP Owner Controlled Area (OCA) is equivalent to the construction zone and is shown in Figure 4.3-1. An estimate of all land areas, including both developed lands and undeveloped terrestrial habitats~~, that would be temporarily or permanently disturbed during construction of BBNPP and supporting facilities is provided in Table 4.1-1. Approximately 630 ac (255 ha) of the BBNPP OCA would be disturbed by site preparation and construction. This area is assumed to be the maximum area of soil to be exposed at any time.~~ that will be temporarily or permanently disturbed during construction of BBNPP is provided in Table 4.3-1. A comparison of pre- and post-construction land cover areas within the BBNPP Project Boundary is provided in Figure 4.3-2. Areas to be occupied by specific permanent and temporary construction features and operational facilities and their current land use classifications are detailed in Table 4.1-1. The limit of disturbance boundary associated with BBNPP encompasses 687 acres (278 ha), of which 677.4 acres (274.1 ha) will actually be disturbed by site preparation and construction. Furthermore, 457 acres (185 ha) would be permanently dedicated to BBNPP and its supporting facilities and converted to structures, pavement, or other intensively-maintained exterior grounds, or from forested land to scrub/shrub vegetation within transmission line and vehicle, rail and utility bridge corridors. Of the total acreage to be disturbed, approximately 622.8 ac (252 ha) of impacts will occur to areas that are not currently developed, and the maximum area of soil to be exposed at any one time will be 633 ac (261 ha). Existing land cover within certain areas of the construction footprint will not be altered by construction activities, including some portions of existing transmission line corridors and local roads.

Approximately 369 ac (149.5 ha) of undeveloped land ~~365 ac (148 ha) (developed and undeveloped)~~ would be permanently converted to structures, pavement, or other intensively-maintained exterior grounds. These facilities will include the proposed power block, switchyards, CWS and ESWS cooling towers, ESWEMS Retention Pond, combined wastewater retention pond, water treatment plant, permanent parking and laydown areas, roads, railroad, stormwater ponds, soil stockpile and CWS Makeup Water Intake Structure. Temporary disturbance of forest cover would also be considered effectively permanent due to the time needed to recreate forest cover of similar maturity.

Approximately 220.3 ac (89.2 ha) ~~265 ac (107 ha) (developed and undeveloped)~~ of undeveloped land would be temporarily lost ~~disturbed~~, only, to accommodate the concrete batch plant, temporary sedimentation pond, dewatering basin, topsoil stockpiles ~~modular assembly area,~~ and temporary offices, warehouses, and parking and laydown areas. This includes temporary wetland and regulated waterbody losses associated with the installation of water intake and discharge pipelines and wetland mitigation activities. Acreage not containing permanent structures would be restored by grading and revegetating ~~revegating~~ to the extent practicable. Wetland and stream mitigation will enhance and restore the temporarily impacted areas following PPL's mitigation plan.

Approximately 33 ac (13.4 ha) of forested land would be permanently converted to accommodate transmission lines and vehicle, rail and utility pipeline bridge corridors. These areas include both forested upland and forested wetland areas that will require forest clearing for transmission line rights-of-way and bridges. Transmission line corridors and areas under and

adjacent to bridges will be permanently maintained as scrub/shrub habitats following PPL vegetative management programs.

Construction impacts to non-wetland terrestrial habitats, only, will entail a permanent loss of 368 ac (149 ha), and temporary disturbance of 209 ac (85 ha) as shown in Figure 4.3-2 and Table 4.3-1. Permanent terrestrial habitat losses are small compared to the 4,390,530 ac (1,776,784 ha) of terrestrial habitat in the region as shown in Table 2.2-5. Wetlands comprise approximately 1.4 ac (0.6 ha) of permanently lost terrestrial habitat, as shown in Figure 4.3-3. Permanent wetland losses are also small compared to the 83,797 ac (33,911 ha) of wetlands in the region.

~~Construction impacts to terrestrial habitats, only, will entail a permanent loss of 351 ac (142 ha), and temporary disturbance of 213 ac (86 ha) as shown in Figure 4.3-2 and Table 4.3-1. Permanent terrestrial habitat losses are small compared to the 4,390,530 ac (1,776,784 ha) of terrestrial habitat in the region as shown in Table 2.2-5. Wetlands comprise approximately 36 ac (14.6 ha) of the permanently lost terrestrial habitat, as shown in Figure 4.3-2 Permanent wetland losses are also small compared to the 83,797 ac (33,911 ha) of wetlands in the region (Eastern Pennsylvania).~~

Additionally, construction of the surface water CWS Makeup Water Intake Structure and blowdown diffuser structure will involve very minor impacts of 0.7 acres (0.3 hectares) within the Susquehanna River as shown in Figure 2.2-1. Approximately 0.2 ac (0.08 ha) of the river habitat will be permanently converted to a discharge structure while the intake structure will be built at the shoreline of the River. The remaining disturbed area of approximately 0.8 ac (0.32 ha) will be temporarily disturbed, only, to accommodate cofferdams, necessary excavation work and other construction activities within the river. Wherever possible, the construction footprint has been designed to minimize impacts to the river channel and terrestrial ecosystems, specifically potential habitat for species of special concern; wetlands; and forest cover, especially large blocks of contiguous forest that provide habitat for forest interior dwelling species.

Construction activities will start upon receipt of all federal, state, county and local permits necessary to start clearing and grading of the site. Start and end dates of construction activities for non safety-related systems and structures are discussed in Section 1.0.

Section 4.3.1.1 of the BBNPP COLA ER will be revised as shown below.

4.3.1.1Vegetation

Plant Communities and Habitats

Clearing and grubbing will result in the vegetation losses shown in and summarized in Figure 4.3-2 ~~Figure 4.3-1~~ and summarized in Table 4.3-1. The permanent and temporary losses and permanent conversions will include approximately 222 ac (90 ha) ~~174 ac (70 ha)~~ of upland deciduous forest cover and approximately 11.3 ac (4.6 ha) ~~22 ac (9 ha)~~ of palustrine forested wetland cover. Of these totals, approximately 25 ac (3.2 ha) of upland forest will be converted to scrub/shrub vegetation and 7.9 ac (3.2 ha) of palustrine forest will be converted to palustrine scrub/shrub vegetation. The majority of both the upland and wetland forest covers is composed of well-developed overstory and understory strata. Many canopy trees are over 12 in (30 cm) in

diameter at breast height. Other vegetation losses from both permanent and temporary disturbances will include approximately:

- ~~174 ac (70 ha) of upland scrub/shrub vegetation,~~
- ~~179.8 ac (72.6 ha) of old field vegetation,~~
- ~~134.4 ac (54.3 ha) of agricultural land including an abandoned orchard,~~
- ~~14.0 ac (5.7 ha) of palustrine emergent (herbaceous marsh) vegetation,~~
- ~~0.7 ac (0.3 ha) of scrub/shrub vegetation,~~
- 63 ac (25.7 ha) of upland scrub/shrub vegetation,
- 168 ac (68.1 ha) of old field vegetation and former agricultural land including an abandoned orchard, and
- 148 ac (60 ha) of agricultural land.

Each of the affected types of vegetation is common throughout the region.

Important Habitats:

To the extent practicable, the construction footprint has been designed to limit impacts to the river channel and terrestrial ecosystems, specifically potential habitat for species of special concern; wetlands; and forest cover, especially large blocks of contiguous forest that provide habitat for forest interior dwelling species. Site preparation will result in the permanent loss (filling) of approximately 37 ac (15 ha) of wetland habitats, including approximately 14 ac (5.7 ha) of palustrine emergent wetlands, approximately 0.7 ac (0.3 ha) of palustrine scrub/shrub wetlands and approximately 22.2 ac (9.0 ha) of palustrine forested wetlands. Wetland impacts are discussed in more detail in Section 4.3.1.3.

The 1,200-acre ~~ac~~ (486-hectare) ~~(486 ha)~~ Susquehanna Riverlands Environmental Preserve (SREP) was also identified as an important habitat as this area encompasses a wide variety of upland and wetlands habitats along both sides of the Susquehanna River, and includes a 400-acre ~~ac~~ (162-hectare ~~ha~~) public recreation area and the Wetlands Natural Area. Site development within the SREP ~~this area~~ will consist of surface water intake and wastewater discharge related facilities and pipelines, a temporary dewatering pond for river dredging, and temporary laydown areas ~~blowdown related facilities~~. Earth disturbance will be limited and will largely take place in upland cover types that are common throughout the region. Permanent loss (filling) of wetlands associated with these structures will be minimal and is ~~are~~ included with wetland losses discussed in the above paragraph.

An estimate of all land areas within the SREP, including both developed lands and undeveloped terrestrial habitats, that will be temporarily or permanently disturbed during construction of BBNPP is provided in Table 4.3-3. A comparison of pre- and post-construction land cover areas within the SREP is provided in Table 4.3-4.

The Susquehanna River Important Bird Area (IBA #50) consists of approximately 2,111 ac (854.2 ha) and includes the Wetlands Natural Area and nearly all of the SREP. The IBA #50 is

comprised of a wide variety of upland and wetland habitats along both sides of the Susquehanna River and includes Gould Island and the Susquehanna River. Approximately 957 ac (387.1 ha) of IBA #50 occurs within the BBNPP Project Boundary and a portion of this acreage will be impacted as a result of construction (Table 4.3-6). Site development within the IBA #50 includes all of the aforementioned impacts for the SREP. In addition, development within the IBA #50 includes switchyards, transmission line corridors, the ESWEMS Retention Pond, the combined wastewater retention pond, access roads, a railroad spur, and a small section of permanent parking.

An estimate of all land areas within the IBA #50, including both developed lands and undeveloped terrestrial habitats, that will be temporarily or permanently disturbed during construction of BBNPP is provided in Table 4.3-5. A comparison of pre- and post-construction land cover areas within the IBA #50 is provided in Table 4.3-6.

RAI No. TE 4.3-7

ESRP 4.3.1

ESRP 9.3

Summary:

Provide a table of wetland acreages and types of wetland impacts (wetland loss vs. wetland conversion) for the proposed and all alternative sites.

Full Text (Supporting Information): A draft table was presented at the site audit. This table would serve to adequately answer this request with the addition of wetland losses and conversions.

Response:

Section 9.3 (Alternative Sites) of the BBNPP COLA Environmental Report (NRC, 2009) was rewritten in its entirety and submitted to the NRC on November 25, 2009 (Document BNP-2009-371, Docket No. 52-039). The revised section includes wetland and stream impact tables for BBNPP and the Alternative Sites, including two new Alternative Sites that were not originally included in the draft table presented at the site audit noted above. Subsequent to the submission of the revised section, wetland and stream impacts for BBNPP were recalculated to take into account the revised Project Boundary associated with relocation of the power block.

Table 9.3-12 in ER Section 9.3 presents a summary of the wetland and stream impacts associated with the BBNPP and Alternative Sites, and Table 9.3-13 and Table 9.3-14 provide supporting information on specific wetlands and streams, respectively, that would potentially be impacted at each site (NRC, 2009). These tables will be modified to include the revisions to BBNPP wetland and stream impacts. The modified information for BBNPP that will appear in a future revision of Table 9.3-12 is presented below in Table 1. Modified information for Tables 9.3-13 and 9.3-14 for the BBNPP is also presented below as Tables 2 and 3, respectively.

For the Alternative Sites, the information available from reconnaissance-level data collection and field inspections is not detailed enough to estimate what portion of wetlands impacted at each site would result in temporary versus permanent impacts or wetland conversion versus loss. Data for these sites was collected in conformance with the guidelines presented in NUREG-1555 for ESRP 9.3. To allow for a valid comparison between the Alternative Sites and BBNPP, the same sources of information and assumptions were used to characterize impacts at BBNPP as for the Alternative Sites based on a 420- acre EPR site footprint, even though more refined data is available for BBNPP, which will be presented in a future revision of Section 4.3.1 of the ER. The information and assumptions used are presented in Table 1. Modified wetland and stream impacts for the Alternative Sites were presented in the response to RAI 5026 EIS USACE-17 and will be provided in a future revision of Section 9.3 of the ER in Tables 9.3-12, 9.3-13, and 9.3-14. The response to RAI 5026 EIS USACE-17 also included wetland and stream impacts for an additional Alternative Site, the Martins Creek site. (NRC, 2011)

Although the design, location and installation methods of structures and pipelines along with site- specific soil and hydrologic conditions may have a significant influence on whether a wetland is converted or lost, impacts to wetlands from water and transmission line rights-of-way (ROWs) are typically temporary in nature and may result in a conversion to another wetland

type rather than a loss. Therefore, it is assumed that wetland areas potentially affected by water and transmission line ROWs at BBNPP and each of the Alternative Sites would result in a permanent conversion or temporary impact as opposed to a permanent loss. Additional information on wetland and waterway impacts along the proposed transmission and water line ROWs for the Alternative Sites are presented in the responses to RAI 5026 EIS USACE-18 and RAI 5043 EIS 9.3-47. As stated in the responses to RAI 5026 EIS USACE-18 and RAI 5043 EIS 9.3-47, the only permanent loss of wetland acreage would be within the area converted to access roads within the ROWs. (NRC, 2011).

References Cited in the Response

NRC, 2009. Bell Bend Nuclear Power Plant Environmental Report Section 9.3, Alternative Sites, BNP-2009-371, Docket No. 52-039. Letter dated November 25, 2009 from Rocco R. Sgarro, Manager Nuclear Regulatory Affairs, PPL Bell Bend, LLC to Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Enclosure 1, Bell Bend Nuclear Power Plant ER Section 9.3 Alternative Sites (ML093380312).

NRC, 2011. Bell Bend Nuclear Power Plant – Final Response to Environmental Requests for Additional information 5022, 5026, 5033, 5034, 5035, 5036, 5042 and 5043, BNP-2011-177, Docket No. 52-039. Letter dated September 23, 2011 from Rocco R. Sgarro, Manager, Nuclear Regulatory Affairs, PPL Bell Bend, LLC, to Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Enclosure 1, Responses to Environmental Requests for Additional Information No. 5022, 5026, 5033, 5034, 5035, 5036, 5042 & 5043 Bell Bend Nuclear Power Plant (ML11286A242).

Table 1 Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites

	BBNPP[1]		Humboldt		Montour		Seedco		Martins Creek	
Property Acreage	2,055 ac (831.6 ha)		3,796 ac (1,536.2 ha)		3,538 ac (1,431.8 ha)		1,061 ac (429.4 ha)		542.9 ac (219.7 ha)	
Wetlands – Total Property[2]	159 ac (64.3 ha)		119.3 ac (48.3 ha)		137.3 ac (55.6 ha)		1.9 ac (0.7 ha)		0 ac (0 ha)	
Wetlands – Site[3]	28.5 ac (11.6 ha)		3.8 ac (1.5 ha)		0 ac (0 ha)		0.7 ac (0.3 ha)		0 ac (0 ha)	
Streams – Total Property[4]	24,014 lf (7,320 m)		23,391 lf (7,129.6 m)		42,463 lf (12,942.7 m)		21,101 lf (6,431.6 m)		4,457 lf (1,358.5 m)	
Streams – Site[5]	1,562.5 lf (476.3 m)		5,057 lf (1,541.4 m)		3,891 lf (1,186.0 m)		3,790 lf (1,155 m)		3254 lf (991.9 m)	
Wetlands Affected – Site[6]	28.5 ac (11.6 ha)		3.8 ac (1.5 ha)		0 ac (0 ha)		0.7 ac (0.3 ha)		0 ac (0 ha)	
Streams Affected – Site[7]	1,562.5 lf (476.3 m)		5,057 lf (1,541.4 m)		3,891 lf (1,186.0 m)		3,790 lf (1,155 m)		3254 lf (991.9 m)	
Offsite Wetlands/Waterways Affected –ROWs and Interconnects[8]	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**
CWIS (in-water components)[9]	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)
CW Pump House[10]	0	0	0	0	0	0	0	0	0	0
Water Line ROW[11]	0	0	1.1 ac (0.4 ha)	596.3 lf (181.8 m)	1. 3 (0.6 ha)	3,417 lf (1,042 m)	0 ac (0 ha)	430.1 lf (131.1 m)	0	0

Table 1 Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites

	BBNPP[1]		Humboldt		Montour		Seedco		Martins Creek	
Transmission Line ROW[12]	0	0	7.2ac (2.9 ha)	2,210 lf 673.7 m)	4.1 ac (1.6 ha)	2,321 lf (707.4 m)	4.5 ac (1.8 ha)	2,040 lf (621.7 m)	11.1 ac (4.5 ha)	2,431 lf (741.0 m)
Railroad Spur/Improvements[11, 13]	NA	NA	NA	NA	0	0	0	208 lf (63.3 m)	0	0
Access Roadways[11, 13]	NA	NA	NA	NA	0.5 ac (0.2 ha)	246 lf (75.0 m)	0	120 lf (36.6 m)	NA	NA
Other Offsite Uses[14]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
[1]ER Section 4.1.1.1 states the BBNPP and supporting facilities will be located on 2,055 acres; ER Section 4.3.1.3 states the construction of BBNPP will permanently fill approximately 742 LF of stream and 1.4 acres of delineated wetland areas. This table provides data primarily for the approximate 420-acre EPR Site (see Footnote 2) for consistent comparison with the alternative sites and, therefore, some data in this table will be different from quantities of affected acreage stated in the ER.
[2]"*Total Property*" includes the entirety of the alternate site facility contiguous land holdings (black outline).
[3]"*Site*" includes the 420 parcel on the Total Property selected for EPR development (red outline).
[4]Describes the total length of all streams on the Total Property in linear feet. Includes both mapped perennial and intermittent waterways and obvious drainage ways observed during site inspections or interpreted from desktop mapping.
[5]Describes streams within the 420 EPR Site, calculated in the same manner as streams for "Total Property".
[6] An assumption has been made that any wetlands within the 420 acre Site would be affected by construction
[7]An assumption has been made that any streams within the 420 acre Site would be affected by construction.
[8]An assumption has been made that any wetlands or streams within the ROWs or interconnects would be affected by construction. Impacts associated with ROW construction and some in-water construction activities are temporary in nature.
[9]An assumption has been made to allow a 100'x100' area of impact for in-water cooling water intake system (CWIS) components. No alternate sites are proposed to use shoreline intake structures; all intake/discharge structures are proposed to be sited at a depth of -20' mean low water (MLW) or greater. Horizontal directional drilling (HDD) is proposed to access off shore locations.
[10]A cooling water pump house would be located alongshore to the selected cooling water source, and would occupy 0.5 acre total area. It is assumed that the pump house would be located in an upland area near the shore.
[11]For the purposes of this evaluation, it has been assumed that any water line ROW would require a 120' width for construction to allow installation of 2-60" pipes, except that the width of the ROW would be reduced to 80' when crossing streams and wetlands. The same width corridor was assumed for the road and railroad access.
[12]For new transmission line construction or reconductoring of existing circuits to accommodate the EPR, a 200' wide cleared ROW is assumed to be required.
[13]NA (Not Applicable) because there is existing road or railroad access to the site.
[14]Other offsite uses include any required parking, laydown, staging requiring land alteration.
Sources:
USFWS, 2008b; ESRI, 2005

Table 2 Summary of Potential Onsite and Offsite Wetland Impacts, BBNPP and Alternative Sites

Site	Number of discrete wetlands or systems	Wetland types (NWI classification)[1]	Description
BBNPP[2]	3	1) Freshwater Pond (Onsite) 2) Freshwater Forested/Shrub Wetland (Onsite) 3) Freshwater Emergent Wetland (Onsite)	1) 3.1 ac (1.3 ha) 2) 19.2 ac (7.8 ha) 3) 6.2 ac (2.5 ha)
Humboldt	10	1) Freshwater Pond (Onsite) 2) Freshwater Pond 3) Freshwater Pond 4) Riverine 5) Freshwater Forested/Shrub Wetland 6) Freshwater Pond 7) Freshwater Forested/Shrub Wetland 8) Freshwater Emergent Wetland 9) Riverine 10) Freshwater Pond	1) 3.8 ac (1.5 ha) 2) 0.5 ac (0.2 ha) 3) 0.2 ac (0.1 ha) 4) 0.3 ac (0.1 ha) 5) 0.1 ac (0.03 ha) 6) 1.1 ac (0.4 ha) 7) 0.8 ac (0.3 ha) 8) 0.3 ac (0.1 ha) 9) 3.6 ac (1.5 ha) 10) 1.4 ac (0.6 ha)
Montour	9	1) Freshwater Forested/Shrub Wetland 2) Freshwater Forested/Shrub Wetland 3) Freshwater Emergent Wetland 4) Freshwater Emergent Wetland 5) Freshwater Emergent Wetland 6) Freshwater Forested/Shrub Wetland 7) Freshwater Pond 8) Riverine 9) Freshwater Pond (Offsite Road Impact)	1) 0.02 ac (0.01 ha) 2) 0.1 ac (0.04 ha) 3) 0.2 ac (0.1 ha) 4) 0.1 ac (0.06 ha) 5) 0.5 ac (0.2 ha) 6) 0.4 ac (0.2 ha) 7) 0.1 ac (0.03 ha) 8) 4.0 ac (1.6 ha) 9) 0.5 ac (0.2 ha)
Seedco	6	1) Freshwater Pond (Onsite) 2) Freshwater Pond 3) Freshwater Emergent Wetland 4) Freshwater Forested/Shrub Wetland 5) Freshwater Forested/Shrub Wetland 6) Freshwater Emergent Wetland	1) 0.7 ac (0.3 ha) 2) 0.5 ac (0.2 ha) 3) 1.0 ac (0.4 ha) 4) 0.5 ac (0.2 ha) 5) 0.7 ac (0.3 ha) 6) 1.8 ac (0.7 ha)
Martins Creek	21	1) Freshwater Pond 2) Freshwater Forested/Shrub Wetland 3) Freshwater Emergent Wetland 4) Freshwater Pond	1) 0.1 ac (0.04 ha) 2) 0.01 ac (0.004 ha) 3) 0.4 ac (0.2 ha) 4) 0.1 ac (0.04 ha)

Table 2 Summary of Potential Onsite and Offsite Wetland Impacts, BBNPP and Alternative Sites

Site	Number of discrete wetlands or systems	Wetland types (NWI classification)[1]	Description
		5) Freshwater Emergent Wetland	5) 1.3 ac (0.5 ha)
		6) Freshwater Forested/Shrub Wetland	6) 1.4 ac (0.6 ha)
		7) Freshwater Forested/Shrub Wetland	7) 0.004 ac (0.002 ha)
		8) Freshwater Forested/Shrub Wetland	8) 0.1 ac (0.04 ha)
		9) Freshwater Forested/Shrub Wetland	9) 0.03 ac (0.01 ha)
		10) Freshwater Emergent Wetland	10) 1.4 ac (0.6 ha)
		11) Freshwater Forested/Shrub Wetland	11) 0.3 ac (0.1 ha)
		12) Freshwater Forested/Shrub Wetland	12) 0.2 ac (0.1 ha)
		13) Freshwater Forested/Shrub Wetland	13) 1.5 ac (0.6 ha)
		14) Freshwater Pond	14) 1.4 ac (0.6 ha)
		15) Freshwater Pond	15) 1.3 ac (0.5 ha)
		16) Freshwater Forested/Shrub Wetland	16) 0.2 ac (0.1 ha)
		17) Riverine	17) 0.4 ac (0.2 ha)
		18) Riverine	18) 0.1 ac (0.04 ha)
		19) Freshwater Forested/Shrub Wetland	19) 0.4 ac (0.2 ha)
		20) Freshwater Forested/Shrub Wetland	20) 0.4 ac (0.2 ha)
		21) Freshwater Pond	21) 0.1 ac (0.04 ha)

Notes:
[1]Unless otherwise indicated, the wetland listed is located offsite.
[2]ER Section 4.1.1.1 states the BBNPP and supporting facilities will be located on 2,055 acres; ER Section 4.3.1.3 states the construction of BBNPP will permanently fill approximately 742 lf of stream and 1.4 acres of delineated wetland areas. This table provides data primarily for the approximate 420-acre EPR Site for consistent comparison with the alternative sites and, therefore, some data in this table will be different from quantities of affected acreage stated in the ER.
Source: USFWS, 2008b

Table 3 Summary of Potential Onsite and Offsite Waterway Impacts, BBNPP and Alternative Sites

	Number of/names of streams[1]	Stream type	Description
BBNPP[2]	A. Walker Run (Onsite)	A. Perennial	A. 1,562.5 lf (476.3 m)
Humboldt	A. Stony Creek (Onsite)	A. Perennial	A. 5,057 lf (1541.4 m)
	B. Tributary of Stony Creek	B. Intermittent	B. 120.5 lf (36.7 m)
	C. Black Creek	C. Perennial	C. 134.7 lf (41.1 m)
	D. Tributary of Black Creek	D. Perennial	D. 128.3 lf (39.1 m)
	E. Tributary of Black Creek	E. Perennial	E. 88.2 lf (26.9 m)
	F. Tributary of Black Creek	F. Perennial	F. 124.6 lf (38.0 m)
	G. Tributary of Stony Creek	G. Perennial	G. 240.0 lf (73.2 m)
	H. Stony Creek	H. Perennial	H. 336.9 lf (102.7 m)
	I. Black Creek	I. Perennial	I. 205.0 lf (62.5 m)
	J. Tributary of Little Nescopeck Creek	J. Perennial	J. 207.7 lf (63.3 m)
	K. Tributary of Black Creek	K. Perennial	K. 239.0 lf (72.9 m)
	L. Big Wapwallopen Creek	L. Perennial	L. 295.8 lf (90.2 m)
	M. Tributary of Big Wapwallopen Creek	M. Perennial	M. 216.9 lf (66.1 m)
	N. Tributary of Big Wapwallopen Creek	N. Perennial	N. 262.2 lf (79.9 m)
	O. Susquehanna River	O. Perennial	O. 206.8 lf (63.0 m)
Montour	A. East Branch Chillisquaque Creek (Onsite)	A. Perennial	A. 3,891 lf (1186.0 m)
	B. East Branch Chillisquaque Creek	B. Perennial	B. 144.0 lf (43.9 m)
	C. Chillisquaque Creek	C. Perennial	C. 177.7 lf (54.2 m)
	D. County Line Branch	D. Perennial	D. 130.6 lf (39.8 m)
	E. Beaver Run	E. Perennial	E. 681.9 lf (207.8 m)
	F. Beaver Run	F. Perennial	F. 204.8 lf (62.4 m)
	G. Tributary of Beaver Run	G. Perennial	G. 184.9 lf (56.4 m)
	H. Beaver Run	H. Perennial	H. 289.8 lf (88.3 m)
	I. Tributary of Warrior Run	I. Perennial	I. 141.5 lf (43.1 m)
	J. Tributary of Warrior Run	J. Perennial	J. 212.2 lf (64.7 m)
	K. Warrior Run	K. Perennial	K. 627.2 lf (191.2 m)
	L. Tributary of Warrior Run	L. Intermittent	L. 276.8 lf (84.4 m)
	M. Warrior Run	M. Perennial	M. 11.8 lf (3.6 m)
	N. Warrior Run	N. Perennial	N. 206.5 lf (62.9 m)
	O. Warrior Run	O. Perennial	O. 127.5 lf (38.9 m)
	P. Tributary of Mud Creek	P. Perennial	P. 200.3 lf (61.1 m)
	Q. Mud Creek	Q. Perennial	Q. 200.0 lf (61.0 m)

Table 3 Summary of Potential Onsite and Offsite Waterway Impacts, BBNPP and Alternative Sites

	Number of/names of streams[1]	Stream type	Description
	R. Tributary of Mud Creek	R. Intermittent	R. 269.9 lf (82.3 m)
	S. Mahoning Creek	S. Perennial	S. 205.9 lf (62.8 m)
	T. Tributary of Mahoning Creek	T. Intermittent	T. 298.3 lf (90.9 m)
	U. Frozen Run	U. Intermittent	U. 205.3 lf (62.6 m)
	V. Frozen Run	V. Perennial	V. 201.8 lf (61.5 m)
	W. Tributary of Frozen Run	W. Perennial	W. 303.4 lf (92.5 m)
	X. Montour Run	X. Perennial	X. 223.0 lf (68.0 m)
	Y. Susquehanna River	Y. Perennial	Y. 213.4 lf (65.0 m)
Seedco	A. Shamokin Creek (Onsite)	A. Perennial	A. 3790.0 lf (1155.2 m)
	B. Quaker Run	B. Perennial	B. 132.6 lf (40.4 m)
	C. Tributary of Shamokin Creek	C. Perennial	C. 174.3 lf (53.1 m)
	D. Little Roaring Creek	D. Intermittent	D. 123.2 lf (37.6 m)
	E. Tributary of Shamokin Creek	E. Perennial	E. 207.5 lf (63.2 m)
	F. Tributary of Mugser Run	F. Intermittent	F. 484.5 lf (147.7 m)
	G. Mugser Run	G. Perennial	G. 200.2 lf (61.0 m)
	H Tributary of Roaring Creek	H. Intermittent	H. 302.0 lf (92.0 m)
	I. Tributary of Roaring Creek	I. Perennial	I. 205.3 lf (62.6 m)
	J. Roaring Creek	J. Perennial	J. 427.2 lf (130.2 m)
	K. Tributary of Roaring Creek	K. Intermittent	K. 213.1 lf (65.0 m)
Martins Creek	A. Buckhorn Creek (Onsite)	A. Perennial	A. 3254.3 lf (991.9 m)
	B. Pophandusing Brook	B. Perennial	B. 221.3 lf (67.5 m)
	C. Tributary of Pequest River	C. Perennial	C. 200.1 lf (61.0 m)
	D. Tributary of Pequest River	D. Perennial	D. 426.7 lf (130.1 m)
	E. Tributary of Pequest River	E. Perennial	E. 398.7 lf (121.5 m)
	F. Pohatcong Creek	F. Perennial	F. 246.6 lf (75.2 m)
	G. Unnamed Canal/Ditch	G. Canal/Ditch	G. 506.9 lf (154.5 m)
	H. Trout Brook	H. Perennial	H. 202.4 lf (61.7 m)
	I. Musconetcong River	I. Perennial	I. 228.3 lf (69.6 m)

Notes:
[1]Unless otherwise indicated, the stream/creek listed is located offsite.
[2]BBNPP water bodies are identified in COLA ER Sections 2.3.1.1 and 2.4.2 and were mapped during field surveys in 2008, 2010, and 2011. However, to allow for consistent comparison with the Alternative Sites, only Walker Run was assumed to be "onsite."
Source: ESRI, 2005

COLA Impact:

BBNPP information in BBNPP COLA ER Tables 9.3-12 through 9.3-14 will be revised, as follows, in a future revision of the COLA. Note: The revisions to BBNPP COLA ER Tables 9.3-12 through 9.3-14 for the Alternative Sites (i.e., Humboldt, Montour, Seedco, and Martins Creek) were submitted to the NRC on September 23, 2011 (ML11286A242).

Table 9.3-12 Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites

	BBNPP[1]		Humboldt		Montour		Seedco		Martins Creek	
Property Acreage	~~882 ac~~ 2,055 ac (~~356.9 ha~~) (831.6 ha)		3,796 ac (1,536.2 ha)		3,538 ac (1,431.8 ha)		1,061 ac (429.4 ha)		542.9 ac (219.7 ha)	
Wetlands – Total Property[2]	~~39.6~~ 159 ac (~~16.0~~ 64.3 ha)		119.3 ac (48.3 ha)		137.3 ac (55.6 ha)		1.9 ac (0.7 ha)		0 ac (0 ha)	
Wetlands – Site[3]	28.~~85~~ ac (11.~~76~~ ha)		3.8 ac (1.5 ha)		0 ac (0 ha)		0.7 ac (0.3 ha)		0 ac (0 ha)	
Streams – Total Property[4]	~~5,044 lf~~ 24,014 lf (~~1,537.4 m~~) (7,320 m)		23,391 lf (7,129.6 m)		42,463 lf (12,942.7 m)		21,101 lf (6,431.6 m)		4,457 lf (1,358.5 m)	
Streams – Site[5]	~~2,519~~ 1,562.5 lf (~~767.8~~ 476.3 m)		5,057 lf (1,541.4 m)		3,891 lf (1,186.0 m)		3,790 lf (1,155 m)		3254 lf (991.9 m)	
Wetlands Affected – Site[6]	28.~~85~~ ac (~~16.0~~ 11.6 ha)		3.8 ac (1.5 ha)		0 ac (0 ha)		0.7 ac (0.3 ha)		0 ac (0 ha)	
Streams Affected – Site[7]	~~2,519~~ 1,562.5 lf (~~767.8~~ 476.3 m)		5,057 lf (1,541.4 m)		3,891 lf (1,186.0 m)		3,790 lf (1,155 m)		3254 lf (991.9 m)	
Offsite Wetlands/Waterways Affected –ROWs and Interconnects[8]	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**	**Wetlands**	**Streams**
CWIS (in-water components)[9]	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)	0.2 ac (0.08 ha)	0 (streams classified as wetlands)
CW Pump House[10]	0	0	0	0	0	0	0	0	0	0
Water Line ROW[11]	0	0	1.1 ac (0.4 ha)	596.3 lf (181.8 m)	1. 3 (0.6 ha)	3,417 lf (1,042 m)	0 ac (0 ha)	430.1 lf (131.1 m)	0	0
Transmission Line ROW[12]	0	0	7.2ac (2.9 ha)	2,210 lf 673.7 m)	4.1 ac (1.6 ha)	2,321 lf (707.4 m)	4.5 ac (1.8 ha)	2,040 lf (621.7 m)	11.1 ac (4.5 ha)	2,431 lf (741.0 m)

Table 9.3-12 Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites

	BBNPP[1]		Humboldt		Montour		Seedco		Martins Creek	
Railroad Spur/Improvements[11, 13]	NA	NA	NA	NA	0	0	0	208 lf (63.3 m)	0	0
Access Roadways[11, 13]	NA	NA	NA	NA	0.5 ac (0.2 ha)	246 lf (75.0 m)	0	120 lf (36.6 m)	NA	NA
Other Offsite Uses[14]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
[1]ER Section 4.1.1.1 states the BBNPP and supporting facilities will be located on 2,055 ~~882~~ acres; ER Section 4.3.1.3 states the construction of BBNPP will permanently fill approximately 742 ~~340~~ LF of stream and 1.4 ~~36~~ acres of delineated wetland areas. This table provides data primarily for the approximate 420-acre EPR Site (see Footnote 2) for consistent comparison with the alternative sites and, therefore, some data in this table will be different from quantities of affected acreage stated in the ER.
[2]"*Total Property*" includes the entirety of the alternate site facility contiguous land holdings (black outline).
[3]"*Site*" includes the 420 parcel on the Total Property selected for EPR development (red outline).
[4]Describes the total length of all streams on the Total Property in linear feet. Includes both mapped perennial and intermittent waterways and obvious drainage ways observed during site inspections or interpreted from desktop mapping.
[5]Describes streams within the 420 EPR Site, calculated in the same manner as streams for "Total Property".
[6] An assumption has been made that any wetlands within the 420 acre Site would be affected by construction
[7]An assumption has been made that any streams within the 420 acre Site would be affected by construction.
[8]An assumption has been made that any wetlands or streams within the ROWs or interconnects would be affected by construction. Impacts associated with ROW construction and some in-water construction activities are temporary in nature.
[9]An assumption has been made to allow a 100'x100' area of impact for in-water cooling water intake system (CWIS) components. No alternate sites are proposed to use shoreline intake structures; all intake/discharge structures are proposed to be sited at a depth of -20' mean low water (MLW) or greater. Horizontal directional drilling (HDD) is proposed to access off shore locations.
[10]A cooling water pump house would be located alongshore to the selected cooling water source, and would occupy 0.5 acre total area. It is assumed that the pump house would be located in an upland area near the shore.
[11]For the purposes of this evaluation, it has been assumed that any water line ROW would require a 120' width for construction to allow installation of 2-60" pipes, except that the width of the ROW would be reduced to 80' when crossing streams and wetlands. The same width corridor was assumed for the road and railroad access.
[12]For new transmission line construction or reconductoring of existing circuits to accommodate the EPR, a 200' wide cleared ROW is assumed to be required.
[13]NA (Not Applicable) because there is existing road or railroad access to the site.
[14]Other offsite uses include any required parking, laydown, staging requiring land alteration.
Sources:
USFWS, 2008b; ESRI, 2005

Table 9.3-13 Summary of Potential Onsite and Offsite Wetland Impacts, BBNPP and Alternative Sites

Site	Number of discrete wetlands or systems	Wetland types (NWI classification)[1]	Description
BBNPP[2]	3	1) Freshwater Pond (Onsite) 2) Freshwater Forested/Shrub Wetland (Onsite) 3) Freshwater Emergent Wetland (Onsite)	1) 3.1 ~~3.2~~ ac (1.3 ha) 2) 19.2 ~~19.1~~ ac (7.8 ~~7.7~~ ha) 3) 6.2 ~~6.5~~ ac (2.5 ~~2.6~~ ha)
Humboldt	10	1) Freshwater Pond (Onsite) 2) Freshwater Pond 3) Freshwater Pond 4) Riverine 5) Freshwater Forested/Shrub Wetland 6) Freshwater Pond 7) Freshwater Forested/Shrub Wetland 8) Freshwater Emergent Wetland 9) Riverine 10) Freshwater Pond	1) 3.8 ac (1.5 ha) 2) 0.5 ac (0.2 ha) 3) 0.2 ac (0.1 ha) 4) 0.3 ac (0.1 ha) 5) 0.1 ac (0.03 ha) 6) 1.1 ac (0.4 ha) 7) 0.8 ac (0.3 ha) 8) 0.3 ac (0.1 ha) 9) 3.6 ac (1.5 ha) 10) 1.4 ac (0.6 ha)
Montour	9	1) Freshwater Forested/Shrub Wetland 2) Freshwater Forested/Shrub Wetland 3) Freshwater Emergent Wetland 4) Freshwater Emergent Wetland 5) Freshwater Emergent Wetland 6) Freshwater Forested/Shrub Wetland 7) Freshwater Pond 8) Riverine 9) Freshwater Pond (Offsite Road Impact)	1) 0.02 ac (0.01 ha) 2) 0.1 ac (0.04 ha) 3) 0.2 ac (0.1 ha) 4) 0.1 ac (0.06 ha) 5) 0.5 ac (0.2 ha) 6) 0.4 ac (0.2 ha) 7) 0.1 ac (0.03 ha) 8) 4.0 ac (1.6 ha) 9) 0.5 ac (0.2 ha)
Seedco	6	1) Freshwater Pond (Onsite) 2) Freshwater Pond 3) Freshwater Emergent Wetland 4) Freshwater Forested/Shrub Wetland 5) Freshwater Forested/Shrub Wetland 6) Freshwater Emergent Wetland	1) 0.7 ac (0.3 ha) 2) 0.5 ac (0.2 ha) 3) 1.0 ac (0.4 ha) 4) 0.5 ac (0.2 ha) 5) 0.7 ac (0.3 ha) 6) 1.8 ac (0.7 ha)
Martins Creek	21	1) Freshwater Pond 2) Freshwater Forested/Shrub Wetland 3) Freshwater Emergent Wetland 4) Freshwater Pond	1) 0.1 ac (0.04 ha) 2) 0.01 ac (0.004 ha) 3) 0.4 ac (0.2 ha) 4) 0.1 ac (0.04 ha)

Table 9.3-13 Summary of Potential Onsite and Offsite Wetland Impacts, BBNPP and Alternative Sites

Site	Number of discrete wetlands or systems	Wetland types (NWI classification)[1]	Description
		5) Freshwater Emergent Wetland	5) 1.3 ac (0.5 ha)
		6) Freshwater Forested/Shrub Wetland	6) 1.4 ac (0.6 ha)
		7) Freshwater Forested/Shrub Wetland	7) 0.004 ac (0.002 ha)
		8) Freshwater Forested/Shrub Wetland	8) 0.1 ac (0.04 ha)
		9) Freshwater Forested/Shrub Wetland	9) 0.03 ac (0.01 ha)
		10) Freshwater Emergent Wetland	10) 1.4 ac (0.6 ha)
		11) Freshwater Forested/Shrub Wetland	11) 0.3 ac (0.1 ha)
		12) Freshwater Forested/Shrub Wetland	12) 0.2 ac (0.1 ha)
		13) Freshwater Forested/Shrub Wetland	13) 1.5 ac (0.6 ha)
		14) Freshwater Pond	14) 1.4 ac (0.6 ha)
		15) Freshwater Pond	15) 1.3 ac (0.5 ha)
		16) Freshwater Forested/Shrub Wetland	16) 0.2 ac (0.1 ha)
		17) Riverine	17) 0.4 ac (0.2 ha)
		18) Riverine	18) 0.1 ac (0.04 ha)
		19) Freshwater Forested/Shrub Wetland	19) 0.4 ac (0.2 ha)
		20) Freshwater Forested/Shrub Wetland	20) 0.4 ac (0.2 ha)
		21) Freshwater Pond	21) 0.1 ac (0.04 ha)

Notes:
[1]Unless otherwise indicated, the wetland listed is located offsite.
[2]ER Section 4.1.1.1 states the BBNPP and supporting facilities will be located on 2,055 ~~882~~ acres; ER Section 4.3.1.3 states the construction of BBNPP will permanently fill approximately 742 ~~340~~ lf of stream and 1.4 ~~36~~ acres of delineated wetland areas. This table provides data primarily for the approximate 420-acre EPR Site for consistent comparison with the alternative sites and, therefore, some data in this table will be different from quantities of affected acreage stated in the ER.
Source: USFWS, 2008b

Table 9.3-14 Summary of Potential Onsite and Offsite Waterway Impacts, BBNPP and Alternative Sites

	Number of/names of streams[1]	Stream type	Description
BBNPP[2]	A. Walker Run (Onsite)	A. Perennial	A. 1,562.5 ~~2519~~ lf (476.3 ~~767.8~~ m)
Humboldt	A. Stony Creek (Onsite)	A. Perennial	A. 5,057 lf (1541.4 m)
	B. Tributary of Stony Creek	B. Intermittent	B. 120.5 lf (36.7 m)
	C. Black Creek	C. Perennial	C. 134.7 lf (41.1 m)
	D. Tributary of Black Creek	D. Perennial	D. 128.3 lf (39.1 m)
	E. Tributary of Black Creek	E. Perennial	E. 88.2 lf (26.9 m)
	F. Tributary of Black Creek	F. Perennial	F. 124.6 lf (38.0 m)
	G. Tributary of Stony Creek	G. Perennial	G. 240.0 lf (73.2 m)
	H. Stony Creek	H. Perennial	H. 336.9 lf (102.7 m)
	I. Black Creek	I. Perennial	I. 205.0 lf (62.5 m)
	J. Tributary of Little Nescopeck Creek	J. Perennial	J. 207.7 lf (63.3 m)
	K. Tributary of Black Creek	K. Perennial	K. 239.0 lf (72.9 m)
	L. Big Wapwallopen Creek	L. Perennial	L. 295.8 lf (90.2 m)
	M. Tributary of Big Wapwallopen Creek	M. Perennial	M. 216.9 lf (66.1 m)
	N. Tributary of Big Wapwallopen Creek	N. Perennial	N. 262.2 lf (79.9 m)
	O. Susquehanna River	O. Perennial	O. 206.8 lf (63.0 m)
Montour	A. East Branch Chillisquaque Creek (Onsite)	A. Perennial	A. 3,891 lf (1186.0 m)
	B. East Branch Chillisquaque Creek	B. Perennial	B. 144.0 lf (43.9 m)
	C. Chillisquaque Creek	C. Perennial	C. 177.7 lf (54.2 m)
	D. County Line Branch	D. Perennial	D. 130.6 lf (39.8 m)
	E. Beaver Run	E. Perennial	E. 681.9 lf (207.8 m)
	F. Beaver Run	F. Perennial	F. 204.8 lf (62.4 m)
	G. Tributary of Beaver Run	G. Perennial	G. 184.9 lf (56.4 m)
	H. Beaver Run	H. Perennial	H. 289.8 lf (88.3 m)
	I. Tributary of Warrior Run	I. Perennial	I. 141.5 lf (43.1 m)
	J. Tributary of Warrior Run	J. Perennial	J. 212.2 lf (64.7 m)
	K. Warrior Run	K. Perennial	K. 627.2 lf (191.2 m)
	L. Tributary of Warrior Run	L. Intermittent	L. 276.8 lf (84.4 m)
	M. Warrior Run	M. Perennial	M. 11.8 lf (3.6 m)
	N. Warrior Run	N. Perennial	N. 206.5 lf (62.9 m)
	O. Warrior Run	O. Perennial	O. 127.5 lf (38.9 m)
	P. Tributary of Mud Creek	P. Perennial	P. 200.3 lf (61.1 m)
	Q. Mud Creek	Q. Perennial	Q. 200.0 lf (61.0 m)

Table 9.3-14 Summary of Potential Onsite and Offsite Waterway Impacts, BBNPP and Alternative Sites

	Number of/names of streams[1]	Stream type	Description
	R. Tributary of Mud Creek	R. Intermittent	R. 269.9 lf (82.3 m)
	S. Mahoning Creek	S. Perennial	S. 205.9 lf (62.8 m)
	T. Tributary of Mahoning Creek	T. Intermittent	T. 298.3 lf (90.9 m)
	U. Frozen Run	U. Intermittent	U. 205.3 lf (62.6 m)
	V. Frozen Run	V. Perennial	V. 201.8 lf (61.5 m)
	W. Tributary of Frozen Run	W. Perennial	W. 303.4 lf (92.5 m)
	X. Montour Run	X. Perennial	X. 223.0 lf (68.0 m)
	Y. Susquehanna River	Y. Perennial	Y. 213.4 lf (65.0 m)
Seedco	A. Shamokin Creek (Onsite)	A. Perennial	A. 3790.0 lf (1155.2 m)
	B. Quaker Run	B. Perennial	B. 132.6 lf (40.4 m)
	C. Tributary of Shamokin Creek	C. Perennial	C. 174.3 lf (53.1 m)
	D. Little Roaring Creek	D. Intermittent	D. 123.2 lf (37.6 m)
	E. Tributary of Shamokin Creek	E. Perennial	E. 207.5 lf (63.2 m)
	F. Tributary of Mugser Run	F. Intermittent	F. 484.5 lf (147.7 m)
	G. Mugser Run	G. Perennial	G. 200.2 lf (61.0 m)
	H Tributary of Roaring Creek	H. Intermittent	H. 302.0 lf (92.0 m)
	I. Tributary of Roaring Creek	I. Perennial	I. 205.3 lf (62.6 m)
	J. Roaring Creek	J. Perennial	J. 427.2 lf (130.2 m)
	K. Tributary of Roaring Creek	K. Intermittent	K. 213.1 lf (65.0 m)
Martins Creek	A. Buckhorn Creek (Onsite)	A. Perennial	A. 3254.3 lf (991.9 m)
	B. Pophandusing Brook	B. Perennial	B. 221.3 lf (67.5 m)
	C. Tributary of Pequest River	C. Perennial	C. 200.1 lf (61.0 m)
	D. Tributary of Pequest River	D. Perennial	D. 426.7 lf (130.1 m)
	E. Tributary of Pequest River	E. Perennial	E. 398.7 lf (121.5 m)
	F. Pohatcong Creek	F. Perennial	F. 246.6 lf (75.2 m)
	G. Unnamed Canal/Ditch	G. Canal/Ditch	G. 506.9 lf (154.5 m)
	H. Trout Brook	H. Perennial	H. 202.4 lf (61.7 m)
	I. Musconetcong River	I. Perennial	I. 228.3 lf (69.6 m)

Notes:
[1]Unless otherwise indicated, the stream/creek listed is located offsite.
[2]BBNPP water bodies are identified in COLA ER Sections 2.3.1.1 and 2.4.2 and were mapped during field surveys in 2008, 2010, and 2011. However, to allow for consistent comparison with the alternative sites, only Walker Run was assumed to be "onsite."
Source: ESRI, 2005

RAI No. TE 4.3-10

ESRP 4.3.1

Summary:

Provide a consistent representation of temporary and permanent grading on all figures.

Full Text (Supporting Information): Address the areal extents of temporary and permanent disturbances that appear inconsistent within the ER: see Figures 4.3-1 and 4.3-2 and compare to Figure 4.1-1 near the proposed intake structure.

Response:

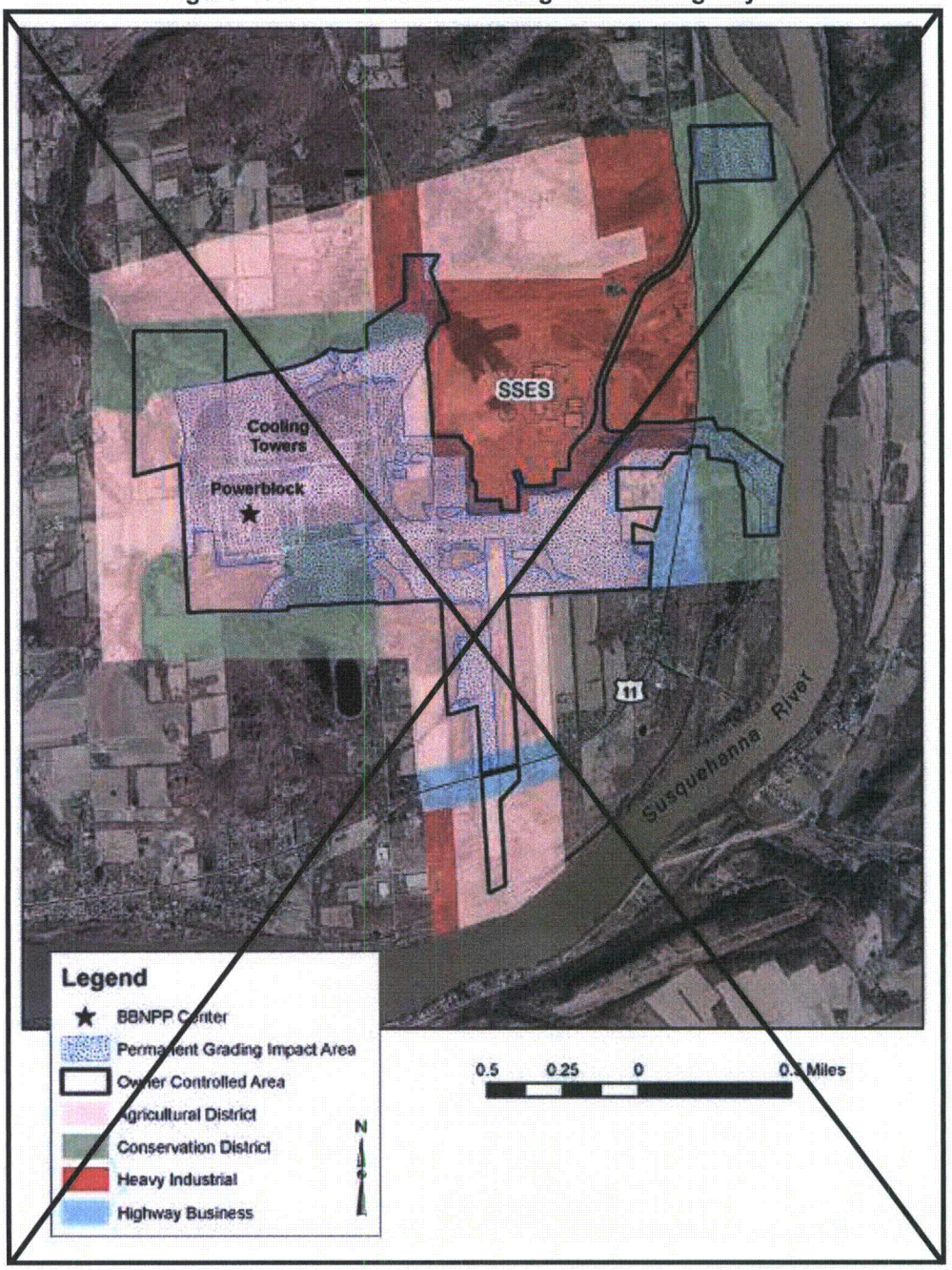
It is assumed that all land areas where permanent habitat losses and most temporary habitat losses will occur, along with previously developed areas impacted by construction, will be subject to earth disturbance activities, including clearing, grubbing and grading to varying degrees, and will therefore be classified as grading impact areas as presented in ER Figure 4.1-1. Areas of permanent conversion from one habitat category to another that do not involve earthwork are not considered to be impacted by grading.

Existing ER Figures 4.3-1, 4.3-2, and 4.1-1 have been revised based on the BBNPP Plot Plan Change (PPC) and PPC and Related Grading Changes and any inconsistencies related to the areal extent of temporary or permanent disturbances have been addressed as noted above. ER Figures 4.3-1 and 4.3-2 have also been renumbered as Figures 4.3-2 and 4.3-3 to accommodate a new Figure 4.3-1.

COLA Impact:

BBNPP COLA ER Figure 4.1-1 will be revised in a future revision of the COLA as shown below. BBNPP COLA ER Figures 4.3-1 and 4.3-2 will be revised in a future revision of the COLA and renumbered as Figures 4.3-2 and 4.3-3, respectively.

Figure 4.1-1-BBNPP Site Zoning and Grading Layout



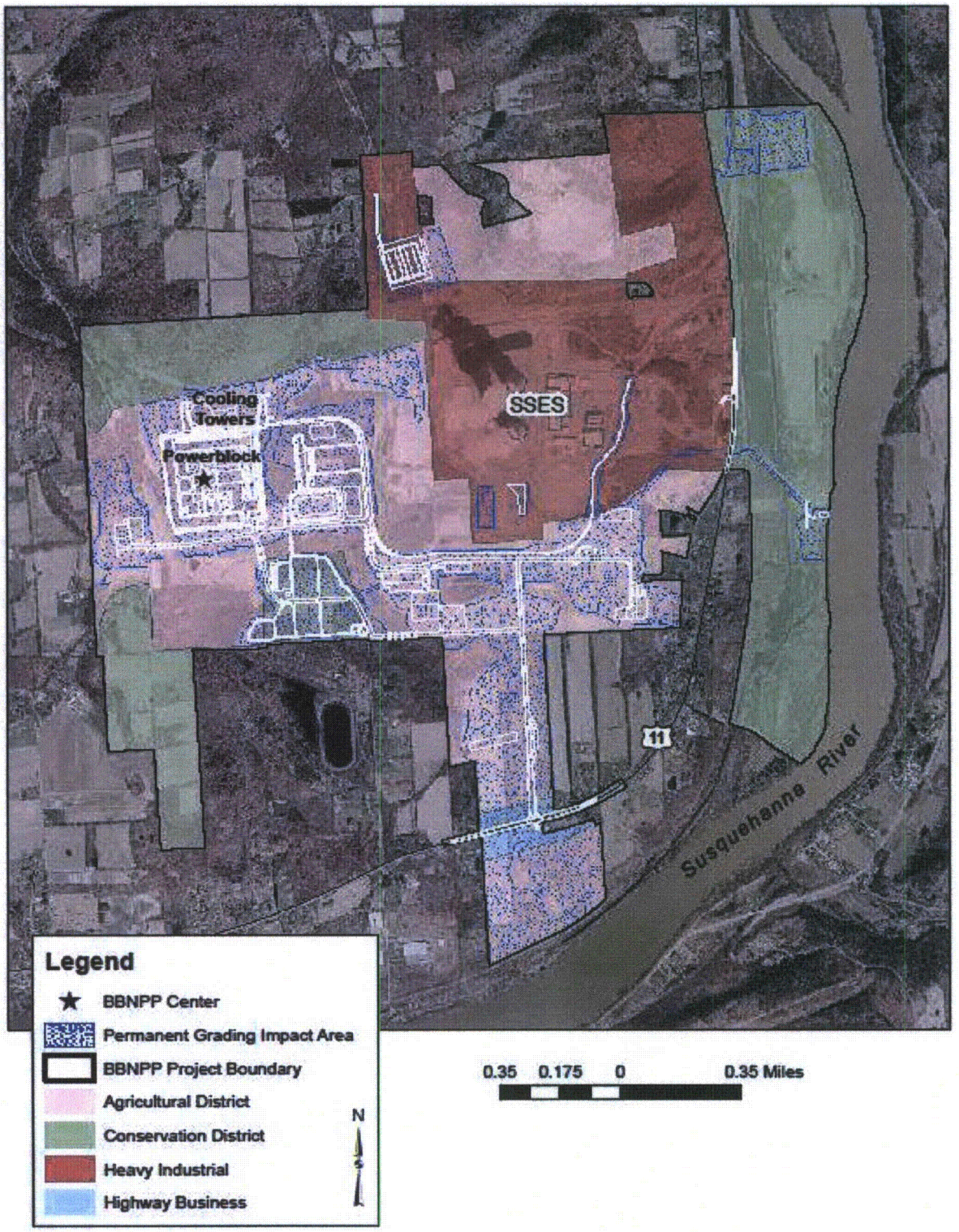

Cooling Towers
Powerblock
SSES
11
Susquehanna River
Legend
BBNPP Center
Permanent Grading Impact Area
BBNPP Project Boundary
Agricultural District
Conservation District
Heavy Industrial
Highway Business
N
S
0.35 0.175 0 0.35 Miles

Figure 4.3-1—BBNPP Owner Controlled Area (OCA) Vegetation Impacts

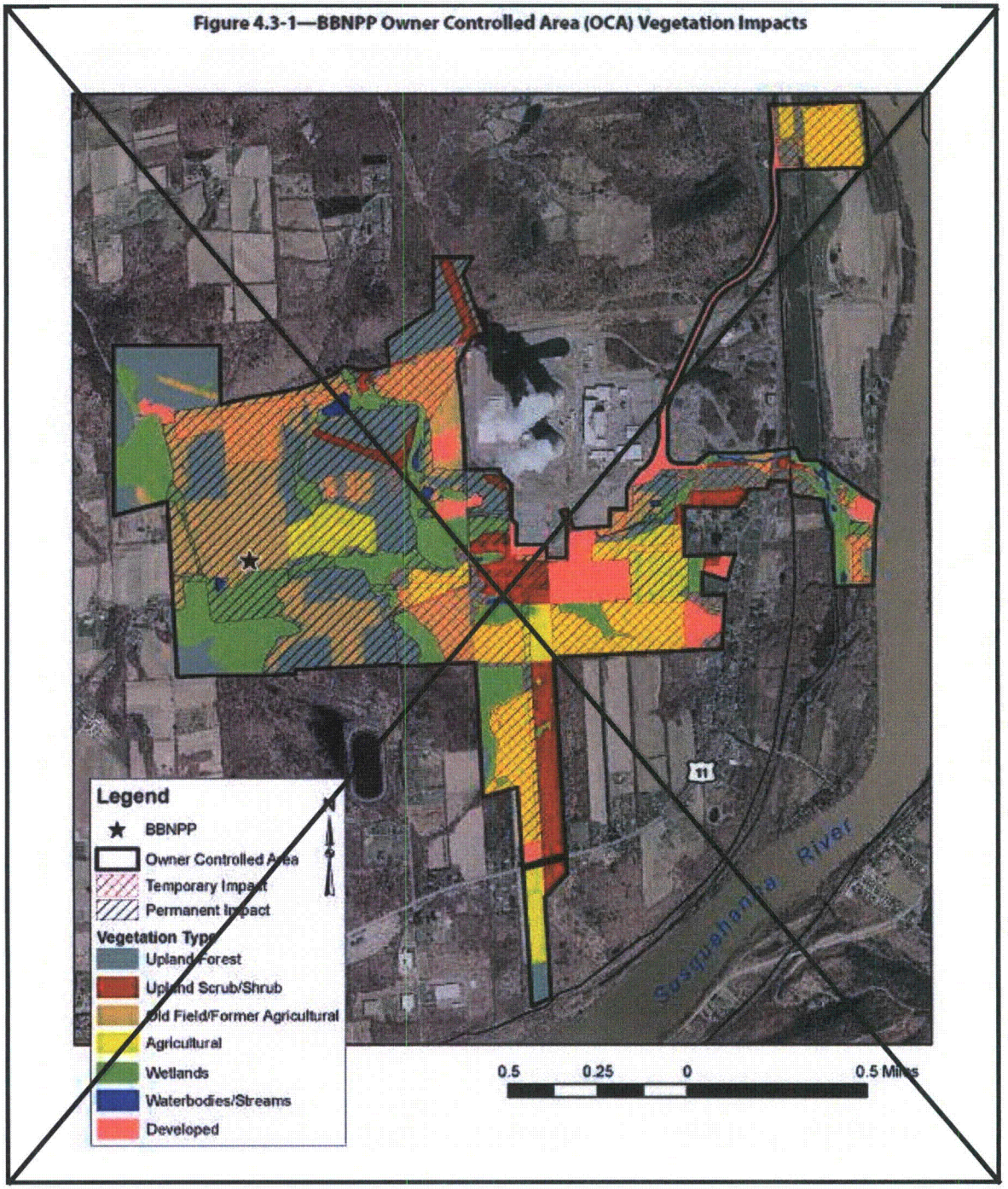


Figure 4.3-2. BBNPP Vegetation Impacts

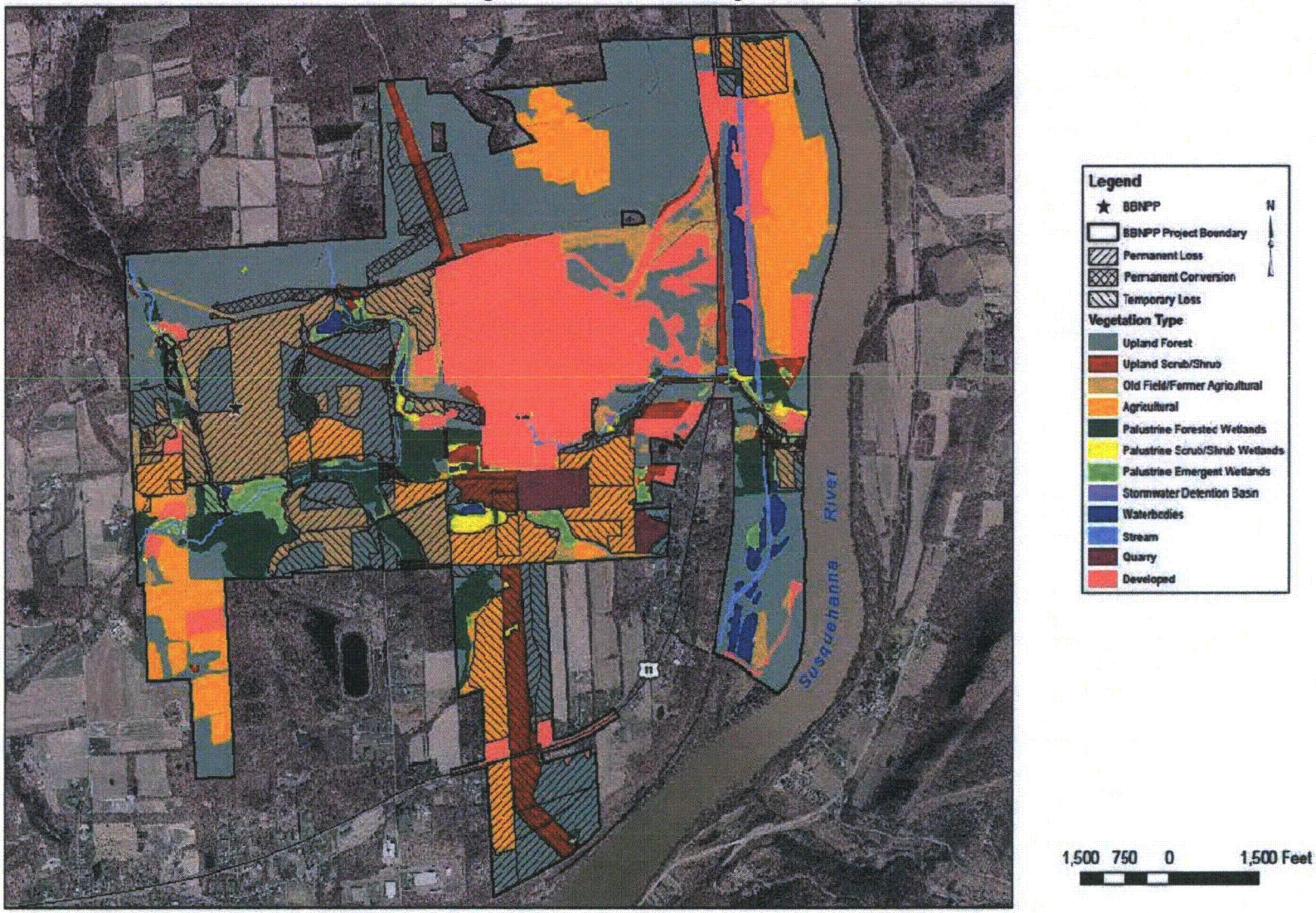


Figure 4.3-2 BBNPP Wetland Impacts

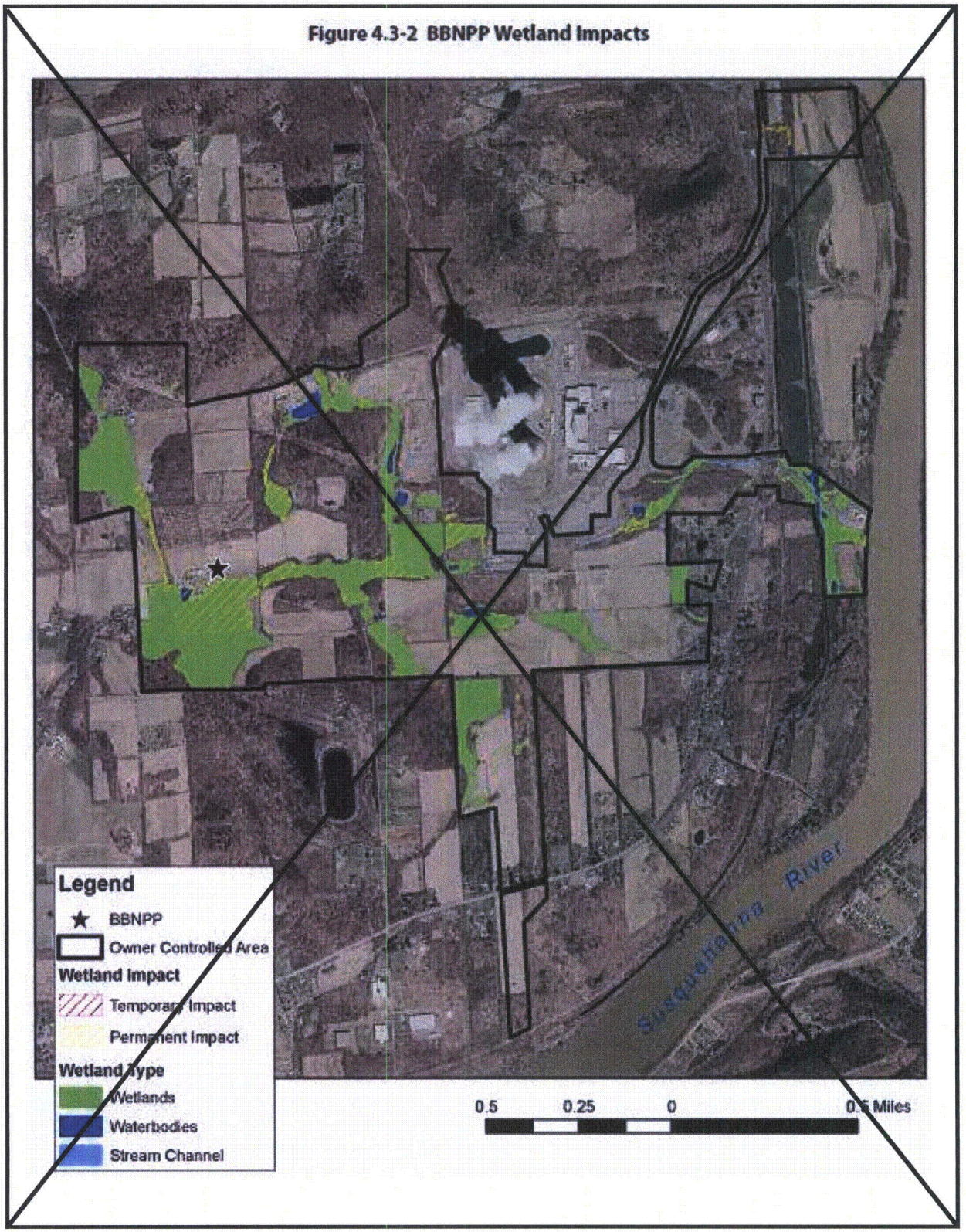
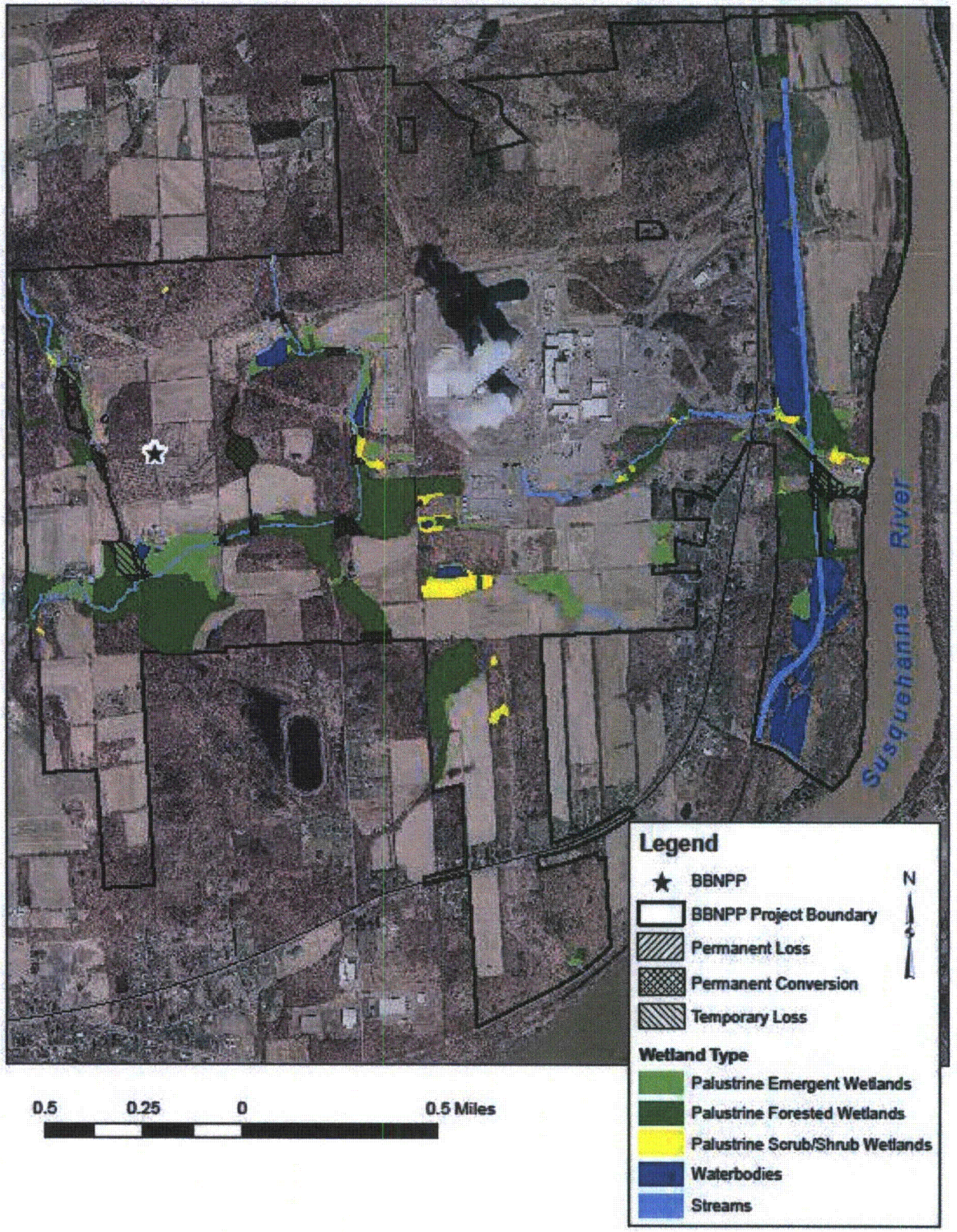


Figure 4.3-3. Wetland Impacts



RAI No. MET 2.7-1

ESRP 2.7

Summary:

Provide detailed estimates of ozone precursor (NOx and VOC) emissions associated with construction and operation of the BBNPP for use in a general conformity determination.

Full Text (Supporting Information): 40 CFR 81.339 lists Luzerne County as attaining the 8-hour ozone standard on December 19, 2007 and is therefore a maintenance area for ozone. 40 CFR Part 51 Subpart W requires a Federal agency to make a determination that a Federal action conforms to the applicable implementation plan in a nonattainment or maintenance area. Emission estimates are the basis for the general conformity determination. Provide a detailed estimate of ozone precursor (NOx and VOC) emissions associated with both construction and operation of the BBNPP site for the purpose of supporting the general conformity determination.

Response:

Detailed estimate of ozone precursor (NOx and VOC) emissions associated with construction and operations are included in, "General Air Conformity Analysis NOx and VOC Emissions from Construction Activities Bell Bend Nuclear Power Plant" (Enclosure 2)

This report documents the NOX and VOC emissions associated with the construction of BBNPP for purposes of determining applicability to the federal Clean Air Act General Conformity Rule.

COLA Impact:

No changes to the BBNPP COLA ER are required as a result of this RAI response.

RAI No. LU 4.1-1

ESRP 4.1

Summary:

Provide information/figure to quantify the area of 100-year and 500-year floodplains affected by construction.

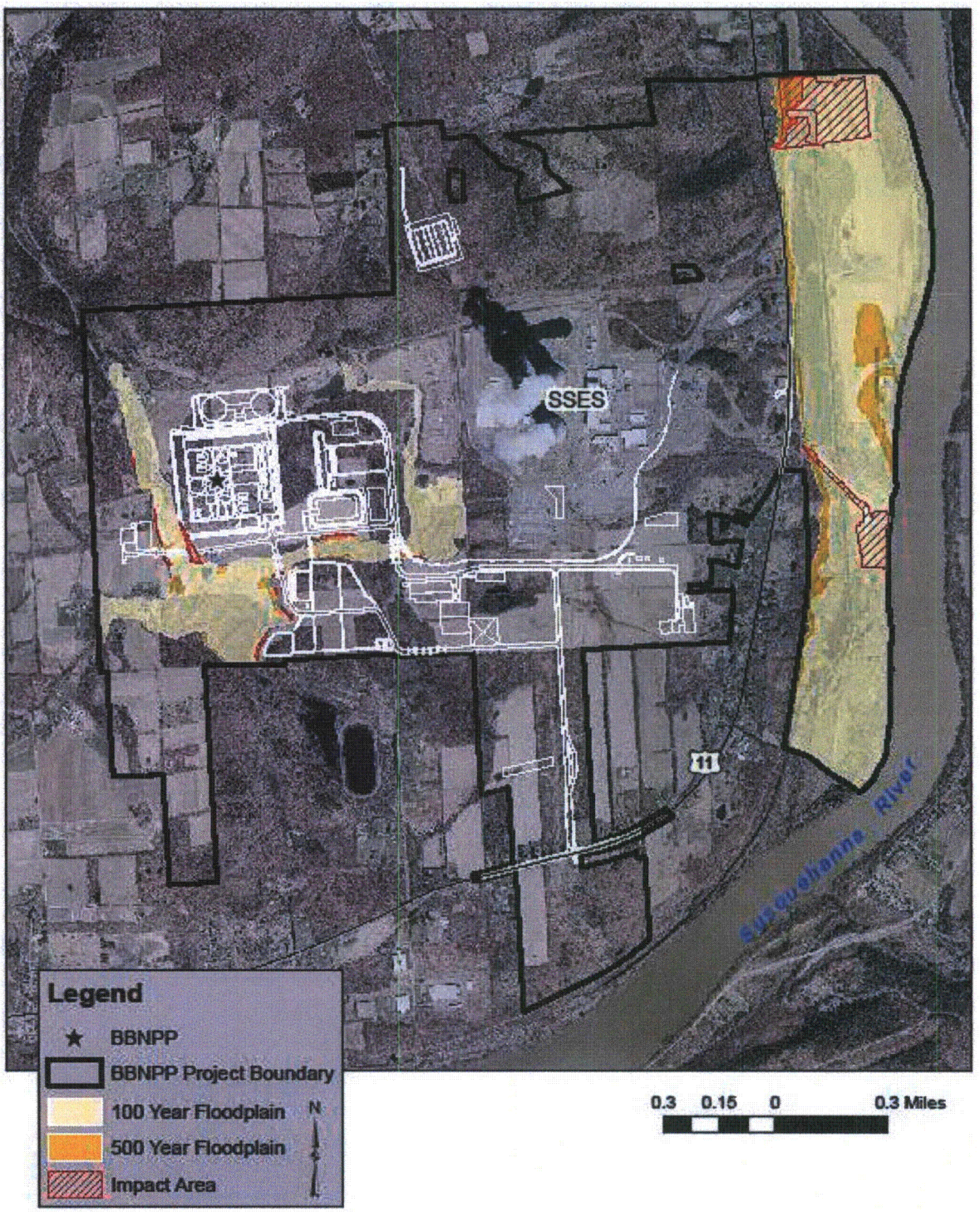
Full Text (Supporting Information): None.

Response:

The BBNPP power block, supporting facilities, and pre-construction 100-year and 500-year floodplains within and in the vicinity of the BBNPP Project Boundary are shown in Figure 1 below. As also detailed in this figure, the floodplains of both Walker Run and the Susquehanna River will be impacted by construction of BBNPP. Proposed construction activities within the Walker Run watershed will affect a total of 0.45 ac (0.18 ha) of the 100-year floodplain and 1.85 ac (0.75 ha) of the 500-year floodplain. For the Susquehanna River watershed a total of 28.1ac (11.4 ha) of the 100-year floodplain and 32.5 ac (13.2 ha) of the 500-year floodplain will be affected. The affected 500-year floodplain acreage includes affected acreage for the 100-year floodplain. Construction activities affecting the floodplains include the installation of temporary and permanent facilities, grading and other earth disturbance work associated with these facilities, and vegetation removal and management.

The totals for the Susquehanna River watershed and Walker Run watershed do not include impacts associated with wetland mitigation activities.

Figure 1. 100-year and 500-year floodplains within and in the vicinity of the BBNPP Project Boundary



COLA Impact:

In a future revision of the BBNPP COLA ER, Section 4.1.1.1 will be revised as follows:

Heavy equipment and reactor components would be transported by rail and highway to the new construction site and lay down areas. A new access road, approximately 0.8 mi (1.3 km) long, would be constructed from U.S Highway 11 to the construction site providing access to the construction areas without impeding traffic to the existing units. A site perimeter road system and access road around the cooling towers area and the power block would be built. An access driveway would be constructed to connect the proposed water intake structure to an existing road.

~~The new intake and discharge would be located in the 100-year floodplain. A small portion of the BBNPP site to the west along Walker Run would also be within the 100-year and 500-year floodplain. With those exceptions, construction activities would be outside the 500-year floodplain in areas designated as areas of minimal flooding.~~

The proposed location of the BBNPP will impact portions of the Susquehanna River and Walker Run floodplains. Figure 4.1-3 illustrates the BBNPP power block, supporting facilities, and preconstruction 100-year and 500-year floodplains within and in the vicinity of the BBNPP Project Boundary. Also illustrated in Figure 4.1-3 are those areas of the Walker Run and the Susquehanna River floodplains that will be impacted by BBNPP construction activities. As discussed in Section 2.3.1.1.1.9, the BBNPP plant grade will be at least 60 ft (18 m) above the predicted 100-yr and 500-yr flood levels. Thus, flooding from a 100-yr or a 500-yr storm should be at least 60 ft (18 m) below the plant grade.

Proposed construction activities within the Walker Run watershed will affect a total of 0.45 ac (0.18 ha) of the 100-year floodplain and 1.85 ac (0.75 ha) of the 500-year floodplain. For the Susquehanna River watershed a total of 28.1 ac (11.4 ha) of the 100-year floodplain and 32.5 ac (13.2 ha) of the 500-year floodplain will be affected. The affected 500-year floodplain acreages include affected acreages for the 100-year floodplain. Construction activities affecting the floodplains include the installation of temporary and permanent facilities, grading and other earth disturbance work associated with these facilities, and vegetation removal and management. In-river impacts to the Susquehanna River channel associated with the cooling water intake and discharge structures are discussed in ER Section 4.3.2.2.

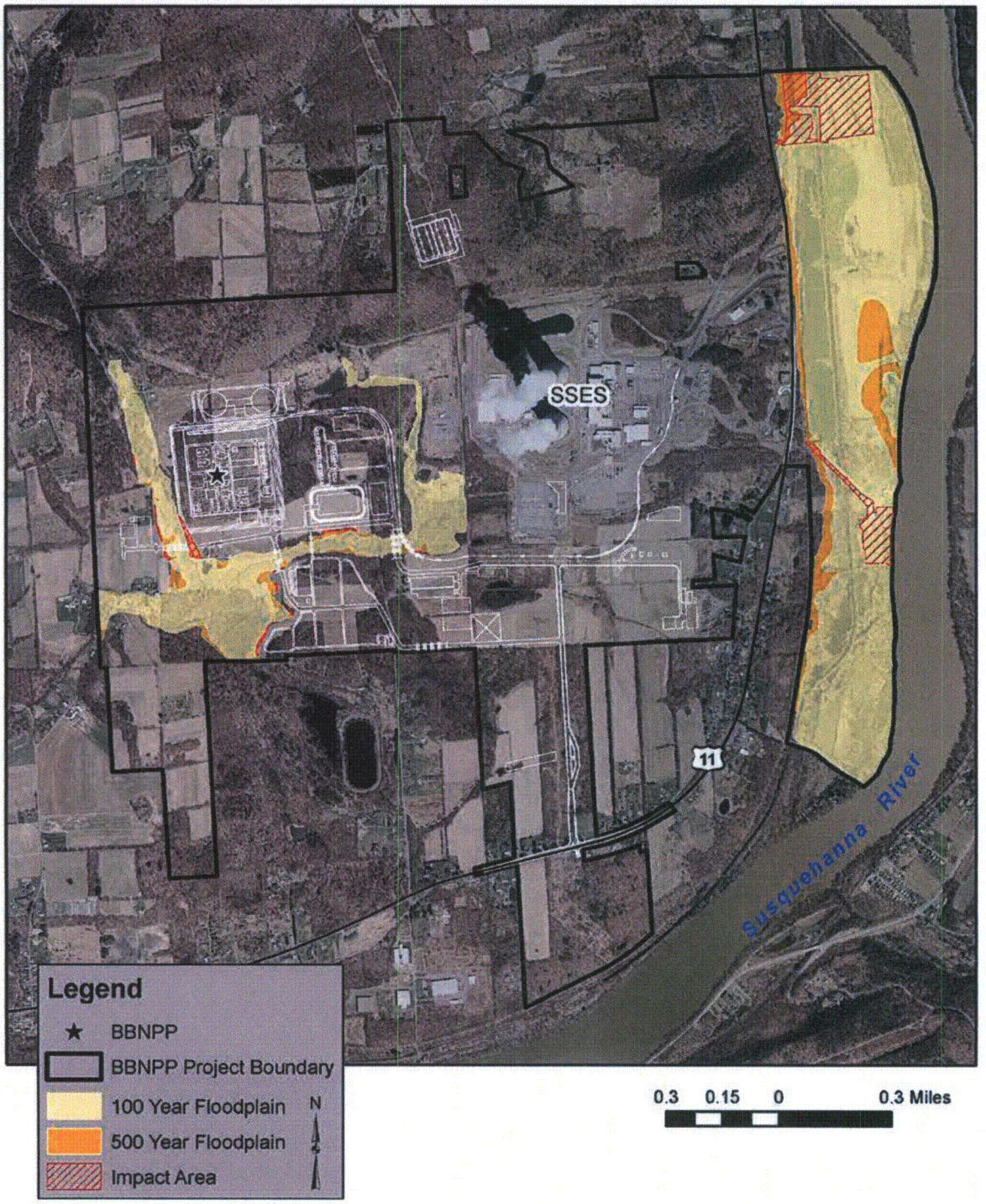
For the Susquehanna River most construction impacts within the floodplains will be temporary in nature, with the exception of the BBNPP Intake Structure, which will be located in the existing 100-year floodplain. Similarly, for Walker Run most of the construction impacts within the floodplains will be temporary, with the exception of a small section of roadway, bridge abutment, and yard area adjacent to the southwest corner of the BBNPP Power Block that will impact the existing 100-year floodplain. Grading impacts on the western edge of the temporary construction parking area will also result in a permanent alteration of the Walker Run 500-year floodplain.

Construction activities within the Walker Run watershed will permanently impact a total of 0.3 ac (0.12 ha) of the existing 100-year floodplain and 1.0 ac (0.4 ha) of the existing 500-year floodplain, which includes the 100-year floodplain. For the Susquehanna River watershed construction will permanently impact a total of 1.7 ac (0.69 ha) of the existing 100-year floodplain and 1.7 ac (0.69 ha) of the existing 500-year floodplain, which includes the 100-yr floodplain.

The stormwater management plan for BBNPP will utilize infiltration beds to promote groundwater recharge, limit alterations to existing hydrology, and reduce the amount of surface runoff that is discharged directly into Walker Run and the Susquehanna River. Therefore, given the limited permanent impacts to existing floodplains and hydrology within the BBNPP Project Boundary, downstream land use impacts within the Walker Run and Susquehanna River watersheds due to floodplain changes are not anticipated after construction is complete.

In a future revision of the BBNPP COLA ER, Figure 4.1-3 will be added as follows:

Figure 4.1-3 – Construction Impacts to Floodplains within the BBNPP Project Boundary



RAI No. LU 5.1-1

ESRP 4.1

Summary:

Provide copy of figure identifying location of prime farmland on and near BBNPP site and impacts from construction.

Full Text (Supporting Information): During the site audit, the applicant identified that the project would affect 360 acres of prime farmland based on soil types. The applicant stated that they would provide a copy of the prime farmland figure.

Response:

At the site audit, a figure was presented showing the presence of prime farmland soils in the BBNPP Owner Controlled Area (OCA). The figure showed that approximately 360 acres (145.7 hectares) of prime farmland soils were located within the OCA. This original figure was revised as part of this response to include the modified BBNPP Project Boundary, modified location of the powerblock and related structures as a result of the footprint change, and changes to the grading impact area, and is presented below as Figure 1. The revised figure includes an updated list of prime farmland soils (NRCS, 2009). Based on the revised figure, 825 acres (333.9 hectares) of prime farmland soils are located within the BBNPP Project Boundary. However, of the total acreage of prime farmland soils within the Project Boundary approximately 197 acres (79.7 hectares), or roughly 24%, have been previously developed. Developed soils include areas that have been previously graded, excavated, covered, filled, or disturbed in some manner to accommodate residential, commercial, industrial or other non-agricultural structures and facilities.

Figure 1 shows both the developed and undeveloped prime farmland soils that will be impacted by site grading during construction. The figure shows the same grading layout as displayed in ER Figure 4.1-1. Based on the new figure, it is calculated that approximately 324 acres (131.1 hectares) of prime farmland soils will be affected by construction. However, of this amount, only 292 acres (118.2 hectares) represent undeveloped land that has not been previously impacted by non-agricultural uses.

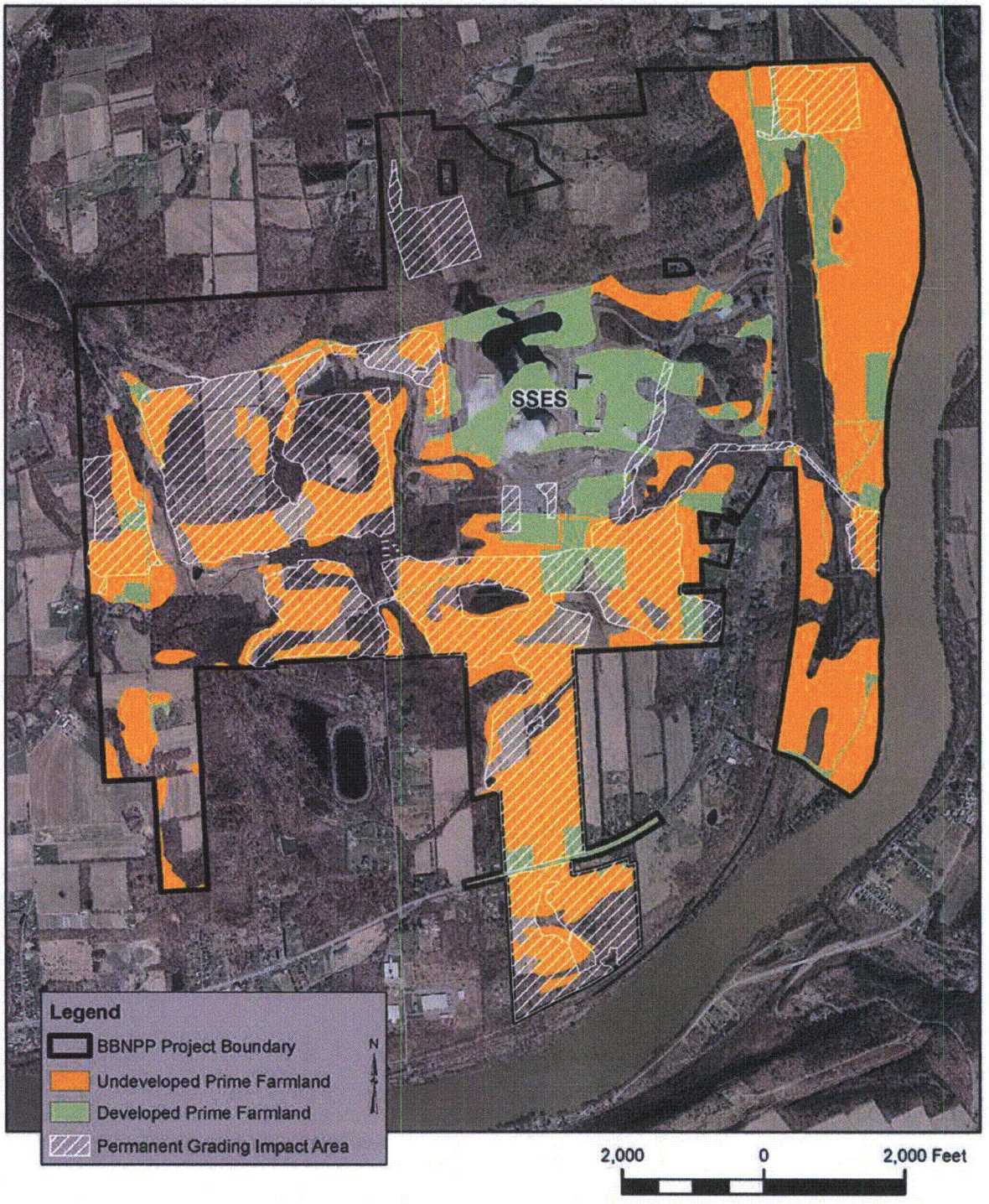
The total area of prime farmland (developed and undeveloped) affected by construction is greater than the approximately 440 acres (178.1 hectares) categorized as in agricultural use in COLA ER Table 2.2-1 (Land Use on the BBNPP Site), primarily because not all of the acreage classified by the prime farmland soils method is classified as in agricultural use according to USGS Land Use and Land Cover data (NRCS, 2009 and USGS, 2008).

References Cited in the Response

NRCS, 2009. Soil Data Mart, Website: http://soildatamart.nrcs.usda.gov. Natural Resources Conservation Service. Date accessed: October 27, 2010.

USGS, 2008. U.S. Geological Survey (USGS), Land Use and Land Cover Data, LULC Categories, Website: http://www.webgis.com/lulc_data/9_app.html, Date accessed, March 15, 2008.

Figure 1: Construction Impacts to Prime Farmland within the BBNPP Project Boundary



COLA Impact:

In a future revision of the BBNPP COLA ER, Section 4.1.1.1 will be revised as follows:

4.1.1.1 The Site

The proposed location of BBNPP and supporting facilities is partially farmland, and the site contains three types of soil rated as Prime Farmland by the U.S. Department of Agriculture's National Resources Conservation Service (NRCS). Also present on the BBNPP site are five types of soil rated as Farmland of Statewide importance.

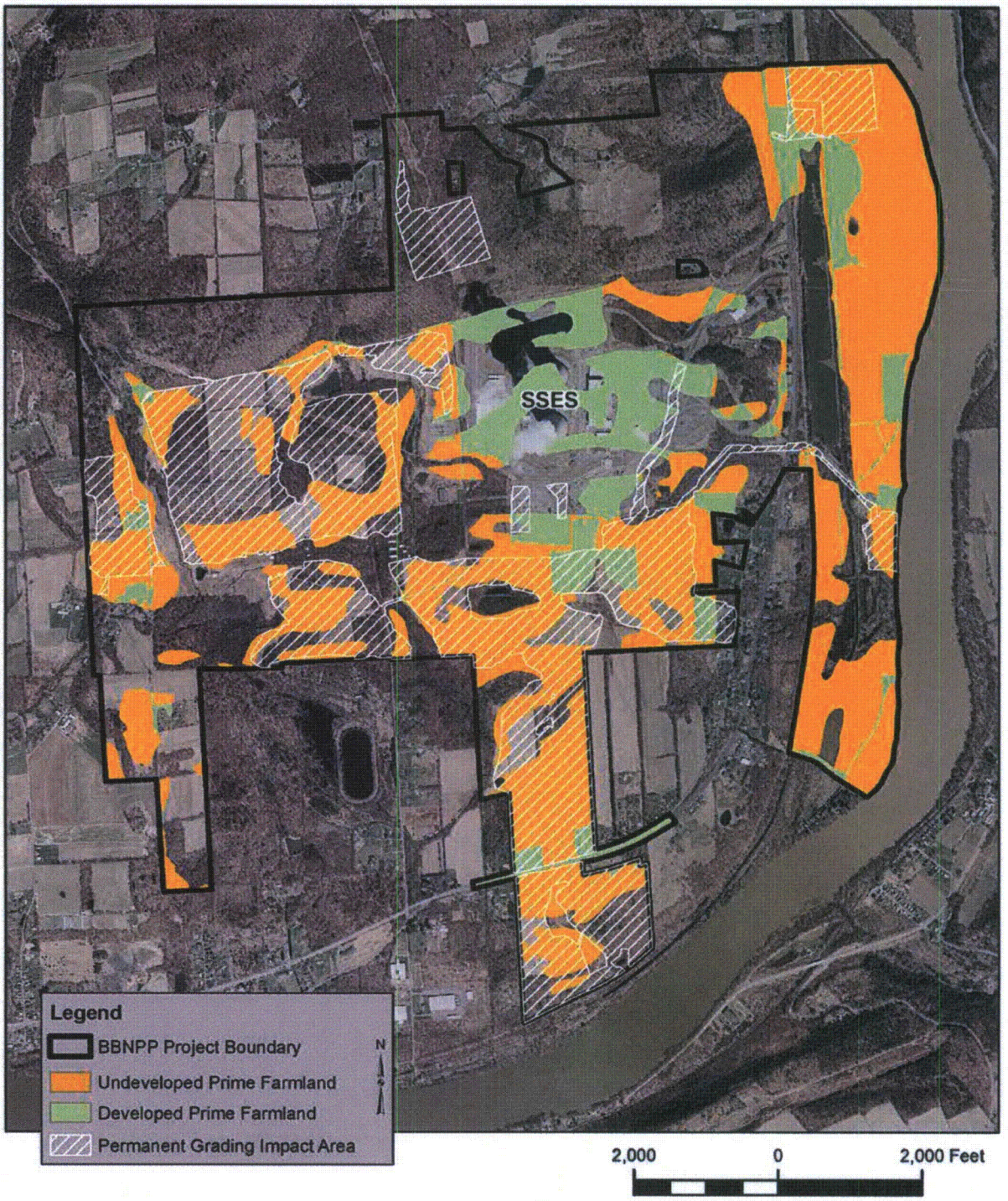
Approximately 825 ac (333.9 ha) of prime farmland soils are located within the BBNPP Project Boundary as illustrated in Figure 4.1-2. However, of the total acreage of prime farmland soils within the Project Boundary approximately 197 ac (79.7 ha), or roughly 24%, have been previously developed. Developed soils include areas that may have been previously graded, excavated, covered, filled, or disturbed in some manner to accommodate residential, commercial, industrial or other non-agricultural structures and facilities.

Figure 4.1-2 illustrates both the developed and undeveloped prime farmland soils that will be impacted by site grading during construction. As a result of site grading approximately 324 ac (131.1 ha) of prime farmland soils will be impacted by construction. However, of this amount, only 292 ac (118.2 ha) represent land that has not been previously impacted by development.

As discussed in Section 4.3.1.1, an estimated 174 ac (70 ha) of mixed deciduous forest would be lost during construction activities. Additional information is provided on Table 4.1-1.

Figure 4.1-2, Prime Farmland Impacts, will be added in a future revision of the BBNPP COLA ER:

Figure 4.1-2 - Construction Impacts to Prime Farmland within the BBNPP Project Boundary



RAI No. LU 5.1-2

ESRP 4.1

Summary:

Provide information/figure on 100-year and 500-year floodplains on BBNPP site after construction. Provide information on potential downstream land use impacts due to floodplain changes.

Full Text (Supporting Information): None

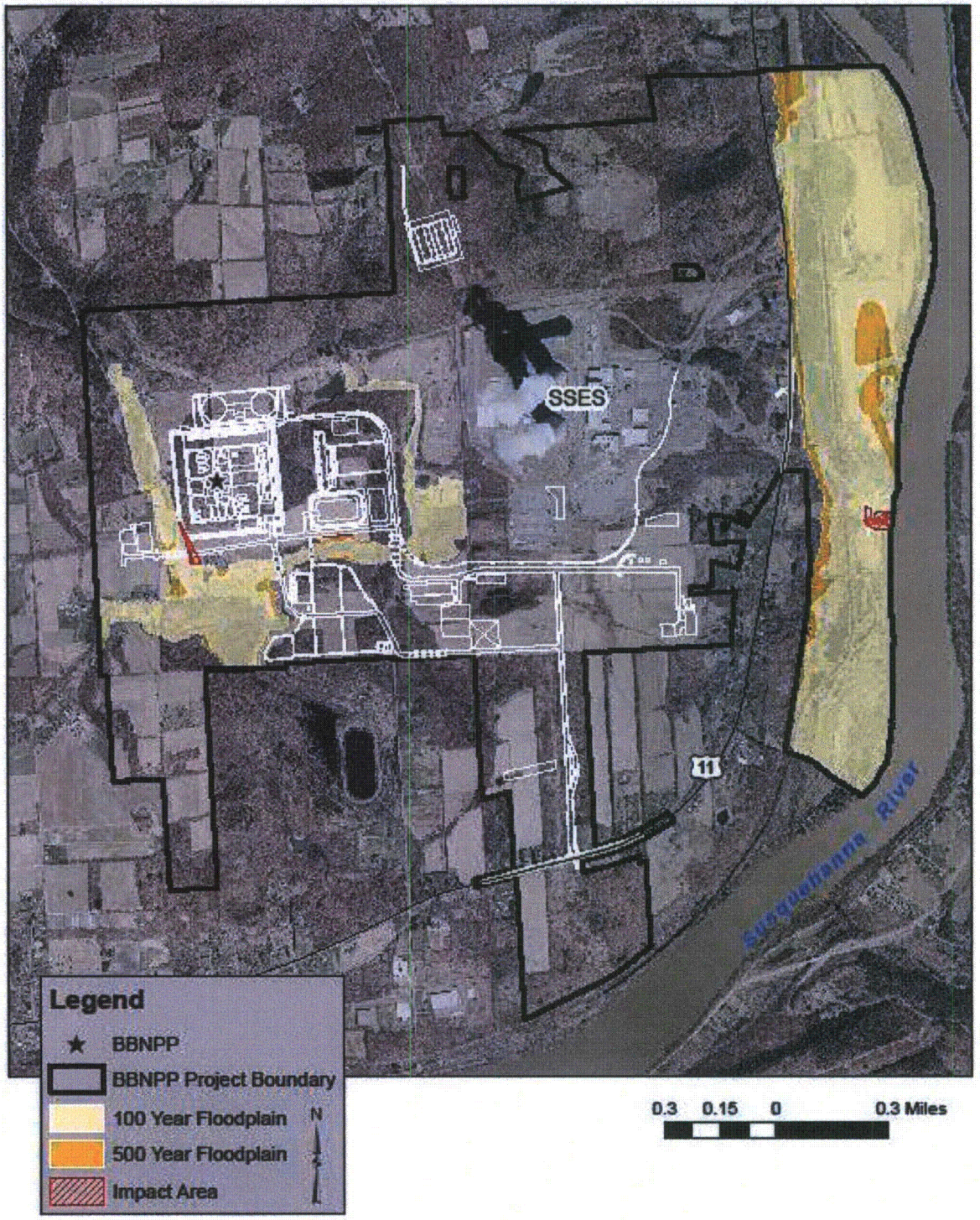
Response:

Permanent impacts to the existing 100-year and 500-year floodplains within the BBNPP Project Boundary following construction of BBNPP are shown in Figure 1 below. Construction activities within the Walker Run watershed will permanently impact a total of 0.3 ac (0.12 ha) of the existing 100-year floodplain and 1.0 ac (0.40 ha) of the existing 500-year floodplain, which includes the 100- year floodplain. For the Susquehanna River watershed construction will permanently impact a total of 1.7 ac (0.69 ha) of the existing 100-year floodplain and 1.7 ac (0.69 ha) of the existing 500-year floodplain, which includes the 100-yr floodplain. Permanent floodplain impacts consist of currently known alterations to existing topography within the permanent grading impact area, the addition of permanent structures, pavement or other intensively-maintained exterior grounds, and/or permanent conversions from forested to scrub/shrub land cover.

The total permanent impacts to the existing floodplains for both Walker Run and the Susquehanna River are small compared to the overall size of each floodplain within the BBNPP Project Boundary. The total acreage of the 500-year floodplain for Walker Run within BBNPP Project Boundary is 112 acres (45.3 hectares). Only 1.0 acres (0.40 ha) or 1% of the floodplain will be impacted by construction activities. For the Susquehanna River the total acreage of the 500-year floodplain within the BBNPP Project Boundary is 348.2 acres (140.9 hectares) and only 1.7 ac (0.69 ha) or 0.5% of the floodplain will be impacted by construction activities.

For the Susquehanna River most construction impacts within the floodplains will be temporary in nature, with the exception of the BBNPP Intake Structure. Most of the construction impacts within the floodplain of Walker Run will be permanent and include a small section of roadway, bridge abutment, and yard area adjacent to the southwest corner of the BBNPP Power Block. The stormwater management plan for BBNPP will utilize infiltration beds to promote groundwater recharge, limit alterations to existing hydrology, and reduce the amount of surface runoff that is discharged directly into Walker Run and the Susquehanna River. Therefore, given the limited permanent impacts to existing floodplains and hydrology within the BBNPP Project Boundary, downstream land use impacts within the Walker Run and Susquehanna River watersheds due to floodplain changes are not anticipated after construction is complete.

Figure 1: Permanent Impacts to Existing Floodplains within the BBNPP Project Boundary



COLA Impact:

No changes to the BBNPP COLA ER are required as a result of this RAI response.