

## BellBendEnveRAIPEm Resource

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**From:** Quinn-Willingham, Laura  
**Sent:** Thursday, September 06, 2012 5:56 PM  
**To:** Sgarro, Rocco R  
**Cc:** Hsia, Anthony; Mcdowell, Bruce K; Leigh, Kimberly D; Goldin, Laura; BellBendEnveRAIPEm Resource; Doub, Peyton; Becker, James M  
**Subject:** Bell Bend Final RAIs for Terrestrial Ecology (2 of 4)  
**Attachments:** ENV-15 RAI\_6787\_TE (2).pdf

Please find attached RAI Env-15 for the Bell Bend COL application. The ENV-15 RAI is an aggregate of the draft terrestrial ecology RAIs (TE-37, TE-41, TE-43, TE-44, TE-45, TE-46, TE-47 and TE-49) that were provided to you on August 13, 2012 as part of a complete table of draft RAIs. There was no request for a clarification discussion of this draft RAI. No other changes are necessary; hence we are issuing this RAI as final.

The schedule we have established to the review of your application assumes technically correct and complete responses within 30 calendar days of receipt of RAIs. For any RAIs that cannot be responded to within 30 calendar days, it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information might impact the schedule.

Please contact me if you have any questions.

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## Request for Additional Information ENV-15

Issue Date: 9/6/2012

Application Title: Bell Bend Environmental Review Docket Number 52-039

Operating Company: PPL Bell Bend LLC.

Docket No. 52-039

Review Section: EIS 4.3.1 - Terrestrial and Wetland Impacts

Application Section: Part 3 - Environmental Report

### QUESTIONS

#### EIS 4.3.1-11

In reference to PPL's proposed Confers Lane compensatory wetland mitigation project, provide information indicating whether Confers Lane would remain open and, if so, the fate of the mitigation project; i.e., whether the project would be undertaken, how, and the anticipated amount of wetland created and/or enhanced. Alternatively, if Confers Lane will remain open and the mitigation project would not be executed, describe any PPL plans for substitute compensatory mitigation.

#### Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts.

PPL's Joint Permit Application to the U.S. Army Corps of Engineers provides a detailed proposed mitigation plan to reconnect two wetlands (formerly joined hydrologically), one on either side of Confers Lane, as partial compensation for construction of BBNPP. The plan is based on closing Confers Lane, removing the roadbed down to the level of the existing wetlands to restore the hydrological connection, and revegetating imported native soil. However, information obtained from Salem Township at the site audit in May 2012 indicated that Confers Lane may not be closed, calling into question whether the proposed mitigation plan would be undertaken and, if so, how and with what anticipated result, or alternatively, whether it would be substituted with other compensatory mitigation.

This was TE-37 in the draft RAI table and is a new Info Need from the site audit.

#### Acceptance Criteria:

ESRP Section 4.3.1

#### EIS 4.3.1-12

Provide a figure that depicts hardwood and mixed-hardwood forest habitat available within a 10 mi radius of BBNPP site, as depicted in Figure 4 of the November 2011 *Indiana Bat Biological Evaluation and Management Plan* (ML122490631). Provide a determination of the percentage of the total hardwood and mixed-hardwood forest habitat available in this area that would be lost by development of the BBNPP site.

#### Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1)

predict and evaluate the significance of potential impacts to “important” species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. ESRP Section 4.7 directs the staff’s summarization of potential cumulative environmental impacts associated construction activities for the proposed project. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

The November 2011 *Indiana Bat Biological Evaluation and Management Plan* (BEMP) (ML122490631) identifies other activities (BEMP Section 8 Cumulative Effects Analysis) that may contribute to forest loss within the BBNPP action area (BEMP Figure 2), but does not consider the effects of forest loss on the BBNPP site on a landscape scale. Suitable forest habitat within 10 mi of a hibernacula (such as the forest habitat on the BBNPP site) is assumed to be used by the species for fall roosting, foraging, and swarming (FWS letter to NRC dated July 10, 2009 ML092020071 and Section 2.2 of FWS 2009 *Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines*). An assessment of the loss of hardwood and mixed-hardwood forest habitat in the BBNPP project area relative to the amount of such habitat available within a 10-mi radius of the BBNPP site, which encompasses three hibernacula (Figure 4 of the *Indiana Bat BEMP*), would provide an indication of landscape-scale effects to Indiana bat habitat by the BBNPP project.

This was Info Need TE-41 in the draft RAI table and was a new Info Need from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1 and 4.7; Endangered Species Act (16 U.S.C. 1531 *et seq.*)

#### EIS 4.3.1-13

Provide an explanation of the types and acreages of compensatory mitigation for impacts to forest habitat for the Indiana bat, and include any areas of passive reforestation if such areas are part of the mitigation plan. Revise Figures 2 and 5 of the *Indiana Bat Biological Evaluation and Management Plan* (ML122490631) to include areas of passive reforestation if such areas are part of the mitigation plan.

Supplemental Information:

ESRP Section 4.3.1 directs the staff’s description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to “important” species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

The introductory portion of Section 4.2 of the November 2011 *Indiana Bat Biological Evaluation and Management Plan* (BEMP) (ML122490631) discusses conservation and reforestation of 386 ac and 58 ac, respectively, totaling 444 ac. These areas are depicted in Figures 2 and 5 of the BEMP. In contrast, the May 7, 2012 FWS letter to the NRC (ML121450545) notes that PPL proposes to partially offset the loss of forest habitat for the Indiana bat by preservation of 386 ac of forest, active reforestation of 58 ac, and passive reforestation through natural succession of 137 ac, totaling 581 ac.

This was Info Need TE-43 in the draft RAI table and was a new Info Need from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1531 *et seq.*)

#### EIS 4.3.1-14

Provide any plans to place all Indiana bat compensatory mitigation lands (forest preservation [386 acres], active reforestation [58 acres], and passive reforestation through natural succession [137 acres] [Note that inclusion of the 137 acres is questioned in RAI TE-43], totaling 581 acres) into a conservation easement for permanent protection and develop a corresponding resource management plan prior to any disturbance of Indiana bat habitat on the BBNPP site, as described in the supporting information. Also provide any plans to disclose to FWS, NRC, and a prospective easement holder any factors that could render the conservation easement property vulnerable to future habitat loss.

#### Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

The May 7, 2012 FWS letter to the NRC (ML121450545) states that PPL proposes to partially offset the loss of forest habitat through a combination of forest preservation (386 ac), active reforestation (58 ac), and passive reforestation through natural succession (137 ac) (note that inclusion of the 137 acres is questioned in RAI TE-43), totaling 581 ac. The proposed preservation of existing forest is at a 1.6:1 compensation ratio (386 ac preserved:234 ac impacted), although this may be reduced after short- and long-term impacts on isolated forest parcels remaining after construction are further evaluated, as noted in RAI TE-40. While the November 2011 *Indiana Bat Biological Evaluation and Management Plan* (ML122490631) indicates 386 ac of forest will be protected through a conservation easement, this does not address the long-term fate of the 58 acres of active reforestation or the 137 acres of passive reforestation (natural succession) (note that inclusion of the 137 acres is questioned in RAI-43). In the absence of any permanent protection of these lands, they would not be counted as compensating for impacts to Indiana bat habitat, and thus not figured into the compensation ratio. Therefore, the FWS recommended that all 581 acres be part of the conservation easement and that a resource management plan be developed and finalized prior to disturbance of any Indiana bat habitat on the BBNPP site. The resource management plan would replace the forest management guidelines in Section 7.2 of the *Indiana Bat Biological Evaluation and Management Plan* (ML122490631). In addition, it would be important to assess and disclose to FWS, NRC, and a prospective easement holder any existing easements, liens, encumbrances or reserved rights related to the surface or subsurface of the property that may render it vulnerable to future habitat loss (FWS May 7, 2012 letter to NRC ML121450545).

This was Info Need TE-44 in the draft RAI table and was a new Info Need from the site audit.

#### Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1531 *et seq.*)

#### EIS 4.3.1-15

Provide any plans to include the 137 acres of passive reforestation (natural succession) in the long-term monitoring and maintenance plan originally established for the 58 acres of active reforestation, and to provide any plans for proactive intervention for both the active or passive reforestation areas to ensure the long-term success of reforestation, as described in the supporting information. Indicate the foreseen duration of the long-term monitoring and maintenance plan based on a conservative estimate of the time required to achieve success.

Supplemental Information:

ESRP Section 6.5.1 directs the staff's description and evaluation of the applicant's preapplication, site preparation and construction, preoperational and operational monitoring programs for terrestrial ecology and land use. The scope of the review includes evaluations of standardization, adequacy, and accuracy of data collection and analytical methods used in the terrestrial monitoring programs. If elements of the monitoring program are determined to be inadequate, the reviewer should evaluate potential supplemental programs. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

Section 7.1 of the November 2011 *Indiana Bat Biological Evaluation and Management Plan (BEMP)* (ML122490631) indicates that the 58 acres of active reforestation would be subject to reforestation guidelines, which include a long-term monitoring and maintenance plan to ensure that reforestation efforts, as well as natural re-colonization, will be successful (i.e., meet specifications of Section 2.4.2.2 of FWS 2009 *Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines* and other guidance provided by the FWS). The long-term monitoring and maintenance plan includes provisions to control invasive plants and white-tailed deer browsing (amongst other things) within the 58 ac active reforestation area that could impede establishment of diverse native hardwood tree species that meet specifications in the above-cited reference. However, no similar provisions are made in the *Indiana Bat BEMP* for the 137 acres of passive reforestation (natural succession). Further, no provision is made for proactive intervention for either the active or passive reforestation areas to ensure success, if needed (FWS May 7, 2012 letter to NRC ML121450545), and the foreseen length of the long-term monitoring and maintenance plan is not indicated.

This was Info Need TE-45 in the draft RAI table and was a new RAI from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1301 *et seq.*)

EIS 4.3.1-16

Provide a figure/map depicting the 11.8 acres of palustrine forested wetland that would be impacted and the extent to which this area overlaps with the area of mitigative reforestation for the Indiana bat. Provide a discussion of how the 10-yr wetland monitoring and corrective action plan specified in Section 3.1.2 of the November 2011 *Indiana Bat Biological Evaluation and Management Plan* (ML122490631) would interface with the long-term monitoring and maintenance plan noted in RAI TE-45 to ensure that any forested wetland mitigation would be successful for the Indiana bat.

Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. ESRP Section 6.5.1 directs the staff's description and evaluation of the applicant's preapplication, site preparation and construction, preoperational, and operational monitoring programs for terrestrial ecology and land use. The scope of the review includes evaluations of standardization, adequacy, and accuracy of data collection and analytical methods used in the terrestrial monitoring programs. If elements of the monitoring program are determined to be inadequate, the reviewer should evaluate potential supplemental programs. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

Section 3.1 (introduction) of the November 2011 *Indiana Bat Biological Evaluation and Management Plan (BEMP)* (ML122490631) notes that 11.8 ac of palustrine forested wetland would be impacted, but does not indicate to what extent these impacts overlap with areas of mitigative reforestation for the Indiana bat. Section 3.1.2 of the BEMP (Wetland Mitigation Activities) specifies a 10-yr monitoring and corrective action plan, but does not discuss whether

this plan is part of the long-term monitoring and maintenance plan noted above for the Indiana bat and, if so, how the two monitoring plans would interface to ensure that any forested wetland mitigation would be successful for the species.

This was Info Need TE-46 in the draft RAI table and was a new RAI from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1531 et seq.)

#### EIS 4.3.1-17

Provide any plans to begin restoration efforts as expediently as possible in areas of both active (58 ac) and passive (137 ac) reforestation, in order to partially offset the permanent loss of resource function for Indiana bats that would occur within the 244 ac of suitable forest habitat that would be impacted by the BBNPP project.

Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

The effects of forest loss in the BBNPP project area would be considered permanent, as it would take decades for new forests to mature. In order to partially offset this permanent loss of resource function for Indiana bats within the 244 ac of suitable forest habitat that would be impacted, the FWS recommended that forest restoration efforts begin immediately both in areas of active (58 ac) and passive (137 ac) reforestation (FWS May 7, 2012 letter to NRC ML121450545).

This was Info Need TE-47 in the draft RAI table and was a new Info Need from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1531 et seq.)

#### EIS 4.3.1-18

Provide the reference for the requirement on page 26 of the *Indiana Bat Biological Evaluation and Management Plan* (BEMP) (ML122490631) that at least 70 percent of the total Indiana bat forested habitat to be affected must be reforested, unless off-site mitigation measures are used. Provide the acreages of the offsite (based on BEMP Figure 1, this is east of the Susquehanna River) reforestation and conservation areas, and whether (and if so, how) these are an adequate substitution for the 105 ac (45 percent) of impacted Indiana bat habitat that would not be reforested, as explained in the supporting information.

Supplemental Information:

ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of

environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

Page 26 of the October 2011 *Indiana Bat Biological Evaluation and Management Plan* (BEMP) (ML122490631) states that at least 70 percent of the total Indiana bat forested habitat to be affected must be reforested, unless off-site mitigation measures are used. There is no reference provided for this requirement. Based on the BEMP, about 25 percent (58 ac) of the total Indiana bat forested habitat (234 ac) that would be affected would be reforested, leaving approximately 45 percent (105 ac) that would need to be reforested per the above-stated requirement, or be compensated for via offsite mitigation. Ten of the 58 ac to be reforested are located in the Walker Run corridor and 48 ac are in the Susquehanna River corridor (BEMP Figure 2). Of the 48 ac, an unknown number are offsite, i.e., on the east side of the Susquehanna River (BEMP Figure 2). In addition, 264 ac of forest would be in Conservation Management Area 1 in the Susquehanna River corridor (BEMP Figure 2). Of the 264 ac, an unknown number are located offsite on the east side of the Susquehanna River (BEMP Figure 2). The BEMP does not indicate whether (and if so, on what basis) the unidentified numbers of reforestation and conservation acres located offsite are an adequate compensation for the 105 ac (45 percent) of impacted Indiana bat habitat.

This was Info Need TE-49 in the draft RAI table and was a new Info Need from the site audit.

Acceptance Criteria:

ESRP Section 4.3.1; Endangered Species Act (16 U.S.C. 1531 *et seq.*)