Chapter 3

Proposed Action and Alternatives

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3 Proposed Action and Alternatives

This chapter of the DEIS describes the Proposed Action, as well as the Project as proposed by the Applicant. NEPA requires that the environmental documents prepared for a proposed action discuss alternatives. Therefore this chapter also describes the three alternatives to the Proposed Action that were retained for detailed analysis, including a No Action alternative. The alternatives to the Proposed Action were primarily designed to address the potential for take of Indiana bats and are operational alternatives relating to the dates and times of operation and the speed at which turbines become operational. The alternatives do not address other aspects of the Project such as turbine siting. The Applicant has demonstrated that siting and design of the Project has incorporated avoidance and minimization of direct physical impacts to Indiana bats and migratory birds and their habitats (e.g., ground disturbance or habitat removal) to the maximum extent practicable (see HCP Sections 6.1 and 6.2).

3.1 Proposed Action - Modified Operations and Habitat Conservation Plan

The Proposed Action is USFWS' issuance of a Section 10 ITP for activities covered by the proposed HCP. The HCP describes what are considered Covered Activities, or those activities associated with the construction, operation, maintenance, and decommissioning of the Project. The Project would be one of the first large-scale commercial wind powered electric generation facilities in Ohio, and may be among the first wind facilities in the nation to operate with an ITP for the Indiana bat. The Project would be located within an approximately 32,395 ha (80,051 acre) Action Area that includes portions of Union, Wayne, Urbana, Salem, Rush, and Goshen Townships (Figure 1-1). The Project Area[1] includes those sites within the Action Area where Project components would be located, plus a 305 m (1,000-ft) buffer or setback from the turbines (see Figure 1-2). The permanent footprint (the area of permanent disturbance) for the Project would be a maximum of 52.2 ha (128.9 ac) acres, or 0.16 percent of the Action Area.

The Project would consist of up to 100 turbines, each with a capacity rating of 1.6 to 2.5 MW, resulting in a total generating capacity of up to 250 MW for the Project. In addition to turbines, the Project would include construction of access roads, underground and overhead electrical collection lines, a substation, up to 4 temporary construction staging areas, 4 permanent meteorological (MET) towers, and an O&M facility. The Applicant expects the Project to operate at an average annual capacity factor of approximately 30 percent, resulting in approximately 657,000 MWh of electricity generation per year. The energy generated by the Project would collect to a new electric substation in Union Township in Champaign County (Figure 1-1). The Applicant expects to remain as the owner and operator for both construction and operation of the Project. Figures 1-1 and 1-2 indicate the locations for 52 of the possible 100 turbines; locations for the remaining 48 turbines have yet to be determined.

[1] This definition of "Project Area" is derived from the OPSB rules 4906-17-01(B)(1). "Project area means the total wind-powered electric generation facility, including all associated setbacks." Section 4906-17-08(C)(1)(c)(ii) of the rule requires that the wind turbine must be at least 750 ft in horizontal distance from the tip of the turbine's nearest blade at 90 degrees to the exterior of the nearest habitable residential structure, if any, located on adjacent property at the time the OPSB application is filed. The maximum turbine height (tower height plus half the height of the rotor) of turbines under consideration for the Project is 150 m (492 ft). If the turbine blade were at 90 degrees, the tip would extend from the base of the tower one-half the length of the rotor diameter, or 164 ft, which added to 750 ft, yields a total setback of 914 ft. To standardize the analysis for the purposes of the OPSB Application and this DEIS, resources were assessed within 1,000 ft.

In addition, Buckeye Wind has identified a possible re-design of the Project collection system that would allow a more efficient infrastructure that would result in greater ease of construction but would not significantly change the net effect on the Indiana bat and would not result in a higher level of take described in the HCP. The potential redesign would move a portion of those lines to an underground system located on private land under easement ("Redesign Option"). This Redesign Option is under consideration and would require various state and local permits and amendments to those permits. As such, it is offered here as an optional Project design that would be implemented at Buckeye Wind's discretion. While the exact design is not known at this time, a maximum estimate of impacts with the Redesign Option is presented in this document. No turbine locations would be altered except as otherwise required as part of normal project micro-siting. The Redesign Option is described in further detail in Section 3.1.4.

The Applicant states that the locations for all turbines and associated facility components would be sited using the following criteria (collectively, the Siting Criteria):

- Within the Action Area;
- On lands belonging to willing land lease participants;
- In accordance with all OPSB rules and regulations, as determined through the OPSB Certification process;
- Where the compatible land use would continue to be rural agricultural;
- No direct impacts to wetlands;
- Such that no more than 32 streams would be crossed for a total impact of 380.4 m (1248 ft). No more than 49 streams would be crossed for a total impact of (1,598 ft) for the Redesign Option:
    - For road crossings over high quality streams, specifically Ohio Exceptional Warmwater Habitat and Cold Water Habitat streams, open bottom culverts, elliptical culverts or arched bridges would be used such that ground within the delineated edge of the stream is not impacted (see HCP Section 5.2.1.2); and
    - When only underground collection lines cross perennial streams (i.e., no co-location of road crossings), these perennial streams crossings would utilize directional boring to avoid impacts. For intermittent or ephemeral streams, trenching would be done when the stream is dry.
- No more than 6.5 ha (16.0 ac) of trees would be cleared for the 100 turbine facility;
- The three known Indiana bat roost trees in the Action Area would not be removed, and no turbine would be located closer than 2.9 km (1.8 mi) to known maternity roost trees;
- No more than 11.3 ha (27.9 ac) of Conservation Reserve Program (CRP) land will be impacted by the 100 turbine project, and of this no more than 2.3 ha (5.7 ac) of impact will be permanent;
- Turbines would be sited such that operational sound levels generated by the Project would not exceed 5 dBA above the average background noise (Leq), as measured at the nearest non-participating residential structure (see Section 5.10 – Noise for more detailed description of potential noise impact factors):

  - A compliant resolution procedure would be implemented in coordination with the staff of OPSB to address any complaints regarding construction or operational sound.

- Turbines would be sited such that exposure to shadow flicker[2] created by operational turbines would not exceed 30 hours in any calendar year, as measured at the nearest non-participating residential structure;
- Impacts to the cultural resources would be evaluated and avoided according to the methodologies developed in accordance with the NHPA. Buckeye Wind would implement the approach for assessment and mitigation as outlined in the preliminary reports completed by CRA (see Section 4.6 – Cultural and Historic Resources);
- The known 52 turbines would be setback from non-participating residential structures and non-participating property boundaries as indicated in the OPSB Certificate issued on March 22, 2010 (see Section 1.5.2 – State Regulations). For the additional 48 turbines, setbacks from non-participating residential structures would not be less than 305 m (1,000 ft). Setbacks to non-participating property boundaries would not be less than 1.1 times the total height of the turbine (165 m [541 ft] if the total turbine height is 150 m [492 ft]);
- The turbines would be positioned so as to avoid any likely impact to communications systems, including off-air television stations, AM/FM radio stations, microwave telecommunications systems and cellular/PCS telephone systems. If it is found that the turbines result in degradation to the communication services provided, Buckeye Wind would address and resolve each individual problem as commercially practicable;

Even though the exact location for the additional 48 turbines is not known, they would occur within the Action Area and the Applicant would implement the above Siting Criteria, as well as the conservation program described in the HCP (see Chapter 6 of the HCP). By implementing these Siting Criteria and the HCP conservation program, the USFWS is able to assess the degree of effects that would result from the full 100 turbine Project. All impacts to Indiana bats and the identified resources that occur within the Project Area are analyzed in this DEIS and the HCP for a 100 turbine Project; hence, no additional analysis for the additional 48 turbines would be required under NEPA.

The Project contains the following elements:

- Construction of Project components and associated infrastructure:
  - 100 turbines and workspaces;
  - 64.4 km; (40.0 mi) of new service roads that would connect wind turbines to existing access roads;
  - 113.5 km (70.5 mi) of 34.5 kV electrical interconnect lines that would connect individual turbines to the substation, of which:

[2] Shadow flicker is defined as moving blades passing between the sun and a receptor, creating alternating changes in light intensity of shadows. The spatial relationship between a wind turbine and a receptor, along with weather characteristics such as wind direction and sunshine probability, are key factors related to shadow-flicker impacts. Shadow flicker becomes much less noticeable at distances beyond approximately 1,000 feet, except at sunrise and sunset when shadows are long (NRC, 2007).

        - 56.7 km (35.2 mi) would be installed underground with the majority (approximately 84%) installed parallel to Project access roads, requiring no additional clearing or soil impacts beyond those required for access road construction;
        - 56.8 km (35.3 mi) would be installed overhead in public road right-of-ways (mostly co-located with existing electric distribution facilities); and
    - Temporary crane paths totaling approximately 22.7 km (14.1 mi);
    - Up to 4 temporary construction staging areas, occupying a cumulative area of approximately 9.2 ha (22.9 ac);
    - 1 substation that would allow connection with the existing transmission line, occupying an area of approximately 2.0 ha (5.0 ac);
    - 1 O&M facility and associated storage yard (likely to be refurbishment of existing facility; however, if a new building were needed, it would not be expected to exceed 557 m² (6,000 ft^2) or disturb an area of greater than 1.2 ha (3.0 ac), and would be designed to resemble an agricultural building similar in style to those found throughout the area);
    - Up to 2 temporary concrete batch plants occupying a cumulative area of 2.4 ha (6.0 ac); and
    - 4 permanent MET towers occupying a cumulative area of 0.008 ha (0.002 ac).
- Operational constraints in the form of feathering would be applied to each turbine based on its location relative to suitable Indiana bat habitat and the season of Indiana bat activity. Cut-in speeds would range from the manufacturer's cut-in speed, which varies by manufacturer and size, to 6.0 m/s (13.4 mph) and periods over which they would be applied would vary based on seasonal considerations, the habitat in which they are sited (e.g., low quality versus high quality), and other factors as described in the HCP (Chapter 6). See Section 3.1.2 for further details on operational constraints; and
- HCP implementation, including post-construction monitoring, adaptive management, and mitigation focused on the Indiana bat.

The following sections describe the elements of the Project.

3.1.1 Project Components

3.1.1.1 Turbines

Development of the Project would include installation of up to 100 turbines, each with a generating capacity of 1.6 MW to 2.5 MW. The specific turbine model to be used for the Project has not yet been selected. Final selection depends on a number of factors including cost, performance, availability, and other site specific factors. Recent trends in the supply market have made it more practicable and efficient to delay capital commitments (i.e., turbine purchase agreements) until later in the Project planning process. Commercially available turbine models being considered for the Project are essentially uniform in terms of dimensions, appearance, and electrical output design and dimension. Any variation among turbine models selected for the Project would be small to insignificant (i.e., ranging from approximately 7 to 16 ft difference in

total height). Table 3-1 summarizes turbine characteristics of the worst-case scenario in terms of total turbine height (see Figure 3-1).

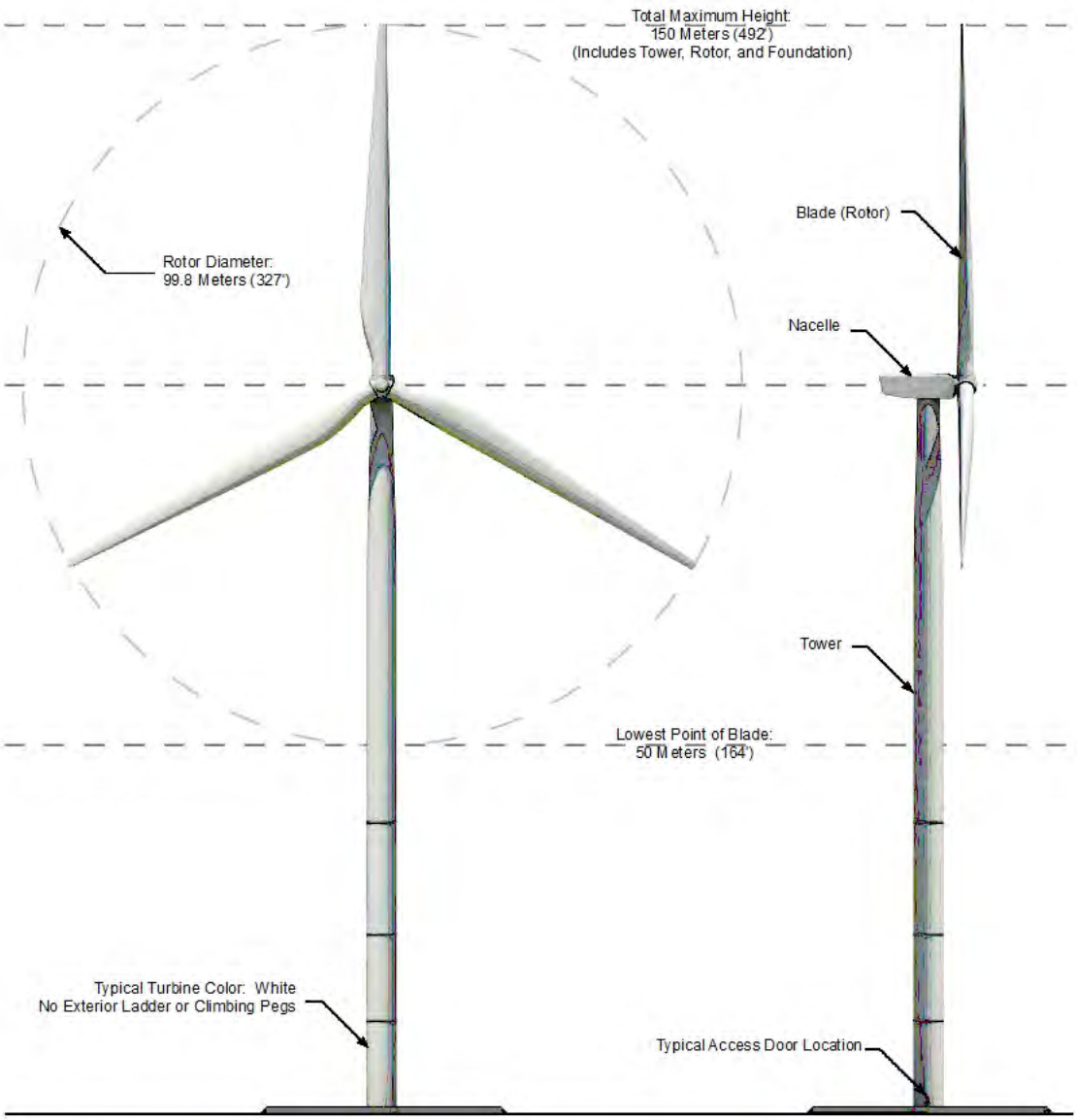
Table 3.1-1 Turbine Characteristics

Component or Feature	Size or Performance
Power Generation	2.5 MW per turbine
Hub Height	100 m (328 ft)
Rotor Diameter	100 m (328 ft)
Total Tower Height (Hub + ½ Rotor)	150 m (492 ft)[3]
Height of Lowest Rotor Blade Reach	50 m (164 ft)
Rotor Swept Area	7,823 square meters (m^2) (84,206 square ft [ft^2])
Rotor Speed (range possible)	9.6-14.9 rotations per minute (rpm)
Rotor Tilt Angle / Blade Cone Angle	5° / 3.5°
Wind Speed of Generator Initiation (Cut-in)	3 m/s (7 mph)
Wind Speed of Generator Cessation (Cut-out)	20 m/s (45 mph)
Maximum Tip Speed	77 m/s (172 mph)
Rated Wind Speed (Unit Reaches Maximum Output)	12.5 m/s (28 mph)

Each wind turbine consists of three major components: the tower, the nacelle, and the rotor (Figure 3-1). The tubular towers used for MW-scale turbines are conical steel structures manufactured in multiple sections. Each tower would have an access door and internal lighting, along with an internal ladder and mechanical lift to access the nacelle. The height of the tower, or "hub height" (height from foundation to top of tower) would be 100 m (328 ft). The nacelle sits atop the tower, and the rotor hub is mounted to the front of the nacelle. The rotor diameter would be 100 m (328 ft). Thus, the total turbine height at the highest blade tip position (i.e., rotor apex) would be 150 m (492 ft). The towers would be painted off-white in accordance with FAA regulations designed to make the structures more visible to aircraft when viewing from above, as light colors contrast sharply against the dark-colored ground. This also has the benefit of reducing visibility from ground vantage points, which are generally viewed against the background of the sky.

[3] There are some potential turbines that have a slightly longer rotor diameter (103 m), but are on a slightly lower tower such that the total height does not exceed 150 m.

Figure 3-1 Representative Wind Turbine



The main mechanical components of the wind turbine, including the drive train, gearbox, and generator, are housed in the nacelle. The nacelle is housed in a steel reinforced fiberglass shell that protects internal machinery from the environment and dampens noise emissions. The housing is designed to allow for adequate ventilation to cool internal machinery. The nacelle is equipped with an external anemometer and a wind vane that signals wind speed and directional information to an electronic controller. Attached to the top of some of the nacelles would be FAA approved aviation obstruction lights. These lights are anticipated to be flashing red strobes that operate only at night and in accordance with FAA guidelines (Advisory Circular 70/7460-1K). The nacelle is mounted on a bearing that allows it to rotate ("yaw") into the wind to maximize wind capture and energy production.

Each rotor consists of three composite blades that would be up to 50 m (164 ft) in length, with a total rotor length of up to 100 m (328 ft). Motors within the rotor hub feather each blade according to wind conditions, which enables the turbine to operate efficiently at varying wind speeds. The rotor can spin at varying speeds to operate more efficiently. Depending on the turbine model selected, the turbines would begin generating energy at wind speeds as low as 3-3.5 meters per second (m/s) (6.7-7.8 mph), and cut out when wind speeds reach 20 m/s (56-mph). The maximum rotor speed is approximately 15 rpm.

3.1.1.2 Electrical System

The Project's electrical system would consist of a maximum 113.5 km (70.5-mile [mi]) long system of 34.5 kV cables that would collect power from each wind turbine and connect to a new substation. No more than 56.8 km (35.3 mi) of lines would be built above ground on rebuilt poles in existing public road right-of ways. These lines would be over-hung on poles used by the local electric utilities to distribute power to local residences and businesses. No more than 56.7 km (35.2 mi) of the 34.5 kV interconnects would be buried underground parallel to Project access roads.

The Redesign Option collection system is described in Section 3.1.4.

The substation would transfer the power from the collector cables to existing transmission lines and the regional power grid. The substation would be located near the intersection of Pisgah Road and Route 56 in the Town of Union, at the southern end of the Action Area (Figure 1-2). The substation would step up voltage from 34.5 kV to 138 kV to allow connection with an existing transmission line. The substation would include dead-end structures, circuit breakers, air break switches, metering units, a step up transformer, relaying, communication equipment, and a control house. Construction of the substation would permanently impact no more than 2.0 ha (5 ac). The substation would be enclosed by a chain link fence, and be accessed from Pisgah Road by a new gravel-surfaced road no more than 0.2 km (0.1 mile) in length.

3.1.1.3 Met Towers

In order to record weather data to ensure turbine output is maximized, the Project layout includes 4 permanent meteorological test towers (MET towers). The permanent MET towers would support equipment used to measure wind speed (anemometers), wind direction (wind vanes), temperature and other pertinent weather data. The final locations of the permanent MET towers would be determined by turbine engineers and would be placed in open fields so that turbulence

from trees and other structures would not interfere with equipment readings. The permanent MET towers would be non-guyed, free standing structures.

3.1.1.4 Access Roads

No more than 64.4 km (40.0 mi) of access roads would be constructed as new roads or improved farm lanes to provide access to the turbines and substation (Figure 3-1). The roads would be gravel-surfaced and typically 4.9 m (16 ft) in finished width with up to 0.6 m (2-ft) borders for side slope grading on each side (total 6.1 m [20 ft] road width).

3.1.1.5 Construction Staging Areas

Project construction would require the development of up to 4 construction staging areas, collectively occupying no more than 9.2 ha (22.9 ac) (Figure 1-2). Staging areas would only be located on previously disturbed or agricultural lands. These areas would accommodate material storage, parking for construction workers, and construction trailers enclosed by fencing (at 1 site only). Development of the staging areas would include a temporary disturbance, including a site for trailers. Lighting of the staging areas would be required for safety and security.

3.1.1.6 Operations and Maintenance Building

A permanent operations and maintenance (O&M) building and associated storage yard would be located within the Action Area to house operations personnel, equipment, and materials, and operations staff parking. The Applicant anticipates refurbishing one of numerous unused buildings in the area for this use. If a new building were needed, the Applicant states that it would not be expected to exceed 557 m^2 (6,000 ft^2) or disturb an area of greater than 1.2 ha (3.0 ac), and would be designed to resemble an agricultural building similar in style to those found throughout the area.

3.1.1.7 Concrete Batch Plant

Up to two temporary concrete batch plants would be required to construct the 100-turbine Project. Concrete batch plants are expected to be located at existing, developed facilities located off-site from the Action Area that would require no vegetation clearing or soil disturbance. If a new batch plant(s) is required within the Action Area, it would be located in previously disturbed areas that would not impact trees, streams, or wetlands. Vegetation clearing and soil disturbance no greater than 1.2 ha (3.0 ac) would be required for each new batch plant, for a total temporary impact for 2 batch plants of 2.4 ha (6.0 ac), with no permanent impacts. Operation and permitting of the plant(s) would be handled by the sub-contractor selected to supply the Project construction.

3.1.1.8 Crane Paths

A large erection crane will set the tower segments on the foundation, place the nacelle on top of the tower, and place the rotor onto the nacelle. The erection crane(s) will move from one turbine site to another along access roads or temporary crane paths. To complete construction of the 100-turbine Project, approximately 22.7 km (14.1 mi) of temporary crane paths will be utilized. Temporary crane paths will require vegetation clearing 16.8 m (55 ft) wide and will result in no permanent soil disturbance.

3.1.1.9 Land Area Requirements

Table 3.1-2 summarizes the anticipated land area requirements for the Project components. The permanent footprint (the area of permanent disturbance) for the entire Project would be no more than 52.2 ha (128.9 ac) or 52.5 ha (129.8 ac) for the Redesign Option (see Section 3.1.4).

Table 3.1-2 Anticipated Land Area Requirements for the Project Components

Project Components	Typical Vegetation Clearing Area	Area of Soil Disturbance (temporary and permanent)	Permanent Disturbance Area (fill/structures)
Wind Turbines and Workspaces (100)	61 m (200 ft) radius per turbine	61 m (200 ft) radius per turbine	0.08 ha (0.2 ac) (pedestal plus crane pad)
Access Roads (64.4 km [40.0 mi])	16.8 m (55 ft) wide per linear foot of road	12.2 m (40 ft) wide per linear foot of road	6.1 m (20 ft) wide per linear foot of road
Buried Electrical Interconnects (except where located parallel to access roads) (56.7 km [35.2 mi], or 86.5 km [53.7 mi] for Redesign Option)	7.3 m (25 ft) wide per linear foot of cable	7.3 m (25 ft) wide per linear foot of cable	None
Overhead Electrical Interconnects (1,000 poles, or 200 poles for Redesign Option)	Clearing restricted to existing right-of-way	<0.01 ha (<0.03 ac) per pole	Negligible (0.00008 ha [0.0002 ac]), .00002 ha [.00005 ac] for Redesign Option)
Crane paths (22.7 km [14.1 mi])	16.8 m (55 ft) wide per linear foot of path	12.2 m (40 ft) wide per linear foot of path	None
O&M Building and Associated Storage Yard (1)	1.2 ha (3.0 ac)	1.2 ha (3.0 ac)	1.2 ha (3.0 ac)
Staging Areas (up to 4 areas)	9.2 ha (22.9 ac) total	9.2 ha (22.9 ac) total	None
Substation (1)	2.0 ha (5.0 ac)	2.0 ha (5.0 ac)	2.0 ha (5.0 ac)
Permanent MET Towers (4)	0.4 ha (1.0 ac)	< 0.01 ha (.03 ac) per tower	0.0008 ha (0.0002 ac)
Concrete batch plants (2)	1.2 ha (3.0 ac) per plant	1.2 ha (3.0 ac) per plant	None
TOTAL		**220.9 ha (545.8 ac), or 219.9 ha (543.6 ac) for Redesign Option**	**52.2 ha (128.9 ac), or 52.5 ha (129.8 ac) for Redesign Option**

3.1.1.10 Construction Schedule, Project Life, Decommissioning

The Applicant proposes to begin construction as soon as practicable contingent upon approval of the HCP and issuance of an ITP. Construction of access roads, underground and overhead collection system lines, and concrete turbine foundations would begin first. The Project, including all 100 turbines, would be constructed within 1 - 2 construction phases, each phase expected to continue for 12 to 18 months. The exact timing of the two construction periods is not known and may overlap. Timing is dependent upon several factors such as turbine availability, OPSB certification and economic considerations. The Applicant anticipates a 25-year Project operational life, with the HCP and ITP in effect for 30 years to cover Project construction, operation and decommissioning.

Megawatt-scale wind turbine generators typically have a life expectancy of 20 to 25 years. The current trend in the wind energy industry has been to replace or "re-power" older wind energy projects by upgrading older equipment with more efficient turbines. If, at the end of the life of the Project, an upgrade or re-power is proposed that could result in additional take of Indiana bats (e.g., due to a taller structure or a larger rotor-swept zone) or if re-powering would extend the life of the Project beyond what is authorized in an ITP, an amended ITP would be required. A renewal to the ITP could be sought if no change in the Project is proposed and authorized take of Indiana bats has not been reached by the end of the ITP term. A major amendment to the ITP would be required if changes to the Project are proposed and impacts not already considered in this EIS could occur or if exceedance of authorized take is requested.

If the Project is not upgraded, or if the turbines were non-operational for an extended period of time (such that there was no expectation of their returning to operation), they would be decommissioned. Decommissioning would be conducted in accordance with a decommissioning plan to be approved by the OPSB that would address removal of Project components/ improvements as well as site/land reclamation. The ITP would cover Project decommissioning in the extremely unlikely event that Indiana bat(s) is/are taken during decommissioning activities.

3.1.2 Operational Adjustments

Under the Proposed Action, operation of each turbine within the Project would be modified based on turbine location in relationship to suitable Indiana bat habitat and the season of Indiana bat activity. The goal of the modified operations is to avoid and minimize take of Indiana bats to the maximum extent practicable, based on best available science and site-specific data.

Operational adjustments would dictate that turbines are feathered (i.e., reduce the blade angle to the wind to slow or stop the turbine from spinning) until a designated cut-in speed is reached. Cut-in speeds are the wind speed at which rotors begin rotating and producing power. Cut-in speeds would range from the manufacturer's cut-in speed, which varies by manufacturer and size, to 6.0 m/s (13.4 mph) and periods over which they would be applied would vary on a nightly and seasonal basis and depending upon the habitat categories determined using the Habitat Suitability Model (4=least risk, 3= low risk, 2=moderate risk, and 1=highest risk, see HCP Appendix B). The higher the category of risk, the more suitable the habitat for the Indiana bat, and the more likely the Indiana bat may be found in that area. Table 3.1-3 summarizes the modified operations for each category.

Table 3.1-3 Summary of Modified Operations for Year One of Evaluation Phase

Habitat risk category	# Turbines[1]	Cut-in speed - m/s		
		Spring (1 Apr - 31 May)	Summer (1 Jun - 31 Jul)	Fall (1 Aug - 31 Oct)
Category 1 - Highest Risk	10	5.0	6.0	6.0
Category 2 - Moderate Risk	15	5.0	5.75	5.75
Category 3 - Low Risk	15	5.0	5.5	5.75
Category 4 - Lowest Risk	85	None[2]	5.25	5.75
Totals	125			

[1]No more than the specified number of turbines would be placed in the specified habitat types for the 100 turbine build-out. The sum is greater than 100 turbines to allow some flexibility in siting. No more than 100 turbines would be built.

[2] Turbines in the spring would be feathered until manufacturer-set cut-in speed is reached.

The feathering plan would vary seasonally, based on three periods in which Indiana bats display distinct behavioral characteristics that could differentially affect their exposure to wind turbines:

- Spring emergence and migration, or "spring" (1 April to 31 May);
- Early summer habitat use, or "summer" (1 June to 31 July); and
- Late summer and fall migration, or "fall" (1 August to 31 October).

Spring Feathering Plan

The spring feathering plan will be applied over a period of approximately 8.5 weeks from 1 April to 31 May during the nighttime period, ½ hour before sunset to ½ hour after sunrise. Because post-construction mortality studies at wind facilities across the country have consistently documented lower levels of bat mortality during the spring migration period, feathering levels during this period would be the least restrictive of all seasons in the Indiana bat active period. Feathering would be applied to turbines in the 3 highest habitat risk categories (Categories 1, 2, and 3) at wind speeds of 5.0 m/s (11 mph) (Table 3.1-3). Category 4 habitat has been established in the habitat suitability model as being unsuitable for roosting and foraging, and spring should represent the lowest risk time period for Indiana bats. As such, in Category 4 habitat in the spring, turbines would only be feathered until manufacturer-set cut-in speed (which varies by manufacturer and size) is reached.

Summer Feathering Plan

The summer feathering plan will be applied over a period of approximately 8.5 weeks from 1 June to 31 July during the nighttime period, ½ hour before sunset to ½ hour after sunrise. Although mortality monitoring at wind facilities during the early summer reproductive period has consistently documented less bat mortality than the fall period, feathering would be applied

to all turbines until specific cut-in speeds are reached during this period because risk to Indiana bats in the Action Area during this time is uncertain and higher mortality during late summer has been demonstrated. The summer feathering plan was based on the results of the Habitat Suitability Model (Appendix B of the HCP). Using a tiered approach, the highest cut-in speeds (6.0 m/s [13.4 mph]) would be applied to turbines located within habitat Category 1, which was predicted to have the highest suitability for Indiana bat roosting and foraging activities. The cut-in speed in this Category is the most conservative of any cut-in speed throughout the active period because there is a higher level of uncertainty as to the impacts to Indiana bats and bats in general. Assuming there is a reduced risk in increasingly lower suitability habitats, cut-in speeds would be stepped down evenly in 0.25 m/s (0.6 mph) increments in habitat Category 2 through Category 4 (Table 3.1-3).

Fall Feathering Plan

The fall feathering plan will be applied over a period of approximately 13 weeks from 1 August to 31 October during the nighttime period, ½ hour before sunset to ½ hour after sunrise. Mortality monitoring at wind facilities during the fall period has consistently documented the greatest numbers of bat fatalities relative to other seasons. Therefore, equal or more restrictive cut-in speeds would be applied to all turbines during this period to minimize impacts to Indiana bats. The late summer/early fall cut-in speeds were selected based on acoustic monitoring studies that documented decreased bat activity at higher wind speeds, and post-construction mortality monitoring studies that consistently documented substantially reduced bat mortality at cut-in speeds of 5.0 m/s (11 mph) and 6.5 m/s (14.5 mph). These cut-in speeds were also informed by three operational adjustment studies (Baerwald et al., 2009; Arnett et al., 2010; Good et al., 2011) that documented substantial reductions in bat fatalities between 38% and 93% (median of 68.3% across all studies) at curtailed and feathered turbines during the fall period using cut-in speeds of 5.0 m/s (11 mph) and above. The seasonal definitions do not define a hard switch from foraging to migration behaviors and there would inevitably be cross-over of behaviors between the defined seasonal periods. In order to ensure that pre-migratory Indiana bats are afforded the same protection as is provided in the summer feathering plan, turbines located in Category 1 habitat areas would be feathered until a cut-in speed of 6.0 m/s (13.4 mph) is reached.

Turbines would be allowed to operate at full capacity at temperatures below 10°C (50°F), based on USFWS summer survey protocol (USFWS 2007) and a multitude of studies that have documented low levels or no bat activity at low temperatures. Turbines will be allowed to operate at manufacturer specified cut-in speeds if nighttime temperatures fall below 10 °C (50°F) for a period of 15 consecutive minutes. Likewise, the cut-in speeds as specified by the feathering plan and any subsequent adaptive management actions will be implemented if the nighttime temperature has risen above 10 °C (50°F) for a period of 15 consecutive minutes.

Feathering speeds would be applied to each of the additional 48 turbines based on final locations selected and habitat suitability at those locations as defined by the Habitat Suitability Model (Table 3.1-3 and Appendix B of the HCP).

3.1.3 Habitat Conservation Plan (HCP)

The Proposed Action is USFWS' issuance of a Section 10 ITP for activities covered by the proposed HCP. The full HCP is included as Appendix B to this DEIS.

The HCP contains the following types of measures designed to avoid, minimize, mitigate, and monitor take of Indiana bats as a result of the Project:

- Project siting, construction, maintenance, and decommissioning measures (design features);
- Minimization Measures (operational adjustments described in Section 3.1.2);
- Mitigation measures;
- Conservation measures;
- Post-construction monitoring; and
- Adaptive management.

3.1.3.1 Project Siting, Construction, Maintenance, and Decommissioning Measures to Avoid or Minimize Impacts to Indiana Bat Roosting and Foraging Habitat

A series of Project design features would be used to avoid or minimize the potential for adverse effects to the Indiana bat and suitable roosting and foraging habitat from construction and maintenance activities:

- The Applicant would site the Project to minimize tree clearing to the maximum extent practicable. No more than 6.5 ha (16.1 ac) of tree clearing would occur for the 100-turbine Project (for the Redesign Option, a maximum of 6.8 ha [16.8 ac]);
- The Applicant would not remove the three known Indiana bat roost trees in the Action Area. None of the 100 turbines would be located closer than 2.9 km (1.8 mi) to known maternity roost trees documented in 2009;
- Buckeye Wind would conduct habitat assessments jointly with the USFWS for the areas of planned tree clearing once Project plans are finalized and before any clearing is conducted, during which all potential roost trees would be identified and flagged. Any potential roost trees observed within the clearing zone would be flagged and impacts avoided to the maximum extent practicable. Prior to the finalization of the detailed design of Project components, all reasonable attempts would be made to offset the clearing radii around turbines or adjust roads/interconnects to preserve any potential roosts and avoid any unnecessary clearing;
- Prior to tree removal, the limits of proposed clearing would be clearly demarcated on the site with orange construction fencing (or similar) to prevent inadvertent over-clearing of the site;
- The Applicant would conduct tree clearing during the period between 1 November and 31 March to avoid potential mortality of Indiana bats that could result from removal of previously unidentified roost trees;
- A natural resource specialist knowledgeable of Indiana bats and their habitat requirements would be present at the time of tree clearing;
- A plan note would be incorporated into the construction contract requiring that contractors adhere to all provisions of National Pollutant Discharge Elimination System (NPDES) permits and the Storm Water Pollution and Prevention Plan (SWPPP). The

SWPPP would specify Best Management Practices for construction activities that would minimize degradation of water quality resulting from runoff of stormwater and sediment from construction areas into adjacent water bodies; and

- Streams and wetlands and associated riparian areas would be avoided or impacts minimized to the maximum extent practical. When only underground collection lines cross perennial streams (i.e., no co-location of road crossings), these perennial streams crossings would utilize directional boring to avoid impacts. For intermittent or ephemeral streams, trenching would be done when the stream is dry. For road crossings, open bottomed culverts, elliptical culverts, or arched bridges would be used to avoid impacts to any high quality streams, specifically Ohio Exceptional Warmwater Habitat and Cold Water Habitat streams. Wetlands would not be impacted by construction activities for the 100 turbine Project. Crossing widths and clearing of wooded riparian areas for stream crossings would be limited to the minimum required for the crossing methods.
- Decommissioning measures will be identical to the commitments made for Project construction.

3.1.3.2 Minimization Measures

The primary method to minimize impacts to Indiana bats would be operational adjustments (i.e., the use of feathering and cut-in speeds) as described in Section 3.1.2.

3.1.3.3 Mitigation Measures

The Applicant would implement one or a combination of the following mitigation actions to compensate for the impact of the taking of Indiana bats:

- Acquiring and/or otherwise providing protection of 87.8 ha (217.0 ac) of suitable Indiana bat swarming habitat within 11.2 km (7.0 mi) of a Priority 2 Indiana bat hibernaculum[4] in Ohio, through acquisition of a conservation easement in perpetuity or purchase of the property and then assigning a conservation easement in perpetuity.
    - Within the conservation easement areas, restore travel corridors between woodlots and/or along stream corridors to increase availability of suitable Indiana bat habitat through enhanced connectivity.
    - Within conservation easement areas, enhance suitable habitat through ensuring an adequate number of suitable roost trees and through managing woody invasive species.
- Buying credits from a USFWS-approved Indiana bat mitigation bank whose geographical range service area includes the Project.
- To ensure that the habitat is adequately protected with the conservation easement, any conservation easement would be provided to the USFWS and the ODNR for comment, be held by a third-party conservation group approved by USFWS and ODNR, and would include, at a minimum, the following stipulations:

[4] Hibernacula with a current or observed historic population of 1,000 or greater Indiana bats, but fewer than 10,000.

- No industrial use;
- No new residential use;
- No commercial use;
- No agricultural use;
- No vegetative clearing;
- Development rights extinguished; and
- No subdivision.

The estimated cost to implement the above mitigation measures is $1.5 million. This amount would include the cost of identifying mitigation lands, purchasing the property or the related conservation easement, and restoration and/or enhancement of the mitigation land. Implementation of mitigation is proposed to occur in two stages. Stage 1 will include the first 10 years of operation. Stage 2 will include the last 15 years of operation. Funding for the mitigation measures will occur prior to Project operation in Stage 1 and prior to the 11th year of Project operation for Stage 2. Stage 1 mitigation will be completed prior to the end of the first year of operation; Stage 2 mitigation will be completed prior to the end of the 11th year of operation.

3.1.3.4 Conservation Measures

In cooperation with the USFWS and ODNR Division of Wildlife, the Applicant would implement one or a combination of the following conservation measures to advance the knowledge base of Indiana bat and wind energy interactions.

- Provide funding to a qualified research program(s) to conduct research on Indiana bat behavior relative to wind energy development. For example:
  - To better understand Indiana bat behavior in the vicinity of operating wind turbines, radio-telemetry, light-tagging, mist netting, and/or thermal infrared camera studies could be conducted on Indiana bats during summer in the Action Area. The three known roost trees in the northern portion of the Action Area or nearby suitable habitat could be targeted for mist-netting. Increased understanding of Indiana bat/wind power interactions will increase effectiveness of future minimization and avoidance measures at wind power facilities. Research would include data collection of flight height relative to the rotor swept-zone, spatial use patterns relative to turbines, and potential attraction or avoidance of turbines; and
  - There is a paucity of information about how Indiana bats migrate, particularly during the fall, when bats, in general, are most susceptible to collision or barotrauma at wind facilities. Such information could help to validate the assumptions of the collision risk model and help to understand the extent to which Indiana bats are at risk of barotrauma or collision with wind turbines during migration at the Project or other wind facilities. Telemetry studies could be conducted to better understand aspects of fall migration that may result in greater risk from wind power projects such as whether or not Indiana bats follow landscape or habitat features; migration flight height, speed, and duration; and

avoidance behavior of potential barriers to migration, such as wind power projects, urban areas, or major transportation thoroughfares.

See HCP Section 6.4 for further details on potential research topics, methods, and variables for measurement.

Funding in the amount of $200,000 for conservation measures would be made available from Project operating revenues to a qualified research program after 1 year of Project operation has been completed. The funding would be assigned within 5 years of the beginning of Project operation and would be provided to appropriate private or academic institutions to conduct research on Indiana bat behavior relative to wind energy development. Results of the research will be incorporated into the adaptive management of the Project, where appropriate. The assignment of funds and all research and sampling protocols will be developed in consultation with the USFWS, ODNR DOW, and appropriate scientific experts. Disbursement of funds would be decided in coordination with the USFWS and ODNR Department of Wildlife.

3.1.3.5 Post-Construction Monitoring

The HCP includes a post-construction mortality monitoring plan that would measure the effectiveness of the minimization and mitigation measures outlined above and ensure that the Project does not exceed the permitted take of Indiana bats.

Post-construction mortality monitoring for Indiana bat mortality would be conducted within 3 phases: the Evaluation Phase, Implementation Phase, and Re-Evaluation Phase. The objective of the Evaluation Phase is to monitor Indiana bat mortality to ensure that it is at or below the expected levels, and if it is not, to use adaptive management (see Section 3.1.3.5) to arrive at a feathering regime that results in take that is at or below expected levels. During the Implementation Phase, the operational feathering regime determined at the end of the Evaluation Phase will be implemented long-term. Monitoring will be conducted during the Implementation Phase to ensure that incidental take of Indiana bats remains at or below expected levels. Implementation Phase monitoring will occur biennially for the first 4 years, and provided that incidental take of Indiana bats remains at or below expected levels, will move to once every 3 years. Re-evaluation Phase monitoring would be implemented if modified feathering is triggered according to adaptive management criteria (see Section 3.1.3.5). Re-evaluation Phase monitoring will also allow Buckeye Wind to test new avoidance or minimization techniques that may become available to effectively minimize Indiana bat mortality while operating the Project in the most cost-effective manner. Re-evaluation Phase monitoring would occur for a minimum of 2 consecutive years.

Monitoring would be most intensive during the first years of Project operation, during the Evaluation Phase, which would last for a minimum of 2 years. Monitoring would occur at every turbine location with a 3-day search interval from 1 April to 15 November during the first 2 years of monitoring. After two years of study during the Evaluation Phase, if no Indiana bat carcasses are documented at the site after 31 October, and if less than 5% of all documented bat carcasses occur after 31 October, the monitoring period would be shortened to end on 31 October. Each subsequent monitoring year, monitoring would occur from 1 April to 31 October.

Initially, the search area would consist of an area that extends 2.0 times the blade length from the base of the turbine (i.e., radius of 100 m (328 ft) for a 50 m [164 ft] blade). Following two years of study, the search area would be modified to the distance within which 90 % of the bat

carcasses and 100% of Indiana bat carcasses were found, not to exceed the size of the original search area.

During all monitoring phases searcher efficiency and carcass removal rates would be evaluated through a series of trials. Searchable area would be quantified for each turbine throughout the search period. Correction factors for these variables would be built into a formula for calculating annual mortality with as much accuracy as possible. Post-construction monitoring would also document annual mortality of birds and other bat species related to Project operations. Prior to initiation of mortality searches, the appropriate state and federal permits necessary for the collection and possession of Indiana bats (and other bats and birds) would be obtained (e.g., MBTA Special Purpose – Utility Migratory Bird Mortality Monitoring Permit, State Collectors Permit). Surveyors would be trained by the post-construction monitoring manager on the proper handling of live birds and bats in the event that they are found. Any individual that handles live bats would maintain an up-to-date rabies vaccination. In addition, all *Myotis* species collected would be sent to USFWS/ODNR for species verification.

In order to enhance the understanding of the factors that contribute to increased risk of Indiana bats and potentially refine the feathering plan and maximize the operational output of the Project, the following factors that influence Indiana bat mortality would be monitored:

- Seasonal variation of mortality;
- Variation in mortality with respect to turbine location and habitat; and
- Variation in mortality with respect to weather characteristics, including:
    - Wind speed
    - Temperature
    - Barometric pressure
    - Humidity

Monitoring efforts would also assess the condition of mitigation habitat. Mitigation monitoring would document the location, quantity, and land cover for each mitigation site and any restoration and/or enhancement actions that have occurred at the mitigation site to date. At each mitigation site, Buckeye Wind would monitor habitat features including number and diameter of potential roost trees, survival of planted trees, and percent cover of woody invasive species. Mitigation monitoring for each phase would be performed in each of Years 1 through 5 after the mitigation has occurred and every 5th year thereafter until the end of the ITP Term.

3.1.3.6 Adaptive Management

The Proposed Action would incorporate an adaptive management strategy to respond (primarily through modification of the HCP's minimization and mitigation measures) to monitoring results and new information on the impacts to Indiana bats from wind development. The goals of the adaptive management plan would be to ensure that authorized incidental take levels are not exceeded, and that mitigation lands provide suitable Indiana bat habitat. The adaptive management strategy is described in detail in the HCP Section 6.5.3.

The portion of the adaptive management plan that ensures incidental take levels are not exceeded is structured around a monitoring feedback loop that includes Evaluation Phase, Implementation

Phase, and Re-Evaluation Phase Monitoring efforts. Mortality monitoring would be the primary method used to gather information about effects of the project on Indiana bat populations, and would be used to inform management actions.

Trigger points for immediate adaptive management actions have been established that would increase cut-in speeds at defined intervals based on the number of observed Indiana bat mortalities in a season in a single year. Two documented Indiana bat mortalities prior to the fall season, or less than 2 documented Indiana bat mortality prior to fall and two during the fall, or three documented Indiana bat mortalities during the fall would result in cut-in speeds immediately being increased by 1.0 m/s (2.2 mph) at all turbines. Additional documented mortality prior to the fall season, or two additional mortalities during the fall season, would immediately trigger all turbines operating with a cut-in speed of 7.0 m/s (15.7 mph). If additional Indiana bat mortality is documented after cut-in speeds are increased to 7.0 m/s (15.7 mph), all turbines would immediately be turned off from 1 hour before sunset to 1 hour after sunrise for the remainder of the active period. Should a trigger event occur in any given year, adaptive management strategies (i.e., increasing cut-in speeds) would also be implemented the following year and Evaluation Phase monitoring would be implemented for at least 2 years.

If no trigger points for immediate adaptive management are reached during Evaluation Phase monitoring, the decision to implement adaptive management actions in the subsequent year would be based on the estimated annual Indiana bat take calculated based on the results of that year's mortality monitoring. For example, at the end of the first year of Evaluation Phase monitoring, if the annual Indiana bat mortality estimate remains at or below expected levels, cut-in speeds can be reduced by 0.5 m/s or maintained at the same level. If the annual Indiana bat mortality estimate again remains at or below expected levels at the end of the second year of Evaluation Phase monitoring, the project could then enter into Implementation Phase monitoring at the same cut-in speeds as Year 2 of Evaluation Phase monitoring, or the cut-in speeds could be reduced by 0.5 m/s and an additional year of Evaluation Phase monitoring would occur. If the annual Indiana bat mortality estimate exceeds expected levels in any one Evaluation Phase monitoring year without reaching trigger points for immediate adaptive management, then the cut-in speeds would increase by 0.5 m/s and an additional year of Evaluation Phase monitoring would occur to confirm that the estimated Indiana bat mortality levels are at or below the expected levels. Further adjustments to cut-in speeds may be made if, after two years of Evaluation Phase monitoring, observed mortality patterns suggest greater or reduced risk in certain season, habitats, or weather conditions (see HCP Section 6.5.3 for a detailed description of the adaptive management strategy. In no instance would the cut-in speeds of any particular turbine be decreased by more than 0.5 m/s (1.1 mph) in any one year. Any adjustment to cut-in speeds (increase or decrease) would be subject to an additional year of Evaluation Phase monitoring before moving into the Implementation Phase.

Once mortality rates are documented at expected levels or lower, for at least 2 years of Evaluation Phase monitoring, the feathering plan would remain in place and Implementation Phase monitoring would be implemented until such time that any one of the following occurs: 1) trigger points for immediate adaptive management occur in any one year; 2) greater than expected mortality is estimated in any two consecutive years without reaching trigger points; 3) results of Implementation Phase monitoring indicate that season, habitat, or weather extremes including wind speed, barometric pressure, temperature, or humidity contribute more or less risk to Indiana bats and Buckeye Wind elects to alter feathering strategies as a result; or 4) new techniques or new information are developed that can help reduce Indiana bat mortality and

Buckeye Wind elects to implement those new techniques or information with approval from the USFWS. These events would trigger adaptive management action and would result in Re-Evaluation Phase monitoring. Results of monitoring studies would inform any changes to the feathering plan and monitoring protocols for all turbines or a subset of turbines as deemed appropriate (e.g., higher than expected mortality levels observed at some turbines would lead to an appropriate adjustment of cut-in speeds at those turbines).

The adaptive management plan also would ensure that mitigation habitat remains suitable for Indiana bats throughout the duration of the ITP. Monitoring results from each mitigation site would be used to determine if girdling trees is necessary in order to maintain the desired density of snags, if additional woody invasive species control is needed to maintain less than 5% woody invasive cover, and whether 300 stems/ac on average per planting area have survived. If desired snag densities are not present, trees will be girdled to create snags. If woody invasive species cover exceeds 5% at any mitigation site in any monitoring year, control methods including manual pulling and digging and herbicides would be used to reduce cover to below 5%. In areas where tree planting occurred, adaptive management would be used to ensure survival of at least 300 planted stems/ac.

3.1.4 Collection System Redesign Option

The Redesign Option would move a portion of the Project's collection lines to an underground system located on private land under easement. This Redesign Option is under consideration and would require various state and local permits. As such, it is offered here as an optional Project design that would be implemented at Buckeye Wind's discretion. While the exact design is not known at this time, the Redesign Option would include no more than 95.4 km (59.3 mi) of 34.5 kV interconnect lines that would connect individual turbines to the substation, of which 86.5 km (53.7 mi) would be installed underground with about 32% installed parallel to Project access roads and 9.0 km (5.6 mi) would be installed overhead. No turbine locations would be altered except as otherwise required as part of normal Project micro-siting.

3.2 Alternative A – Maximally Restricted Operations Alternative, No HCP

Alternative A would require more operational restrictions than those described in the HCP, which would eliminate take of Indiana bats. Accordingly, an ITP would not be necessary and the HCP and associated conservation measures would not be implemented.

Alternative A contains the following elements:

- Project components and associated infrastructure identical to those described in the HCP; and
- Operational adjustments would be used to eliminate take of Indiana bats by having all 100 turbines non-operational from sunset to sunrise during the entire period over which Indiana bats are active (April 1 through October 31).

3.3 Alternative B – Minimally Restricted Operations Alternative with HCP

This alternative would require less operational restrictions than those described in the HCP. It would include implementation of the HCP and associated post-construction monitoring and adaptive management as described in the HCP.

Alternative B contains the following elements:

- Project components and associated infrastructure identical to those described in the HCP;
- Operational adjustments would be used to reduce take of Indiana bats by feathering all 100 turbines until a cut-in speed of 5.0 m/s (11 mph) is reached. This cut-in speed would be applied to the turbines for the hours of the night during which *Myotis* bats have been documented to be most active (i.e., the first one to six hours after sunset). The timing restriction would be during the fall migration period (August 1 through October 31), which has consistently been documented to be the window of highest risk for mortality of Myotis and other bat species based on results from post-construction monitoring studies; and
- HCP as described for Proposed Action, including post-construction monitoring, mitigation, and adaptive management focused on Indiana bat.

3.4 Alternative C – No Action

Under the No Action Alternative, the USFWS would not issue an ITP and the Project would not be developed. The No Action Alternative would avoid the potential take of the Indiana bat, but would also not provide a clean source of electricity, offset carbon emissions, or contribute to the Nation's renewable energy portfolio. The No Action Alternative would also not provide the conservation, research, and advanced knowledge of bat- and bird-wind interactions that could help the overall health of the Indiana bat and other bat and bird species.

3.5 Summary of Proposed Action and Alternatives Considered in this DEIS

Table 3.5.1 summarizes the key features of the Proposed Action and Action Alternatives (Alternatives A and B) considered in this DEIS. The table does not include Alternative C – No Action because under this alternative the Project would not be developed.

Table 3.5-1 Summary of Proposed Action and Action Alternatives Considered in this DEIS

Proposed Action - Modified Operations	Alternative A Maximally Restricted Operations Alternative	Alternative B Minimally Restricted Operations Alternative
Project Components 1. 250 MW wind-powered electric generation Project. 2. Up to 100 turbines, total height up to 150 m (492 ft). 3. Electrical system: 113.5 km (70.5 mi) of buried and overhead cables (95.4 km [59.3 mi] of cables under the redesign option); 2.0 ha (5 ac) substation. 4. 64.4 km (40.0 mi) of access roads. 5. Approximately 22.7 km (14.1 mi) of crane paths. 6. Up to four construction staging areas, totaling 9.2 ha (22.9 ac). 7. A 557.4 m^2 (6,000 ft^2) operations and maintenance building within a 1.2 ha (3.0 ac) area. 8. Four permanent MET towers. 9. Up to 2 concrete batch plants; 1.2 ha (3 ac) each 10. Total permanent vegetation disturbance approximately 52.2 ha (128.9 ac) or 52.5 ha (129.8 ac) for Redesign Option. 11. 30-year life of the HCP and ITP.	Same as Proposed Action.	Same as Proposed Action.
Operational Adjustments Project operational adjustments (feathering and cut-in speeds) based on turbine location in relationship to identified suitable Indiana bat habitat and season.	All 100 turbines would be non-operational during the period when Indiana bats could be present in the Action Area (sunset to sunrise from April 1 through October 31).	Turbine would be feathered until a cut-in speed of at 5.0 m/s (11 mph) for all 100 turbines during the first one to six hours after sunset from August 1 through October 31.
HCP 1. Avoid removal of the three known Indiana bat roost trees in the Action Area. 2. Conduct tree clearing between 1 November and 31 March to avoid potential mortality of Indiana bats that could result from removal of previously unidentified maternity roost trees. 3. Post-construction monitoring plan to measure the take of Indiana bat and the effectiveness of minimization and mitigation measures. 4. Adaptive management based on post-construction monitoring results. 5. Mitigation by conservation easement in perpetuity on 87.8 ha (217 ac) of suitable Indiana bat habitat within 11.3 km (7.0 mi) of a Priority 2 Indiana bat hibernaculum in Ohio or use of an approved Indiana bat mitigation bank in Ohio. 6. Funding for studies and research on Indiana bats and wind turbine interaction or migration behavior.	HCP would not be implemented.	Same HCP as under Proposed Action.