



thoroughbred solar

Attachment I

Landscaping and Lighting Plan



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Thoroughbred Solar
Hart County, Kentucky

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Attachment A – Landscape Screening Plan

1. Introduction

Thoroughbred Solar, LLC (Thoroughbred or Applicant) is proposing to construct a 50-megawatt solar energy generating facility (the Project) on approximately 530 acres in Hart County, Kentucky (the Project Area). Thoroughbred has developed this conceptual plan of potential landscape and lighting to be used in specific locations within the Project Area.

In general, the need for lighting will be limited to the minimum necessary in order for security and/or task lighting in the event of the need for nighttime maintenance.

2. Landscaping Plan Design Methodology

The conceptual planting modules identified for the landscaping plan are designed to utilize native plant material intended to complement the existing vegetation within and adjacent to the Project Area. In most instances, the recommended planting modules are not intended to provide complete screening of the Project; rather, the plantings are intended to provide intermittent screening and soften the view while providing ecological benefits through the creation of foraging and habitat areas for local wildlife. The landscape mitigation outlined in this plan represents a preliminary concept with the main goal of minimizing and reducing the potential visual impacts to resources adjacent to the Project Area.

Another key component to developing a successful mitigation plan is to retain existing plant material wherever possible. Not only does this provide immediate screening for Project components but also has the added benefit of allowing new vegetation to blend more seamlessly with existing vegetation, increasing the likelihood for successful integration of the Project. Without the retention of existing plant material, Project components and even new vegetation would have a much stronger visual contrast, producing a less integrated result. Wherever feasible, retention of plant material, particularly near sensitive areas such as property lines and along public roads, will help to preserve and/or enhance the character of the surrounding context. In this instance, the majority of the Project Area consists of open agricultural fields, so the ability to retain existing mature trees is limited, but will be prioritized where possible. A total of approximately 20 acres of tree clearing is proposed, consisting of scattered trees and vegetated fencerows. Most of the perimeter vegetation is planned to remain following construction, and the approximately 23-acre stand of trees located in the southeastern portion of the Project Area will also be preserved.

The landscape mitigation is designed with the intent of softening the horizontal edges often introduced by solar arrays. Depending on the location and distance of potential viewing locations adjacent to the Project, varying plant types and densities are proposed within the Project Area in order to provide an appropriate level of mitigation. For example, a residence with views focused directly into the Project Area where arrays are located may receive a denser planting module than a local road where only fleeting views of the Project may be available. As such, this plan considers three preliminary planting modules which vary in density and plant material. The modules were developed in consideration of the existing landscape character, likelihood of successful establishment based on regionally appropriate species, and options to allow for a meaningful reduction in visual contrast associated with the Project to the greatest extent possible. The module options have been developed not only to assimilate the Project into its surroundings but to also provide ecological benefits.

Key aspects of design methodology; plant material selection and maintenance; specific locations where screening is currently proposed; and details regarding specific planting modules are provided in the following sections.

2.1 PLANT MATERIAL SELECTION AND MAINTENANCE

2.1.1 Visual Screening

Selecting an appropriate visual barrier is dependent on the context of the surroundings, which includes actively soliciting feedback from nearby residents. While an opaque fence may be well suited to an urban setting, it would not fit in a rural landscape. Vegetative buffers, on the other hand, have precedent in agricultural landscapes and would not appear out of place in most instances. The use of vegetation mimics typical farm field hedgerow borders while obscuring/screening the contrast of the horizontal elements of the Project.

2.1.2 Native Plant Materials

Selecting plant materials native to a specific site or region provides the opportunity for the greatest success. Species that are best suited for their site-specific climate will require minimal maintenance to achieve their maximum size and form and will have the greatest likelihood of survival. Planting native species allows the Project to become integrated into surrounding vegetation, while providing habitat, food, and shelter for other native species of insects, birds, and wildlife.

Using seed mixes of various native grasses is an effective method to introduce biodiversity to a site in a way that compliments the existing landscape. Creating habitat for insects, birds, butterflies, and bees provides an ecological benefit to the surrounding monoculture of agricultural crops. These plantings provide cover, food, breeding and feeding grounds for a variety of species. In addition to the ecological benefits, these areas help to soften the views of solar facilities during the growing season while maintaining open views and vistas that extend beyond the Project. Herbaceous plantings also help stabilize soils and filter runoff. Native grasses can provide visual interest both while in bloom and when left to stand over winter.

2.1.3 Existing Vegetative Setting

Existing vegetation mainly consists of agricultural crops within and adjacent to the Project Area. However, these expansive agricultural fields often are bounded by thin hedgerows; areas of wood lots and stream channels lined with a vegetative buffer are limited but do occur within the Project Area. Roadside trees are also located in places throughout the Project Area. Where appropriate, existing vegetation will inform the general plant material selection for the proposed mitigation plan. This strategy largely relies on the theory that the success of existing native species in the area serves as an indicator that conditions may be suitable for newly installed plants of the same or similar species.

2.2 EXISTING SCREENING

As can be seen on the screening plan in Attachment A, considerable existing vegetation exists around the perimeter of the Project Area that will be retained with the Project in place. In addition, the approximately 23-acre stand of trees located in the southeastern segment of the Project will also remain in place. Both of these features will provide for considerable natural screening of the Project, especially when coupled with the terrain within the Project Area and the surrounding landscape. Additional landscaping will be integrated into the Project as described in Section 2.3.

2.3 PLANTING MODULES

Two distinct planting modules have been developed for use within the Project Area. A drawing of the two landscape buffer types is provided in plan and elevation, and each is described below. All species selected for the project are native and/or commonly grown in Kentucky.

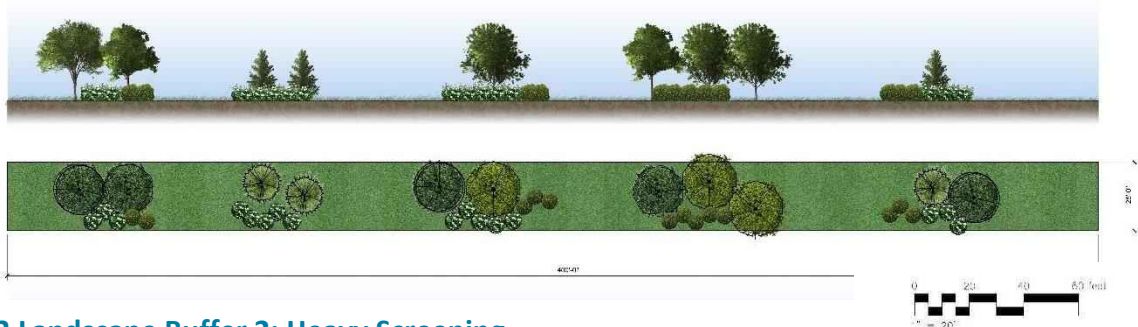
Note that the illustration represents the condition of approximately 10 years of growth. The projected vegetation growth rates are estimates and do not constitute any guarantee of plant establishment and success in a given area. Factors such as soil condition, precipitation rate, climate exposure, incorrect installation, establishment rate, vandalism, disease and pest infestation, maintenance of overgrowth, and vegetation competition play a key role in the health and projected growth of an individual specimen or species. Attachment A illustrates the intended locations for each particular landscape type. Note that these are preliminary locations that will be revised based upon final engineering details, drain tile investigations, and other local considerations.

2.2.1 All Landscape Buffers: Pollinator Habitat

In both of the Landscape Modules, grasses and pollinator seed mixes will have the potential to be used in the vegetation plan. This is intended to soften the edges of agricultural fields or low visibility areas with use of a pollinator seed mix, or to enhance a landscaped area. The seed mix will provide seasonal color and texture interest as well as ecological benefits that did not previously exist within the Project Area. A variety of potential seed mixes will be specified based on the expected soil composition in different locations within the Project Area to increase survivability and successful regeneration.

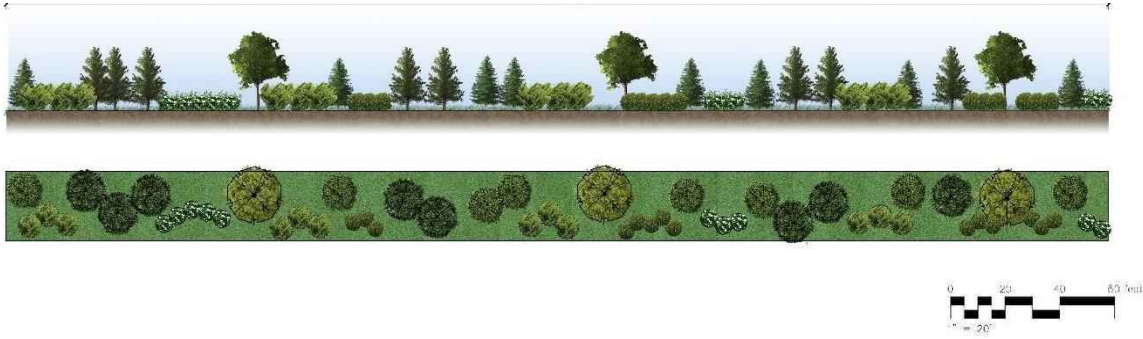
2.2.2 Landscape Buffer 1: Standard Screening

As shown in Attachment A, Landscape Buffer 1 has primarily been selected for use along roadways where panels are relatively proximate to local roadways, but specific dwellings are not adjacent. Consisting of shrubs and trees of varying scale and form spaced to create visual interest, Landscape Buffer 1 has the ability to visually break up the horizontal line resulting from the solar array, and to provide partial screening and greater integration with the surrounding landscape. The lower profile of the majority of the selected species allows for partial Project screening while maintaining long views and open sky over the top of the Project's features. The resulting variety of colors and heights spaced along the array fenceline would not fully obscure visibility but would provide a natural screening to the viewed Project.



2.2.3 Landscape Buffer 2: Heavy Screening

As shown in Attachment A, its use is intended for locations where viewer may have the potential to see Project features, but where the layout buffer results in a reduced visual effect. Landscape Buffer 2 reflects an almost continuous stretch of plantings, consisting of tall deciduous and evergreen species as well as lower-growing shrubs. Species with varying coloration and size were selected for visual interest. Landscape Buffer 2, while a considerably greater level of screening than Landscape Buffer 1, is still intended to soften views toward the Project while allowing for longer-range line-of-sight.



2.2.4 Lighting Plan

Lighting for the Project will be designed to have minimal impact on the surrounding community while providing for safe operations. Area lighting will meet the standards of applicable engineering and other codes and standards.

During construction no lighting is proposed within laydown areas, although it could be added as needed, should safety or vandalism issues be identified. Lighting during construction is anticipated to be minimal and will be restricted to construction hours. To the extent practicable, lighting will be oriented toward the interior of the Project, away from roadways and adjacent residences.

Downlit security lighting will be used at Project entrances, the Project Substation, the Utility Switchyard, the O&M Building, and at inverters. All fixtures will be oriented toward the Project and, to the extent appropriate for the purpose, be directed downward. Motion sensing lights can be used at entrances and the O&M building, while inverter lighting can be task lighting that would be manually turned on only in the event nighttime maintenance was required. It is expected that the electrical substation and utility switchyard associated with the Project will require lighting to remain on for security purposes; full cutoff optics will be used to reduce unwanted fugitive light.

3. Conclusion

Mitigation of visual impacts is an important component of the development of a solar facility. The proposed landscaping serves to reduce or minimize the potential visual impacts associated with the Project to the extent practicable. The three landscape buffers demonstrate potential mitigation options that could be incorporated into the Project. In addition to the visual mitigation provided, prioritizing the selection of native species further enhances ecological benefits through habitat creation and increased biodiversity. It is anticipated that the proposed landscaping will be effective in achieving the goals outlined in this plan. However, circumstances such as appropriate planting medium, the presence of utilities, availability of species at the time of procurement, and continued input from the key stakeholders (such as the County Soil and Water Conservation District and adjacent landowners for whom the screening is targeted) may result in alterations or substitutions to the proposed materials.

Lighting will also carefully balance the need for safety and task support with minimizing community visual effect. By limiting the lighting to the essential locations, and using sensor and manual task lighting to the extent possible, the community is not expected to be affected by the Project's lighting.

Attachment A
Landscape Screening Plan

