# Decommissioning Plan – White Tail Solar, Augusta Township, Washtenaw County, Michigan

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# 1.0 INTRODUCTION

White Tail Solar, LLC (White Tail), a subsidiary of Ranger Power, LLC (Ranger Power) is developing the White Tail Solar Project (Project), on approximately 664 acres of land in Augusta Township, Washtenaw County, Michigan. Stantec Consulting Services Inc. (Stantec) has prepared this Large Solar Energy System (LSES) Decommissioning Plan (Plan) to describe the decommissioning phase of the Project. The Project is being developed near the western boundary of Augusta Township southeast of Stony Creek, Michigan.

The Project boundary encompasses approximately 470 acres of potential land within perimeter fencing (project parcels total approximately 664 acres). The maximum nameplate generating capacity of the Project will be approximately 72.6 megawatts (MW) alternating current (AC). Construction of the Project is planned to begin in 2021 with the Commercial Operation Date (COD) projected in 2022.

This Plan has been prepared in accordance with Augusta Township Large Solar Energy System Ordinance (the “Ordinance”); Article 6.25, Sections B.12 and O. This Plan is applicable to the decommissioning/deconstruction and restoration phases of the Project. A summary of the components to be removed is provided in Section 1.1. A summary of estimated costs associated with decommissioning is included in Section 4.0.

## 1.1 SOLAR PROJECT COMPONENTS

Major components of the Project covered under this Plan include (also see Figure 1):

- Solar panels and tracking system
- Foundations and steel piles
- Inverter stations
- Electrical cabling and conduits
- Site access and internal roads
- Perimeter fencing
- Substation

## 1.2 TRIGGERING EVENTS AND EXPECTED LIFETIME OF PROJECT

Project decommissioning may be triggered by events, such as: abandonment during Project construction, interruption of minimum generation requirements as defined by the Decommissioning Agreement, or when the Project reaches the end of its operational life.

The estimated lifetime typical of the equipment utilized in this Project is approximately 40 years; however, the project lifetime may be extended to 50 years or more with equipment replacement and repowering. Depending on market conditions and project viability, the solar arrays may be retrofitted with updated

components (e.g., panels, frame, tracking system, etc.) to extend the life of the project. In the event that the modules are not retrofitted, or at the end of the Project's useful life, the panels and associated components will be decommissioned and the site will be restored in accordance with this Plan or an updated decommissioning plan agreed to between the Project and applicable regulatory bodies at the time of decommissioning.

## 1.3 DECOMMISSIONING SEQUENCE

As required by the Ordinance the LSES will be considered abandoned and shall be removed if not operated for a continuous period of 12 months. The ground will be restored to its original topography, to the extent reasonably possible, within 12 months of abandonment or decommissioning. Restoration of the Project may extend beyond this period as more time may be required to monitor for successful revegetation and restoration. The general sequence of decommissioning and removal is described below; however, overlap of activities is expected:

- Reinforce access roads, if needed, and prepare site for component removal;
- Install temporary erosion fencing and other best management practices (BMPs) to protect sensitive resources and control erosion;
- De-energize solar arrays;
- Dismantle panels and racking;
- Remove frame and internal components;
- Remove portions of structural foundations or piles and backfill sites;
- Remove inverters stations and skids;
- Remove electrical cables and conduits located at a depth of three feet or less;
- Remove substation;
- Remove access and internal roads and grade areas, as needed or agreed upon within landowner leases;
- De-compact subsoils (if required), restore and revegetate disturbed land to pre-construction conditions to the extent practicable.

# 2.0 PROJECT COMPONENTS AND DECOMMISSIONING ACTIVITIES

Project components and decommissioning activities are further described within this section.

## 2.1 OVERVIEW OF SOLAR FACILITY SYSTEM

The Project anticipates utilizing 241,878 solar modules, with a total nameplate generating capacity of approximately 101.6 MW direct current (DC) (72.6 MW[AC]). The White Tail Solar Project generating facilities will be placed within the 470 acres of potential land bounded by perimeter fencing as shown on Figure 1. The land within the perimeter fencing is predominantly agricultural land. Statistics and estimates provided in this Plan are based on a bifacial LONGi 420-watt mono-crystalline module, although the final panel manufacturer has not been selected at the time of this report. The fenced areas shown on the attached figure include additional areas that may not be utilized in the final Project design.

Foundations, steel piles, electric cabling and conduit 36 inches or less below the soil surface will be removed; equipment placed greater than 36 inches in depth may be abandoned in place. Access roads may be left in place if requested and/or agreed to by the landowner; however, for purposes of this assessment, all access roads are assumed to be removed. Public roads damaged or modified during the decommissioning and reclamation process will be repaired upon completion of the decommissioning phase.

Estimated quantities of materials to be removed and salvaged or disposed of are included in this section. Many of the materials described have salvage value; although, there are some components that will likely have none at the time of decommissioning. All materials will be salvaged or recycled to the extent possible. All other waste materials will be disposed of in accordance with state and federal law in an approved licensed solid waste facility.

Solar panels will have value in a resale market, decreasing over the life of the Project. For purposes of this report, salvage values only, not resale, were considered, as this is the more conservative estimate strategy.

Table 1 presents a summary of the major Project components included in this Plan.

**Table 1 Major Components of Solar Project to be Decommissioned**

| Component | Quantity | Unit of Measure |
|---|---|---|
| Solar Modules | 241,878 | Each |
| Tracking System (equivalent full trackers based on 78 panels per tracker) | 3,101 | Tracker |
| Steel Piles (including trackers and inverter stations) | 37,488 | Each |
| Inverter Stations (on skids and piles) | 23 | Each |
| Perimeter Fencing | 67,639 | Linear Foot |
| Internal Access Roads (approximate) | 27,285 | Linear Foot |

## 2.2 SOLAR MODULES

The Project is planning to use a bifacial monocrystalline silicon (mono-Si) panel (420 watt) from LONGi or other manufacturers for the Project. Each module assembly (with frame) has a total weight of approximately 65 pounds (29.5 kg). The modules will be approximately 84 by 41 inches (213 by 105 cm) in size and are mainly comprised of non-metallic materials such as silicon, glass, composite film, plastic, and epoxies, with an anodized aluminum frame.

At the time of decommissioning, module components in working condition may be refurbished and sold in a secondary market yielding greater revenue than selling as salvage material; however, for purposes of this report, only salvage value of the components is considered.

## 2.3 TRACKING SYSTEM AND SUPPORT

The solar modules will be mounted on a single-axis tracking system, such as those manufactured by NEXTracker. Each full tracker is approximately 83 meters (271 feet) in length and will support approximately 78 solar modules. Smaller trackers will be employed at the edges of the layout, to efficiently utilize available space. The tracking system is mainly comprised of galvanized and stainless steel; steel piles that support the system are comprised of structural steel.

The solar arrays will be deactivated from the surrounding electrical system and made safe for disassembly. Liquid wastes, including oils and hydraulic fluids will be removed and properly disposed of or recycled according to regulations current at the time of decommissioning. Electronic components, and internal electrical wiring will be removed and salvaged. The steel piles will be completely removed from the ground.

The supports, tracking system, and posts contain salvageable materials which can be sold to provide revenue to offset the decommissioning costs.

## 2.4 INVERTER STATIONS

The inverter stations typically sit on a skid assembly mounted on steel pile foundations within the array. The inverters and associated equipment will be deactivated, disassembled and removed. Depending on condition, the equipment may be sold for refurbishment and re-use. If not re-used, they will be salvaged or disposed of at an approved solid waste management facility.

## 2.5 ELECTRICAL CABLING AND CONDUITS

The Project's underground electrical collection system will be installed at a depth greater than 36 inches. Cabling located below 36 inches may be abandoned in place at the time of decommissioning.

## 2.6 PROJECT SUBSTATION

White Tail Solar will include a Project substation within an approximately 400-foot by 600-foot footprint. The substation will contain within its perimeter, a gravel pad, power transformers and footings, electrical control house and concrete foundations, as needed. A security fence surrounds the substation perimeter. The fence will be completely removed from the site at the time of decommissioning. The substation transformers may be sold for re-use or salvage. Components of the substation, including the perimeter fence, that cannot be salvaged will be transported off-site for disposal at an approved waste management facility. Although there is some potential that the Project substation may remain at the end of the Project life, an estimated decommissioning cost has been included in this Plan.

## 2.7 OPERATIONS AND MAINTENANCE BUILDING

The Project will include an operations and maintenance building within the Project area that will be of a Conex box type construction. The placement of the structure on the site will be in conformance with all local and state building codes and it will be completely removed during the decommissioning process.

## 2.8 PERIMETER FENCING, SITE ACCESS AND INTERNAL ROADS

The Project site will include a perimeter fence for security. White Tail has requested to install a seven-foot-high deer fence with wood posts, as this design blends into the rural / natural surroundings while still providing site security. The substation fence will be a seven-foot chain link fence with one-foot extension arm consisting of a minimum of three strands of barbed-wire placed above the fencing and slanting outward as measured from the natural grade of the fencing perimeter, or something similar that complies with NESC and industry standards. The perimeter and substation fencing will be completely removed from the Project site during decommissioning.

Access drives will provide direct access to the solar facility from local roads. Internal roads will be located within the array to allow access to the equipment. The access drives and internal roads will be approximately 20 feet wide and total 27,285 linear feet (5.17 miles). The internal access road lengths may

change with final Project design. To be conservative, the decommissioning estimate assumes that all internal roads will be completely removed.

During installation of the Project site access road, subgrade conditions may be stabilized by either the placement of geogrid reinforced granular fills over soft ground, chemical stabilization, or cement stabilization. This Plan assumes the installation of geogrid and fill of up to eight inches of granular materials (No. 2 stone), followed by four inches of compacted granular backfill during the initial site construction. The estimated quantity of these materials is provided in Table 2.

### Table 2 Typical Access Road Construction Materials

| Item | Quantity | Unit |
|---|---|---|
| Geogrid | 60,634 | Square Yards |
| No. 2 stone, 8 inches thick | 13,470 | Cubic Yards |
| Compacted granular backfill, 4 inches thick | 6,740 | Cubic Yards |

Decommissioning activities include the removal and stockpiling of aggregate materials onsite for salvage preparation. It is conservatively assumed that all geogrid and aggregate materials will be removed from the Project site and hauled up to five miles from the Project area. Following removal of aggregate and geogrid, the access road areas will be graded, de-compacted with deep ripper or chisel plow (ripped to 18 inches), backfilled with native subsoil and topsoil, as needed, and land contours restored as near as practicable to preconstruction conditions.

# 3.0 LAND USE AND ENVIRONMENT

## 3.1 SOILS AND AGRICULTURAL LAND

Areas of the Project that were previously utilized for agricultural purposes will be restored to their preconstruction condition and land use. Restored areas will be revegetated in consultation with the current landowner. Decommissioning activities will comply with regulations as stated in the current project permit and any environmental agency regulations in place at the time of decommissioning. Land disturbed by Project facilities will be restored in such a way to be used in a reasonably similar manner to its original intended use as it existed prior to Project construction.

## 3.2 RESTORATION AND REVEGETATION

Project areas that have been excavated and backfilled will be graded as previously described to restore land contours as near as practicable to preconstruction conditions. The current site terrain is relatively flat. Soils compacted during decommissioning activities will be de-compacted, as necessary, to restore the land to pre-construction conditions. If present, drain tiles that have been damaged will be repaired or replaced to pre-construction condition.

## 3.3 SURFACE WATER DRAINAGE AND CONTROL

The Project area is predominantly located in active agricultural land. The terrain is relatively flat. The Project facilities have been sited to avoid wetlands and waterways to the extent practicable. The existing Project site conditions and proposed BMPs to protect surface water features will be detailed in a Stormwater Pollution Prevention Plan (SWPPP) for the Project prior to the commencement of construction activities.

Surface water conditions at the Project site will be reassessed prior to the decommissioning phase. White Tail will obtain the required water quality permits if needed, before decommissioning of the Project. Construction storm water permits will also be obtained and a SWPPP prepared describing the protections needed reflecting conditions present at the time of decommissioning. BMPs may include: construction entrances, temporary seeding, permanent seeding, mulching (in non-agricultural areas), erosion control matting, silt fence, filter berms, and filter socks.

## 3.4 MAJOR EQUIPMENT REQUIRED FOR DECOMMISSIONING

Equipment required for the decommissioning activities is similar to what is needed to construct the solar facility and may include, but is not limited to: small cranes, low ground pressure (LGP) track mounted excavators, backhoes, LGP track bulldozers, LGP off-road end-dump trucks, front-end loaders, deep rippers, water trucks, disc plows and tractors to restore subgrade conditions, and ancillary equipment. Over-the-road dump trucks will be required to transport material removed from the site to disposal facilities.

# 4.0 DECOMMISSIONING COST ESTIMATE SUMMARY

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report approximate 2019-2020 average market values were used to estimate labor expenses. Fluctuation and inflation of the labor costs were not factored into the estimates.

The value of the individual components of the solar facility will vary with time. In general, the highest component value would be expected at the time of construction with declining value over the life of the Project. Over most of the Project's life, components such as the solar panels could be sold in the wholesale market for reuse or refurbishment. As panel efficiency and power production decrease due to aging and/or weathering, the resale value will decline accordingly. Secondary markets for used solar components include other utility scale solar facilities with similar designs that may require replacement equipment due to damage or normal wear over time; or other buyers (e.g., developers, consumers) that are willing to accept a slightly lower power output in return for a significantly lower price point when compared to new equipment.

## 4.1 DECOMMISSIONING RISK OVER THE LIFECYCLE OF A PROJECT

The probability of an event that would lead to abandonment or long-term interruption is extremely low during the first 15 to 20 years of the Project life. Accordingly, the risk of decommissioning the Project is extremely low during this time frame. The reasons why the risk to decommission the Project is extremely low in the early phases of the Project include, but are not limited to:

- Project owners have sophisticated financing structures that allow the lender or tax equity partner to step in and rectify the event that may lead to abandonment.
- Most critical solar components have original equipment manufacturer (OEM) warranties with terms in excess of five years that include labor and parts. A warranty is an agreement or guarantee outlined by a manufacturer to a customer that defines performance requirements for a product or service. Warranties give customers a form of insurance if the purchased product or service does not adhere to quality standards. These warranties assure the project owner, financing parties, and other stakeholders, that equipment will perform as expected which minimizes the risk of a decommissioning event. Average warranty lengths for critical solar components range from 5 to 10 years, with production warranties on solar panels extending to 20 to 25 years.
- Solar projects consist of many networked components designed to convert solar radiation into electrical energy. The failure of any single component will not result in a substantial reduction of energy generation that could lead to a decommissioning event.
- Solar projects are required to maintain replacement value property damage insurance coverage and business interruption insurance coverage. Business interruption insurance covers the loss of

income that a business suffers after a disaster or equipment failure. Typical solar business interruption insurance covers income loss for twelve months from the date of the event triggering the loss.

- The replacement costs of solar components will typically decline over time, and accordingly, costs to replace failed or damaged equipment after lapsed OEM warranties will not create large financial hurdles for the Project.

Solar power is an increasingly popular form of renewable energy around the world and as an alternative to the burning of fossil fuels, solar ranks alongside wind and hydropower as essential energy options for the future of the planet. Solar also offers the additional benefit of being easier to build, operate and decommission with minimal environmental risks. Recent rises in popularity and use can be linked to lower installation and operation costs and it is expected that this pattern will continue into the future, further reducing the risk of a decommissioning event.

## 4.2 DECOMMISSIONING RISKS OVER TIME

As previously noted, the probability of a decommissioning event that would lead to abandonment or long-term interruption is extremely low during the first 15 to 20 years of the Project life and accordingly, the financial risk to decommission the Project is also extremely low. The risk analysis is presented here for informational purposes only and has not been considered in the final decommissioning cost estimates presented in this Plan.

It is important to note that there are two aspects to consider in evaluating the risk for decommissioning the Project: the risk of the need to decommission the Project as a whole (Project termination risk), and the risk of failing to recuperate the cost of the decommissioning activities (decommissioning funding). The most important concern for the Township is the ability to recuperate the cost of decommissioning and restoration of the land to pre-Project conditions. Table 3 summarizes the estimated decommissioning cost recovery risk of the Project.

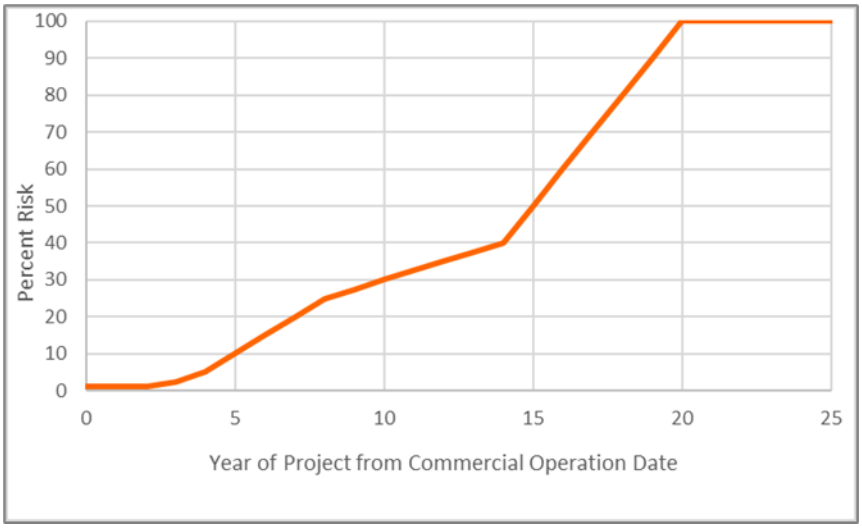
The graph shown in Table 3 uses a “one percent” risk as the lowest risk; however, the financial value of the Project or equipment in the early years would far exceed the cost of the decommissioning and restoration activities.

The factors taken into consideration in estimating the risk include, but were not limited to:

- Years 1-5 – Nearly no Project termination or financial risk, value of components, component warranties, value of facility as a whole.
- Years 5-10 – Minimal Project termination risk, value of components, component warranties, value of facility as a whole; however, some increased financial risk due to the decrease in resale value of used components and rise in technological improvements of new equipment in market.
- Years 10-15 – Similar consideration of previous period, with slightly increased risk as warranties start to expire. Value of equipment is still substantial but decreasing.

- Years 15-20 – Warranties continue to expire; value of equipment diminishes with age and technological improvements in market.
- Years 20-25 – Project termination and funding risks increase, value of equipment diminishes, and technological improvements in market. A rise in salvage value of removed equipment is expected due to diminishing natural resources and improvements in the efficiency of recycling/extraction technologies.

### Table 3 Estimated Decommissioning Cost Recovery Risk




## 4.3 DECOMMISSIONING EXPENSES

Project decommissioning will incur costs associated with disposal of components not sold for salvage, including materials which will be disposed of at a licensed facility, as required. Table 4 summarizes the estimates for activities associated with the major components of the Project. The total estimated decommissioning cost in Table 4 also covers costs for backfilling, grading and restoration as described in Section 2.

### Table 4 Estimated Decommissioning Expenses

| Activity | Unit | Quantity | Cost per Unit | Total |
|---|---|---|---|---|
| Overhead and management (includes estimated permitting required) | Lump Sum | 1 | $440,000 | $440,000 |
| Solar modules; disassembly and removal* | Each | 241,878 | $3.75 | $907,043 |
| Tracking system disassembly and removal (equivalent full trackers) | Each | 3,101 | $620.00 | $1,922,620 |
| Steel pile/post removal (includes piles for inverter stations) | Each | 37,488 | $9.50 | $356,136 |
| Inverter stations | Each | 23 | $1,100.00 | $25,300 |

DECOMMISSIONING COST ESTIMATE SUMMARY

| Activity | Unit | Quantity | Cost per Unit | Total |
|---|---|---|---|---|
| Access road excavation and removal | Lump Sum | 1 | $191,997 | $191,997 |
| Perimeter fence removal | Lineal Feet | 67,639 | $2.80 | $189,390 |
| Topsoil replacement and rehabilitation of site | Lump Sum | 1 | $400,800 | $400,800 |
| Project substation | Lump Sum | 1 | $300,000 | $300,000 |
| O&M building | Lump Sum | 1 | $5,000 | $5,000 |
| **Total Estimated Decommissioning Cost** | | | | **$4,738,286** |

* Cost of equipment removal would be higher if retaining for resale rather than salvage; however, the increased revenue would offset the added costs.

## 4.4 DECOMMISSIONING REVENUES

Revenue from decommissioning the Project will be realized through the sale of the solar facility components and construction materials. As previously described, the value of the decommissioned components will be higher in the early stages of the Project and decline over time. Resale of components such as solar panels is expected to be greater than salvage (i.e., scrap) value for most of the life of the Project.

Modules and other solar plant components can be sold within a secondary market for re-use. A current sampling of reused solar panels indicates a wide range of pricing depending on age and condition ($0.20 to $0.60 per watt). Future pricing of solar panels is difficult to predict at this time, due to the relatively young age of the market, changes to solar panel technology, and the ever-increasing product demand. A conservative estimation of the value of solar panels at $0.20 per watt would yield approximately $20,317,752. Increased costs of removal, for resale versus salvage, would be expected in order to preserve the integrity of the panels; however, the net revenue would be substantially higher than the estimated salvage value.

The resale value of components such as trackers, may decline more quickly; however, the salvage value of the steel that makes up a large portion of the tracker is expected to stay at or above the value used in this report.

The market value of steel and other materials fluctuates daily and has varied widely over the past five years. Salvage value estimates were based on an approximate five-year-average price of steel and copper derived from sources including on-line recycling companies and United States Geological Survey (USGS) commodity summaries. The price used to value the steel used in this report is $253 per metric ton; aluminum at $0.40 per pound; silicon at $0.40 per pound and glass at $0.05 per pound. The main component of the tracking system and piles is assumed to be salvageable steel. Solar panels are estimated to contain approximately 75 percent glass, 8 percent aluminum and 5 percent silicon. A 70 percent recovery rate was assumed for aluminum and all panel components, due to the processing required to separate the panel components. Alternative and more efficient methods of recycling solar panels are anticipated before this Project is decommissioned, given the large number of solar facilities

that are currently being developed. Table 5 summarizes the potential salvage value for the solar array components and construction materials.

**Table 5 Estimated Decommissioning Revenues**

| Item | Unit of Measurement | Quantity per Unit | Salvage Price per Unit | Total Salvage Price per Item | Number of Items | Total |
|---|---|---|---|---|---|---|
| | | | | | | |
| Panels - Silicon | Pounds per Panel | 2.3 | $0.40 | $0.92 | 241,878 | $222,528 |
| Panels - Aluminum | Pounds per Panel | 3.6 | $0.40 | $1.44 | 241,878 | $348,304 |
| Panels - Glass | Pounds per Panel | 34.1 | $0.05 | $1.71 | 241,878 | $413,611 |
| Tracking System and Posts | Metric tons per $MW_{[AC]}$ | 50 | $253 | $12,650 | 72.5 | $917,922 |
| Substation | Each | 1 | $50,000 | $50,000 | 1 | $50,000 |
| | | | | | | |
| **Total Potential Revenue** | | | | | | **$1,952,365** |

* Revenue based on salvage value only. Revenue from used panels at $0.20 per watt could raise $20,317,752 as resale versus the estimated salvage revenue.

## 4.5 DECOMMISSIONING COST SUMMARY AND FINANCIAL ASSURANCE

The following is a summary of the net estimated cost to decommission the Project, using the information detailed in Sections 4.1 and 4.3. Estimates are based on 2019-2020 prices, with no market fluctuations or inflation considered.

**Table 6 Net Decommissioning Summary**

| Item | Cost/Revenue |
|---|---|
| Decommissioning Expenses | $4,738,286 |
| Potential Revenue – salvage value of panel components and recoverable materials | $1,952,365 |
| **Net Decommissioning Cost** | $2,785,921 |

## 4.6 FINANCIAL ASSURANCE

White Tail will post decommissioning funds to be provided in a decommissioning agreement at an agreed upon date. The Financial Assurance value over the life of the Project has been calculated and shown in

DECOMMISSIONING COST ESTIMATE SUMMARY

Table 7, considering the estimated risk of funding the decommissioning (i.e., multiplying the net estimated removal cost by the percent risk at each milestone year [1, 5, 10, 15, and 20]). For example, the proposed total Financial Assurance Requirement in Year 10 is:

> **30%** (Decommissioning Funding Risk) **X $2,913,921** (Net Estimated Decommissioning Cost)
> **= $874,176** (Financial Assurance Requirement)

***Note that similar to the graph shown in Table 3 the decommissioning funding risk uses a "one percent" as the lowest risk; however, the financial value of the Project or equipment in the early years of the Project would far exceed the cost of the decommissioning and restoration activities and provide a net revenue to the county.***

### Table 7 Financial Assurance Summary

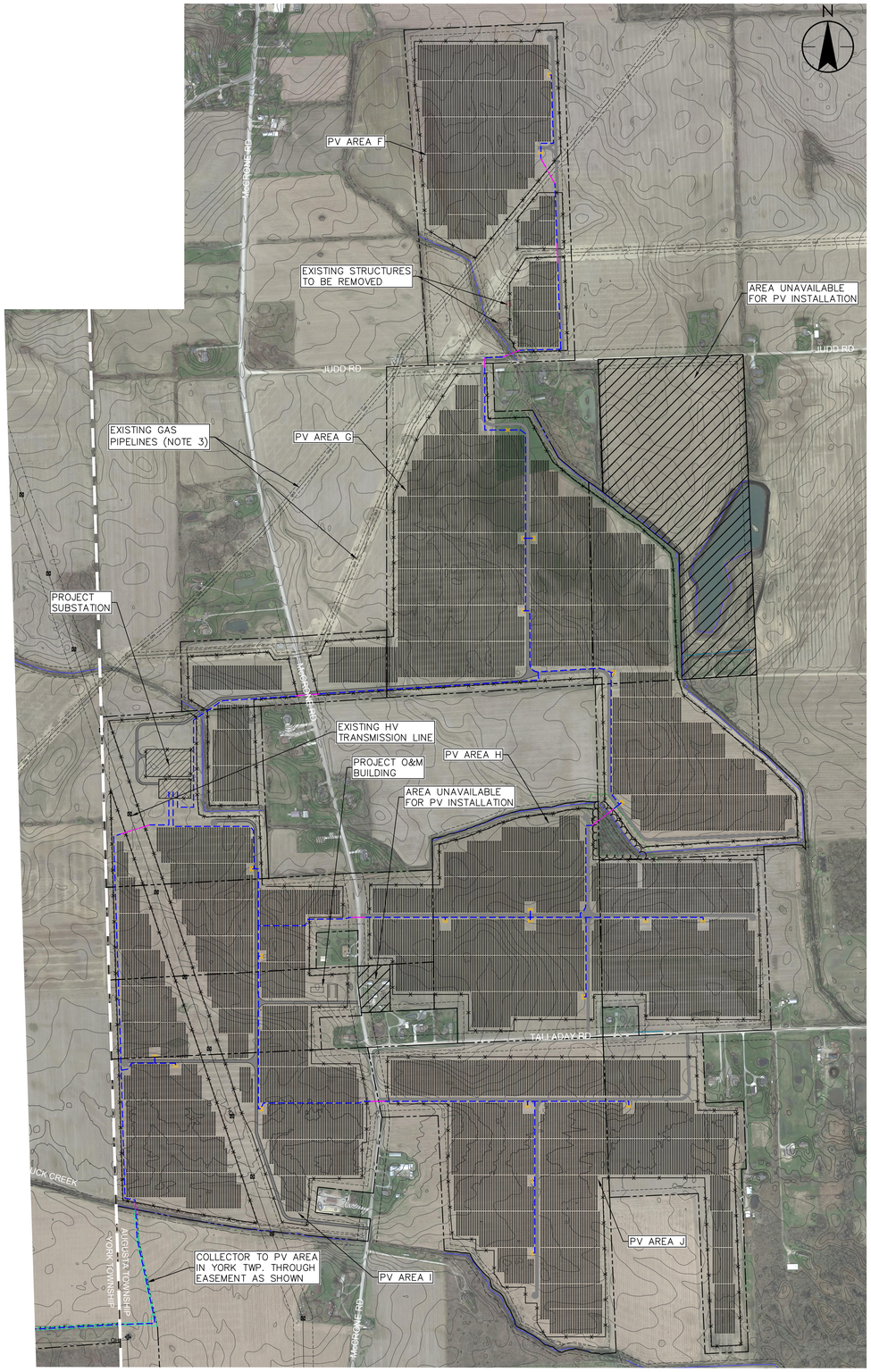
| Decommissioning Funding Risk | Project Year | Net Estimated Costs[1] | Financial Assurance Requirement[2] |
|---|---|---|---|
| 1% Decommissioning Risk | Year 1 | $2,913,921 | $29,139 |
| 10% Decommissioning Risk | Year 5 | $2,913,921 | $291,392 |
| 30% Decommissioning Risk | Year 10 | $2,913,921 | $874,176 |
| 50% Decommissioning Risk | Year 15 | $2,913,921 | $1,456,960 |
| 100% Decommissioning Risk | Year 20 | $2,913,921 | $2,913,921 |

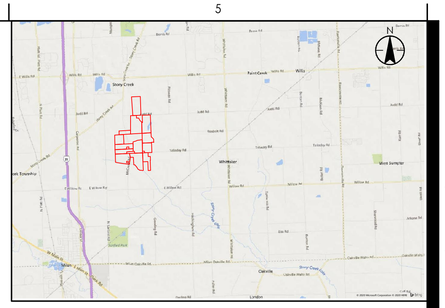
[1] Net Estimated Cost (decommissioning expense minus revenue) assumes a worst-case scenario of salvage value only. This is an unlikely scenario during the early stages of the Project, when resale value of the facility and the components is high.

[2] Financial assurance is calculated multiplying the Decommissioning Funding Risk (percent) times the Net Estimated Cost.

# FIGURES

## Figure 1 Proposed Project Layout



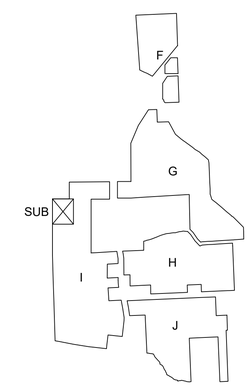

PROJECT KEY MAP
NOT TO SCALE

| PV System Information | |
|---|---|
| PV Module Wattage (Watts) | 420 |
| PV Modules per String | 26 |
| Maximum String Voltage (Volts) | 1500 |
| PV Racking Type | Single Axis Tracker (East/West) |
| Racking Sizes | Full - 3 Strings - 271 ft x 6.75 ft |
| | Partial - 2 Strings - 183 ft x 6.75 ft |

**PV Solar System Summary**

| Location | No. of Full Trackers | No. of Partial Trackers | DC kW | AC kW | DC/AC Ratio |
|---|---|---|---|---|---|
| PV Area F | 238 | 101 | 10,003 | 7,145 | 1.40 |
| PV Area G | 712 | 233 | 28,414 | 20,296 | 1.40 |
| PV Area H | 390 | 344 | 20,289 | 14,492 | 1.40 |
| PV Area I | 596 | 194 | 23,762 | 16,973 | 1.40 |
| PV Area J | 509 | 112 | 19,121 | 13,658 | 1.40 |
| **Totals** | **2,445** | **984** | **101,589** | **72,563** | **1.40** |

NOTE:
POWER SUMMARY TABLE PROVIDED FOR PURPOSES OF THIS PRELIMINARY SITE DESIGN, WATTAGE OF MODULE MAY CHANGE DUE TO TECHNICAL ADVANCEMENTS.




PV AREA LEGEND
NOT TO SCALE

Stantec

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Notes

1. COORDINATE SYSTEM: NAD83 MICHIGAN STATE PLANES, SOUTH ZONE, INTERNATIONAL FOOT
2. PARCELS INFORMATION BASED ON GIS COORDINATES.
3. NATURAL GAS PIPELINE LOCATION IS APPROXIMATE BASED ON AERIAL IMAGERY. EXACT ALIGNMENT OF PIPELINE AND LEGAL EASEMENT ARE TO BE CONFIRMED.

Legend

- INVERTER STATION
- 40ft WIDE ACCESS CLEARANCE WITH 20ft WIDE ACCESS ROAD
- FENCE LINE
- TREE SHADING SETBACK
- EXISTING PIPELINE
- EXISTING TRANSMISSION LINE
- CONSTRUCTION SETBACK
- PROPERTY LINE
- UNDERGROUND COLLECTOR LINE
- BORED COLLECTOR CROSSING
- EXISTING TRANSMISSION LINE STRUCTURE
- FULL PV TRACKER - 3 STRINGS (3 TRACKERS SHOWN)
- PARTIAL PV TRACKER - 2 STRINGS (3 TRACKERS SHOWN)
- WATERWAY
- WETLAND
- 1 FOOT GRADE CONTOUR

| Revision | | By | Appd | YYYY.MM.DD |
|---|---|---|---|---|
| G | UPDATE NOTES | AR | TG | 2020.11.11 |
| F | ADDED ADDITIONAL PARCELS, MOVED SUBSTATION | AR | TG | 2020.10.23 |
| E | UPDATED SUBSTATION | AR | TG | 2020.10.22 |
| D | ADDED GRADE CONTOURS, UPDATE SUBSTATION | AR | TG | 2020.10.20 |
| C | ADD COLLECTOR TO YORK TWP, UPDATE LAYOUT | AR | TG | 2020.10.07 |
| B | UPDATED PARCELS AND WETLANDS | AR | TG | 2020.10.05 |
| A | CONCEPTUAL LAYOUT FOR REVIEW | MS | TG | 2020.09.30 |

| File Name: | Dwn. | Dsgn. | Chkd. | YYYY.MM.DD |
|---|---|---|---|---|
| 193707233_WHITETAIL_COMBINED_LAYOUT | MS | MS | TG | 2020.09.30 |

Permit/Seal

**PRELIMINARY NOT FOR CONSTRUCTION**

Not for permits, pricing or other official purposes. This document has not been completed or checked and is for general information or comment only.

Client/Project Logo

Client/Project
WHITE TAIL SOLAR, LLC

WHITE TAIL SOLAR
CONCEPTUAL LAYOUT
Washtenaw County, MI

Title
CONCEPTUAL
OVERALL SITE PLAN
AUGUSTA TOWNSHIP

Project No. 193707233
Scale 1" = 500'
Revision G
Sheet 1 of 1
Drawing No. C-061

ORIGINAL SHEET - ARCH D