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Saratoga Solar Project, LLC
Solar CPCN Application
Wood County, Wisconsin
PSC Docket No. 9816-CE-100
May 2022

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LIST OF ACRONYMS

ac	alternating current
AFR	Application Filing Requirements
ATC	American Transmission Company
BESS	Battery Energy Storage System
bgs	below ground surface
BMPs	Best Management Practices
CAFO	Concentrated Animal Feeding Operation
CPCN	Certificate of Public Convenience and Necessity
DATCP	Wisconsin Department of Agriculture, Trade and Consumer Protection
dc	direct current
dBA	A-weighted decibels
DPP	Definitive Planning Phase
ECP	Environmental Control Program
ECSWMP	Erosion Control and Stormwater Management Plan
EMP	Environmental Management Plan
ER	Endangered Resources
FAA	Federal Aviation Administration
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
JDA	Joint Development Agreement
KBB	Karner blue butterfly
KOPs	Key Observation Points
kV	kilovolt
MFL	Managed Forest Law
MISO	Midcontinent Independent System Operator
MPT	Main Power Transformer
msl	mean sea level
MVA	Megavolt Amps
MW	megawatt
NHI Portal	Wisconsin Natural Heritage Inventory
NLEB	Northern Long-Eared Bat
NRCS	Natural Resource Conservation Service
NRHP	National Registry of Historic Places
NSA	Noise Sensitive Area
O&M	Operations and Maintenance
OHWM	Ordinary High Water Mark
PPA	power purchase agreement
PSCW	Public Service Commission of Wisconsin
PV	photovoltaic
PVSYST	photovoltaic systems software
ROW	right-of-way
Saratoga Solar	Saratoga Solar Project, LLC

Savion	Savion, LLC
SCADA	Supervisory Control and Data Acquisition
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SSURGO	Soil Survey Geographic Database
STH	State Highway
STP	shovel test pit
SWPPP	Stormwater Pollution Prevention Plan
tmy	typical meteorological year
W	watt
WDNR	Wisconsin Department of Natural Resources
WisDOT	Wisconsin Department of Transportation
WRRD	Wisconsin Remediation and Redevelopment Database
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1. Project Description and Overview

Saratoga Solar Project, LLC (Saratoga Solar or Applicant) submits this Application for a Certificate of Public Convenience and Necessity (an Application for a CPCN) for the Saratoga Solar Project (Project)in accordance with Wis. Stat. § 196.491(3) and Wis. Admin Code § PSC 111.53 to the Public Service Commission of Wisconsin (PSCW or Commission). Saratoga Solar is seeking a CPCN and all other approvals and authorizations required to construct, install, operate, and maintain a 150.5-megawatt (MW) alternating current (AC) solar electric generating facility to be located in the Town of Saratoga, Wood County, Wisconsin. Saratoga Solar compiled the information in this Application pursuant to the PSCW Application Filing Requirements (AFR) for Solar Energy Projects (Version Updated 2021) and consultations with the PSCW and Wisconsin Department of Natural Resources (WDNR).[1] Please note that Project design is still preliminary in nature. The information presented in this Application is based on information known to Saratoga Solar at this time and is subject to change as Project development proceeds and the Project design is finalized.

The Project is anticipated to be placed in service as early as Q4 2024 and includes a 150.5 MW_{AC} primary array area (Primary Facility Area) and an alternate array area that can accommodate up to 25 percent of the Project's AC nameplate capacity (Alternate Facility Area), as required by the AFR. The Primary and Alternate Facility Areas together with the Generator Tie Line Area comprise the "Project Area." The Project includes development of an approximately 50 MW_{AC} Battery Energy Storage System (BESS). The Project will also require construction of a new 138-kilovolt (kV) Project substation. The BESS and Project substation will be located within the Project Area boundary.

1.1 General Project Location and Description of Project and Project Area

1.1.1 Project Location - counties and town in the project area.

The proposed Project is located in the Town of Saratoga in Wood County, Wisconsin. Table 1 identifies the location of the Primary Facility Area and Alternate Facility Area.

Table 1: Project Location

County	Primary Facility Area		Alternate Facility Area	
	Township Name	Sections	Township Name	Sections
Wood	Saratoga	19, 20, 21, 29, 30	Saratoga	20, 21, 28, 29

[1] The numbering in this Application is consistent with numbering in the 2021 version of the AFR.

1.1.2 Size of project area (in acres), area to be disturbed by construction activities (in acres), and size of solar arrays (in acres).

The Project Area boundary is shown on Figure 1.1.2 of Appendix A and encompasses an area of approximately 1,926 acres. Areas disturbed by construction activities are described in Section 5.4, Land Cover Impacted by Proposed Project Facilities. The Solar Array Area for the Primary Facility Area encompasses approximately 825 acres of land, and the Solar Array Area for the Alternate Facility Area encompasses approximately 219 acres.

1.1.3 Size (rated capacity), in both DC and alternating current (AC) MWs, of the proposed project.

The full Project nameplate capacity of 150.5 MW_{AC} can be achieved with the single-axis tracking system proposed for the Project. The conceptual design for the Solar Array Area associated with the Primary Facility Area will generate 150.5 MW_{AC} (197.9 MW_{DC}) and the Solar Array Area associated with the Alternate Facility Area will generate 39.6 MW_{AC} (52.06 MW_{DC}).

Saratoga Solar used the Talesun Bipro TD7G72M 540-watt (W) bifacial half-cell monocrystalline solar panel, manufactured by Talesun, for the conceptual Project design. The Talesun Bipro panels are anticipated to be available in 530W, 535W, 540W, 545W and 550W models.

At the time of construction, several photovoltaic (PV) module offerings from different suppliers will be evaluated and a selection will be made based on the most cost-effective option. The final supply of modules may contain a mix of several similar wattages. PV modules produced by a wide range of manufacturers are under consideration for the Project.

1.1.4 Number of panel sites proposed for the project and the number of alternative panel sites that have been identified. Identify any new or modified electric transmission lines or other electric transmission facilities that might be needed.

The Primary Facility Area is designed for 366,444 individual PV panels with a total direct current (DC) generating capacity of 197.9 MW_{DC}. For a designed 1.31 DC-to-AC ratio, this is enough capacity to meet a nameplate generating capacity of 150.5 MW_{AC} power.

The Alternate Facility Area is designed for 96,408 individual PV panels with a total DC generating capacity of 52.06 MW_{DC}. For a designed 1.31 DC-to-AC ratio, this is enough capacity to meet a nameplate generating capacity of 39.6 MW_{AC} power, which is approximately 25 percent of the Primary Facility Area generating capacity.

An approximately 500-foot 138-kV generation tie line will be constructed extending from the Project substation to the existing American Transmission Company (ATC)-owned Petenwell to Saratoga 138kV Transmission Line (ATC X-43) via a switching station that will be constructed, owned and operated by ATC.

1.1.5 Provide a general map showing the location of the project area, nearest communities, townships, and major roads. Include an inset map showing where the project is located in the state. Scale should be appropriate for showing communities within at least 10 miles of the project area boundary.

Figure 1.1.2 provided in Appendix A depicts the general Project location within the state of

Wisconsin and Figure 4.1.1 in Appendix A shows the total Project Area with an aerial photography basemap. Figure 4.1.2 in Appendix A is a detailed map of the proposed Project facilities.

1.2 Ownership

The applicant is Saratoga Solar, which will develop and sell the Project to a utility or an independent power producer. Saratoga Solar, a Delaware limited liability company, is a wholly owned subsidiary of Savion, LLC (Savion), a Delaware limited liability company. Savion is one of the country's most experienced utility-scale solar and energy storage development teams, with a vision for the transformation of the country's electricity supply to renewable resources. The Savion team has a portfolio of over 130 projects in 25 states rated at over 11 Gigawatts in operation, under construction, contracted or in development.

1.3 Project Need/Purpose

Subsections 1.3.1 through 1.3.5 of the AFR are omitted because they apply only to utility-sponsored projects.

1.3.6 *IPPs Only* – Energy Agreements

1.3.6.1 Identify all Wisconsin utilities under contract for delivery of energy from the proposed project.

An energy agreement (such as a power purchase agreement [PPA]) is not currently contemplated for delivery of energy from the Project because it is anticipated that utilities, having service territories in Wisconsin, will ultimately own the Project. Multiple utilities have expressed a significant need for solar power within their publicly stated Internal Resource Plans. In addition, Wisconsin utilities have announced plans to decommission several fossil fuel power plants in the coming years and will need to quickly replace this generation capacity.

1.3.6.2 For each utility under contract or with which an agreement in principle for delivery of energy is in place provide the following, by utility:

1.3.6.2.1 Rated capacity under contract.

The Project does not currently have rated capacity under contract.

1.3.6.2.2 Annual energy to be delivered under contract or expected to be delivered.

The Project does not currently have annual energy to be delivered under contract. Annual energy to be delivered from the Project is detailed in Section 2.1 of the Application.

1.4 Alternatives

1.4.1 *Utilities (CPCN)* – Supply Alternatives.

Describe the supply alternatives to this proposal that were considered (including a "no-build" option) and present the justification for the choice of the proposed option(s).

1.4.1.1 Describe any alternate renewable fuel options considered and why those options were not selected.

1.4.1.1.1 Wind

1.4.1.1.2 Biomass

1.4.1.1.3 Hydro

1.4.1.1.4 Landfill Gas

1.4.1.1.5 Fuel Cell

1.4.1.2 Describe Purchase Power Agreements (PPAs) considered or explain why a PPA was not considered for this project.

1.4.1.3 No-Build Option.

This section is omitted as it only applies to utility-sponsored projects.

1.4.2 *Utilities (CPCN or CA) and IPPs (CPCN)* – Project Area Selection

1.4.2.1 Alternative Project Areas. Describe the project area screening and selection process used to select the proposed project area. Provide the following:

1.4.2.1.1 List individual factors or site characteristics used in project area selection.

1.4.2.1.2 Explain in detail how brownfields were considered in the selection of sites to develop.

1.4.2.1.3 Explain how individual factors and project area characteristics were weighted for your analysis and why specific weights were chosen.

1.4.2.1.4 Provide a list of all project areas reviewed with weighted scores for each siting factor or characteristic used in the analysis.

1.4.2.2 Provide a narrative describing why the proposed project area was chosen.

This section addresses the requirements of Section 1.4.2 of the AFR, including all subsections, i.e., 1.4.2.1 through 1.4.2.1.4.

Saratoga Solar evaluated potential project sites and identified the Project Area after considering the following primary factors:

Transmission and injection capacity: The primary factor in site selection for utility-scale solar development is availability of existing electric infrastructure necessary to connect a project to the power grid.

One primary factor in site selection for utility-scale solar development is availability of existing electric infrastructure necessary with sufficient capacity to connect a project to the power grid. Preferred injection points are found where the existing electrical infrastructure is robust, thereby minimizing the interconnection facility costs and network upgrades frequently attributed to new generating facilities. Projects where land is available near points of interconnection are also preferable, as this minimizes the length of high voltage transmission generation tie lines and the number of structures that support them.

Saratoga Solar submitted an interconnection request to the Midcontinent Independent System Operator (MISO) on June 25th, 2020 and was assigned queue position 1751 (aka: J1751). The Project is currently in the Definitive Planning Phase (DPP) 2020 cluster and in the ATC study group. The BESS entered the MISO Interconnection Queue on July 22nd, 2021 and was assigned queue position 2117 (aka: J2117). The Project is currently in the DPP-2021 cluster and in the ATC study group.

Land availability and infrastructure: Large tracts of relatively flat undeveloped land are typically utilized for utility-scale solar facilities. The use of cleared land that is relatively flat minimizes impacts from shading and the need to remove trees and also significantly reduces the likelihood that significant flora or fauna inhabit the area.

Land within the Project Area boundary is partially pine plantation that has been planted for timber and pulp production, as well as agricultural land that has been in production for decades. Overall, the topography is conducive for solar development. The Project Area is mostly flat and should not experience shading from external objects.

Area infrastructure was reviewed for compatibility with large construction vehicles and delivery trucks and a summary of the findings is included in the Road Condition Report in Appendix Q. The Project Area is located in an area where nearby roads and highways, such as State Highway (STH) 13 and STH 73, are suitable for equipment and material delivery during construction.

Environmental considerations: A preliminary analysis followed by field surveys was completed to screen for environmental factors, including, wetlands, waterways, endangered species, invasive species, critical habitat, floodplains, and cultural and historic resources. The Project Area has few environmental constraints and those factors identified can be avoided by placement of the solar PV array.

Community: Saratoga Solar values working with communities that welcome solar projects and responsible economic development opportunities. Saratoga Solar places great importance on community-supported projects. The Saratoga Solar team engages local landowners, neighboring landowners, municipal leaders, and state legislators early on in the development process. In order to be a good neighbor, it is important that any project start on the right foot by being transparent and being in constant communication with the public. Saratoga Solar has been engaging the community and values their feedback and concerns. The Town of Saratoga and Wood County have expressed positive feedback about the Project.

Brownfields: No 1,500-acre brownfields exist within proximity of the existing 138kV transmission line, so brownfields were not considered in the siting of this Project.

1.5 Utilities (CPCN OR CA) and IPPs (CPCN) – Site Selection

Refer to Section 1.4.2 above for the individual factors or characteristics used to select the overall Project Area and development of the Project Area boundary. Saratoga Solar further evaluated the property for siting the Primary and Alternate Facility Areas, which factored in the following considerations:

Community feedback: Saratoga has solicited and received feedback from the community, which has been considered in the preliminary Project design, including proposed setbacks, panel

locations, and access roads. As Project development progresses, Saratoga Solar may make minor changes to accommodate for unforeseen circumstances; however, any such changes shall take into account the basic siting criteria that were used in designing the current Project layout.

Environmental considerations: Saratoga Solar evaluated natural resources such as wetlands, waterways, endangered species, floodplain, and cultural resources as part of the Project development process. Saratoga Solar designed the Project to avoid and minimize impacts to these resources to the extent practicable.

Setbacks and screening: Saratoga Solar established and mapped setbacks from public road rights-of-way (ROWs), utilities, lot lines, and sensitive community resources. One church / school building is located approximately 0.6 miles from the Project Area. No other sensitive community resources such as churches, schools or nursing homes are located within a 1-mile radius of the Project Area.

Unavailable or restricted land: Managed and public lands, conservancies, land under contracts such as Conservation Reserve Program, Managed Forest Law (MFL), and Farmland Preservation Agreements were reviewed and considered for restrictions. The red pine plantation portions of the Project Area are enrolled in the MFL Program, therefore Saratoga Solar will work with the WDNR and current landowner to comply with MFL withdrawal requirements.

Airport locations: Airports, airstrips and runways were assessed to verify that sufficient distances exist from runways to Project facilities. The South Wood County Airport in Wisconsin Rapids is approximately 4.5 miles north of the Project. The grass strip runway at Jennie's Field is located approximately 0.5 mile south of the Project.

Existing Renewable Energy (Wind) Facilities: The Wood County Solar Project is currently under construction in the Town of Saratoga, Wisconsin.

Sound: Sound modeling determined that sound generated by the Project will remain below the state standard of 50 A-weighted decibels (dBA) during daytime and 45 dBA during nighttime outside adjacent receptors.

Constructability and collection: Saratoga Solar factored construction considerations into the Project design, including restrictions due to slopes and soils, construction efficiency, and equipment movement. Additionally, the ability to network the collection system between solar panel array sites was optimized to the extent possible.

1.5.1 List the individual factors or characteristics used to select the proposed and alternate panel sites (arrays).

Saratoga Solar considered the factors described in Sections 1.4.2 and 1.5 as part of an iterative process to develop a Project design that minimizes impacts to the environment and surrounding landowners to the greatest extent reasonably feasible, while maximizing the efficiency of the Project within the Primary Facility Area. The Alternate Facility Area will be utilized if required pursuant to Project permitting or if circumstances arise prior to construction that prohibit the use of part of the Primary Facility Area. Revisions to the panel layout design may require associated modifications to other Project components, including collection line routes, access roads, and shifts in other panel locations.

1.5.2 Provide information on how site characteristics and the type/s of panels chosen factored into the selection of the final panel sites.

Saratoga Solar considered Project site characteristics, as described in Sections 1.4.2 and 1.5.1. The conceptual design for the Project includes: the Talesun Bipro TD7G72M 540W bifacial half-cell monocrystalline solar panel; Sungrow SG3600UD-MV inverters; and NEXTracker NX Horizon self-powered single-axis trackers. However, Saratoga Solar has not yet made a final decision regarding the specific make and model of the panels and other equipment that will be installed as part of the Project. For a 2024 in-service date, the Project is expected to use products with similar electrical and physical characteristics that are readily available in the market at the time of purchase.

1.5.3 Setback distances

This section addresses the requirements of Section 1.5.3.1 of the Application Filing Requirements.

Saratoga Solar designed the facilities to maintain minimum solar panel setbacks from residences, property lines, and other features. These setback distances meet or exceed all county, township, and village ordinances or rules.

Table 2: Design Setbacks

Type	Setback/ Constraint	Setback	Clarification
Structures	Inhabitable Structures - Building Edge (nonparticipating)	100 feet	As measured to PV generation asset. Does NOT apply to access roads and fences.
Structures	Inhabitable Structures - Building Edge (participating)	100 feet (from building footprint)	As measured to PV generation asset. Does NOT apply to access roads and fences
Structures	Noninhabitable Structures	20 feet (from building footprint)	As measured Building Footprint to edge of PV asset. Does NOT apply to access roads and fences.
Property Lines	Wooded Preservation Setback	No tree removal to occur within 50 feet of adjacent property line (nonparticipating)	Vegetative buffer shall be reviewed and maintained for any residence within 500 feet of Project fenceline
Property Lines	Property Line	100 feet (from neighboring property line)	As measured to PV generation asset. Does NOT apply to access roads and fences
Roads	Local Roads (Town Roads)	30 feet from ROW	As measured to PV generation asset. Does NOT apply to access roads and fences
	Collector Roads (County Highway)	30 feet from ROW	

Type	Setback/ Constraint	Setback	Clarification
	Arterial Roads (State Highway)	110 feet from centerline or 50 feet from ROW	
Environmental	Waterways	75 feet from Ordinary High Water Mark (OHWM) to access roads	Does not include PV generation assets or fences. No waterways present within or near Project boundary.
Environmental	Wetlands	50 feet from delineated wetland boundary to access roads	Does not include PV generation assets or fences. No wetlands present within or near Project boundary.
Environmental	Floodplain Zoning	Administration of the County Floodplain Ordinance pertains to lands within Floodplain.	No floodplains present within or near Project boundary.
Environmental	Shoreland Zoning	Administration of the County Shoreland Ordinance pertains especially to properties within 300 feet of a river or navigable stream, and within 1,000 feet of a lake.	No shoreland zones present within or near Project boundary.

1.5.3.1 Provide the minimum setbacks for both boundary fences and solar panels from:

- **residences**
- **property lines**
- **other buildings (e.g., animal barns, storage sheds)**
- **roads**
- **wetlands and waterways**
- **any other features.**

See Table 2 above.

1.5.3.2 Identify any sites where non-participating "good neighbor" agreements have been executed.

No "good neighbor" agreements have been executed or are expected to be required for the Project.

1.5.3.3 Status of easement agreements:

1.5.3.3.1 Identify all project sites with easement agreements that have been signed.

No standalone easements are required for the Project. Saratoga Solar has secured the necessary land rights through the transactions identified in Table 3.

1.5.3.3.2 Identify all sites where easement agreements have not been signed and provide a short description of the status of negotiations.

Table 3 provided below identifies all Project site land agreements that have been signed.

Table 3: Status of Land Agreements

Primary Owner Name	Parcel ID	Type	Status	Acreage (rounded)
FULL CIRCLE FARMLAND LLC	1800476.0	Purchase Option	Signed	39.8
FULL CIRCLE FARMLAND LLC	1800477.0	Purchase Option	Signed	39.5
FULL CIRCLE FARMLAND LLC	1800489.0	Purchase Option	Signed	40.0
FULL CIRCLE FARMLAND LLC	1800492.0	Purchase Option	Signed	40.3
FULL CIRCLE FARMLAND LLC	1800501.0	Purchase Option	Signed	40.4
FULL CIRCLE FARMLAND LLC	1800504.0	Purchase Option	Signed	40.1
FULL CIRCLE FARMLAND LLC	1800586.0	Purchase Option	Signed	39.9
FULL CIRCLE FARMLAND LLC	1800587.0	Purchase Option	Signed	40.0
FULL CIRCLE FARMLAND LLC	1800357.0	Purchase Option	Signed	39.2
FULL CIRCLE FARMLAND LLC	1800376.0	Purchase Option	Signed	39.7
GOLDEN SANDS LLC	1800350.0	Purchase Option	Signed	16.1
GOLDEN SANDS LLC	1800353.0	Purchase Option	Signed	37.6
GOLDEN SANDS LLC	1800515.0	Purchase Option	Signed	40.3
GOLDEN SANDS LLC	1800521.0	Purchase Option	Signed	39.9
GOLDEN SANDS LLC	1800524.0	Purchase Option	Signed	39.9
GOLDEN SANDS LLC	1800531.0	Purchase Option	Signed	39.8
GOLDEN SANDS LLC	1800532.0	Purchase Option	Signed	39.8
GOLDEN SANDS LLC	1800533.0	Purchase Option	Signed	40.0
GOLDEN SANDS LLC	1800534.0	Purchase Option	Signed	39.7
GOLDEN SANDS LLC	1800362.0	Purchase Option	Signed	39.2
GOLDEN SANDS LLC	1800363.0	Purchase Option	Signed	40.9
GOLDEN SANDS LLC	1800364.0	Purchase Option	Signed	41.3
GOLDEN SANDS LLC	1800365.0	Purchase Option	Signed	39.7
GOLDEN SANDS LLC	1800367.0	Purchase Option	Signed	37.3
GOLDEN SANDS LLC	1800368.0	Purchase Option	Signed	39.3
GOLDEN SANDS LLC	1800381.0	Purchase Option	Signed	40.1
GOLDEN SANDS LLC	1800382.0	Purchase Option	Signed	39.6
GOLDEN SANDS LLC	1800384.0	Purchase Option	Signed	39.8
GOLDEN SANDS LLC	1800385.0	Purchase Option	Signed	39.7
GOLDEN SANDS LLC	1800505.0	Purchase Option	Signed	38.6

Primary Owner Name	Parcel ID	Type	Status	Acreage (rounded)
GOLDEN SANDS LLC	1800506.0	Purchase Option	Signed	38.6
GOLDEN SANDS LLC	1800507.0	Purchase Option	Signed	38.5
GOLDEN SANDS LLC	1800509.0	Purchase Option	Signed	39.4
GOLDEN SANDS LLC	1800510.0	Purchase Option	Signed	40.8
GOLDEN SANDS LLC	1800511.0	Purchase Option	Signed	40.4
GOLDEN SANDS LLC	1800513.0	Purchase Option	Signed	40.3
GOLDEN SANDS LLC	1800514.0	Purchase Option	Signed	40.2
GOLDEN SANDS LLC	1800516.0	Purchase Option	Signed	40.3
GOLDEN SANDS LLC	1800356.0	Purchase Option	Signed	35.8
GOLDEN SANDS LLC	1800360.0	Purchase Option	Signed	31.4
GOLDEN SANDS LLC	1800361.0	Purchase Option	Signed	39.6
JAN N WOLOSEK	1800493.0	Purchase Option	Signed	39.9
JAN N WOLOSEK	1800494.0	Purchase Option	Signed	40.0
JAN N WOLOSEK	1800495.0	Purchase Option	Signed	40.1
JAN N WOLOSEK	1800496.0	Purchase Option	Signed	40.0
NATHAN P WOLOSEK	1800366.0	Purchase Option	Signed	38.0
NATHAN P WOLOSEK	1800369.0	Purchase Option	Signed	39.3
NATHAN P WOLOSEK	1800379.0	Purchase Option	Signed	39.1
NATHAN P WOLOSEK	1800380.0	Purchase Option	Signed	40.6

1.5.4 Identify whether setbacks are consistent with local zoning (county or municipality) or if there are variations from local zoning setbacks, describe why.

Setbacks meet or exceed all applicable local zoning requirements.

1.6 Utilities Only – Cost

Section 1.6 and all its subsections are omitted because they apply only to utility-sponsored projects.

1.7 IPPs Only - MISO and Project Life Span

1.7.1 MISO Market. Describe how, at the time of this filing, the proposed facility will be treated as an intermittent resource in the MISO market.

Saratoga Solar submitted an interconnection request to MISO on June 25th, 2020 and was assigned queue position 1751 (aka: J1751). The Project is currently in the DPP-2020 cluster and in the ATC study group. The BESS entered the MISO Interconnection Queue on July 22nd, 2021 and was assigned queue position 2117 (aka: J2117). The Project is currently in the DPP-2021 cluster and in the ATC study group.

In its application, Saratoga Solar requested full Network Resource Interconnection Service for 150.5 MW capacity of the facility. Solar PV projects in MISO receive the class average of 50% for its Initial Planning Year until they can demonstrate 3-years of operational history. Thereafter, their capacity value is determined based on a 3-year historical average output of the resource for

peak hours during the summer months. The Project is currently being evaluated through the MISO Definitive Planning Phase (DPP) process and has completed Phase 1. Phase 2 is presently under study with an estimated completion date of 05/05/2022. Phase 3 is currently projected to conclude on 09/16/2022. It is expected that MISO will tender a Large Generator Interconnection Agreement (LGIA) to the Project in 09/30/2022, which will be executed by 02/13/2023.

1.7.2 Provide an estimate of the expected life span for the power plant.

The design life for the Project is approximately 30-35 years. Saratoga Solar understands that the value of a solar project lies in its operation and anticipates a premium level of operation and maintenance service throughout its life. Based upon the needs of the marketplace, the community, the landowners, and Saratoga Solar, it is anticipated there will be an opportunity to extend the Project's life beyond 35 years.

1.7.3 Describe how the facility will be decommissioned at the end of its life span. Describe expected decommissioning actions and timelines.

The Project will operate for at least 30 years based on current forecasts for modern equipment. At the end of the Project's useful life, Saratoga Solar will assess whether to cease operations and decommission the Project or to replace equipment and extend the life of the Project. In general, the majority of decommissioned equipment and materials will be recycled. Materials that cannot be recycled with be disposed of at approved facilities.

Decommissioning activities will require approximately 12 months to complete. In general, decommissioning activities will include:

1. Dismantling and removal of all above ground equipment (solar panels, racking, transformers, Project Substation, etc.);
2. Removal of all above ground cabling;
3. Removal of foundations (piles, piers and posts); and
4. Scarification of compacted areas within and contiguous to the solar facility (including but not limited to internal and external access roadways).

Removal of interior roads and underground cabling will be determined by the future landowner.

See Appendix R to review the Project decommissioning plan.

1.7.3.1 Provide an estimate of the cost of and source of funding for decommissioning. State whether financial security would be provided to cover decommissioning costs, including the amount and time it would be provided.

Saratoga Solar is discussing a development agreement with the Town of Saratoga that will include requirements for Project decommissioning. It is anticipated that the Project will be required to provide a decommissioning plan and financial assurance that such plan be completed; and that the amount of the financial assurance would be determined by a mutually agreed upon engineer, net of salvage value, and updated approximately every five years.

1.7.3.2 State how the start of decommissioning would be decided, including a description of what constitutes site abandonment.

All above-ground components will be removed and restoration within the Project boundary will occur within 12 months after permanent cessation of operation of the Project.

1.7.3.3 State whether a participating landowner could be responsible for decommissioning costs in any situations.

Participating landowners will not be responsible for decommissioning costs in any foreseeable situation.

1.8 Utilities and IPPs - Required Permits and Approvals

1.8.1 Approvals and Permits. For each of the regulatory agencies listed below provide the following information:

- **regulatory agency**
- **the approvals/permits required,**
- **application filing date,**
- **the status of each application,**
- **agency contact name and telephone number.**

The expected local, state, and federal permits required for construction and operation of the proposed Project are listed in Table 4. Saratoga Solar is in contact with Wood County and the Town of Saratoga regarding permitting for the Project and will update the list if additional requirements are identified.

Table 4: List of Potential Permits and Approvals

Agency	Permit or Approval	Contact	Application/Notice Date	Status
Federal				
State				
PSC	CPCN for construction of large energy generation facility	Jeff Kitsembel	Q2, 2022	Submitted
WDNR	Wisconsin Pollutant Discharge Elimination System (WPDES)/ Stormwater Runoff Permit (NR216)	Samantha Whitens (608) 273-5947	Q2, 2023	Will be obtained prior to construction, as necessary
WDNR	Wisconsin Endangered Species Law (s. 29.604, Wis. Stats.)	Stacy Rowe (608) 228-9796	September 29, 2021	Coordination Complete
Wisconsin Department of Transportation (WisDOT)	Heavy and oversized load permits	Keith Rutkowski (715) 421-8035	Q2, 2023	Will be obtained prior to construction, as necessary
Local				
Town of Saratoga	Construction Permits (Various)	Various	Q2, 2023	Will be obtained prior to construction, as necessary
Town of Saratoga	Driveway Access Permit	Various	Q2, 2023	Will be obtained prior to construction, as necessary
Wood County	Construction Permits (various)	Various	Q2, 2023	Will be obtained prior to construction, as necessary

1.8.2 Correspondence with Permitting Agencies.

Copies of correspondences with applicable permitting agencies are provided in Appendix C. Saratoga Solar will continue to correspond with permitting agencies throughout development, construction, and operational phases of the Project.

2. Technical Description – Project Area, Arrays, Panels, and Ancillary Facilities

2.1 Estimated Solar Resource and Projected Energy Production

Provide a complete solar resource and energy production assessment for the Project. This report should include, at a minimum:

2.1.1 Solar resource data used in analysis.

Saratoga Solar estimated the Project's solar energy production using the Clean Power Research SolarAnywhere dataset. SolarAnywhere irradiance estimates are derived from real-time and historical satellite images, through a series of algorithms developed at the State University of New York at Albany. Solar resource, temperature, and humidity data are derived from surface-based weather stations and numerical weather prediction model trial fields. Additional details about the algorithms, including numerous validation studies, can be found on the SUNY website.[2] Data was procured from the 10x10km SolarAnywhere grid cell containing the centroid of the project (44.25N, 89.75W). SolarAnywhere data are provided by Clean Power Research both as an hourly time series dating back to 1998 and as an hourly typical meteorological year (TMY) file, which is used to simulate conditions during an average year. The TMY file was then used to simulate a typical full year of production with the photovoltaic systems software (PVSYST) analysis program. The PVSYST model output information is included in Appendix D.

2.1.2 Gross and net capacity factor

Per the preliminary design, the system consists of an installed nameplate power capacity of 150.5 MW_{AC}. This value will be confirmed once the final layout and generation equipment are determined. The gross and net capacity factors for the Project are calculated to be 24.16 percent and 22.94 percent, respectively, when comparing the nameplate rating to the energy forecasted from the PVSYST model. Table 5 provides a summary of the Project's estimated available solar energy throughout the year.

Table 5: Global Horizontal Irradiance

Global Horizontal Irradiance on PV Plane (kWh/m^2)												
Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
53.4	78.6	124.6	138.7	173.7	175.8	188.9	159.5	118.0	79.8	50.8	43.0	1384.9

2.1.3 Estimated Energy Production of Project

While the maximum output of the Project will be 150.5 MW_{AC} at the point of interconnection, its output may be less at any given time depending on the energy available from the sun. The PVSYST software program was used to simulate the energy conversion process using model files from the PV module and inverter manufacturer, historical weather data as discussed in section 2.1.1, and the parameters that apply to the Project.

[2] http://www.asrc.cestm.albany.edu/perez/directory/ResourceAssessment.html

2.1.3.1 Estimated Production Losses

Energy losses within the system include electrical losses in the AC and DC electrical collection system, energy conversion losses within the PV inverters, step-up transformers and various other equipment, and losses due to soiling of the PV modules themselves due to dust, debris and snow cover. Taking those factors into account, a reasonable estimate of energy loss ranges from 15 to 20 percent of the maximum output, which is consistent with industry-wide estimates.

2.1.3.2 Estimated Net Energy Production

The Project's estimated net annual energy production is 301,618 megawatt-hours. Annual energy production output will depend on final design, site-specific features, and annual variability in the solar resource.

2.2 Solar Panel Type and Panel Characteristics

2.2.1 Identify the manufacturer and model of solar panel to be used.

Solar panel technology is continually making advancements in both manufacturing and efficiency and is subject to commodity pricing based on the current market demand and available stock. Therefore, the final PV module selection cannot be made until detailed engineering is completed and ordering of the PV modules is possible.

The preliminary layouts for the Saratoga Solar Project that were prepared for the Application used the Talesun Bipro TD7G72M 540W bifacial mono-crystalline panels as the basis of design and ensuing calculations and assumptions. Datasheets for these PV modules are provided in Appendix B.

At the time of construction, several PV module offerings from different suppliers will be evaluated, and a selection will be made based on the most cost-effective option. The final supply of modules may contain a mix of several similar wattages.

2.2.2 Panel Delivery Date - Indicate whether or not this date is firm.

At this time, panel deliveries are expected to occur during the first quarter of 2024, although this timeframe is subject to change.

2.2.3 Total Number of Panels Required for Project

The Primary Facility Area is designed for 366,444 panels with a generating capacity of 197.88 MW of DC power. Saratoga Solar expects that the full Project capacity of 150.5 MW_{AC} can be achieved with the single axis tracking systems for the site.

The Alternate Facility Area is designed for approximately 96,408 panels with a generating capacity of 52.06 MW of DC power or 39.6 MW_{AC}, which represents 25 percent of the Primary Facility Area power production.

2.2.4 Technical Characteristics of Panels

The PV modules initially selected for the Project have 144 half-cells and will be a plate-glass module with an aluminum frame, with approximate dimensions of one meter by two meters. The PV modules will be connected in series for up to 1500-volt operation and will be mounted on a

tracker system in-line, in portrait orientation on racking, which tracks east to west to follow the angle of the sun throughout the day.

The datasheets for the currently proposed PV modules are provided in Appendix B. If other PV modules from another manufacturer are selected, Saratoga Solar anticipates that the physical characteristics will be similar and follow the industry standards.

2.2.4.1 Panel physical dimensions.

The physical dimensions of the Talesun Bipro 540W panels on which the Project's preliminary site design are based are 2,285 millimeters by 1,134 millimeters.

2.2.4.2 Panel material/type.

The panel material/type for the Talesun Bipro 540W panels are bifacial mono-crystalline panels with an aluminum alloy frame, semi-tempered glass and an anti-reflective coating.

2.2.4.3 Any surface treatment of panels.

The panels will be covered in semi-tempered glass and an anti-reflective coating.

2.2.4.4 Panel power curve (provide actual data – solar resource and rated output needed to create the curve).

The current-voltage and power-voltage curve for the Talesun Bipro 540W panels is provided in Figure 2.1 below.

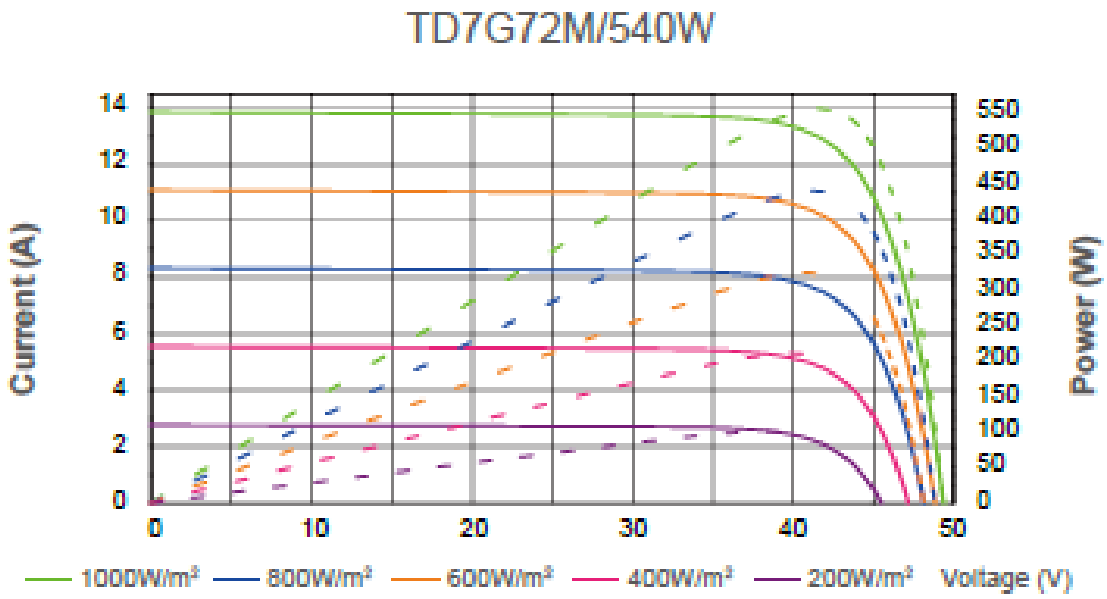

Figure 2.1 Current-Voltage and Power-Voltage Curves

2.2.4.5 Panel tolerances for extreme weather events.

The Talesun Bipro 540W panels are certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.

2.2.5 Technical Characteristics of Inverters

As noted in Section 2.2.1, the final selection of the inverters will be made at a future date based on the current market offering. A manufacturer specification sheet of the inverter used in the preliminary Project design is provided in Appendix B.

2.2.6 Technical characteristics of any tracking systems, panel supports, and racking.

2.2.6.1 Type of material used for supports and racking.

The supports and racking will be constructed of steel and aluminum.

2.2.6.2 Tracking system used

Based on the preliminary design, the NexTracker NX Horizon single-axis tracking system is proposed for this Project. If more suitable or technologically advanced tracker systems are developed after the Commission issues an order, Saratoga Solar may select a different unit.

2.2.6.3 Dimensions and number of sections required.

Based on the preliminary design, two different tracker table dimensions are proposed for this Project. The three-string tracking tables are 301.88 feet by 7.64 feet. The two-string tracking tables are 202.25 feet by 7.64 feet. There are 4,442 three-string tracking tables and 1,092 two-string tracking tables in the Primary Facility Area. There are 414 three-string tracking tables and 216 two-string tracking tables in the Alternate Facility Area. Final counts and tracker lengths are subject to final design and final selection of tracker unit.

2.2.6.4 Typical distances between rows, access roads, and fences.

Saratoga Solar anticipates that the spacing between solar panel rows, as measured from the panel posts, will typically be 24 feet, and the spacing between solar panel rows, as measured from the edge of the panels, will typically be 13 feet. Access roads will be up to 20 feet wide with a minimum of 10 feet of clearance to the array or other equipment. Fences are set back a minimum of 20 feet to arrays or other equipment.

2.2.6.5 Highest and lowest points of panels during daily rotation.

Saratoga Solar anticipates the highest and lowest points of panels during daily rotation to be approximately 9 and 1 feet, respectively. In case a 2 high tracker is selected, the highest and lowest points of panels during rotation will be approximately 15 and 1 feet, respectively.

2.2.6.6 Operational actions in case of extreme weather events. Include descriptions of actions in response to high wind events, as well as snow or ice removal.

The racking and tracking system proposed has intelligent wind-stowing technology with symmetric dampers for maximum array stability in all wind conditions. The racking system can shed snow daily as the panels rotate to follow the sun's position. Snow may also be removed from the panels according to manufacturer recommendations. Methods include blowing snow from equipment or utilizing cloth-based cleaning equipment.

2.2.6.7 Panel tolerance for placement on slopes.

For NexTracker NX Horizon trackers, the north-south slope tolerance is 15 percent.

2.2.7 Scale drawings of a typical panel row including inverter pad and transformer box.

Please refer to drawing included in Appendix B for a typical panel row.

2.2.8 Provide information on any perimeter fencing that would be used around the solar PV arrays. Describe any requirements on the fencing around the PV sites.

Array fencing will consist of seven to eight-foot-high deer exclusion fence with wood fenceposts. Fenceposts will be driven into the ground. No concrete foundations will be used for the fenceposts.

2.3 Other Project Facilities

2.3.1 Site Construction Area. Describe the site construction area. Include the number of, location, and dimensions for:

2.3.1.1 Solar arrays.

The 150.5-MW_{AC} Primary Facility Area is comprised of two fenced areas; and the 39.6-MW_{AC} Alternate Facility Area is comprised of two fenced areas. One fenced area is shared between Primary and Alternate Facility Areas. Drawings provided in Appendix A show the locations of both the primary and alternate arrays.

2.3.1.2 Lay-down/staging areas.

During construction, temporary laydown areas will be established within the Primary Facility Area. These laydown areas will be transient and will move as construction progresses. In the event laydown areas need to be sited outside of the Primary Facility Area, they will be established within the Alternate Facility Area. The specific location of the temporary laydown areas within the Project Area will be established during the final engineering design and construction planning for the Project.

2.3.1.3 Parking area.

Temporary parking for construction activities will be established within the Primary Facility Area. Permanent parking is planned near the O&M buildings. Figure 4.1.2 in Appendix A shows the location of parking at the laydown area and the O&M buildings.

2.3.1.4 Provide a scale drawing showing the general construction setup for the solar array sites.

The Project's general construction setup is shown on Figure 4.1.2, Appendix A.

2.3.2 Collector Circuits.

2.3.2.1 Total number of miles of collector circuits required – separated by circuit type (above-ground vs. underground).

Based on the preliminary Project design, the Project will contain approximately 9.5 miles of collector circuit runs within the Primary Facility Area and 5.25 miles of collector circuit runs in the Alternate Facility Area. All collector circuit runs are currently proposed to be below ground. However, if it is determined during final engineering that the use of overhead collector circuits is

advantageous, Saratoga Solar will share this information with the PSC.

2.3.2.2 Specify the collector circuit voltage to be used.

The collector circuit voltage is 34.5kV.

2.3.2.3 Transformer type, location, and physical size of transformer pad at each site.

Saratoga Solar anticipates the use of one 138 / 34.5kV 107/143/178 Megavolt Amps (MVA) Main Power Transformer (MPT) at the Project substation, which is shown on 4.1.2 in Appendix A. The MPT pad will be 52 feet by 36 feet.

2.3.2.4 Underground collector circuits.

2.3.2.4.1 Conductor to be used.

The collector conductors are anticipated to be ACSR 954 kcmil.

2.3.2.4.2 Describe installation type and how lines would be laid (open-cut trench, vibratory plow, directional bore, etc.). Provide scale drawing of underground circuit.

There will be approximately six collector circuits run in open-cut trenches within upland areas with directional boring as required at road and existing transmission line crossings. No wetland or waterway collector circuit crossings are proposed for the Project. Figure 4.1.2 in Appendix A shows the collector circuit routes, and drawings provided in Appendix B show the typical collector circuit design for the Project. Final circuit counts subject to change upon final design.

2.3.2.4.3 Depth and width of trench, and minimum depth of soil cover over circuits (if applicable).

The typical burial depth for collector circuits is 3 to 4 feet below the ground surface (bgs). The width of the trench is dependent upon the number of circuits. Typical trench widths are as follows:

- Single Feeder trench width – 1 to 1.5 feet
- Two Feeder trench – 3-foot spacing and 3 to 6-foot trench width
- Five Feeder trench – 3-foot spacing and 15 to 16-foot trench width

2.3.2.5 Overhead collector circuits.

2.3.2.5.1 Size of pole to be used.

No overhead collector circuit runs are currently proposed for the Project.

2.3.2.5.2 Engineering drawing of structure to be used.

No overhead collector circuit runs are currently proposed for the Project.

2.3.3 Site Foundations.

2.3.3.1 Describe how the panel and inverter foundations would be installed (e.g. direct imbed, excavation for pouring of concrete footings, etc.).

The Project will use driven pile foundations for the racking system and potentially cast in place

concrete foundations for the inverter. Foundation type will depend on soil and geotechnical conditions.

2.3.3.2 Dimensions, surface area and depth required for each foundation.

The typical pile foundation will be from approximately 5 feet to 15 feet deep depending on soil and geotechnical conditions and final design.

2.3.3.3 Amount of soil excavated for each foundation type.

For driven pile foundations, no excavation is required. For the concrete foundations, soil excavation quantities will be determined in the detailed engineering phase.

2.3.3.4 Describe how excavated soils would be handled including disposal of excess soil.

Spoil material / excavated soils are not anticipated to be exported from the Project site. Any excess material generated from the construction of the MPT, access roads, or collector circuit trench installation will be distributed within the Project Area and properly revegetated to be used during Project decommissioning.

Spoil material management on-site will primarily be associated with the trenching activities for the collector circuit runs. During construction of the collector circuit trenches, first the topsoil will be appropriately segregated from underlying subsoil and staged separately. Spoil materials will be side-cast along the excavated trench and, following installation of the collector circuit(s), will be placed back in the trench to match pre-existing contours. Topsoil will be replaced and revegetated according to the Vegetation Management Plan (Appendix I).

2.3.3.5 Materials to be used for the foundation. Include:

2.3.3.5.1 Approximate quantity and type of concrete required for typical foundation.

Subject to detailed engineering, foundations will be standard reinforced concrete with compressive strength less than 5,000 pounds per square inch.

2.3.3.5.2 Materials required for reinforcement.

The concrete will be reinforced with steel rebar.

2.3.3.5.3 Description of the panel mounting system.

2.3.3.6 The panels will be mounted to a ground-mounted single-axis tracking system. Provide technical drawings of each foundation type to be used showing foundation dimensions.

See Appendix B for a technical drawing of a typical MPT foundation and the typical pile foundation for the solar array.

2.3.3.7 Describe how foundation or support installation would address the risk of frost heave on facilities.

Foundations or supports will be installed to a minimum depth of four feet bgs to minimize impacts from freezing and thawing conditions. Exact embedment depth for the driven pile on

which the solar panels are mounted will be determined with final engineering.

2.3.4 Access Roads

2.3.4.1 Provide the total number and total miles required for access roads. Provide the amounts for both temporary access (used during construction only) and permanent access (for long-term facility operation and maintenance) roads. State if any temporary access roads would be converted into permanent access roads.

Existing public roadways will be used to access the Project. No external temporary roads or temporary widening of existing permanent roads during construction are planned at this time.

Permanent internal access roads within the Primary Facility Area are expected to be 5.15 miles in total length, while the permanent internal roads within the Alternate Facility Area are expected to be 0.6 miles in total length. The internal access roads will primarily be located within the secured fenced areas. They will be designed to provide access to power conversion equipment within the panel arrays and to solar equipment, and to accommodate ongoing maintenance of the Project components.

Saratoga Solar does not anticipate constructing temporary access roads within the Project arrays at this time.

2.3.4.2 Describe materials to be used and methods for construction of temporary and permanent access roads, including roadbed depth.

As mentioned, Saratoga Solar does not anticipate constructing temporary access roads. If temporary access roads are required, they will be built utilizing construction matting or aggregate. These roads will be used to a limited extent in areas with soil strength and stability limitations for construction vehicles. If necessary to compensate for low-strength soils, aggregate may be supplemented with a geosynthetic.

Permanent access roads will consist of either an improved aggregate base or the existing compacted, vegetated soil surface. Permanent aggregate base access roads will be constructed by first removing the topsoil and organic material, compacting the subgrade, and constructing the road according to civil design requirements. A layer of road base will then be added and compacted. Road aggregate or fill will be a local pit run aggregate material that meets WisDOT specifications. Upon completion of detailed engineering, the aggregate specifications will be available for construction quality assurance. Permanent access roads will be maintained for the life of the Project.

2.3.4.3 Specify the required width of temporary and permanent access roads. Fully describe any differences between final road size and that required during construction.

Permanent access roads will be 12 to 20 feet wide. No temporary access roads are planned at this time.

2.3.4.4 Describe any site access control (e.g. fences or gates).

The Project Area will have a perimeter fence with secured gates for site access. Only Saratoga

Solar, ATC, and local emergency personnel will have access to the Project within the secured gated areas.

2.3.4.5 Describe any setbacks from sensitive resources or storm water management considerations in road locations.

No sensitive resources exist on site so no road setbacks from sensitive resources are necessary. Saratoga Solar completed a hydraulic and hydrology study to model stormwater movement during 100-year rainfall events. Based on this study, preliminary locations of stormwater Best Management Practices (BMPs) and access road culverts were located.

2.3.5 General Construction Areas

2.3.5.1 Identify size, number, and location of laydown/staging areas outside of those found at the array sites and any other areas used for material storage.

Saratoga Solar does not anticipate any alternate laydown areas. The main laydown yard anticipated for the Project will total approximately 6 acres.

Saratoga Solar will strip the topsoil from the main laydown areas prior to compacting or installing aggregate materials. The topsoil will be stockpiled and stored near the laydown/staging location and will have temporary erosion control measures, per the Project site-specific Erosion Control and Stormwater Management Plan (ECSWMP). Following construction, the laydown/staging areas will be restored to stable vegetated conditions.

2.3.5.2 Identify size and location of construction parking areas.

Temporary parking for construction activities will be established within the Primary Facility Area. The size and location of construction parking areas will be determined during the construction planning phase.

2.3.5.3 Describe the expected use of these areas after project completion.

After Project construction is complete, the laydown area will be reclaimed and restored to pre-existing conditions. Aggregate surfaces will be removed to a depth where clean aggregate without soil mixing can be retrieved. This aggregate may be applied throughout the site on access roads as a final top layer.

Once the aggregate is removed, deep disking construction equipment will be used to de-compact the subgrade. Once the subgrade has been appropriately de-compacted, the topsoil will be evenly spread over the yard.

2.3.5.4 Provide a list of all hazardous chemicals to be used on site during construction and operation (including liquid fuel).

Hazardous chemicals including fuel for vehicles, paints and lubricants will be stored on site during the construction period. Gasoline and diesel fuel will be stored on site in secondary containment or in individual tanks. Other hazardous chemicals on site will be stored in trailers located at the central laydown area. The expected hazardous chemicals include diesel fuel, gasoline fuel, oil, grease, spray paint, and galvanization paint. All hazardous materials will be stored in accordance

with the Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) and appropriately secured.

2.3.5.5 Discuss spill containment and cleanup measures including the Spill Prevention, Control, and Countermeasures ("SPCC") and risk-management planning for the chemicals proposed.

Saratoga Solar will require that an SPCC Plan be provided by the contractor awarded the construction contract for the Project. The SPCC Plan will outline the procedures and preventive measures that will be followed throughout the construction period. Saratoga Solar and its contractors will be required to comply with the Plan. At a minimum the SPCC Plan will identify the following:

- Typical fuels, chemicals, lubricants and paints to be used or stored in the Project Area.
- Methods and location of storage.
- Locations designated for lubrication and refueling (i.e., outside of sensitive resource areas).
- Preventive measures to be used to minimize potential impacts.
- Mitigation methods to be employed, should a spill occur.
- Location of construction spill kits (gloves, booms, sorbents, barrier materials, etc.).
- Emergency notification procedures and forms.
- Contact information for individuals requiring notification if a spill should occur.

The SPCC Plan will be kept on-site during construction and will meet all Wisconsin DNR requirements. The SPCC Plan, because of its specificity, will be written by the contractor prior to commercial construction.

2.3.6 Construction Site Lighting.

It is expected that at the main laydown area, lighting will be used during construction only and will be installed either on pole(s) or on the construction trailers to provide adequate light for safety and security. Construction is planned to be conducted during daylight hours and therefore will not require additional site lighting. In the event that site lighting is needed to accommodate safe working conditions for construction, portable lighting and generators may be used as needed.

2.3.6.1 Describe the site lighting plan during project construction.

Construction will occur during normal daylight hours. Therefore, with the exception of the lighting at the main laydown area, lighting on site during construction is not anticipated to be required. However, if extensions of working hours would be needed, temporary lighting may be provided by portable lighting and generators.

2.3.6.2 Provide copies of any local ordinances relating to lighting that could apply.

Local ordinances, including the Town of Saratoga Zoning Ordinance are provided in Appendix E. Under the Town Ordinance No. 04-20-16, Section 13 Lighting Regulations, requirements are for full cut-off lighting, which prevent light from being directly emitted above the horizontal plane of the fixture to limit lighting of the night sky, and that lights be directed away from adjacent

properties and public ROWs to prevent light from trespassing or spilling onto those properties. No lighting will be used on site that violates these ordinances. No provisions for lighting are included in ordinances for Wood County.

2.4 Substation

If the project includes the construction of a substation or modifications to an existing substation, provide the following information:

2.4.1 A complete electrical description of required substation facilities including a list of transformers, busses, and any interconnection facilities required.

This section discusses the substation that will be developed for the Project. A preliminary Project substation layout schematic can be found in Appendix B. The Project substation design will be completed during detailed engineering for the Project and is expected to include:

- 34.5kV, 1200A vacuum-insulated circuit breakers for the feeders to the solar panels;
- 34.5kV, main circuit breaker on the 34.5kV side of the MPT;
- 34.5kV, 3000A air insulated bus and supporting structures (includes air insulated isolation switches for the transformer and the individual feeder circuit breakers);
- 34.5kV metering and instrument transformers;
- 100kVA Station service transformer installation, which includes AC panels, station service transformer with fuses, equipment for a secondary source for AC power, conductors and support structures for all equipment;
- MPT 34.5/138kV, 107/143/178 MVA;
- 138kV, 1200A circuit breaker;
- 138kV, 1200A air insulated gang operated disconnect switch;
- 138kV surge arrestors, if required;
- 138kV bus and supporting structures;
- 138kV metering and instrument transformers;
- 138kV dead-end structure for outgoing transmission line (generation tie line to the Point of Interconnection);
- Protection and control building, which will include DC power equipment, DC panels, and relay/control/communication equipment;
- Security card readers;
- Safety and warning signage;
- Internal access roads;
- Security fence with vehicle gate, service gate, barbed wire. Fence to be grounded to the Project substation ground grid per National Electric Safety Code requirements;

- Bare copper grounding grid (to be installed below grade) with high resistance gravel/rock installed above grade for protection against electrical shock;
- Power cables and control cables installed in a below grade concrete trench, polyvinyl conduit and manholes as required;
- Lightning protection masts (as required);
- Yard lighting and receptacles to be used during maintenance and/or during emergency; and
- Any required power factor control equipment (i.e. capacitor bank) with associated isolation equipment such as reactive power switching equipment and disconnect switches.

2.4.2 Indicate the size (in acres) of the land purchase required for the new substation or substation expansion.

A schematic showing the approximate orientation of the Project substation on the property is provided in Appendix B. The Project substation will require approximately 3.5 acres. The land designated for the Project substation is part of an overall purchase option (parcel number 1800353) that has been executed with the landowner.

2.4.3 Indicate the actual size of the substation or substation addition in square feet, the dimensions of the proposed substation facilities, and the orientation of the substation within the purchase parcel. This should include the size of any new driveways associated with the substation.

Pending final design work, the proposed Project substation is expected to have a fenced footprint of approximately 3.5 acres (364 feet by 413 feet.) A preliminary physical layout showing the approximate orientation of the substation with major equipment on the property is provided in Appendix B.

2.4.4 Identify current land ownership and whether applicant has control of property or whether or not an option to buy has been signed.

Saratoga Solar intends to purchase the land designated for the Project substation.

2.4.5 Describe substation construction procedures (in sequence as they would occur) including erosion control practices (see Section 3.1).

A typical construction sequence for the Project substation involves, in order:

- site grading work;
- below-grade foundation installation;
- above-grade physical construction of buswork and installation of major electrical equipment;
- wiring and completion of all terminations;
- testing and commissioning; and
- energization.

A site-specific construction specification and schedule will be developed but is not yet available. All contractors will be required to follow the ECSWMP, as well as adhere to any site-specific environmental requirements including erosion and dust control.

2.4.6 Describe associated permanent stormwater management facilities that will be constructed, or expansion/modification of existing stormwater treatment facilities to comply with applicable post-construction performance standards in Wis. Admin. Code. §§ NR 151.121 through 151.128. Identify the locations of the point(s) of collection and discharge.

Permanent stormwater management facilities will be constructed to manage and treat stormwater associated with the new Project substation. A detention pond (location and size subject to detailed engineering) will be located east of the substation fence between the O&M buildings and BESS area. Nearby grades will be constructed to ensure water is properly routed to the pond via overland sheet flow and/or vegetated swales. The detention pond will have an emergency overflow weir designed to safely route excess flow from a 100-year-or-above storm event.

2.4.7 Describe any security requirements for the substation site and provide information on how these would be met.

The Project substation will be fenced according to the National Electrical Code and National Electric Safety Code. The fence will be properly grounded to avoid any hazards. The Project substation will also have safety lighting and may have security cameras mounted at fence gates.

2.5 Transmission and Distribution Interconnection

2.5.1 Describe any transmission or distribution grid interconnection requirement.

A 138kV generator tie line will connect the Project substation to a switching station that will be owned by ATC. The switching station will interconnect to the existing 138kV transmission line via an approximately 350-foot line tap.

2.5.2 Identify the length of the generator tie line.

The generator tie line is anticipated to be approximately 500 feet long.

2.5.3 Provide details on the types of structures (underground/overhead, single-pole/H-frame, direct embed/concrete caisson, typical span length, etc.) and lines that would be constructed as part of any necessary generator tie line, including the height of the structures. If the installation will be underground, identify the installation method(s), such as directional bore, open-cut trench, plow, etc.

The 138-kV generator tie line will be an approximately 500-foot overhead, single-circuit line. Between zero to two generator tie line structures are anticipated to be required to connect the Project substation to the switching station. These structures are anticipated to be approximately 60 to 100-foot steel monopoles with direct-embed foundations.

2.5.4 Describe the transmission configuration (single-circuit, double-circuit, etc.).

Please reference Section 2.5.3.

2.5.5 Describe the right-of-way (ROW) area needed for the generator tie line and the status of any easements or other land agreements with property owners.

No additional ROW for the generator tie line between the Project substation and switching station is required because all land will be purchased by Saratoga Solar.

2.5.6 Describe all communications and agreements, official or otherwise, with the transmission or distribution owner. These can include definitive phase planning (DPP) studies and any signed generator interconnection agreements, or more informal meeting notes or letters.

In June 2020, Saratoga Solar executed the Attachment X: Appendix 1 to the MISO Generation Interconnection Procedure (GIP) Interconnection Request and Attachment B, C, D and E, which together make up the documents required to request interconnection to the bulk transmission system.

After the MISO Kick Off meeting for DPP-2020 Cycle 1 ATC, Saratoga Solar confirmed its commitment to continue with the application and provided all the necessary data and payment.

After completion of the DPP-2020 Cycle 1 ATC Phase I (DPP1), Saratoga Solar confirmed its commitment to continue with the application and provided all the necessary data and payment.

2.5.7 For transmission interconnections, indicate where the project is in the MISO Queue and provide copies of the latest draft or final MISO report for the project interconnect. During the PSC review process applicant must continue to supply the latest reports from MISO.

The Saratoga Solar Project entered into the MISO Interconnection Queue June 25, 2020 and was assigned queue position 1751 (aka: J1751). The solar facility is currently in the DPP-2020 cluster and in the ATC study group awaiting the DPP2 results. The BESS entered in the MISO Interconnection Queue July 22, 2021 and was assigned queue position 2117 (aka: J2117). The BESS is currently in the DPP-2021 cluster and in the ATC study group awaiting the DPP1 results.

The Project is currently tracking to have an executed interconnection agreement by February 2023.

Final, public versions of any DPP studies that MISO has completed for the Project are available on MISO's website and included in Appendix D. Saratoga Solar will provide confidential versions of these studies, as well as any other non-public, non-final DPP studies for the Project, to Commission staff upon request.

2.5.8 Indicate how equipment access will occur, and if off-ROW access roads will be utilized. If off-ROW access roads will be utilized, provide the following:

At this time, Saratoga Solar does not anticipate that off-ROW access roads will be needed.

2.5.8.1 Provide the number of off-ROW access roads proposed, and an identifying name or number for each off-ROW access road.

Please reference Section 2.5.8.

2.5.8.2 For each proposed route, provide the dimensions (length, width, area) and construction method, including any modifications that would be needed to utilize the off-ROW access roads, such as road widening, road fill placement, tree clearing, etc.

Please reference Section 2.5.8.

2.5.8.3 Discuss the reasons for the necessity for off-ROW access roads (e.g. topography, rivers/wetlands, etc.). If protection of a natural resource is a reason, discuss how the resource would be protected during construction and operation of the proposed project.

Please reference Section 2.5.8.

2.5.8.4 Provide quantitative land cover information for off-ROW access roads similar to the information provided in PSC Impact Tables.

Please reference Section 2.5.8.

2.5.8.5 If the off-ROW access roads would be modified post-construction, provide details.

Please reference Section 2.5.8.

2.5.9 Describe the type of construction machinery that would be used.

Please reference Sections 2.5.2 through 2.5.5.

2.5.10 Describe the construction disturbance zone, if different from the ROW.

Please reference Sections 2.5.2 through 2.5.5.

2.5.11 Describe how spoil materials would be managed on and off-site.

Please reference Sections 2.5.2 through 2.5.5.

2.5.12 Describe the dewatering method(s) that may be utilized during excavation activities, such as pit/trench dewatering or high capacity wells. Identify treatment methods that would be utilized to treat the discharge, and the discharge location.

If dewatering is required, all water will be kept onsite. Water will be pumped to a well-vegetated upland area where it can be discharged without causing erosion. Discharge locations will be constructed with energy dissipators to prevent erosion or suspension of surficial soils. If necessary, discharge basins will be constructed with a combination of straw bales, filter fabric, and rock. Dewatering will comply with applicable WDNR Technical Standards.

2.5.13 Describe if the construction of a new substation or switchyard, or modifications to existing facilities would be needed for the transmission interconnection. If so, describe which company would own and operate the facilities, and which company would conduct any ground disturbing construction for the facilities.

Saratoga Solar will be responsible for the permitting and construction of the Project substation. Saratoga Solar will be responsible for permitting and constructing the switching station. ATC will own and operate the switching station. ATC will be responsible for the construction of the line tap between the switching station and the 138kV transmission line at the point of interconnection.

2.6 Operations and Maintenance Building

Two O&M buildings are proposed for this Project. The sections below provide additional O&M building details.

2.6.1 Describe the purpose and use of the proposed O&M building.

The purpose of the O&M structures is to maintain an on-site location for employee use and meeting space for mobilized maintenance staff, as well as storage for spare parts and equipment.

2.6.2 Number of full-time employees that would be working at the facility.

Saratoga Solar anticipates that there will be up to three full-time staff employed at the facilities.

2.6.3 Provide the size (in acres) of the land purchase required for the facility.

The buildings will be approximately 47 feet by 118 feet in size and will require an area of approximately 150 feet by 260 feet for access around the buildings and vehicle parking. A total of about 1 acre is required for this area.

2.6.4 Building and Building Footprint

2.6.4.1 Provide a drawing or diagram of the O&M building with dimensions including square feet.

A typical diagram is included in Appendix B.

2.6.4.2 Indicate the actual size of the building in square feet, and the size of any permanent driveways for the building to be constructed.

The buildings will be approximately 47 feet by 118 feet in size and will require an area of approximately 150 feet by 260 feet for access around the building and vehicle parking. A total of about 1 acre is required for this area. The permanent driveway into the vehicle parking area has an approximate length of 25 feet and is 20 feet wide off the access road to the project substation.

2.6.4.3 Describe the type of building to be constructed (metal, frame, etc.)

The buildings will be a metal commercial-style building that houses offices and equipment storage.

2.6.4.4 Describe how the building property will be lit and how the lighting plan minimizes disturbance to nearby residences.

The lighting used at the facility will comply with the lighting regulations set forth in the Town of Saratoga Zoning Ordinance. Fixtures used will limit lighting of the night sky and will be directed away from adjacent properties and public ROWs to prevent light from trespassing or spilling onto those properties. No lighting will be used on site that violates these ordinances.

2.6.4.5 Describe any security plans for the property (fences etc.).

The O&M buildings will be located within the overall fenced area. The Project fence will be secured using computerized card readers. Doors to the O&M structures will also be secured using computerized card readers.

2.6.5 Describe any other facilities needed, including:

2.6.5.1 Parking lots.

A parking lot with space for approximately 10 vehicles will be constructed next to the O&M buildings.

2.6.5.2 Sheds or storage buildings.

One or two small storage containers will be located near the O&M buildings.

2.6.5.3 Supplies of water.

A potable water well will be constructed to provide water service to the O&M buildings.

2.6.5.4 Sewer requirements.

A septic system will be constructed to provide sanitary service to the O&M buildings.

2.6.6 Describe construction procedures (in the sequence as they would occur), including erosion control practices (see Section 3.1).

The O&M buildings will be constructed after the Project substation and BESS facility are constructed. Temporary stormwater BMPs will be installed during the construction of the O&M buildings in accordance with the ECSWMP. Once the O&M buildings are complete, the temporary BMPs will be removed, and the site will be stabilized with supplemental permanent seeding as required.

2.6.7 Describe associated permanent stormwater management facilities that will be constructed, or expansion/modification to existing stormwater treatment facilities, to comply with applicable post-construction performance standards in Wis. Admin. Code §§ N.R. 151-121 through 128. Identify the locations of the point(s) of collection and discharge.

A stormwater management basin is proposed to be located immediately to the north of the proposed Project substation. The stormwater basin will be designed to meet regulatory requirements. This will prevent soil erosion and adverse impacts to neighboring properties.

2.7 Battery Storage

If the proposed project would include a large-scale Battery Energy Storage System (BESS) or plans to include one in the future, provide the following information. State clearly if the project is seeking authorization to construct a BESS in the current solar electric generation facility docket. Provide all of the environmental impact information for the BESS if one is being proposed, identical to the environmental impact information provided with all other project facilities.

2.7.1 Describe the location of the proposed BESS, including a map that shows its placement within the other project facilities.

The BESS will be located in the Project substation area immediately east of the O&M buildings. See Appendix B Drawing E-3 for a Site plan that displays the BESS in relation to other Project facilities.

2.7.2 Explain what criteria was used to decide whether to use a BESS, and provide information on how its inclusion would affect the electrical design of the project and MISO interconnection process.

Cost modeling of various use-case scenarios were conducted to determine the optimum BESS size. The BESS will be interconnected into the same project substation that the solar facility is interconnected to in a non-additive basis. The non-additive storage application was entered into MISO DPP 2021 cycle, and it has its own Queue number. The storage interconnection process will follow the MISO DPP 2021 cycle process.

2.7.3 Identify the manufacturer and model of battery systems to be used. (It is acceptable to identify several potential units). Include technical specifications.

The Sungrow ST2752UX-US liquid-cooled BESS is incorporated into the Project design. Datasheets have been included in Appendix B. Alternative manufacturers offering a functionally equivalent system may be considered in the future.

2.7.4 Provide information on how the BESS would be installed, any changes to project impacts through its inclusion, and ongoing operations and maintenance actions it would require.

The BESS will be installed in conjunction with the solar facility's construction timeline. Including the BESS will require additional interconnection into the common Project substation and integration into the Project Supervisory Control and Data Acquisition (SCADA) control scheme. The BESS will be operated remotely under most circumstances and will only require periodic maintenance including groundskeeping and semi-annual maintenance activities.

2.7.5 Discuss any safety requirements specific to the BESS both on site and for local first responders.

The BESS will be compliant with International Fire Code 2018; NFPA 855; National Electrical Code NFPA 70; and UL 1973, UL 1642, 16 UL 1741, UL 9540, UL 9540A, and UN 38.3, along with any standard that supersedes one of these standards.

The BESS will be installed with flammable gas detection and automatic ventilation. The BESS enclosures will be sited in accordance with UL-9540a test results so that in the event of a fire, the adjacent containers will be far enough away to prevent fire propagation. The enclosures will be designed in such a way as to prevent the possibility of human occupancy. Hazards associated with the BESS will be documented in the site Emergency Response Plan and reviewed in training sessions with local first responders.

2.7.6 Describe construction procedures (in the sequence as they would occur), including erosion control practices (see Section 3.1).

Temporary stormwater BMPs will be installed during the construction of the BESS in accordance with the Project ECSWMP. Once the BESS is complete, the temporary BMPs will be removed, and the site will be stabilized with supplemental permanent seeding as required.

2.7.7 Describe associated permanent stormwater management facilities that will be constructed, or expansion/modification to existing stormwater treatment facilities, to comply with applicable post-construction performance standards in Wis. Admin. Code §§ N.R. 151-121 through 128. Identify the locations of the point(s) of collection and discharge.

Permanent stormwater management facilities will be constructed to manage and treat stormwater associated with the new BESS. A detention basin will be located west of the BESS and north of the Project substation. Nearby grades will be constructed to ensure water is properly routed to the basin via overland sheet flow and/or vegetated swales. The detention basin will have an emergency overflow weir designed to safely route excess flow from a 100-year-or-above storm event.

3. Construction Sequence and Workforce

3.1 Construction Sequence and Schedule

3.1.1 Provide the construction schedule for the proposed project, identifying any potential seasonal or regulatory constraints. Include a timeline showing construction activities from beginning of construction to in-service. Identify all critical path items.

The estimated construction schedule is provided in Table 6 below. The current estimate is that site work could begin as early as Q2 of 2023, but the start date will be contingent on receipt of regulatory approvals. A more refined schedule will be prepared as the permitting and engineering processes proceed.

Table 6: Estimated Project Construction Schedule

Activity	Start	End
Start of Construction	Q1 2023	
Site Preparation (Erosion Control and Tracking Pads installation and ongoing maintenance)	Q1 2023	
Vegetation Removal and Temporary Seeding	Q1 2023	Q2 2023
Staging and Lay-down Areas	Q2 2023	Q2 2023
Construct Project Substation and BESS	Q2 2024	Q3 2024
Access Roads	Q2 2023	Q1 2024
Drive Posts	Q2 2023	Q4 2023
Install Racks	Q2 2023	Q1 2024
Install Inverter Pads	Q4 2023	Q2 2024
Install Solar Modules	Q4 2023	Q3 2024
Backfeed	Q2 2024	Q2 2024
Commissioning	Q3 2024	Q4 2024
In-Service Date		Q4 2024

3.1.2 Provide a description of the staging and construction sequence required for building of a typical solar array. Include the delivery of materials.

The following provides a description of the staging and construction sequence for the Project:

- The initial site preparation will include the installation of tracking pads at construction entry and exit points. Stormwater BMPs will be installed as outlined in the ECSWMP that will be prepared for the Project.
- Vegetation removal will start in areas where initial staging and laydown areas will be located. Vegetation removal will continue across the site, sequenced to proceed in an organized and cost-efficient manner. Grubbing and ground-leveling will occur and then permanent and temporary seed will be concurrently installed prior to installation of piles

and other equipment. Disturbance will be staged to minimize the amount of exposed soil at one time and stabilized in accordance with the ECSWMP and WDNR requirements.

- Staging and lay-down areas will be developed to receive and store construction materials and equipment. The laydown areas will also house trailers and parking for personnel and construction-related vehicles.
- Initial material deliveries will commence, starting with security fencing and gate materials. The fencing and gates will then be installed to secure future material deliveries and equipment.
- Access roads will be developed to facilitate continued clearing operations and construction of the facility (limited grading is anticipated as roads will be constructed at grade when possible).
- Delivery of equipment, including piles, aluminum supports/mounting structures, tracking systems, and inverters will then begin. The Project will be constructed in blocks and multiple blocks will be constructed simultaneously over time. Deliveries will continue over time in advance of construction of the blocks.
- Solar block construction in sequence, starting with driving pile foundations, then installing aluminum supports/mounting structures onto the piles.
- Delivery of collection system equipment and installation via trenching and directional drilling.
- Delivery and installation of solar PV modules.
- Delivery of materials and equipment for the construction of the Project substation
- Construct gen-tie transmission line and the connection between the Project substation and switching station
- Construct O&M buildings.
- Conduct interconnection inspections and testing and Project commissioning.
- Vacate and restore staging and laydown areas prior to installation of piles and construction of the final solar blocks.
- Reseed and revegetate staging, temporary laydown, and other disturbed areas consistent with the Project Vegetation Management Plan (Appendix I).

3.1.3 Provide an estimate of time required to complete construction at a typical solar array.

The duration of construction for the Project is estimated to be 12-18 months. The schedule in Section 3.1.1 assumes 18 months. This timeline is in part dependent on winter weather conditions and the ability to work through the winter months. If the winter is mild, activities such as driving posts, installing of racking, and installing inverter pads could be accelerated. In this case, the total construction period could last 12 months.

3.1.4 Provide a description of the staging and construction sequence for any other facilities to be constructed.

The sequence for staging and construction for all Project facilities is described above in 3.1.2.

3.1.5 If grading, land leveling or any other activity that would result in a change in topography or vegetative or non-vegetative soil cover will occur provide following information as fully as possible. If technical details are not available, discuss the goals and practices generally:

3.1.5.1 Indicate the maximum area (sq. ft. or acres) of disturbance that would occur at a given time.

The Project Area is comprised of a mixture of red pine plantation and cropland. Prior to the start of construction (assumed to be Q1 2023 as stated in Table 6), Saratoga Solar will coordinate with participating landowners to determine the types of crops that may be present within the Project Area and the timeframe of harvest. Saratoga Solar will harvest lumber at the start of construction.

Micro-grading or site leveling will likely be necessary prior to array installation. It is estimated that micro-grading or site leveling will occur on roughly 40-60 acres at one time, with the use of construction blocks, as described in Section 3.1.2, minimizing the acreage of exposed soils at any given time, to the extent practicable. Appropriate BMPs will be installed prior to these grading activities. Permanent and temporary seed will be concurrently installed as each construction block seedbed is prepared. During the initial stages of the Project, 500 acres or more of the Project could be disturbed at a given time as temporary and permanent seed is installed and establishes.

3.1.5.2 Describe erosion and sediment control practices (e.g. sedimentation basins) that by design will be employed to result in a discharge of no more than 5 tons per acre per year of the sediment load carried in runoff from initial construction to final grading.

Preliminary review of Project area site characteristics, including existing topography and soils, show that the existing gentle slopes are not likely to be subject to severe soil erosion. The majority of the Project area includes gentle slopes of less than 1 percent, and much of the Project contains well drained, sandy soils. The Project area will be surrounded by silt fence which will filter low-velocity sheet flow coming from the work area. In locations where larger areas drain to the Project boundaries, the silt fence will be augmented by filter socks to allow settlement of sheet flow run-off. Erosion control blankets will be used in combination with silt fence to protect sensitive areas by establishing a vegetative buffer to allow additional settlement. In locations where large drainage areas occur with steeper ground slopes (>5% pitch), sedimentation basins will be established to allow settlement of run-off with a higher silt content.

3.1.5.3 Describe any structural practices that will be used to divert flow away from exposed soils, store runoff or otherwise limit runoff and the discharge of sediment.

Saratoga Solar will prepare an ECSWMP prior to construction that will provide specific prescription of stormwater BMPs to minimize scour and / or provide temporary conveyances to maintain drainage. BMPs will be used that meet WDNR Technical Standards. These may include ditch checks, culvert protection and temporary sediment basins. The Saratoga Solar Project is characterized by excessively well-drained sandy soils which will further limit runoff and prevent discharge.

3.1.5.4 Describe to what extent final grade will affect predevelopment drainage patterns.

Final grade will minimally affect pre-development drainage patterns. On-site infiltration post-construction is anticipated to be comparable to pre-construction on-site infiltration.

3.1.5.5 Describe how these preventative measures will be incorporated into the project:

- **Maintenance of existing vegetation, especially adjacent to surface waters whenever possible.**

The site is predominantly planted in red pine plantation. This existing vegetation will be cleared within and adjacent to the Project fence line. Most of the vegetation outside of the fence line will remain in place. There are no surface waters within the Project boundary.

- **Minimization of soil compaction and preservation of top-soil.**

Topsoil will be segregated during the grubbing and grading phase of construction. It will be re-applied across the disturbed portions of the Project. Soil compaction will be minimized through the use of temporary laydown yards through the construction process. The temporary laydown yards will be de-compacted prior to the re-application of topsoil and permanent seed installation.

- **Minimization of land-disturbing construction activity on slopes of 20 percent or more.**

There are no slopes in excess of 20 percent within the Project Area.

3.2 Workforce

3.2.1 Provide information on the workforce size and skills required for project construction and operation.

During construction, the work force will be primarily comprised of delivery drivers, laborers, equipment operators, and management personnel. The equipment operators will operate civil equipment, pile drivers, cranes, and material handling equipment. Most of the personnel required to construct the Project will be laborers that install racking systems and place modules. Approximately 300 to 400 workers, at peak construction, are anticipated to be needed to construct the Project. Once construction is complete, the Project will require approximately 3 full-time personnel for O&M. The plant operator(s) will have specific training / expertise to run a solar facility.

Saratoga Solar will implement an Environmental Management Plan (EMP) consisting of environmental training, regularly scheduled inspections, and tools, such as permit matrices, to ensure ongoing compliance with environmental rules and regulations. Under the EMP, the environmental lead will provide environmental training to managers and the foreman prior to construction. Thereafter, the contractor will ensure employees who work at the site is trained in accordance with the EMP. During construction, the environmental lead will conduct weekly meetings at the site as well as regular inspections to ensure environmental regulations and conditions are being implemented.

3.2.2 Estimate how much of the expected workforce would come from local sources.

Approximately 50 percent of the workforce is anticipated to come from local sources. This percentage is dependent upon the labor market and availability at the time of construction.

3.3 Construction Equipment and Delivery Vehicles

Provide a description of the types of construction equipment needed to build the project and the types of delivery vehicles that would be used. For large equipment and vehicles include:

3.3.1 Types of construction equipment and delivery vehicles.

The Project will require different equipment types depending on the phase of construction. Saratoga Solar estimates that there will be between 25 and 35 trucks used daily for equipment delivery during construction. Light duty trucks will also be used on a daily basis for transportation of construction workers to and from the site. Most panels and other site equipment and materials will be delivered by standard, legal load weight semitrucks. Typical construction equipment such as scrapers, bulldozers, dump trucks, watering trucks, motor graders, vibratory compactors, and backhoes will be used during construction. Specialty construction equipment that may be used during construction will include:

- Skid steer loader;
- Vibratory pile driver;
- Cranes;
- All-terrain forklift;
- Concrete truck and boom truck;
- High-reach bucket truck; and
- Truck-mounted auger or drill rig.

The first phase consisting of civil work and road building will require dozers, motor graders, and rollers. The pile-driving phase will utilize pile drivers. After pile driving, installation of racking and panels will be supported mainly by skid steers and telehandlers. For the Project substation and BESS, a multi-axle, low-boy trailer will be used for the transformer delivery and a large truck crane will be needed to set the transformer and other heavy equipment. For other facility components, small cranes, bucket trucks, and forklifts will be used to place equipment. Other support equipment such as skid steers, ATVs, and forklifts will also be used.

3.3.2 Gross vehicle weight (loaded and unloaded) for all vehicles using local roads.

Vehicles used for transporting Project components will consist of legal load (80,000 pounds or less) over-the-road trucks. The only expected oversize load delivery vehicles will be for the MPT at the Project substation.

The site will receive an average of approximately five to 15 box trucks (PV panels) a day throughout the PV panel delivery period and five to 15 flatbed trucks a day (inverters, piles, racking, etc.) during the pile driving period. The shipping weight of the MPT will be approximately 200,000 pounds and may be transported via rail to the nearest railyard or via barge to the nearest port and then use special multi-axle trucking as necessary to the site.

If there becomes a need for a larger vehicle, Saratoga Solar's construction contractor will work with state and local authorities to obtain the applicable oversize-overweight permits.

3.3.3 For vehicles Used for delivery, include:

3.3.3.1 Overall vehicle length.

Except for the multi-axle, low-boy semitrailers for delivery of the transformer and crane, vehicles used for delivery will be standard over-the-road semi-trucks.

3.3.3.2 Minimum ground clearance.

The standard over-the-road semis/delivery vehicles that will be used for this Project will have standard ground clearances. Low-boy trailers may be utilized for the delivery of some construction equipment, and a multi-axle low-boy trailer will be utilized for the delivery of the transformer. These vehicles have low ground clearance (similar to that of automobiles). The contractor will coordinate the use of reduced ground clearance vehicles as necessary to prevent damage to public roadways or other infrastructure. Vehicles used inside the arrays will be suitable for the engineered internal access roads and will have sufficient ground clearance.

3.3.3.3 Maximum slope tolerance.

The routes to the Project are relatively flat. Slope tolerance is therefore not expected to be an issue. Prior to delivery, the EPC contractor will finalize Project routes for all deliveries, including the transformer load, adjusting delivery plans accordingly.

3.3.4 Roads and Infrastructure. Estimate the potential impacts of construction and delivery vehicles on the local roads. Provide the following:

A Road Condition assessment was completed for the Project in October 2021. Current desktop road-condition data and visual inspections were performed as part of that road study. The results of the analysis conducted and provided in the Road Condition Report indicate that the local roadways which access the Project Area and within the Project Area have varying levels of integrity and construction access viability. Viable construction routes are included/proposed in the report which are beneficial for minimizing interface between construction traffic and the general public as well as avoiding excessive damage to roadways based on weight limits. The Road Condition Report is included in Appendix Q.

3.3.4.1 Describe methods to be used to handle heavy or large loads on local roads.

The transformer and cranes are the only equipment that will require use of transportation vehicles other than standard over-the-road flatbed trailers and box trucks. The transformer will be hauled to the Project substation using a multi-axle, low-boy trailer designed to haul loads of over 200,000 pounds. Prior to delivery, the EPC contractor and heavy-haul contractor will map out and determine the necessary route from the railyard drop location to the Project substation, based on road gradients, daily traffic patterns, bridge and electrical distribution wire/communication cable clearances, road weight limits, turning radius and permit requirements.

3.3.4.2 Probable routes for delivery of heavy and oversized equipment and materials.

The recommended haul route to the Project Area is from Interstate 39 to STH 73 to Tower Road for Project access east of STH 13. For access to Project Areas west of STH 13, STH 73 to STH 13 to Blue Ridge Lane will be preferred to minimize traffic on lower capacity roadways.

3.3.4.3 Potential for road damage and any compensation for such damage.

Road damage during the construction phase of the Project is unlikely. Solar projects generally use legal-limit loads. If required, Saratoga Solar will record all roads in the Project Area using a high-frame rate, high-definition digital camera prior to and following construction for comparison purposes. Per the conclusions of the Road Study Report, no culvert or pavement damage is expected during the equipment delivery and construction phase of the Project. Saratoga Solar will have an obligation to repair any road damage caused by Project construction.

3.3.4.4 Probable locations where local roads would need to be modified, expanded, or reinforced in order to accommodate delivery of equipment.

No modifications to local roads are expected.

3.3.4.5 Include an estimate of whether or not trees near or in road right-of-way (ROW) might need to be removed.

No clearing of trees in road ROWs along construction routes is anticipated.

3.3.4.6 Provide an estimate of likely locations where local electric distribution lines would need to be disconnected in order to allow passage of equipment and materials.

No disconnection of local electric distribution lines will be necessary to allow for delivery of equipment and materials.

3.3.4.6.1 Describe how residents would be notified before local power would be cut.

Not applicable.

3.3.4.6.2 Estimate the typical duration of a power outage resulting from equipment or materials delivery.

Not applicable.

3.3.5 Construction Traffic. Describe any anticipated traffic congestion and how congestion would be managed, minimized or mitigated. Include:

Deliveries of equipment and materials from the north, south or west will likely utilize STH 73 to Tower Road for Project access east of STH 13. During construction, between 100 and 200 construction workers are expected to travel to and from the Project. Local traffic congestion may occur from Monday to Friday, twice a day, coinciding with workers arriving or leaving the site.

The Project will receive an average of approximately 15 to 20 box trucks transporting modules or flatbed trucks transporting inverters, piles and other equipment per day. These various delivery

trucks are expected to be legal-load flatbed and box trucks. The transformer and cranes will likely require a special delivery vehicle, and due to its weight (estimated at 200,000 pounds) will require state road permits for its delivery. The delivery of the transformer and cranes utilizing a specialized multi-wheel trailer may require police traffic control along local roadways. This traffic control will only be required during the delivery of the transformer and cranes.

Local routes to the Project will have construction signage notifying deliveries and workers to reduce traffic. Signage will be posted to inform the general public of the additional construction traffic.

3.3.5.1 List of roads most likely to be affected by construction and materials delivery.

See the Road Condition Report (Appendix Q) for a depiction of preliminary Project haul routes and the roads most likely to be affected by construction and materials delivery.

3.3.5.2 Duration of typical traffic disturbance and the time of day disturbances are most likely to occur.

A small traffic increase will likely occur twice a day during the work week (Monday through Friday) when construction workers are traveling to and from the Project. This increase will consist of the personal vehicles owned by the workers. Deliveries of equipment will also be traveling to the Project during the work week**.** Material deliveries will generally be scheduled throughout the day versus during hours when residents are also commuting. The delivery and construction timing may be adjusted as needed to maintain the Project's construction schedule.

4. Project Maps, Aerial Photography, Photo Simulations, and GIS Shapefiles

Required maps listed below are included in Appendix A, unless otherwise noted.

4.1 Project Area Maps

4.1.1 General Project Area Map.

4.1.2 Detailed Project Area Map.

4.1.3 Topographic Maps

4.1.4 Substation

4.1.4.1 Provide a map showing the features listed in the AFR:

4.1.4.2 Provide an engineering diagram/s of the substation and substation equipment including any turning structures and interconnection facilities.

The substation diagram is found in Appendix B.

4.1.5 O&M Building

4.1.5.1 Provide a map showing the O&M building, parking area, roads, other impervious ground surfaces (e.g. gravel, aggregate, asphalt, concrete, etc.), permanent storm water management areas, and any other facilities. Include, as a background, a recent aerial image of the property.

4.1.5.2 Provide an engineered drawing of the O&M Building.

The O&M structure diagram is found in Appendix B.

4.1.6 Battery Storage

4.1.6.1 Provide an engineered drawing of the battery storage area, fencing, impervious ground surfaces, access roads, and permanent storm water management areas.

4.1.7 Natural Resources and Land Use/Ownership Maps

4.1.7.1 Wetland and waterway maps. See section 8.3 for the map sets to provide.

4.1.7.2 Land Ownership Maps, minimum scale 1:10,000 (map extent to 1.0 mile from the project boundary).

4.1.7.3 Public Lands.

4.1.7.4 Land Cover.

4.1.7.5 Flood Insurance Rate Maps (FIRM) (within the project boundary). Provide flood insurance maps if the site is within 0.5 miles of a floodplain.

4.1.7.6 Soil Survey Maps (within the project boundary).

4.1.7.7 Bedrock Maps (within the project boundary). Map showing depth to bedrock for the entire project area.

4.1.8 Community Maps

4.1.8.1 Zoning Maps. Provide a map or maps of the project area showing existing zoning (e.g. agriculture, recreation, forest, residential, commercial etc.). Map should show existing zoning within and up to 0.5 miles of the project area boundary.

4.1.8.2 Sensitive Sites. Additional map (if necessary) showing proximity to schools, day care centers, hospitals, and nursing homes within and up to 0.5 miles of the project area boundary.

4.1.8.3 Airports.

4.1.9 Communication Infrastructure

4.1.9.1 Identify radio, television, microwave towers, and any NEXRAD or Doppler weather radar installations on a map and show the results of the line of site analysis. Include communications and NEXRAD/Doppler installations within a 50-mile radius of the project area.

4.2 GIS data

Provide GIS data with attributes as listed and described in section 4.2 of the Application Filing Requirements. GIS attribute table information should be clearly labeled to identify fields and feature names.

Appendix F (submitted via the Commission's SFTP server) contains the following GIS-related items as part of the application:

- GIS shapefiles containing all the data used to produce all maps in the application.
- A spreadsheet listing all GIS data files, a file description, the source of the data, and the date when the data was collected or published.
- Map files in Esri ArcGIS *.mxd format for all GIS maps in the application.

4.3 Photo Simulations

Existing aesthetic conditions of the Project Study Area and its vicinity were documented with photographs taken in October 2021. A subset of photographs collected during a site visit served as the baseline images for the creation of visual simulations. The simulations show rendered views that include the proposed solar arrays and collector substation as proposed in engineering and plan documents.

Prior to commencing the photo simulation tasks for the Project, Saratoga Solar consulted with Commission staff to determine the suitability of potential Key Observation Points (KOPs). Four KOPs were selected and used to create visual simulations of what the Project may look like once constructed:

- KOP 1 – View southwest from STH 13
- KOP 2 – View northwest from Tower Road
- KOP 3 – View north/northwest from Blue Ridge Lane

- KOP 4 – View northeast from STH 13

The existing and simulated conditions is provided in Appendix G. The Visual Resources Technical Report contains baseline photographs and visual simulations for the listed KOPs.

5. Natural and Community Resources, Description and Potential Impacts

5.1 Site Geology

5.1.1 Describe the geology of the project area.

The Saratoga Solar Project lies within the Northern Highlands and Central Plain of the Central Lowland Physiographic Province of the United States. Characteristic features of the Central Lowland province are flat lands with geomorphic remnants of glaciation. The Project Area is located in the Central Sand Plains of Wisconsin, underlain by lacustrine and outwash sand that originated during the last part of the Wisconsin Glaciation.

Bedrock within the Project Area is Cambrian aged sandstone with some dolomite and shale of the Elk Mound group. Precambrian igneous and metamorphic rocks lie beneath the sandstone. Depth to bedrock in most of the Project Area is between 30 to 90 meters (98 to 295 feet) below the surface. U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) mapping indicates that depth to a restrictive layer for most of the Project Area is greater than two meters (6.5 feet).

The Project Area is located in southeastern Wood County. Soils in this portion of the county are described as nearly level to steep, moderately well drained and excessively well drained soils that have a sandy subsoil. These soils are formed in deep sand outwash on outwash plains. The majority of land cover and land use in the general area is forested red pine plantations.

5.1.2 Geotechnical report on soil conditions

Saratoga Solar utilized the geotechnical report (Appendix T) prepared for the adjacent Wood County Solar Project (PSC Docket ID #9803-CE-100) to evaluate the Saratoga Solar Project Area. Due to the similarities and proximity of the two projects, the Wood County Solar Project geotechnical report is a suitable reference for the Saratoga Solar Project. Detailed geotechnical investigations within the Project Area are ongoing.

5.1.2.1 Provide a summary of conclusions from any geotechnical report or evaluation of soils in the project area including (subjects in bullets below):

The following subsections discuss the existing soil classifications and potential limitations, which include soil bearing capacity and soil settlement potential, potential for frost heave, compaction prone soils, hydric soils, drainage classification, potential for corrosion to steel, depth to water table, and depth to bedrock.

- **Results of soil borings including a review of soil bearing capacity and soil settlement potential.**

Thirty-seven soil test borings were performed for the Wood County Solar Project, several of which overlap the Saratoga Solar Project boundary. Borings were conducted to a depth of 20 feet, with three borings extended to a depth of 50 feet. Soil boring and test pit locations are shown as Figure 1 in the Geotechnical Report in Appendix T of this application.

According to the Wood County Solar Project Geotechnical Evaluation, a majority of the Project Area has a topsoil thickness ranging from about 0.5 to 1.5 feet, generally underlain by cohesive

soils comprised of poorly graded fine to medium-grained sand, extending to the boring termination depths. Groundwater was encountered during auger advancement at depths ranging from about 8 to 20 feet. The groundwater was generally observed within natural granular soils. Estimated groundwater depths at the specific boring locations at the time of drilling are presented in Table 1 (Soil Data) enclosed in Appendix C of the Geotechnical Report included as Appendix T of this application.

Saratoga Solar expects that the soils at the Project Area will be suitable for standard driven pile foundations required to support the module racking and inverters. Concrete foundations within the Project substation will likely be on drilled piers and/or large slab foundations, similar to the main power transformer slab. Pile foundations for the racking pose little risk as less suitable soils can generally be overcome through longer, heavier pile sections. A final geotechnical study will be completed prior to construction, which will confirm the pile requirements and appropriate foundation designs. Foundation design depths and steel pile cross sections are based on the snow, wind, and loading of the module and racking weights. Foundation cross section and depths will be designed by a Wisconsin licensed structural engineer. Frost depths will be taken into consideration when determining the design. Typical foundation designs are based on a minimum 30-year useful life which includes both corrosion and foundation displacement (frost heave) potential.

- **Results of soil borings and test pits for Site Evaluation for Storm Water Infiltration (Wisconsin Technical Standard 1002).**

The geotechnical investigation performed for the Wood County Solar Project did not include an analysis for soil infiltration or permeability testing. However, based on the soil type encountered within the geotechnical borings and during the wetland delineation, the soils consist of topsoil underlain by poorly-graded fine to medium-grained sand. These soil types are highly permeable and will provide excellent stormwater infiltration. The final site stormwater plan will review available soil infiltration data and account for these properties in the development of stormwater detention and treatment.

- **Depths to seasonal high groundwater.**

Groundwater was encountered at 7 of the 40 borings examined in the geotechnical investigation. Depth to groundwater ranged from a high of 8 feet bgs to 20 feet bgs. A full summary of the range of groundwater depths at each soil boring is included in Wood County Solar Project Geotechnical Evaluation in Appendix T.

- **Results of any infiltration rate measurements, such as for permanent storm water infiltration basins or other practices.**

The geotechnical investigation performed for the Wood County Solar Project did not include an analysis for soil infiltration or permeability testing. However, based on the soil type encountered within the geotechnical borings and during the wetland delineation, the soils consist of topsoil underlain by poorly-graded fine to medium-grained sand. These soil types are highly permeable and will provide excellent stormwater infiltration.

- **Identify any soil conditions related to site geology that might create circumstances requiring special methods or management during construction.**

Frost Action: All of the soils within the Saratoga Solar Project Area have a low rating for frost action, per the SSURGO database. However, estimating potential frost heave is difficult. The amount of possible heave is dependent on depth of frost penetration, extent of frost-susceptible soils allowing for the creation of ice lenses, and availability of water (either groundwater or from surface infiltration) for ice formation. Because of the variability in these three requirements, frost heaving is difficult to predict, sporadic in occurrence, and highly variable in the amount of heave. Frost heave is often an ongoing process, with the pile or structure settling back a little less than the amount heaved such that eventually it is displaced by the repetitive frost heave cycles.

Frost heave is not anticipated to be an issue for facilities constructed for the Project. Frost heave of exterior slabs can be addressed by replacing the frost susceptible soils with non-frost susceptible soils or insulation. Alternatively, the equipment pads can be supported on frost-depth foundations with a structural slab. General site grades will be set to direct surface drainage away from structures to limit the potential for saturation of the subgrade and any subsequent heaving. Field-testing will be conducted to more accurately evaluate solar panel support design to prevent heave from ground freezing.

Erosion Hazard: None of the soils within the Saratoga Solar Project Area have a rating of very severe or severe erosion hazard. Under existing conditions, much of the Project Area consists of silviculture under pine plantation production. Areas with limited vegetation due to past farming operations or disruption of vegetation due to civil construction activities will be seeded and stabilized in a timely manner. Prior to construction, Saratoga Solar will obtain a Water Resource Application for Project Permits from the WDNR in accordance with Wis. Admin. Code ch. NR 216. The application will include a site-specific ECSWMP. The Plan will include technical drawings and descriptions of the best management practices that will be followed in compliance with WDNR technical standards. Erosion control and vegetation management practices that will be conducted during construction and operation of the Project are described in the Vegetation Management Plan in Appendix I and within Section 5.5.

Compaction: Compaction prone soils were identified by querying the SSURGO database for soils that have a rating of “high” or “medium.” All the soils within the Saratoga Solar Project Area are classified as having a low potential for compaction.

Impacts on soil resources are expected to be minimal based on several factors including the characteristics of the soils present within the Project Area, implementation of the restoration procedures, soil compaction mitigation, and revegetation practices described in the Vegetation Management Plan in Appendix I. Prior to construction, areas that do not have more than 70 percent existing vegetative cover may be planted with both a cover crop and a long-term seed mix simultaneously. Before seeding, areas may be tilled to reduce compaction and better prepare the seed bed. In lieu of deep tillage, specific vegetative species may be added to the seed mix that are capable of alleviating compaction.

Corrosion of Steel: “Risk of corrosion” pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. All the onsite soils are classified as

having a low risk of corrosion of steel, per the SSURGO database. Corrosion testing will be performed prior to construction to identify whether corrosion protection of buried structures such as steel piles is required at this site.

Groundwater: As described in Section 5.1.2.1, groundwater was encountered during auger advancement at depths ranging from about 8 to 20 feet bgs at the Wood County Solar Project. The groundwater was generally observed within natural granular soils. It is not anticipated that groundwater will be encountered during typical excavations at Saratoga Solar Project. If perched water or collected rainwater is encountered within excavations for foundations it will be removed with sump pumps to facilitate proper backfilling or concrete placement. Any dewatering activities will follow WDNR BMPs.

5.1.2.2 Depth to bedrock

- **Identify any sites where panel supports or foundation construction must be modified because of the presence of bedrock**
- **Describe construction methods and foundation issues associated with situations where bedrock formations are near the surface.**

According to the Wood County Solar Project Geotechnical Evaluation, bedrock was not encountered during soil borings to a depth of 21 feet bgs and is not expected to be a constraint. Additionally, the SSURGO database maps the bedrock within the whole Saratoga Solar Project Area as greater than 100 feet from the land surface. Saratoga Solar expects that conditions within the Project boundary will be suitable for standard driven pile foundations required to support the module racking and inverters and for concrete foundations within the Project substation. A final geotechnical study will be completed prior to construction, which will confirm the pile requirements and appropriate foundation designs. If geotechnical investigations determine that shallow bedrock is present at depths that may impact construction, subgrade design and construction methods will be modified as appropriate.

- **Likelihood or potential that construction on bedrock formations may negatively impact private wells within two miles of panel sites.**

There is a low likelihood that construction on bedrock formations may negatively impact private wells within two miles of the Project area. If bedrock formations are encountered during the final subsurface exploration and geotechnical engineering evaluation, measures will be implemented to guard against the introduction of contaminants into groundwater due to accidental release of construction-related chemicals, fuels, or hydraulic fluid during construction. Spill-related impacts from construction are primarily associated with equipment refueling and equipment maintenance. To avoid spill-related impacts, the construction contractor will be required to prepare an SPCC Plan and/or a stormwater pollution prevention plan (SWPPP), as required, that outlines measures that will be implemented to prevent accidental releases of fuels and other hazardous substances and describes response, containment, and cleanup procedures. By implementing the protective measures set forth in these plans, long-term contamination due to construction and operation activities is not anticipated.

5.2 Topography

5.2.1 Describe the general topography of the project area.

Raster files of topographic features within the Project Area boundary and surrounding landscape, including the area within a 10-mile radius, can be found in the electronic files being provided to the PSCW, as described in section 4.2.

The surface topography of the Project Area is relatively flat across most of its extent, ranging from elevations approximately 987.5 feet above mean sea level (msl) to 1,049.9 feet msl. In the southeast corner, the topography is more pronounced with rolling hills leading to Tenmile Creek, ranging from approximately 1,019 feet msl near the bottom of the slopes to approximately 1,031 feet msl near the top of the slopes.

5.2.2 Describe expected changes to site topography due to grading activities.

The prevailing topography of the Project Area will not be substantially changed by construction activities including installation of the foundations for the tracking systems and trenching for the collection system. Other than grading requirements for the substation/step-up transformer and other localized areas, no significant grading is anticipated. It is anticipated that panel arrays will be designed and constructed to conform to the existing topography to avoid the need for significant grading. However, some localized grading will be necessary to meet racking tolerances. Access roads will be constructed as close to existing grade as possible; maintaining preconstruction hydrologic flow patterns.

5.3 General Project Area Land Cover

The Project is located in a predominately wooded rural landscape, much of which is dominated by an active pine plantation. The land cover is dominated by varying stands and age classes of predominantly red pine (*Pinus resinosa*) plantation, areas of natural dry-mesic to dry mixed coniferous-deciduous woodland, as well as large areas of cleared plantation or storm blow-down that has revegetated as more open upland grassland or shrubland communities. Portions of the Project Area east of STH 13 are currently in agricultural production. Figure 4.1.6.4 in Appendix A provides an overview of the land cover existing within the Project Area.

Due to recent PSCW data requests on other recently submitted solar CPCN applications, Saratoga Solar is including a separate land cover table that provides a summary of land cover (including wetlands and waterways), archaeological/historic sites, endangered resources, and participating and non-participating landowners within and adjacent to the fenced solar production areas (Array IDs). This table is included in Appendix U.

5.3.1 Identify and describe the landscape within the general project area, including a list of dominant plants in the land cover categories listed in this section. Land cover may be based on GIS data, recent aerial imagery, and/or on-site evaluation not greater than two years old.

The vegetative communities within the Project were evaluated by a combination of aerial photographic review and field visits. A summary of the vegetative communities follows.

5.3.1.1 Agricultural

The dominant vegetation is comprised of red pine plantation used for timber production. There are two agricultural parcels within the Project Area totaling approximately 311 acres. Approximately 87 acres of that are used for commercial Christmas tree production, with the remainder used for row crops planted to corn during 2021 field investigations. No pastured lands exist in the Project Area.

- **Row/traditional**
- **Specialty crops/other**
- **Prime farmland**

5.3.1.2 Non-Agricultural Upland

- **Prairie/grasslands/pasture/fallow field**
- **Upland forests**

Non-agricultural upland within the Project Area consists of varying stands and age classes of red pine plantation, areas of natural dry-mesic to dry mixed coniferous-deciduous forest, and large areas of harvested or wind-blown plantation that has re-vegetated as open grassland, shrubland, or mixed coniferous-deciduous forest vegetation.

Within the plantation areas, other common tree species include black oak (*Quercus velutina*), bur oak (*Q. macrocarpa*), and black cherry (*Prunus serotina*). Understory vegetation includes small saplings or shrub versions of the same canopy tree species, as well as hazelnut shrubs (*Corylus americana*), blackberries (*Rubus* spp.), huckleberry (*Gaylussacia baccata*), blueberry (*Vaccinium angustifolium*), sweet fern (*Comptonia peregrina*), and Pennsylvania sedge (*Carex pensylvanica*).

The areas of natural dry-mesic to dry mixed coniferous-deciduous forest are dominated by red pine, jack pine (*Pinus banksiana*), black and bur oak, and similar understory species as the pine plantations. The grass and shrubland-dominated areas are comprised of cleared plantation and storm blow-down areas in various stages of revegetation. Some of the open areas have been replanted with red pine. Other areas contain regrowth of the common surrounding tree and shrub species. Common herbaceous vegetation includes perennial rye grass (*Lolium perenne*), Canada goldenrod (*Solidago canadensis*), Pennsylvania sedge, butter-and-eggs (*Linaria vulgaris*), orange hawkweed (*Hieracium aurantiacum*), and spotted knapweed (*Centaurea stoebe*).

5.3.1.3 Wetlands (Eggers and Reed classification type)

There are no wetlands present within the Project Area. The wetland determination report is available in Appendix H.

5.3.1.4 Developed land

- **Residential**
- **Commercial/Industrial**

Developed land within the Project Area includes residential, commercial/industrial, and roadways. Maintained gravel, paved, or lawn areas surrounding buildings are considered

developed and are included in the total acreage of developed land. The Project Area includes approximately 15.3 acres of developed land.

Table 7: Total Land Cover

Land Cover Classification		Acres[1]
Agriculture	Cropland	223.9
	Specialty Crops	87.2
Developed Land	Residential	0.0
	Developed/Urban	15.3
Non-Agricultural Upland	Grassland	33.1
	Upland Woodland	1,566.5
	Fallow Field	0.0
Wetlands/Waterbodies	Forested Wetland	0.0
	Non-Forested Wetland	0.0
	Open Water	0.0
Project Area Total		1,926.1

5.4 Land Cover Impacted by Proposed Project Facilities

Complete the PSC Solar Impact Table (comprised of 2 tabs) provided with these AFRs.

Land cover impacts are summarized in the PSC Impact Table provided in Appendix U. Saratoga Solar calculated these impacts using GIS software to intersect the digitized land cover dataset with polygons representing the footprints of Project facilities. Land within the solar array fence line is considered impacted; however, that area (exclusive of access roads) will be revegetated as described in Section 5.5. No wetlands are located within the Project Area and therefore, Saratoga Solar does not anticipate the Project having any permanent or temporary impacts to wetlands.

Collector circuits will be installed utilizing a combination of trenching (within upland areas) and directional-boring methods. The directional-boring method will be utilized where collection crosses roads. No permanent or temporary impacts to wetlands or waterways are anticipated. Bore pits will be placed in previously disturbed upland areas, to be determined prior to construction.

5.5 Invasive Species

5.5.1 Describe locations where invasive species, forest pests, or diseases have been observed in the project area (e.g., invasive plants, oak wilt, etc.). State if invasive species surveys have occurred or would be conducted. If invasive species surveys have been conducted, provide documentation showing where surveys occurred and locations of invasive species found, indicating which species.

The Project Area was evaluated for the presence of invasive species during field investigations during May - July 2021. The most prevalent invasive plants found during the 2021 field investigations were spotted knapweed and Tatarian honeysuckle (*Lonicera tatarica*).

5.5.2 Describe mitigation actions during construction that would be used to prevent the introduction or spread of invasive species, forest pests, or diseases.

Applicable BMPs within the Wisconsin Council on Forestry document entitled "Invasive Species Best Management Practices for Transportation and Utility Rights-of-Way" will be used during construction and transportation of materials to prevent the introduction or spread of invasive species.

Construction equipment that may come in contact with field-verified invasive species areas will be cleaned before arriving and prior to leaving the Project. Cleaning of construction equipment may consist of brushing, power washing, and steam cleaning.

5.5.3 Describe planned ongoing invasive species monitoring and management for the project during operations.

Invasive and weed species management will be conducted as needed to reduce the spread of invasive species from existing populations, improve establishment and success of the permanent seed mixes, and reduce vegetation impacts to the PV panels and solar facility infrastructure. Flowering non-native species that are not considered invasive and do not have heights that would interfere with the Project operations will not be actively managed.

Vegetation cutting shall be appropriately timed to assist with controlling invasive species (e.g., mow annual and biennial species during flowering but prior to seed production) and to remove vegetation to assist with site seedbed preparation.

Herbicide treatments are recommended for management of perennial invasive and noxious species, as mowing alone is not typically sufficient for adequate control. Herbicides are also used to remove undesirable vegetation to prepare for permanent seed installation. Additional information regarding invasive species management is provided in the Vegetation Management Plan included in Appendix I.

5.6 Vegetation Management and Site Restoration

5.6.1 Provide a vegetation removal plan that discusses the types and locations where vegetation would be removed (e.g. herbaceous, agricultural crop clearing, shrub/forest clearing, etc.), the timing of vegetation removal, and the equipment to be used.

The Project's Vegetation Management Plan is included in Appendix I. Additional details about vegetation removal, timing, and equipment can be found in the Vegetation Management Plan.

5.6.2 Provide a detailed revegetation and site restoration plan that discusses the following items. If site specific details are not finalized at the time of application, describe the concepts to be used and a methodology for discussing impacts with PSC and DNR staff:

5.6.2.1 Types of revegetation proposed for impacted areas.

Proposed permanent seed mixes are provided in Appendix A of the Vegetation Management Plan included in Appendix I. A description of the mixes and installation location is provided below. Proposed seeding locations are dependent on the final design.

5.6.2.2 Provide seed mixes, or example seed mixes if not known at time of application, and if seed mixes would be pollinator friendly.

Two permanent seed mixes are proposed for the Project:

- Low-growth native / non-native graminoid seed mix for PV panel areas
- Pollinator-friendly seed mix for select buffer areas

5.6.2.3 Vegetation monitoring and management protocols for subsequent years after construction. Include expected timing of actions such as mowing.

All areas will require some form of ongoing maintenance to establish and maintain desirable vegetation that is compatible with PV panels and Project operations. Maintenance is expected to be most intensive in the establishment phase, or approximately two to three years following seeding as desirable species germinate, grow, and mature. In general, native species take longer to mature than non-native species. Monitoring will occur to confirm compatibility of vegetation with facility goals concurrently with routine vegetation maintenance activities.

Frequent cutting is typically required during the establishment phase (years one and two post-seeding) to reduce fast-growing weeds, minimize vegetation height under the PV panels, and assist with growth of planted species. This applies to all seed mixes. Mowing to a height of 6-inches should be conducted when vegetation reaches a height of eight to 12 inches. Anticipated establishment mowing will occur four weeks following seeding and every four to six weeks thereafter from mid-spring to mid-fall. Actual mowing frequency is dependent upon soil moisture; dry periods will reduce mowing frequency.

Years three to five represent a transition phase where desirable vegetation becomes increasingly established but remains susceptible to weed growth. The frequency of cutting may be reduced (to approximately once per year) or there may be a transition to selective mowing to target specific areas of weed growth and minimize vegetation height under the PV panels.

Over the long-term (years six through 30), mowing should occur at least once every other year to benefit low growing grasses. Periodic mowing also minimizes the establishment of woody vegetation.

5.6.2.4 Invasive species management.

Invasive and weed species management will be conducted as needed to reduce the spread of invasive species from existing populations, improve establishment and success of the permanent seed mixes, and reduce vegetation impacts to the PV panels and solar facility infrastructure. Flowering non-native species that are not considered invasive and do not have heights that would interfere with the Project operations will not be actively managed.

Vegetation cutting shall be appropriately timed to assist with controlling invasive species (e.g., mow annual and biennial species during flowering but prior to seed production) and to remove vegetation to assist with site seedbed preparation.

Herbicide treatments are recommended for management of perennial invasive and noxious species, as mowing alone is not typically sufficient for adequate control. Herbicides are also used to remove undesirable vegetation to prepare for permanent seed installation. Additional

information regarding invasive species management is provided in the Vegetation Management Plan included in Appendix I.

5.7 Wildlife

Wildlife habitat found within the Project Area was identified based on desktop habitat review, field investigations and observations, and state and federal information on threatened and endangered species.

5.7.1 Describe existing wildlife resources and estimate expected impacts to plant and animal habitats and populations.

The Project Area consists of mostly red pine plantation, with areas of harvested plantation that have re-vegetated as open grassland or mixed coniferous-deciduous woodland, as well as two blocks of land used for agriculture (row crops, commercial tree production). Typical mammals found in these habitats in central Wisconsin include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), common raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), eastern gray squirrel (*Sciurus carolinensis*), groundhog (*Marmota monax*), opossum (*Didelphimorphia*), rabbits (*Sylvilagus floridanus*), and mice (*Peromyscus maniculatus*), among others. Wildlife may utilize agricultural land and adjacent forested habitats to forage, shelter, and to move through the surrounding landscape.

Numerous bird species may also be found in the Project Area and their presence varies depending on time of year. Typical breeding bird species likely to occur within the Project Area include red-tailed hawk (*Buteo jamaicensis*), horned lark (*Eremophila alpestris*), tree swallow (*Tachycineta bicolor*), American robin (*Turdus migratorius*), gray catbird (*Dumetella carolinensis*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), and red-winged blackbird (*Agelaius phoeniceus*). The Project is expected to have impacts on wildlife and their habitats since most of the Project Area consists of forested timberland. The change in tree cover may reduce the likelihood of species using the Project Area, while other species may find the habitat more suitable. The surrounding area contains forest stands of varying age-classes, allowing wildlife species to move between adjacent habitats. After construction is complete, Saratoga Solar will revegetate the Project Area with a mix of native and non-native perennial grasses and sedges. A pollinator-friendly seed mix will be incorporated in select open spaces between the solar array areas and the perimeter fence. It is anticipated that revegetation of the Project with a permanent cover of vegetation will maintain suitable habitat for a variety of wildlife species including pollinating insects, nesting birds, and small mammals.

The fence that will be used to surround and provide security to the Project will consist of a seven- to eight-foot-high deer exclusion fence. This type of fencing will allow the passage of smaller wildlife species but exclude larger wildlife. The Project substation will require a minimum seven-foot-high chain link fence which will include three strands of barb wire at the top. A schematic of the proposed Project deer exclusion fencing is found in Appendix B.

5.7.2 Wildlife pre-construction surveys. (See Habitat Surveys and Biological Assessments in the Introduction.)

Surveys for suitable habitat and species presence/absence surveys for one federally endangered

insect species were conducted in 2019 and 2021 as part of the Wood County Solar Project and Saratoga Solar Project Resource Surveys, respectively. Additionally, surveys for suitable habitat for one state endangered bird and one state threatened reptile were completed as part of the wetland determination field work for the Project in June 2021. Results of the surveys were submitted to WDNR as part of the Certified Endangered Resources (ER) Review.

5.7.2.1 Provide a summary of pre-application consultation meetings held with DNR or USFWS for the purposes of determining whether or not any pre-construction wildlife studies would be required for the project.

A preliminary ER Review was conducted for the Project to identify whether any state or federally-listed rare species, natural communities, or other natural features with element occurrence records may occur within the one- and two-mile buffers of the Project Area. Based on this preliminary review, it was determined that rare species habitat and/or presence/absence surveys would be needed for one federally listed insect, one state listed bird, and one state listed reptile.

Saratoga Solar also obtained an Official Species List on May 27, 2021 via the U.S Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) for the Project Area. The Official Species list (see Appendix K) included one mammal, one bird, and one insect (Consultation Code 03E17000-2021-SLI-1350). The insect identified was the same species identified in the preliminary ER Review requiring habitat and/or presence/absence surveys. It was determined the federally listed mammal and bird did not require pre-construction surveys.

5.7.2.2 If, after consultation with DNR or USFWS, wildlife pre-construction studies are required, provide the following:

- **A copy of the approved survey methodologies for any studies including the species of interest, dates of surveys, and a schedule for releasing data and reports to the PSC and DNR.**
- **Copies of all data collected for all pre-construction studies (data should be provided using a format acceptable to DNR and PSC staff).**
- **Final report/s or analyses prepared using the data collected.**

Rare species habitat and, where needed, presence/absence surveys, were completed for the federally listed KBB, as well as one state listed bird, and one state listed reptile. Reports documenting the survey results were submitted to WDNR as part of and in support of the determinations made in the ER Review.

The WDNR maintains a Habitat Conservation Plan (HCP) for KBB that accompanies an incidental take permit issued by the USFWS for Wisconsin. The permit and HCP are designed to protect and conserve KBB while allowing activities to occur that could impact KBB or their habitat. Organizations that sign on as HCP partners agree to follow specific protocols to avoid and minimize impacts to KBB during the course of their work and the HCP extends permit coverage for activities that may inadvertently "take" KBB. While Saratoga Solar is not currently a HCP partner, host plant surveys and KBB presence absence surveys were conducted within the Wood County Solar Project Area and Saratoga Solar Project Area in 2019 and 2021 in accordance with the requirements of the WDNR HCP for KBB. Patches of wild lupine (*Lupinus perennis*) sufficient

to support KBB were identified; however, KBB were not present. Survey results were submitted to WDNR to support the ER Review.

WDNR was consulted to determine habitat survey needs for the state listed bird and reptile. Habitat surveys were completed in 2021 to determine if suitable habitat for either species was present. The associated summary reports were submitted with the proposed ER Review for WDNR review and concurrence on September 23, 2021. The survey results are available in Appendix K. The Certified ER Review (ER log# 21-676) was approved by the WDNR on September 29, 2021. A redacted public version is provided in Appendix K and a confidential version has also been provided to PSCW staff.

5.7.2.3 Provide any monitoring and response protocol for wildlife accessing the solar arrays.

Saratoga Solar is proposing to install a seven- to eight-foot-high deer exclusion fence around all arrays and ancillary facilities to prevent Project access by large wildlife species such as deer. The wide mesh in the deer exclusion fencing will allow wildlife such as reptiles, amphibians and small mammals to cross the Project fence line unimpeded. Maintenance crews will monitor the array area for wildlife as they are completing their routine O&M tasks. If a large wild animal does become trapped within the array areas, Saratoga Solar will coordinate with local and state authorities, if necessary, to assist with the safe removal of wildlife.

5.8 Endangered Resources

5.8.1 Provide a copy of the completed DNR endangered resources screening (i.e. ER Review or ER Verification Form) and all supporting materials (see DNR Application Needs in the Introduction).

An ER Review was conducted for the Project to identify any state or federally listed rare species, natural communities, or other natural features with element-occurrence records that may occur within the one- or two- mile buffers of the Project Area boundary. The proposed ER Review, with supporting rare species habitat and presence/absence survey reports, was submitted to the WDNR on September 23, 2021. A Certified ER Review (ER log# 21-676) was approved by the WDNR on September 29, 2021. A redacted public version of the certified ER Review is provided in Appendix K. A confidential version has also been provided to PSCW staff. The rare species survey reports are also available in Appendix K.

5.8.2 Discuss how any DNR-required actions to comply with endangered species law would be incorporated into the project construction or operation. Include discussion of how any USFWS permits or required actions would be incorporated into the project.

Because the project is within the KBB High Potential Range and the KBB is a federally listed species, host plant and presence/absence surveys were completed in accordance with the KBB HCP for the Wood County Solar Project Area and the Saratoga Solar Project Area in 2019 and 2020. Host plant locations were identified, but KBB was not. Survey results are good for five years. Host plant and presence/absence surveys will be required in the future before any planned land management/disturbance activities.

Habitat surveys were also completed for one state listed bird and one state listed reptile. Results of the surveys were submitted to WDNR as part of and in support of the determinations made in the ER Review. Based on the results of the surveys, there are no further required actions for the bird or reptile.

Additionally, Saratoga Solar assessed potential Project impacts for the federally listed mammal and bird identified in the Official Species List (Appendix K) as detailed below:

- **Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*) - Threatened**

The Wisconsin Natural Heritage Inventory (NHI Portal) database contains all current northern long-eared bat roost sites and hibernacula in Wisconsin. Saratoga Solar consulted the NHI Portal for this Project, and per USFWS's 4(d) rule, determined that this project is more than 150 feet from a known maternity roost tree and is more than 0.25 mile from a known hibernaculum. The automated Section 7 consistency letter is available in Appendix K.

- **Whooping Crane (*Grus americana*) – Experimental Population**

Whooping Cranes in the eastern U.S. (including Wisconsin) are considered part of a nonessential, experimental population and per the USFWS are protected only on Federal lands. Further, suitable wetland habitats for this species are not present in the Project Area.

5.8.3 Discuss how any DNR-recommended actions to comply with endangered species law would be incorporated into the project construction or operation. Include discussion of how any USFWS recommended actions would be incorporated into the project.

The ER Review identified that suitable habitat for a state special concern plant may be impacted by the Project and provided recommended actions to avoid impacting this species. Avoidance areas will be implemented where consistent with the final Project design.

5.9 Public Lands and Recreation.

List all public properties within the project area and in a separate list all public properties within two miles of the project area boundary.

To assess the Project for the presence of public lands, recreational sites, and other special use areas, Saratoga Solar reviewed USGS Protected Areas Database of the U.S., USGS topographic maps, aerial photographs, available USFWS and WDNR agency databases, Wood County website, and general internet land information searches (i.e., Google Earth, Google Maps).

A GIS file of public lands within two miles of the Project Area boundary is included with Appendix F to the Application. A map showing federal, state, county, and local properties within two miles of the Project Area is included as Figure 4.1.6.3 in Appendix A.

5.9.1 State properties, including but not limited to: Wildlife Areas, Fisheries Areas, and State Parks

No state properties are located within the Project Area. Two categories of state-owned or managed properties are within two miles of the Project (see Figure 4.1.6.3 in Appendix A).

- Tenmile Creek Stream Bank Protection Areas, located between a quarter-mile and 1 mile from the Project Area. There are a total of 14 parcels listed, with 8 owned by the state and the other 6 privately owned.
- WDNR-owned unnamed State Natural Area, located about 1.75 miles southwest of the Project Area along County Highway Z.

The Project will likely not be visible from these properties due to distance, topography, and tree cover.

5.9.1.1 Wildlife Areas

No managed wildlife areas are located within the Project Area or within two miles.

5.9.1.2 Fisheries Areas

No managed fishery areas are located within the Project Area or within two miles. However, Class I, II, and III trout streams are identified in Sevenmile and Tenmile Creeks, located between 0.25 and one mile of the Project Area.

5.9.1.3 State Parks and Forests

No state parks or forests are located within the Project Area or within two miles.

5.9.2 Federal properties, including but not limited to:

No federal properties are located within the Project Area or within two miles.

5.9.2.1 Wildlife Refuges

5.9.2.2 Parks

5.9.2.3 Scenic Riverways

5.9.3 County Parks

No county or local public properties are located within the Project Area or within two miles.

5.9.4 Recreation Trails

One recreation trail, a Wood County Snowmobile Trail, is located within the Project Area. Approximately 1.5 miles of the trail is located within the Project Area. No other recreation trails are located within the Project Area or within two miles.

5.9.5 Identify the owner/manager of each recreation resource.

The owner/manager of the streambank protection areas and state natural area properties is the WDNR.

5.9.6 Provide any communications with these owners/managers.

No state, federal, county owned, or other special use areas are located within the Project Area boundary. The Project will likely not be visible from the properties within two miles of the Project due to distance, topography, and tree cover, therefore no communications with the landowner/managers has occurred.

5.9.7 Discuss how short and long-term impacts to these resources would be avoided and/or minimized.

No state, federal, county-owned, or other special use areas are located within the Project Area boundary. The Project will likely not be visible from the properties located within two miles of the Project due to distance, topography, and tree cover, therefore, no short or long-term impacts are anticipated.

5.9.8 Describe any measures that would be taken to mitigate or minimize impacts to aesthetics and tourism in the areas surrounding the project.

The surrounding landscape is heavily forested, creating a landscape buffer between the Project Area and the potential tourism features such as the Wisconsin River and the trout stream resources of Sevenmile and Tenmile Creeks. The solar development itself may be a tourist stop given the size of the development and relative novelty of solar facilities in this region of Wisconsin. Saratoga Solar will be incorporating native flowering plants to benefit pollinators while also being aesthetically pleasing. The solar facilities and enclosures will also be regularly maintained.

5.10 Contaminated Sites

List all contaminated sites and solid waste sites within the project area, and in a separate list, all contaminated sites and solid waste sites within two miles of the Project Area boundary.

5.10.1 Using the Wisconsin Remediation and Redevelopment Database (WRRD), http://dnr.wi.gov/topic/Brownfields/WRRD.html, identify any contaminated sites (open and closed) within the project area and within 2 miles of the project area.

No contaminated sites (open and closed) within the Project Area were identified on the WRRD. One open and three closed contaminated sites within 2 miles of the Project Area were identified on the WRRD. None of these sites are of sufficient size to host a 150-MW solar facility.

5.10.2 Using the Historic Registry of Waste Disposal Sites, http://dnr.wi.gov/topic/Landfills/registry.html, identify any Environmental Repair and Solid Waste disposal sites within the project area and within 2 miles of the project area.

No disposal sites within the Project Area were identified. Two disposal sites within 2 miles of the Project Area were identified on the Historic Registry of Waste Disposal Sites.

5.10.3 If contaminated materials are known to exist on-site, list and describe:

- **The type of contaminant(s) known to exist on-site.**
- **The location of the contaminant(s).**
- **The media in which the contaminant is located within (i.e., soil, water, etc.).**
- **The estimated concentration of the contaminant(s).**
- **The estimated volumes of the contaminant(s).**

5.10.4 No contaminated sites (open and closed) within the Project Area were identified on the WRRD. If contaminated materials are newly discovered on-site, specify:

- **The procedure for screening materials.**
- **The location where materials be tested.**
- **The protocols that would be followed.**
- **Whether construction work would be impacted.**

The Project Area land use is predominantly red pine plantation. Saratoga Solar conducted a review for potential contamination within the Project Area. Contaminated materials are not expected to be encountered onsite.

Contractors will be trained to identify potential contaminated materials. Saratoga Solar will notify a firm experienced in the analysis and treatment of such materials if contaminated soils or materials are encountered during construction. The suspected materials will be tested, treated, and disposed of according to the proper protocol for the situation encountered and the corresponding statutory requirements. The WDNR will be contacted as required under state statutes.

5.11 Floodplain

5.11.1 Identify any work occurring in floodplains or flood-prone areas.

The Project Area is not located within a regulatory floodplain or flood-prone area. The nearest floodplain is associated with Tenmile Creek and is located within the Town of Saratoga approximately 550 feet south of the Project Area.

5.11.2 Discuss if impacts to the floodplain have been evaluated, and how impacts to the floodplain will be avoided or minimized.

No impacts are anticipated within floodplain or flood-prone areas.

5.11.3 Provide information on any discussions that have occurred with the application floodplain zoning authority, and how the project will comply with local floodplain ordinance(s).

No impacts are anticipated within a floodplain or flood-prone area. Therefore, no discussion with the floodplain zoning authorities has occurred.

5.12 Local Zoning and Safety

Utilities (CA)

5.12.1 Provide copies of any zoning ordinances affecting the project area and within two miles of the project boundary. Provide only the page(s) directly citing ordinance language.

5.12.2 Describe any zoning changes needed for the project.

5.12.3 Describe zoning changes that the applicant has requested of local government for the proposed project. Include:

5.12.3.1 The name of the entity responsible for zoning changes.

5.12.3.2 Description of the process required to make the zoning change.

5.12.3.3 The outcome or expected outcome for requested zoning changes.

5.12.4 Township road safety and use plans.

5.12.4.1 Saratoga Solar is coordinating JDAs with both the Town of Saratoga and Wood County. Road use and safety plans will be addressed as part of the JDA discussion. Provide details on any plan or permit requirement pertaining to local road safety, use, or repair.

5.12.5 Other conditional use permits

5.12.5.1 Provide details on any other conditional use permit required by local government.

Saratoga Solar has coordinated with both the Town of Saratoga and Wood County. No conditional use permits are required for the Project.

Utilities and IPPs (CPCN)

5.12.6 Provide a list of potential local issues normally associated with zoning, road use and safety, or other condition uses.

The Project Area is located within the Rural Preservation (RP) and Farmland Preservation Districts of the Town of Saratoga. According to the Town of Saratoga Zoning Ordinance Section 7.3 Rural Preservation District Standards, there are no setback, lot size, or other dimensional standards applicable in the RP District.

Saratoga Solar is coordinating with the Town of Saratoga and Wood County to develop separate development agreements that will address the localities' concerns regarding the Project.

5.12.6.1 Provide copies of all correspondence to and from local government pertaining to issues of zoning, safety, or local road use safety plans.

Communications with the Town of Saratoga and Wood County regarding the development agreements are ongoing. Details about outreach to local municipalities is outlined in Section 7.2.

5.12.6.2 Provide a discussion of how local concerns would be accommodated.

Saratoga Solar has met and coordinated with the Town of Saratoga and Wood County representatives as well as with the larger community to discuss local issues. Saratoga Solar will continue to work proactively with Town, County, and community to identify and address issues and concerns should they arise. Saratoga Solar will address local concerns in the development agreements.

5.12.7 Describe any impacts the proposed project would have on existing infrastructure including electric distribution lines and gas pipelines.

No impacts are anticipated to existing electric distribution lines and gas pipelines. The Project will tie into an existing ATC-owned 138kV electric transmission line with the consent and cooperation of ATC.

5.13 Land Use Plans

5.13.1 County Recreation Plans

5.13.2 Farmland Preservation Plans

5.13.3 Highway Development Plans

5.13.4 Sewer Service Area Plans

Project facilities will be located in the Town of Saratoga within Wood County. Land use plans, zoning ordinances, and relevant planning documents are listed in Table 8 and provided in Appendix E.

Table 8: Land Use Plans and Ordinances

Government	Plan or Ordinance
Town of Saratoga	Town of Saratoga Comprehensive Plan 2007-2025 Adopted August 15, 2007
	Town of Saratoga, Solar Energy System License Ordinance, September 18, 2019
	Town of Saratoga, Zoning Ordinance, May 18, 2016
Wood County	Wood County Zoning Ordinance #700
	Wood County Shoreland Protection Ordinance #704
	Wood County Floodplain Zoning Ordinance #703
	Wood County Comprehensive Plan

5.14 Archaeological and Historical Resources

Saratoga Solar conducted an initial cultural resources database review, created an archaeological site probability model, and conducted field investigations to identify cultural resources present within the Project Area boundary. The results of the cultural resources database review indicated that one archaeological survey has been conducted within the Project Area, while two previous archaeological surveys have been conducted within the 0.25mile buffer of the Project Area. No archaeological sites are within 0.25 mile of the Project Area boundary. One cemetery/burial site, the Frank Durrell Grave (located 1,000 ft east of the Project Area), was recorded within the 0.25-mile Project buffer; however, none were recorded within the Project Area. Finally, no catalogued historic structures are located within the Project Area or 0.25 mile of the Project Area boundary.

Archaeological site-location modeling was used to identify areas of high potential for archaeological sites. Saratoga Solar identified the area of high archaeological site potential through review of the Wisconsin Historic Preservation Database online archaeological site files, historical maps mainly postdating the Civil War, and the 2019 Wood County Solar Project probabilistic modeling conducted by Commonwealth Heritage Group. The 2019 modeling for the Wood County Solar Project incorporated the Saratoga Solar Project. This review indicated a moderate probability for archaeological sites for a total of 20.5 acres of the Project Area with highest potential for prehistoric Native American sites within 20 acres and highest potential area for Historic period sites within 0.5 acre.

Archaeologists conducted a shovel test pit (STP) survey of 15-m (49.2-foot) intervals within the 20.5 acres of the Project Area boundary that had the highest potential for prehistoric Native American and historic period Euro-American archaeological sites. No artifacts were recovered and no previously unrecorded archaeological sites were identified in the pedestrian or STP surveys.

Based on these investigations, it is unlikely that the Project will have adverse effects on cultural resources listed in or eligible for either the National Registry of Historic Places (NRHP) or the Wisconsin State Register of Historic Places. No significant cultural resources will be impacted by the Project. The Confidential Cultural Resources Database Review and Survey Results Letter Report is included in Appendix J.

5.14.1 Provide maps or GIS files and a description of all archaeological sites, historic buildings and districts, and human burial sites within or near the proposed Project Area.

Mapping of archaeological, historic buildings and districts, and human burial sites are included in the Cultural Resources Database Review and Survey Results Letter Report included in Appendix J.

5.14.2 For archaeological sites and historic buildings or districts, determine the boundaries, historic significance, and integrity of each resource. Additional field surveys may be required to make these determinations.

Based on probability modeling completed in 2019 and 2021, field surveys were conducted in areas that had the highest probability of containing archaeological sites during September 2021. No archaeological sites or historic structures were located within the Project Area or the 0.25-mile buffer of the Project Area.

The Confidential Cultural Resources Database Review and Survey Results Letter Report is included in Appendix J.

5.14.3 Identify the potential project effects on each resource.

Based on probability modeling completed in 2019 and 2021, field surveys were conducted in areas that had the highest probability of containing archaeological sites during September 2021. No archaeological sites or historic structures were located within the Project Area or the 0.25-mile buffer of the Project Area. Pursuant to Federal and Wisconsin State laws, if grave markers or human skeletal remains are encountered during construction, all activities in the affected area will cease and the State of Wisconsin Burial Sites Preservation Office will be contacted for further instructions.

The Confidential Cultural Resources Database Review and Survey Results Letter Report is included in Appendix J.

5.14.4 Describe modifications to the project that would reduce, eliminate, avoid, or otherwise mitigate effects on the resources. Examples of modifications include changes to construction locations, modified construction practices (e.g. use of low-pressure tires, matting, etc.), placement of protective barriers and warning signage, and construction monitoring.

No known cultural or historical sites will be impacted by the Project.

5.14.5 For human burial sites, obtain a Burial Site Disturbance Authorization/Permit from WHS for all human burial sites that would be affected by the project.

According to the Saratoga Solar Cultural Resource Due Diligence Letter Report (Appendix J), no known cemeteries or burial sites are present within the Project Area. One marked cemetery/burial site is located approximately 1,000 feet east of the Project Area within the 0.25-mile buffer of the Project Area. Cemeteries and burial sites are protected under Wis. Stat. § 157.70. Saratoga Solar will not be required to obtain a Burial Site Disturbance Authorization from the WHS.

5.14.6 Provide an unanticipated archaeological discoveries plan. The plan should outline procedures to be followed in the event of an unanticipated discovery of archaeological resources or human remains during construction activities for the project.

An unanticipated archaeological discoveries plan is included in Appendix J.

5.14.7 Notify Wisconsin Tribal Historic Preservation Officers of any Native American human burial sites and significant prehistoric archaeological sites that could be impacted by the project. Provide copies of all correspondence.

Based on the cultural resources review results provided in Appendix J, no known native American burial sites or significant prehistoric archaeological sites are present within the Project Area of Potential Effect for direct effects or the Project Area of Potential Effect for indirect effects.

5.15 Agricultural Impacts

5.15.1 Identify current agricultural practices in the project area.

The dominant vegetation is comprised of red pine plantation used for timber production. There are two agricultural parcels within the Project Area totaling approximately 311 acres. Approximately 87 acres of that are used for commercial Christmas tree production, with the remainder used for row crops planted to corn during 2021 field investigations. No pastured lands exist in the Project Area.

5.15.2 Identify the location of agricultural drainage systems (tiles, ditches, laterals) irrigation systems, erosion control and water management practices and facilities in the project area that could be impacted by construction activities or the location of the proposed facilities.

There are no known drainage tiles within the Project Area. There are two center-pivot irrigation systems on site that will be removed if facilities are located on those parcels.

5.15.3 Identify any farming operations such as herd management, specialty crop production, field and building access, organic farming, etc. that could be impacted by the construction of the project.

No impacts to dairy farm facilities, herd management, field and building access, or organic farming are anticipated for this Project. The approximately 87 acres of commercial Christmas tree

production is the only specialty crop farming operation within the Project boundary. Those areas may be converted to solar production area if the Alternate Area is utilized for final construction.

No organic farms are located within the Project Area or within one mile of the Project Area. GIS information regarding confined animal facilities was gathered from state and county databases as well as field collected data. A Wisconsin animal feeding operation with 1,000 animal units or more is defined by the State as a large Concentrated Animal Feeding Operation (CAFO). No WDNR-designated large CAFOs are located within the Project Area or within 0.5 miles of the Project Area. Field surveys were conducted to identify potential confined animal operations with an estimated commercial value greater than $1,000 within one-half mile of the Project. GIS database information on confined animal operations is included in Appendix F.

5.15.4 Identify the amount (in acres) of designated prime farmland that would be removed from agricultural use during the operational life of the solar project.

There is no designated prime farmland within the Project area. Therefore, no prime farmland would be removed from agricultural use during the operational life of the solar project.

5.15.5 Describe how damage to agricultural facilities and interference with farming operations would be minimized during construction.

Minimal interference between Project construction equipment and farm equipment travelling on town, village and state roadways may occur. The Project is being constructed on lands that are primarily comprised of agricultural land that were planted for the purpose of timber production. Approved and signed landowner agreements are in place for all solar facilities within the perimeter fence, therefore, farming activities will be halted prior to construction and the center-pivot irrigation systems will be removed. The lands that are converted to solar production areas will be suitable for a return to agricultural farming activities at the end of the Project lifespan (assumed to be 30 years).

5.15.6 Describe how damage to agricultural facilities would be identified and repaired.

The center-pivot irrigation systems will be removed prior to construction.

5.15.7 Identify any farmland affected by the project that is part of an Agricultural Enterprise Area.

The Project will not affect any farmland that is part of an Agricultural Enterprise Area. No Agricultural Enterprise Areas are within 1 mile of the Project Area boundary.

5.15.8 Identify any farmland in the project area that is part of a Drainage District, and identify the Drainage District if applicable. The following items apply when any part of a project is located within a Drainage District.

No Drainage Districts are located within the Project Area. Therefore, impacts to Drainage Districts are not anticipated and this section is not applicable.

5.15.8.1 Describe any permits needed from a Drainage District Board for construction and operation of the proposed project, and the status of any permits.

5.15.8.2 Identify if and where any culverts would be installed in areas of the Drainage District.

5.15.8.3 Provide any correspondence with State Drainage Engineer regarding the project.

5.15.9 Identify any lands within the Project boundary that are enrolled in agricultural conservation or agricultural tax incentive programs. Describe the process for returning land to agricultural use after decommissioning, including any subsequent years of monitoring.

None of the Project parcels are enrolled in the Conservation Reserve Program or other agricultural tax incentive programs.

Following decommissioning activities, the sub-grade material and topsoil from affected areas will be de-compacted and restored to a density and depth consistent with the surrounding areas. If the subsequent use for the Project site will involve agriculture, a deep till of the Project site will be undertaken where necessary. The affected areas will be inspected, thoroughly cleaned, and all construction-related debris removed. Disturbed areas will be reseeded to promote re-vegetation of the area, unless the area is to be immediately redeveloped or farmed. In all areas restoration shall include, as reasonably required, leveling, terracing, mulching, and other necessary steps to prevent soil erosion, to ensure establishment of suitable grasses and forbs, and to control noxious weeds and pests.

5.15.10 Discuss induced voltage issues as they relate to the project arrays, collector circuits, and generator tie line. Provide the following information:

5.15.10.1 Identify the location of confined animal dairy operations within one-half mile of any proposed transmission or distribution centerline or other project facilities.

No confined animal dairy operations are located within 0.5 mile of the Project Area boundary.

5.15.10.2 Identify the location of agricultural buildings located within 300 feet of any proposed transmission or distribution centerline or other project facilities.

A search of the WDNR CAFO database shows that no CAFOs are located within the Project Area boundary or within 0.5 mile of the Project Area boundary.

Field surveys conducted in March 2022 for confined animal commercial buildings and other agricultural related buildings within 0.5 mile of the Project Area boundary identified thirteen confined animal non-commercial buildings. There were no confined animal commercial buildings identified within 0.5 mile of the Project Area boundary. There were 20 agricultural related buildings that were not used for animal confinement within the 0.5-mile buffer area. Potential for impacts related to the Project facilities and measures to mitigate impacts if any, are described in Section 5.15.5 and 5.15.6.

5.15.10.3 Discuss induced voltage issues related to the project and its transmission or distribution line routes.

Saratoga Solar does not anticipate issues regarding induced (stray) voltage as a result of the Project. Induced voltage issues are generally caused by improperly grounded and/or isolated electrical circuits found in older buildings, factories, or barns. Grounding for Saratoga Solar's PV arrays will be designed and certified by a licensed electrical engineer according to current applicable electric code requirements.

5.15.10.4 Discuss any plans to conduct stray voltage testing pre and post construction.

Saratoga Solar does not anticipate conducting pre and post construction stray voltage testing because no livestock operations exist within 0.5 mile of the Project.

5.16 Airports and Landing Strips

5.16.1 Airport, Landing Strips, and Helipads

5.16.1.1 Identify all public and private airports, landing strips, and helipads within 10 miles of the project facilities (both for solar arrays and the nearest generator tie line structure).

The Federal Aviation Administration (FAA) website[3] was searched for registered airport listings of public airports near the Project Area. Airports within a 10-mile radius of the Project Area boundary are displayed on Figure 4.1.7.3 of Appendix A. Additionally, the Wisconsin Department of Transportation[4] (WisDOT) and several private sources of airport/airstrip information, such as Esri[5] and AirNAV[6], were searched. Additionally, attempts were made to determine if local landowners utilized crop dusting services within the Project Area boundary.

According to these sources, there are 4 airports within 10 miles of the Project:

- Jennie's Field is located about 0.5 mile southwest of the Project Area on Ten Mile Avenue, Wisconsin Rapids, WI.
- Alexander Field South Wood County is located about 5 miles north of the Project Area on 1st Street, Wisconsin Rapids, WI.
- Cranmoor Airstrip is located about 7.4 miles northwest of the Project Area on WI-173, Nekoosa, WI.
- Gottschalk Field is located about 9.9 miles west of the Project Area in Nekoosa, WI.

5.16.1.2 Describe each of the airports, landing strips, and helipads with a description of the runways/landing zone and type of use.

- Jennie's Field is privately owned and has one turf runway approximately 1,300 feet in length, oriented north and south. Its primary use is for summertime recreational gliders.

[3] FAA - http://www.faa.gov/airports/airport_safety/airportdata_5010/
[4] WisDOT - http://www.dot.wisconsin.gov/travel/air/airportdirectory.htm
[5] Esri - http://www.esri.com/data/free-data/index.html
[6] AirNav, LLC. http://www.airnav.com/airports/

- Alexander Field South Wood County can be used by the public and has two runways. Runway 02/20 is made of asphalt and approximately 5,500 feet in length, oriented northeast and southwest. Runway 12/30 is made of asphalt and approximately 3,470 feet in length, oriented northwest and southeast.
- Cranmoor Airstrip is privately used and has one turf runway approximately 2,600 feet in length, oriented north and south.
- Gottschalk Field is privately used and has one turf runway approximately 2,600 feet in length, oriented north and south.

5.16.1.3 Describe any potential for impacts to aircraft safety and potential facility intrusion into navigable airspace.

Due to the height of proposed facilities and distance to the airports, Saratoga Solar reviewed whether notification and consultation to the FAA would be required, using the FAA "Notice Criteria Tool." As a result of the query, the Project was found to not be within notice criteria proximity to FAA licensed facilities.

5.16.1.4 Describe any mitigation measures pertaining to public airport impacts.

Based on the result of the query to the FAA, no impacts to public airports are anticipated and therefore no mitigation measures are necessary.

5.16.2 Commercial Aviation

5.16.2.1 Identify all commercial air services operating within the project boundaries (i.e. aerial applications for agricultural purposes, state programs for control of forest diseases and pests (i.e. Gypsy moth control).

The Wisconsin Department of Agriculture, Trade and Consumer Protection[7] (DATCP) and WDNR websites[8] were searched for aerial application information.

In Wisconsin, the USDA Forest Service conducts applications by spray plane in late June and July as part of the gypsy moth control program. This program did not list Wood County as a treatment area for 2021. No other aerial application programs sponsored by DATCP, WDNR, or Wood County were located in the search.

5.16.2.2 Describe any potential impact to commercial aviation operations.

No commercial air services are known to operate within the Project Area boundary. Additionally, because the maximum height of the solar panels will not exceed 16 feet aboveground and the glare analysis for the Project predicts no appreciable impacts to airports, no impacts to commercial aviation operations are anticipated to occur.

5.16.2.3 Describe any mitigation measures pertaining to commercial aviation.

No impacts to commercial air services are anticipated to occur due to the Project. For this reason, mitigation measures pertaining to commercial aviation are not planned at this time.

[7] DATCP - https://www.kellysolutions.com/WI/Applicators/searchbyCity/asp
[8] WDNR - https://gypsymoth.wi.gov/

5.16.3 Agency Consultation

5.16.3.1 Identify any potential construction limitations and permit issues.

Due to the proximity of the airports identified in Section 5.16.1.1 to the Project Area, no limitations on construction equipment or construction activity are expected. Based on the results of the FAA Notice Criteria Tool query, no coordination with the FAA is expected.

5.16.3.2 Provide a summary of the status of any FAA determinations with details on mitigation actions or how any unresolved problems with aircraft safety are being addressed (including generator tie line structures).

Saratoga Solar reviewed whether notification and consultation to the FAA would be required, using the FAA "Notice Criteria Tool." As a result of the query, the Project was found to not be within notice criteria proximity to FAA licensed facilities.

5.16.3.3 Provide a list of any structures requiring WisDOT high structure permits, and the status of any such permits.

No structures will be constructed over 500 feet in height or within one mile of a public airport or spaceport for the Project. Therefore, no WisDOT high structure permits are required for the Project.

5.17 Communications Towers

For the following sections, include in the assessment all facilities that make up the solar arrays as well as any structures that are part of a necessary generator tie line for the project.

5.17.1 Provide an analysis or supportive data to predict whether or not any aspect of the proposed project would interfere with:

Solar facilities are not anticipated to cause disruptions to line-of-sight and broadcast communications. The height of the Project facilities should not obstruct microwave beam paths, degrade broadcast communications, or interfere with cell phone communications or radio broadcasts. Although unlikely, if any resident or business were able to show impacts to line-of-sight or broadcast communications due to the Project, such impacts will be mitigated to the extent practicable.

The Project includes a generator tie line that is approximately 500 feet long. It is not anticipated that the tie line will cause any concerns since it will be constructed extending from the Project substation to the existing ATC-owned Petenwell to Saratoga 138kV Transmission Line (ATC X-43) via a new switching station.

5.17.1.1 Cell phone communications

The Federal Communications Commission (FCC) website was queried for registered antenna structures (towers) within three miles of the Project Area. No towers are located within the Project Area boundary or within one mile of the Project boundary; therefore, cellular services should not be impacted.

5.17.1.2 Radio broadcasts

The exclusion distance for AM broadcast stations varies as a function of the antenna type and broadcast frequency. For directional antennas, the exclusion distance is calculated by taking the lesser of 10 wavelengths or 3 kilometers (1.9 miles). For non-directional antennas, the exclusion distance is simply equal to 1 wavelength. Potential problems with AM broadcast coverage are only anticipated when AM broadcast stations are located within their respective exclusion distance limit from an object that may potentially cause interference. Most facilities do not typically cause interference with FM broadcast stations.

The FCC website was reviewed for AM and FM radio stations within one mile of the Project Area boundary. No stations were identified by this search. As there were no AM or FM stations found within one mile of the Project, the Project should not impact the coverage of local AM or FM stations.

5.17.1.3 Internet (WiFi)

Saratoga Solar does not anticipate that the Project will impact WiFi or internet services for nearby residences and is not aware of evidence suggesting utility-scale solar interferes with internet service.

5.17.1.4 Television

Multipath interference to a television receiver occurs when television signals are scattered by reflecting off an object. Modern digital television (TV) receivers have undergone significant improvements to mitigate the effects of signal scattering. When used in combination with a directional antenna, it becomes even less likely that such signal scattering will cause interference to digital TV reception.

The FCC website was reviewed for any TV stations within one mile of the Project. No stations were identified by this search.

5.17.1.5 Doppler radar network

A Doppler radar is a specialized radar that uses the Doppler effect to produce velocity data about objects at a distance. It does this by bouncing a microwave signal off a desired target and analyzing how the object's motion has altered the frequency of the returned signal. This variation gives direct and highly accurate measurements of the radial component of a target’s velocity relative to the radar. Doppler radars are used in applications such as aviation, sounding satellites, and weather. Tall structures such as trees or buildings within the sight line of the sending position may result in radar interference. Because radar towers are elevated to avoid interference from topography (minimum height of Next Generation Weather Radar, or NEXRAD towers is 32.8 feet in height, for example), it is not anticipated that there would be any impact to radar services due to the development of the Project.

5.17.2 Describe mitigation measures should interference occur during project operation for any of the communications infrastructure listed above.

The facilities developed for the Project are consistent with the height of existing development in the Project Area and are not anticipated to impact any communications infrastructure. If, after

the Project is placed in-service, Saratoga Solar determines that the Project is causing interference with any of the foregoing communications infrastructure, it will implement mitigation measures to provide the same level of coverage prior to the installation of the Project.

5.18 Electric and Magnetic Fields (EMF)

Provide an estimate of the magnetic profile created by any necessary collector circuits and electric transmission facilities (generator tie line). Estimates should be made using the following criteria:

- **Show the predominant electric line configurations proposed for the project (H-frame, single-pole delta, double-circuit, etc.).**
- **Show any existing lines that would be affected by the proposed collector circuits or generator tie-line and a post-construction diagram that incorporates the new existing lines.**
- **Assume all panels are working and project is producing at maximum capacity.**
- **Show EMF profile at 0 ft., 25 ft., 50 ft., and 100 ft. from the centerline of each circuit type modeled.**

An analysis of the estimated magnetic profile of the proposed collector system for the Project was conducted by Stantec using the CYMCAP 7.3 software. The proposed underground collector system for the Project is designed to be rated at 34.5kV and will have 6 – 1,000 kcmil circuits routed in parallel trenches located approximately 5 feet apart from each other when up to 3 circuits are parallel and 10 feet apart when parallel circuits are more than 3. A typical trench cross section of the underground collector system is shown in Appendix B.2 of the EMF Study Provided in Appendix M of this Application. The edge of ROW is at 2.5 feet from the outermost cable, when up to 3 circuits are in parallel and the edge of ROW is at 5 feet from the outer most cable, when more than 3 circuits are in parallel. Figure 4.1.2 in Appendix A and drawings provided in Appendix B show the Project's collector circuit routing and schematics respectively.

Appendices A.1 to A.6 of the EMF Study provided as Appendix M of this Application show detailed results for magnetic field strength estimated at 0 feet, 25 feet, 50 feet, and 100 feet from the centerline for six underground cable scenarios. Scenarios are based on the design which includes 1, 2, 3, 4, 5, and 6 collector cables in parallel. Electric field intensity was not calculated for the underground scenarios in the analysis because it is canceled out due to the shielding by the metallic screen on the underground cables.

No overhead collector circuits are proposed for the project. If it is determined during final engineering that overhead collector circuits will be required for the Project, Saratoga Solar will provide the location of these facilities to the PSCW.

The EMF Study included the assumption that all primary panels are working and producing at maximum capacity. The EMF Study results indicate that the Project is anticipated to create EMF levels consistent with other utility-scale projects and are not a threat to human health.

An EMF Study for the gen-tie line was not performed as the gen-tie will only be 500 feet long and situated within the Saratoga Solar Project Area and the existing 138kV transmission line ROW.

5.19 Noise

Pre- and post-construction noise studies are required for all electric generation projects. Noise measurement studies must be approved by PSC staff.

5.19.1 Provide existing (ambient) noise measurements and projected noise impacts from the project using the PSC's Noise Measurement Protocol. The PSC Noise Measurement Protocol can be found on the PSC website at: https://psc.wi.gov/SiteAssets/ConventionalNoiseProtocol.pdf.

Saratoga Solar completed a pre-construction ambient sound survey and operational predictive assessment for the Project. The study is provided in Appendix N.

Saratoga Solar completed a pre-construction ambient sound survey (ambient sound survey) and predictive sound modeling analysis in compliance with the PSCW requirements and guidance (PSC Noise Measurement Protocol). The ambient sound survey included measurements at five monitoring stations located throughout the Project Area to determine the existing acoustical environment.

Predictive operation sound modeling was also completed at proposed locations, as per the PSC Noise Measurement Protocol, for the solar inverter stations, BESS, and substation transformer. The maximum sound impact from the operating Project at a non-participating residence or noise sensitive area (NSA) during the daytime with equipment in full operation was modeled to be 40.5 A-weighted decibels (dBA).

The results of the sound measurements demonstrate that the Project meets all regulatory requirements and will be operated in a manner that sound, due to its operation, does not exceed 50 dBA (daytime) or 45 dBA (nighttime) at a non-participating residence or occupied community building. The maximum sound impact at a residence is predicted to be approximately 40.5 dBA with all equipment in operation during daytime hours. The maximum nighttime sound is expected to be less than 37.0 dBA at receptors.

5.19.2 Provide copies of any local noise ordinance.

State and local sound regulations were reviewed. The Town of Saratoga and Wood County do not have sound ordinances. In the absence of existing pertinent regulations, the PSCW's Noise Protocols were used as a guideline for the Project.

5.19.3 Provide equipment manufacturer's description of noise attenuating methods and materials used in the construction of proposed facilities.

The specification sheets for the proposed facilities are provided in Appendix B. The final selection of facility components will be made once the PSCW order is received and will be based on the current market offering.

As stated in Section 5.19.1, the projected sound values due to operation of the facility, including the skid inverters and the substation, are at or very near the existing background ambient sound levels at receptors.

5.19.4 Describe how noise complaints would be handled.

Saratoga Solar will work to maintain equipment and conduct repairs in a timely manner to avoid excessive sound.

5.19.5 Discuss any mitigation measures that would be used to address noise complaints during the operation of the project.

As determined by the sound analysis conducted for the Project, sound resulting from the operation of the solar facility is anticipated to have minimal impact on nearby residences. No additional mitigation measures are anticipated to be required beyond compliance with the equipment specifications used for the analysis.

5.20 Solar Panel Glint or Glare

5.20.1 Provide an analysis showing the potential for glint or glare from a typical project solar panel, as well as from the project as a whole. Include the following:

- **The analysis should list the basic assumptions used and the methodology/software used for creating the glint or glare analysis.**
- **The analysis should evaluate impacts to aircraft and air traffic controllers from any impacted airports.**
- **The analysis should also examine the risk of glint or glare to local residents and road users in the project area.**
- **The analysis software may indicate that proposed array areas are large enough to impact the accuracy of glare results. If this warning is encountered in the modeling, the applicant should break the affected array areas into smaller sub-arrays and perform the glare analysis using these smaller sub-arrays.**
- **The analysis software may model different amounts of glare at observation points with different elevations. For any stationary observation points that could have human occupancy at higher elevations (e.g. a second story of a residence), the applicant should model multiple elevations for those stationary observation points.**
- **The analysis software may model different amounts of glare depending on the assumed heights of the solar panels. The applicant should model panel elevations for at least two different solar panel heights to establish a range of potential glare results.**
- **The analysis software may model different amounts of glare depending on the assume rest angle of the solar panels. The applicant should model at least two resting angle configurations, including one configuration with a resting angle set at between zero and five degrees.**

Stantec utilized the web-based ForgeSolar glare hazard analysis program to analyze the potential for glare from the Project. This interactive tool primarily provides a quantified assessment of (1)

when and where glare will occur throughout the year for a prescribed solar installation, and (2) potential effects on the human eye at locations where glare occurs.

The ForgeSolar program visually depicts glare effects using the following classification scheme on a series of project area maps (no color indicates no glare predicted):

- GREEN: Low potential for temporary after-image.
- YELLOW: Potential for temporary after-image.
- RED: Potential for permanent eye damage

Based on the solar array parameters provided, glare is not predicted to occur from the proposed Project at the four airports located within 10 miles of the Project, including the Jennie's Field Airport, Gottschalk Field Airport, Cranmorr Airstrip Airport, and Alexander Field – South Wood County Airport. In addition, the FAA recently issued policy pursuant to its authority under title 14 of the Code of Federal Regulations, part 77 that concluded that in most cases, the glint and glare from a solar facility to pilots on final approach is similar to the glint and glare that pilots routinely experience from water bodies, glass façade buildings, parking lots and similar features and therefore, does not require a glint and glare analysis.

Glare is not predicted for drivers of vehicles on the 10 roads that were analyzed and that are located adjacent to the Project at either 5-foot (cars and small trucks) or 9-foot (semi-trucks) viewing heights. Glare is also not predicted for the total of 537 structures, primarily residences, that were analyzed within proximity to the Project area. All routes and homes were also analyzed using 9-foot and 12-foot AGL panel heights. The full Saratoga Solar Glare Hazard Analysis report can be found in Appendix L.

5.20.2 In the event of an inquiry or complaint by a resident in or near the project area, describe what modeling or other analysis would be used to evaluate the possibility of unreasonable panel glint or glare at the residence.

In the event of a complaint about glare by a resident within or outside of the Project Area boundary, ForgeSolar modeling will likely be used to assess the extent and time of day of glare at the point of concern.

5.20.3 Describe mitigation options available to reduce unreasonable panel glint or glare.

As the PV panels will be mounted to single-axis tracking systems, the surface of the panels will be in line with the position of the sun, thereby reducing the potential for steep, glancing angles (i.e., chance for glare) compared to fixed-axis systems. Additional options for minimizing the impacts include antireflective coating on panel surfaces, fencing, and vegetation.

6. Local Government Impacts

6.1 Joint Development and Other Agreements

6.1.1 Provide a summary of major agreement items agreed upon in any Joint Development Agreements ("JDA") or other type of agreement including:

6.1.1.1 All services to be provided by the city, town, and/or county during construction and when the plant is in operation (e.g. water, fire, EMS, police, security measures, and traffic control).

Saratoga Solar has begun coordination with both the Town of Saratoga and Wood County to prepare JDAs regarding the Project's formal commitments to the local community. Although the Project is under the PSC's jurisdiction, Saratoga Solar has agreed to pursue developer agreements with both the Town of Saratoga and Wood County. The agreements will ensure the Project's commitment to addressing town and county concerns. The JDAs will be provided to the PSC once they have been finalized and approved by the town and county.

Saratoga Solar does not anticipate significant impacts to local public services or local traffic. Since the Project Area is sparsely populated, construction-related traffic disruptions should be minimal. Post-construction traffic disruptions should be rare.

During construction activities, Saratoga Solar anticipates minimal net disruptions to the free flow of traffic on the roads that will be employed for Project access. The majority of focused construction traffic will be temporary in duration. The entire construction cycle should not exceed eighteen months (weather permitting).

Training and coordination with local emergency responders will be included in Saratoga Solar's emergency response plan for construction and operations. Safety protocols, and contact information for Saratoga Solar's facility operations team, will be provided to all local first responders.

Solar energy systems and their components do not present unusual safety hazards. Periodic meetings will be held with first responders to ensure their familiarity with site facilities.

6.1.1.2 Specifically, address community and facility readiness for incidents such as fires.

Training and coordination with local emergency responders will be included in Saratoga Solar's emergency response plan, which will be finalized as part of pre-construction preparation for the Project. Safety protocols and contact information for the Project's facility operations team will be provided to all local first responders.

It is expected that fire services would be provided by the Nekoosa Fire Department and the Town of Rome Fire Department, police services by Wood County Sheriff's Department and EMS services by Wisconsin Rapids Fire Department, Grand Rapids Fire Department, and Port Edwards Fire Department. Project facilities will not be located at an elevation or in areas that present difficulties for first responders. When requested, periodic meetings will be held with first responders to ensure their familiarity with site facilities.

6.1.2 Provide a copy of all agreements with local communities (e.g., JDA).

Joint Development Agreement coordination with the Town of Saratoga and Wood County is currently in progress. Executed Joint Development Agreements will be submitted under separate cover.

6.2 Infrastructure and Service Improvements

No additional infrastructure or current upgrades to existing facilities are expected to be required to construct the Project. Cumulative benefits to the budgets of local governments will be significant due to yearly Shared Revenue Utility Payments. Additional benefits will include significant local spending and increased local jobs during construction and operation.

6.2.1 Identify any local government infrastructure and facility improvements required (e.g. sewer, water lines, railroad, police, and fire).

Saratoga Solar is not aware of any infrastructure or upgrades to existing facilities that will be needed for the construction (or operation) of the Project. If it is determined that such improvements are necessary, such as the repair/improvement to specific roads used in hauling materials during construction, they will be done at Saratoga Solar's expense.

Saratoga Solar is anticipating that no changes to existing roads along haul routes will be required. If such changes are needed for accommodating turning radii, Saratoga Solar will adhere to all local construction standards.

Saratoga Solar will assist Wood County and the Town of Saratoga in conducting pre- and post-construction inspections of haul roads utilized during construction in order to assess any potential damage to county and town roads. Any such damage will be repaired by Saratoga Solar to original condition or better per the Road Condition Report, Appendix Q.

6.2.2 Describe the effects of the proposed Project on city, village, town and/or county budgets for these items.

Local government budgets will be positively impacted by hosting the Project. Wisconsin's Shared Revenue Utility Aid Program provides for payments to be distributed annually to the communities hosting an electric generator. Saratoga Solar's proposed 150.5 MW Project would be eligible for two components of the Shared Revenue Utility Aid Program: Component 4, the MW-based payment, and Component 5, the Incentive payment.

6.2.3 For each site provide an estimate of any revenue to the local community (i.e. city, village, town, county) resulting from the Project in terms of taxes, shared revenue, or payments in lieu of taxes.

Saratoga Solar will generate approximately $602,000 in annual payments through the above referenced Shared Revenue Utility Aid Program. A 150.5 MW project would generate Shared Revenue Utility Payments of approximately $21 million in added revenue to the County and Town over an assumed 35-year life.

A 150.5 MW project would contribute $250,000 annually to the Town of Saratoga and $350,000 annually to Wood County. The County and Town can expect to receive the following estimated amounts:

Table 9: Estimate of Annual Revenue for 150.5-MW Project

Payment Type		Town of Saratoga	Wood County
MW-based Payment	$301,000	$100,333	$200,667
Incentive Payment	$301,000	$150,500	$150,500
Total	$602,000	$250,833	$351,167

6.2.4 Describe any other benefits to the community (e.g. employment, reduced production costs, goodwill gestures).

Approximately 300 construction workers will be employed to build the Project. Whenever possible, these jobs will be sourced from the surrounding communities. In addition to construction: skilled electricians, operations staff, and maintenance workers will regularly be in demand. Other benefits include significant revenues to area landowners who participate in the Project.

Additional economic benefits may include an increase in local employment opportunities to support the Project. Food service, lodging, fuel, sanitation, gravel, asphalt, and other service providers commonly experience an uptick in their businesses during construction.

In addition, the Project has been an active community participant. Saratoga Solar has leased a local office near downtown Wisconsin Rapids and hired a local representative to keep the community informed about the Project. In addition, the Project is planning to sponsor the upcoming Friends of Rapids Music Festival in September 2022.

6.2.5 Provide information on the direct, indirect, and induced state and local economic impacts during and after construction.

During construction, approximately 300 construction workers will be employed to build the Project. Whenever possible, these jobs will be sourced from the surrounding communities. In addition to construction: skilled electricians, operations staff, and maintenance workers will regularly be in demand. This will result in direct, indirect, and induced state and local economic impacts during construction.

After construction, the Town of Saratoga will receive approximately $250,833 and Wood County will receive approximately $351,166 each year in the form of direct payments for the assumed 35-year life of the Project.

7. Landowners Affected and Public Outreach

7.1 Contact Lists

Provide a separate alphabetized list (names and addresses) in Microsoft Excel for each of the groups described below:

7.1.1 Property owners and residents within the Project Boundary and a separate list of property owners and residents from the Project Boundary out to a distance of 1.0 mile. It is strongly recommended that applicants consult with PSC staff in order to ensure that the format and coverage are appropriate considering the project type, surrounding land use, etc.

A list of property owners within the Project Area boundary and a list of property owners within a 1-mile buffer of the Project Area boundary is submitted electronically in Appendix O. Parcel ID numbers of each property owner's land have been appended to the end of each list to aid the PSCW's review of the Application. Some property owners appear on these lists more than once because they own multiple parcels within the Project Area or within a 1-mile buffer of the Project Area boundary. Accordingly, to aid the PSCW's review of the Application, Saratoga Solar is also providing a separate, "dissolved" mailing list that lists each such property owner only once.

7.1.2 Public property, such as schools or other government land.

There are no government-owned buildings within the Project Area or within 1 mile of the Project boundary. One school is located within 1 mile of the Project boundary.

7.1.3 Clerks of cities, villages, townships, and counties directly affected by the proposed project; and the contact info for the Regional Planning Commission relevant to the project area. Also include on this list the main public library in each county the proposed facilities would occupy.

The communities listed in Table 10 have lands within the Project Area boundary or have certain rights of extraterritorial jurisdiction within the Project Area boundary. A list of town and village clerks and public libraries in the vicinity of the Project Area are included in Appendix O.

Table 10: Clerks of Municipalities Directly Affected

Municipality	Clerk Name	Phone Number
Town of Saratoga	Heidi Kawleski	(715) 325-5204
Wood County	Trent Miner	(715) 421-8460
Charles and JoAnn Lester Library - Nekoosa	Darla Allen	(715) 866-7879
North Central Wisconsin Regional Planning Commission	Darryl Landeau	(715) 849-5510 ext. 308

7.1.4 Local media for the project area, at least one print and one broadcast.

Print Media: Wisconsin Rapids Tribune
101 W Riverview Expressway, Suite 131
Wisconsin Rapids, Wisconsin 54495

Print Media: Wisconsin Rapids City Times
2916 Post Road
Stevens Point, Wisconsin 54481

Broadcast Media: Channel 9 WAOW
1908 Grand Avenue
Wausau, Wisconsin 54403

Contact information for these media outlets is also included in Appendix O.

7.1.5 Tribal government representatives for Native American Tribes that hold off-reservation treaty rights in Ceded Territory. This only applies to projects within the following counties: Douglas, Bayfield, Ashland, Iron, Vilas, Forest, Florence, Marinette, Oconto, Menominee, Shawano, Langlade, Oneida, Price, Sawyer, Washburn, Burnett, Polk, Barron, Rusk, Taylor, Lincoln, Marathon, Portage, Wood, Clark, Chippewa, Eau Claire, Dunn, and St. Croix County. The following Tribes hold off-reservation treaty rights in Ceded Territory:

- **Bad River Band of Lake Superior Chippewa Indians**
- **Lac Courte Oreilles Band of Lake Superior Chippewa Indians**
- **Lac du Flambeau Band of Lake Superior Chippewa Indians**
- **Red Cliff Band of Lake Superior Chippewa Indians**
- **St. Croix Chippewa Indians of Wisconsin**
- **Sokaogon Chippewa Community (Mole Lake Band of Lake Superior Chippewa Indians)**

Table 11: Contact information for Tribes that hold off-reservation treaty rights in Ceded Territory

Tribe	Contact Information
Bad River Band of Lake Superior Chippewa Indians	72686 Maple Street Ashland, WI 54806 (715) 682-7111
Lac Courte Oreilles Band of Lake Superior Chippewa Indians	(715) 634-8934
Lac du Flambeau Band of Lake Superior Chippewa Indians	P.O. Box 67 Lac du Flambeau, WI 54538 (715) 588-3303
Red Cliff Band of Lake Superior Chippewa Indians	88455 Pike Road Red Cliff, WI 54814 (715) 779-3700
St. Croix Chippewa Indians of Wisconsin	24663 Angeline Ave Webster, WI 54893 (715) 349-2195
Sokaogon Chippewa Community (Mole Lake Band of Lake Superior Chippewa Indians)	3051 Sand Lake Road Crandon, WI 54520 (715) 478-7500

7.2 Public Outreach and Communication

7.2.1 List and describe all attempts made to communicate with and provide information to the public. Describe efforts to date and any planned public information activities.

Saratoga Solar has made a considerable effort to communicate Project-related information with the local community. Where appropriate and practical, outreach efforts have been conducted through virtual means to account for COVID-19 safety protocols and restrictions. Those efforts are summarized below.

Local Residents – Saratoga Solar has regularly engaged with prospective landowners, their tenants, and nearby residents to determine local interest in the Project in order to secure land and to identify potential concerns that can be addressed during the development stage of the Project.

Local Units of Government – Saratoga Solar has met with the following town, city, and county elected officials and staff to advise them of Project activities, understand potential concerns, negotiate a JDA and gather feedback and input related to the Project:

- Town of Saratoga: Clerk, other elected officials and outside counsel
- Wood County Board of Supervisors and Corporation Counsel

Community Outreach:

- **May 2021:** Saratoga Solar held a virtual presentation with Q&A for leadership of Saratoga Concerned, a local advocacy group.

- **June 2021:** The Saratoga Town Board Meeting at the Town Hall included a presentation with a Q&A session by a Project representative. The meeting was posted on the Town of Saratoga's website: https://dev.saratogawisconsin.org/town/meetings/2021-2/
- **June 2021:** Saratoga Solar launched its online and social media campaign by going live with the Project website (www.saratogasolarproject.com) and Facebook page (www.facebook.com/SaratogaSolarProject/) to provide the community access to updated Project information and a platform to ask Project-related questions.
- **June 2021:** Saratoga Solar held an Open House meeting at the Saratoga Town Hall. A presentation was followed by Q&A with Project representatives. Invitations to the meeting were sent via the US Postal Service to residents within one-quarter mile of the Project; meeting information was sent via electronic mail to key Project stakeholders; the meeting was advertised in the local newspapers, Wisconsin Rapids Tribune and Wisconsin Rapids City Times; and meeting information was posted on the Project Facebook page, Project website, and the Town of Saratoga's website. Approximately 40 people attended the Open House.
- **June 2021 –** Saratoga Solar posted an advertisement about the Project in the 2021 Wisconsin Rapids City Times *Visit the Heart Visitor's Guide*.
- **July 2021:** Saratoga Solar posted a recorded presentation about the Project on the Project website and Facebook page.
- **August 2021:** Project contact information, including website and Facebook page, was sent via the US Postal Service to residents within one-quarter mile of the Project to encourage communication with the Project.
- **September 2021:** Saratoga Solar presented to the Conservation, Education & Economic Development Committee of the Wood County Board of Supervisors to address questions.
- **October 2021:** Saratoga Solar posted an informational video about the Project to the Project website and Facebook page. Saratoga Solar shared the informational video to the Heart of Wisconsin Chamber of Commerce who included it in their virtual newsletter.
- **October through November 2021:** Saratoga Solar introduced Project stakeholders to the new Project Manager via phone calls, electronic mail, and the Facebook page.
- **November 2021:** Saratoga Solar met with the Wisconsin Rapids Noon Rotary Club to present the Project. Over 20 people attended virtually or in-person.
- **January 2022:** Saratoga Solar held an Open House meeting at the Saratoga Town Hall. A presentation was followed by Q&A with Project representatives. Invitations to the meeting were sent twice via the US Postal Service to residents within one-quarter mile of the Project; meeting information was sent via electronic mail to key Project stakeholders; the meeting was advertised in the local newspapers, Wisconsin Rapids Tribune and Wisconsin Rapids City Times; and meeting information was posted on the Project Facebook page and website as well as the Town of Saratoga's website. Approximately 30 people attended the Open House.

- **February 2022:** Saratoga Solar posted a recorded presentation about the Project on the Project website and Facebook page and shared the post via electronic mail to Project stakeholders.
- **February 2022:** Saratoga Solar presented the project to Wisconsin Rapids Clean Green Action, a community advocacy group. Eight were in attendance.
- **March 2022:** Saratoga Solar placed an ad in *Discover Wood County*, a year-long reference guide for residents of Wood County.
- **March 2022:** Saratoga Solar met with the Heart of Wisconsin Chamber of Commerce during the virtual *Coffee with the Chamber* event. More than 15 people were in attendance. The recorded presentation was shared to the Chamber membership afterwards via electronic mail and Facebook.
- Project representatives have held multiple one-on-one communications with Project neighbors and community leaders.

7.2.2 Provide copies of public outreach mailings or website addresses for project pages.

Public outreach mailings are included in Appendix P.

The Project website is www.saratogasolarproject.com.

The Project Facebook page is www.facebook.com/saratogasolarproject/.

7.2.3 Describe plans and schedules for maintaining communication with the public (e.g. public advisory board, open houses, suggestion boxes, and newsletters).

Saratoga Solar will continue to communicate and engage with the public in the following manner:

- Saratoga Solar will maintain a local office in Wisconsin Rapids with the opportunity to make appointments.
- Saratoga Solar will maintain an up-to-date Project website and Facebook page.
- Saratoga Solar will participate regularly in meetings of local units of government.
- Saratoga Solar will share Project information with local media.
- Saratoga Solar will continue one-on-one communication as well as participation in meetings with community groups and local business and service organizations (i.e., Chamber, Rotary, etc.)

7.2.4 Identify all local media that have been informed about the project.

Local coverage of the Project has included conversations held with newspapers and television stations as well as Project related advertisements in newspapers:

- May 19, 2021: Saratoga Solar representative gave a statement to Karen Madden of the Wisconsin Rapids Tribune.

- June 16, 2021: Saratoga Solar advertised the Project in the Wisconsin Rapids City Times *Visit the Heart Visitor's Guide*.
- Saratoga Solar advertised the June 23, 2021 Open House in the Wisconsin Rapids City Times newspaper on June 17, 2021.
- Saratoga Solar advertised the June 23, 2021 Open House in the Wisconsin Rapids Daily Tribune newspaper on June 17, 2021
- Saratoga Solar advertised the January 24, 2022 Open House in the Wisconsin Rapids City Times newspaper on January 12 and 19, 2022.
- Saratoga Solar advertised the January 24, 2022 Open House in the Wisconsin Rapids Daily Tribune newspaper on January 15, 18 and 22, 2022.

7.2.5 Describe the ongoing ways that the public would be able to communicate with plant operators or the company. Describe any internal process for addressing queries or complaints.

The public will be able to communicate with Saratoga Solar by several means which will be documented in the Saratoga Solar Project Complaint Resolution Plan.

1. Saratoga Solar will establish a "hotline" phone number that will be included in this plan and provided to Wood County and the Town of Saratoga once it is established. Individuals may call the hotline at any time to report emergencies or submit complaints.
2. Individuals may visit the temporary onsite management office during construction business hours to file a written complaint with the construction manager.
3. Individuals may submit written complaints by mail to: Saratoga Solar Project, LLC 422 Admiral Boulevard Kansas City, Missouri 64106
4. Individuals may submit complaints via email to the construction manager or O&M staff during construction and operations, respectively. Email addresses will be included in this plan and provided to Wood County and the Town of Saratoga once they are established.

Saratoga Solar will coordinate with the complainant to quickly and effectively address issues such that both parties are satisfied. Saratoga Solar will enter complaints into a complaint log, document the details of the complaint, and assign a point of contact to investigate the complaint. The construction manager, or alternative designee, will be responsible for initiating the review of complaints received during the construction process. On-site O&M staff will be responsible for initiating the review of complaints reported during the operational phase.

Saratoga Solar will first determine if complaints violate federal, state, or local laws or permit conditions, and if there are notifications or required steps to address those violations. Saratoga Solar will also determine if outside resources are necessary to address issues. Saratoga Solar is committed to resolving reasonable complaints within 30 days, unless extenuating circumstances necessitate a longer time period, or it is determined that the complaint is unresolvable. Saratoga Solar will provide an explanation to the complainant for the extended period and the timeline for addressing the complaint should complaint resolution take longer than 30 days.

8. Waterway/Wetland Permitting Activities

The following subsections apply to both proposed and alternative solar array sites.

Saratoga Solar retained Stantec Consulting Services Inc. to identify wetlands and waterways within the Project Area boundary. A portion of the Project Area, mostly west of STH 13, was field reviewed in September 2019, with the remainder of the Project Area, mostly east of STH 13, field reviewed in June 2021. The wetland determination was completed in accordance with the criteria and methods outlined in the U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplements to the Army Corps of Engineers Wetland Delineation Manual.

There were no wetlands or waterways identified within the Project Area. The extent of the Project Area, methodology used, and results of the field investigation are provided in the wetland determination letter report, included in Appendix H.

8.1 Waterway Permitting Activities

Section 8.1 is not applicable to the Project. No waterways are present within the Project Area and no waterways will be impacted by the Project. The WDNR Wetland/Waterway Impact Location Table and Environmental Inventory Table (WDNR Tables 1 and 2, respectively) are provided in Appendix S as required, although they contain no wetland or waterway information as none are present on site.

8.1.1 Identify the number of waterways present, including all DNR mapped waterways and field identified waterways, assuming all waterways are navigable until a navigability determination is conducted (if requested). Provide an overall project total, as well as broken down by the proposed site and the alternate site and their associated facilities.

8.1.2 Identify any waterways in the project area that are classified as Outstanding or Exceptional Resource Waters, Trout Streams, Wild Rice Waters, and Wild or Scenic Rivers.

8.1.3 State if you are requesting DNR staff perform a navigability determination on any of the DNR mapped waterways and/or field identified waterways that would be impacted and/or crossed by project activities. If a navigability determination is requested, provide the following information in a separate appendix with the application:

- **A table with columns for:**
  - **The crossing unique ID,**
  - **Waterbody Identification Code (WBIC) for each waterway (found in the Surface Water Data Viewer or in the GIS data for the DNR mapped waterways),**
  - **Latitude and longitude for each crossing,**
  - **Waterway name,**
  - **Waterway characteristics from field investigation, and;**

- **Any other pertinent information or comments.**

- **Site photographs, clearly labeled with the photo number, direction, date photo was taken, and crossing unique ID. A short description of what the photo is showing, and any field observation must also be included in the caption.**
- **Project map showing the following:**
  - **Aerial imagery (leaf-off, color imagery is preferred),**
  - **DNR mapped waterways (labeled with their unique ID),**
  - **Field identified waterways (labeled with their unique ID),**
  - **the location of each site photograph taken (labeled with the photo number),**
  - **the project area, and;**
  - **Call out box/symbol for each DNR mapped waterway crossing where the navigability determination is requested (labeled with their unique ID).**

8.1.4 For both the proposed and alternate sites and their associated facilities, provide the following:

8.1.4.1 The number of waterways that would be crossed by collection lines and specify the installation method (e.g. X waterways would be bored, Y waterways would be trenched, etc.).

8.1.4.2 The number of waterways that would be traversed with equipment for temporary access roads, and how that crossing would be accomplished (e.g. temporary clear span bridges (TCSB), use of existing bridge or culvert, etc.).

8.1.4.3 The number of waterways that would be impacted for permanent access roads, and how that crossing would be accomplished (e.g. placement of culvert, ford, permanent bridge, etc.).

8.1.4.4 The number of waterways that would be impacted and/or crossed by fence installation and footings.

8.1.4.5 The number of waterways that would be impacted and/or crossed by other construction activities or facilities (e.g. placement of a stormwater pond within 500 feet of a waterway, stream relocation, staging areas, etc.).

8.1.5 Provide the methods to be used for avoiding, minimizing, and mitigation construction impacts in and near waterways. This discussion should include, but not be limited to, avoiding waterways, installation methods (i.e. directional bore versus open-cut trenching or plowing), equipment crossing methods (i.e. for temporary access, the use of TCSB versus temporary culvert; for permanent access, the use of permanent bridge versus permanent culvert), sediment and erosion controls, invasive species protocols for equipment, etc.

8.1.6 Describe fence crossings of waterways, including the location of support pilings

(i.e. in waterway channel, at the top of the waterway banks) and the amount of clearance between the bottom of the fence and the ordinary high-water mark. Also describe any existing public use of the waterway and how this public use may be impacted by the fence crossing.

8.1.7 For waterways that would be open-cut trenched, provide the following:

8.1.7.1 State if any waterways are wider than 35 feet (measured from OHWM to OHWM).

8.1.7.2 The machinery to be used, and where it would operate from (i.e. from the banks, in the waterway channel) and if a TCSB is needed to access both banks.

8.1.7.3 The size of the trench (length, width, and depth) for each waterway crossing.

8.1.7.4 The details on the proposed in-water work zone isolation/stream flow bypass system (i.e. dam and pump, dam and flume, etc.).

8.1.7.5 The details on the proposed dewatering associated with the in-water work zone isolation/stream flow bypass system, including where the dewatering structure would be located.

8.1.7.6 The duration and timing of the in-stream work, including the installation and removal of the isolation/bypass system and the trenching activity.

8.1.7.7 How impacts to the waterway would be minimized during in-water work (e.g. energy dissipation, sediment controls, gradually releasing dams, screened and floating pumps, etc.).

8.1.7.8 How the waterway bed and banks would be restored to pre-existing conditions.

8.1.8 For waterways that would be directionally bored, provide the following:

8.1.8.1 Where the equipment would operate from (e.g. from upland banks, from wetland banks, etc.) and if a TCSB is needed to access both banks.

8.1.8.2 The location and size of any temporary staging and equipment storage.

8.1.8.3 The location and size of bore pits.

8.1.8.4 Provide a contingency plan for bore refusal and a plan for the containment and clean-up of any inadvertent releases of drilling fluid (e.g. a frac-out).

8.1.9 following:

8.1.9.1 A description of the TCSB proposed, including dimensions, materials, and approaches

8.1.9.2 State if any waterways are wider than 35 feet, and/or if any in-stream supports would be used.

8.1.9.3 State how the TCSB placement and removal would occur (e.g. carried in and

placed with equipment, assembled on site, etc.) and if any disturbance would occur to the bed or banks for the installation and removal, including bank grading or cutting.

8.1.9.4 The duration of the TCSB and when installation and removal would occur.

8.1.9.5 Describe sediment controls that would be installed during the installation, use, and removal of the TCSBs.

8.1.9.6 Describe how the TCSBs would be inspected during use, and how they would be anchored to prevent them from being transported downstream.

8.1.9.7 State if the required five-foot clearance would be maintained, or if the standards in Wis. Admin. Code NR 320.04(3) would be complied with.

8.1.9.8 How the waterway banks would be restored when the TCSB is removed.

8.1.10 Describe the proposed area of land disturbance and vegetation removal at waterway crossings. Include a description of the type of vegetation to be removed, and if this vegetation removal would be temporary (allowed to regrow) or permanent (maintained as cleared).

8.1.11 If any of the following activities are proposed, provide the information as detailed on the applicable permit checklist:

- **New culvert placement: https://dnr.wi.gov/topic/waterways/documents/PermitDocs/GPs/GP-CulvertWPEDesign.pdf (General Permit) or https://dnr.wi.gov/topic/Waterways/documents/PermitDocs/IPs/IP-culvert.pdf (Individual Permit).**
- **New permanent bridge placement: https://dnr.wi.gov/topic/waterways/documents/PermitDocs/GPs/GP-ClearSpanBridge.pdf (General Permit, no in-stream supports) or https://dnr.wi.gov/topic/Waterways/documents/PermitDocs/IPs/IP-bridgeTempCross.pdf (Individual Permit, in-stream supports).**
- **New stormwater pond placed within 500 feet of a waterway: https://dnr.wi.gov/topic/waterways/documents/PermitDocs/GPs/GP-StormwaterPond.pdf.**

See section 2.4.6 describing permanent stormwater management facilities. No new stormwater facilities are proposed within 500 feet of a waterway.

8.2 Wetland Permitting Activities

Section 8.2 is not applicable to the Project. No wetlands are present within the Project Area and no wetlands will be impacted by the Project. The WDNR Wetland/Waterway Impact Location Table and Environmental Inventory Table (WDNR Tables 1 and 2, respectively) are provided in Appendix S as required, although they contain no wetland or waterway information as none are present on site.

8.2.1 Describe the method used to identify wetland presence and boundaries within the project area (i.e. wetland delineation, wetland determination, review of desktop resources only, etc.). If a combination of methods were used, describe which project areas utilized which method. The associated delineation report and/or desktop review documentation should be uploaded to the PSC's website as part of the application filing. State if wetlands mapped via desktop resources would be field confirmed, and when (if known).

On-site wetland determinations were based on the criteria and methods outlined in the U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplements to the Army Corps of Engineers Wetland Delineation Manual. Stantec also performed a desktop review, which included the use of available resources such as USGS topographic maps, NRCS soil survey, WDNR Wisconsin Wetland Inventory mapping, and aerial photography. Additionally, antecedent precipitation in the three months leading up to the field investigation was reviewed. The current year's precipitation data were compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using the Climate Analysis for Wetlands Tables (also known as a WETS analysis) as developed by the NRCS.

8.2.2 Identify the number of wetlands present and by wetland type, using the Eggers and Reed classification. Provide as an overall project total, as well as broken down by the proposed site and the alternate site and their associated facilities.

No wetlands are present within the Project Area and no wetlands will be impacted by the Project.

8.2.3 Wetland functional values:

8.2.3.1 Discuss the existing functional values of the wetland present. Functional values include but are not limited to floristic diversity, fish and wildlife habitat, flood storage, water quality, groundwater discharge and recharge, public use, etc.

8.2.3.2 Discuss how the project may impact existing functional values of wetlands.

8.2.3.3 Provide Wisconsin Rapid Assessment Methodology (WRAM) forms, or other assessment methodology documentation, if completed.

8.2.4 Identify any wetlands in the project area that are considered sensitive and/or high-quality wetlands, including, but not limited to:

8.2.4.1 Any wetlands in or adjacent to an area of special natural resource interest (Wis. Admin. Code NR 103.04).

8.2.4.2 Any of the following types: deep marsh, northern or southern sedge meadow not dominated by reed canary grass, wet or wet-mesic prairie not dominated by reed canary grass, fresh wet meadows not dominated by reed canary grass, coastal marsh, interdunal or ridge and swale complex, wild rice-dominated emergent aquatic, open bog, bog relict, muskeg, floodplain forest, and ephemeral ponds in wooded settings.

8.2.4.3 Any wetlands with high functional values based on factors such as abundance of native species and/or rare species, wildlife habitat, hydrology functions, etc.

8.2.5 For both the proposed and alternate sites and their associated facilities, provide the following:

8.2.5.1 How many wetlands would be crossed by collection lines and specify the installation method (i.e. X wetlands would be bored, Y wetlands would be trenched).

8.2.5.2 How many wetlands would have construction matting placed within them to facilitate vehicle access and operation and material storage. Also provide the total amount of wetland matting, in square feet.

8.2.5.3 How many wetlands would be impacted for permanent access roads and indicate if culverts would be installed under the roads to maintain wetland hydrology.

8.2.5.4 How many wetlands would be impacted and/or crossed by fence installation and footings.

8.2.6 Describe if wetlands would be disturbed for site preparation activities (e.g. grading, leveling, etc.) in the array areas, and for the installation of the arrays and associated supports.

8.2.7 Describe if wetlands will be disturbed for site preparation activities:

8.2.7.1 Grading, leveling, etc. in the array areas, and for the installation of the arrays and associated supports.

8.2.7.2 If vegetation removal will be conducted in wetlands, describe how woody debris (i.e. brush piles, wood chips, etc.) would be handled and disposed of when clearing shrub and forested wetlands.

8.2.8 Describe the sequencing of matting placement in wetlands and the anticipated duration of matting placement in wetlands. For matting placed in any wetland for longer than 60 consecutive days during the growing season, prepare and submit a wetland matting restoration plan with the application filing.

8.2.9 For wetlands that would be open-cut trenched, provide the following:

8.2.9.1 Provide details on the total disturbance area in wetland, including how total wetland disturbance was calculated. Include the size of the trench (length, width, and depth), where stockpiled soils would be placed (i.e. in upland, in wetlands on construction mats, etc.), and where equipment would operate.

8.2.9.2 Details on the proposed trench dewatering, including how discharge would be treated and where the dewatering structure would be located.

8.2.9.3 Duration and timing of the work in wetland.

8.2.9.4 How the wetland would be restored to pre-existing conditions.

8.2.10 For wetlands that would be directionally bored, provide the following:

8.2.10.1 How bored wetlands and associated bore pits would be accessed.

8.2.10.2 The location and size of any temporary staging and equipment storage.

8.2.10.3 The location and size of bore pits.

8.2.10.4 Provide a contingency plan for bore refusal and a plan for the containment and clean-up of any inadvertent releases of drilling fluid (e.g. a frac-out).

8.2.11 Describe how fence installation would occur in wetlands, including the footing types (e.g. direct imbed, concrete, etc.), any associated wetland impact such as vegetation clearing, operation of equipment, etc.

8.2.12 For wetland vegetation that would be cleared or cut, provide the following:

8.2.12.1 The justification for why wetland trees and shrubs are proposed to be cleared, and what construction activity the clearing is associated with.

8.2.12.2 The timing and duration of vegetation removal.

8.2.12.3 Describe the type of equipment that would be used, and if the vegetation removal would result in soil disturbance, including rutting and soil mixing.

8.2.12.4 The type of wetland and type of vegetation to be cleared.

8.2.12.5 If tree and shrubs removed would be allowed to regrow or be replanted, or if cleared areas would be kept free of trees and shrubs long-term.

8.2.12.6 Indicate the plan for removal and disposal of brush and wood chips.

8.2.13 Indicate if any permanent wetland fill is proposed, such as for substation placement, permanent roads, fence or array footings, pole locations, etc. and provide the amount of permanent wetland fill.

Provide the methods to be used for avoiding, minimizing, and mitigation construction impacts in and near wetlands. This discussion should include, but not limited to, avoiding wetlands, installation methods (i.e. directional bore versus open-cut trenching, soil segregation during trenching, etc.), equipment crossing methods (i.e. use of construction matting, frozen ground conditions, etc.), sediment and erosion controls, invasive species protocols for equipment, etc. Additional guidance to prepare this discussion can be found here: https://dnr.wi.gov/topic/Sectors/documents/PAAsupp3Utility.pdf.

8.2.14 Indicate if an environmental monitor would be employed during project construction and restoration activities. If so, describe the monitors roles and responsibilities, frequency of visits, etc.

Saratoga Solar will utilize an Environmental Management Plan (EMP) that verifies compliance with applicable environmental permits, plans, and regulations. An environmental monitor will

conduct ongoing on-site inspections during construction to ensure all employees are environmentally aware and ensuring compliance throughout construction.

The environmental monitor will be responsible for implementing the EMP, which will consist of environmental training, regularly scheduled inspections, and tools such as permit matrices and inspection summary logs to ensure all environmental laws and conditions are met. Under the EMP, the environmental monitor will provide environmental training to construction managers and operators prior to construction.

Saratoga Solar and the environmental monitor will train Project employees in accordance with the EMP and applicable environmental permitting. During construction, the environmental monitor will attend weekly meetings at the site and provide feedback to construction crews on issues previously identified.

8.2.15 Describe how all wetlands within the project area would be restored. This includes wetlands that would be encompassed within the arrays even if not directly impacted by project construction. This discussion should include details on the seeding plan, maintenance and monitoring, restoring elevations and soil profiles, restoring wetland hydrology, etc.

8.3 Mapping Wetland and Waterway Locations, Impacts, and Crossings

Provide the following map sets, as detailed below, for each proposed facility. Each map set should include an overview or index page that includes page extents for the corresponding smaller-scale map pages within the remainder of the map set. The smaller-scale map pages, to show the project and resources in greater detail, should include page numbers to reference to the overview page and have consistent scales throughout the smaller-scale pages.

8.3.1 Topographic map set showing the following:

- **Solar arrays and all associated components, including but not limited to:**
  - **permanent and temporary access roads;**
  - **fences;**
  - **collector circuits (labeled with the installation method, i.e. directional bore, plow, open-cut trench, etc.);**
  - **Staging areas (labeled with identifying name/number) and all temporary work spaces;**
  - **O&M Building and associated driveways, stormwater management features, etc.;**
  - **New and existing substations;**
  - **Distribution or transmission interconnection, including pole locations and all access roads (including off-ROW access roads), include identifying labels for each facility; and**
  - **Generator tie line, including pole locations and all access roads, including off-ROW access.**

- **Delineated wetlands, labeled with the feature unique ID**
- **Wisconsin Wetland Inventory and hydric soils, if a delineation was not conducted.**
- **DNR mapped waterways, labeled with the feature unique ID.**
- **Field identified waterways, labeled with the feature unique ID.**
- **Locations of proposed stormwater features (i.e. ponds, swales, etc.).**
- **Vehicle crossing method of waterways for both permanent and temporary access, labeled by the crossing method (i.e. TCSB, installation of culvert, installation of bridge, installation of ford, use of existing culvert, use of existing bridge, use of existing ford, driving on the bed).**
- **Placement of construction matting in wetlands.**
- **Excavation areas in wetlands (i.e. bore pits, open-cut trench, etc.).**

8.3.2 Aerial image map set showing the following:

- **Solar arrays and all associated components, including but not limited to:**
  - **Permanent and temporary access roads;**
  - **Fence;**
  - **Collector circuits (labeled with the installation method, i.e. directional bore, plow, open-cut trench, etc.);**
  - **Staging areas (labeled with identifying name/number) and all temporary work spaces;**
  - **O&M Building and associated driveways, stormwater management features, etc.**
  - **New and existing substations;**
  - **Distribution or transmission interconnection, including pole locations and all access roads (including off-ROW access roads), include identifying labels for each facility; and**
  - **Generator tie line, including pole locations and all access roads, including off-ROW access.**
- **Delineated wetlands, labeled with the feature unique ID**
- **Wisconsin Wetland Inventory and hydric soils, if a delineation was not conducted.**
  - **DNR mapped waterways, labeled with the feature unique ID.**
  - **Field identified waterways, labeled with the feature unique ID.**
  - **Locations of proposed stormwater features (e.g. ponds, swales, etc.).**
  - **Vehicle crossing method of waterways for both permanent and temporary access (i.e. TCSB, installation of culvert, installation of bridge, installation of ford, use of existing culvert, use of existing bridge, use of existing ford, driving on the bed).**
  - **Placement of construction matting in wetlands.**

- **Excavation areas in wetlands (i.e. bore pits, open-cut trench, etc.).**

8.3.3 A map showing which method(s) were used to identify wetland presence and boundaries within the project area (i.e. wetland delineation, wetland determination, review of desktop resources only).

9. DNR Guidance Information regarding Erosion Control and Storm Water Management Plans (not PSC requirements)

9.1 Erosion Control and Stormwater Management Plans

Once the Project is authorized, Saratoga Solar will submit a Water Resource Application for Project Permits to the WDNR in accordance with Wis. Admin. Code Ch. NR 216. The application will include a site-specific ECSWMP. The plan will include technical drawings and descriptions of the Erosion Control BMPs that will be followed in compliance with WDNR technical standards. The ECSWMP will address soil and slope stabilization; seeding, mulching and establishment of vegetation; matting, tracking pads, silt fences, and stockpile protection; channel protection and other associated strategies to minimize site erosion.